TECHNICAL COMMENTARY

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Group therapy

Introduction

Group therapy refers to any psychosocial therapy that is administered in a group setting. It can include specific cognitive or behavioural therapies. It is often utilised in inpatient settings. The usefulness of group therapy has been examined in the context of improving illness outcomes such as symptom severity and quality of life, medication compliance and particularly social interaction and anxiety. It has also been investigated for treatment of patients with dual diagnoses.

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 of 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 which describes a preferred way to present a meta-analysis[1]. 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, 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 or if there is a dose dependent response. We have also taken into account sample size and whether results are consistent, precise and direct with low associated risks (see end of table for an explanation of these terms)[2]. 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 four systematic reviews that met our inclusion criteria[3-6].

- Moderate to high quality evidence suggests a small effect of improved overall patient outcomes with group psychotherapy over various control conditions.

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Drake RE, O'Neal EL, Wallach MA

A systematic review of psychosocial research on psychosocial interventions for people with co-occurring severe mental and substance use disorders

Journal of Substance Abuse Treatment 2008; 34(1): 123-138

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Comparison	**Integrated group therapy, involving education and medication management for psychoactive substance abuse vs. treatment as usual for 8 months.**
Summary of evidence	**Low quality evidence (small sample size, unable to assess precision, direct) is unclear as to the benefit of integrated group therapy.**
Mental state and substance use	
1 trial, N = 47 reported no difference in mental health outcomes, psychoactive substance use, or hospitalisation rates, but some improvement in study attrition was reported.	
Consistency in results‡	Not applicable (1 trial).
Precision in results§	No measure of precision is reported.
Directness of results‖	Direct

Kosters M, Burlingame GM, Nachtigall C, Strauss B

A meta-analytic review of the effectiveness of inpatient group psychotherapy

Group Dynamics 2006; 10(2): 146-163

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Comparison 1	**Inpatient group psychotherapy vs. standard inpatient care, alternative therapy or waitlist.** **Most studies used a cognitive behavioural approach. 54% of patients had a diagnosis of schizophrenia.**

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Summary of evidence	**Moderate to high quality evidence (large sample, consistent, precise, indirect) suggests a small effect of improved patient outcomes with group psychotherapy over control conditions.**
Patient outcomes (unspecified)	
A significant, small effect of improved patient outcomes with group psychotherapy; 24 studies, N = 1,366, *d* = 0.31, 95%CI 0.21 to 0.41, Q = 34.4, *p* = 0.35	
Consistency in results	Consistent
Precision in results	Precise
Directness of results	Indirect comparisons
Comparison 2	**Pre-post treatment assessment of inpatient group psychotherapy.** **Most studies used a cognitive behavioural or psychodynamic approach.**
Summary of evidence	**Moderate quality evidence (consistent, precise, direct, unclear sample size) suggests a medium-sized effect of improved patient outcomes after group psychotherapy.**
Patient outcomes (unspecified)	
A significant, medium-sized effect of improved patient outcomes with group psychotherapy; 4 studies, N not reported, *d* = 0.50, 95%CI 0.33 to 0.66, Q = not reported, *p* = 0.48	
Consistency in results	Consistent
Precision in results	Precise
Directness of results	Direct

Lockwood C, Page T, Conroy-Hiller T

Systematic review: effectiveness of individual therapy and group therapy in the treatment of schizophrenia

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JBI Reports 2004; 2(10): 309-338 View review abstract online	
Comparison	**Group interventions vs. control conditions.**
Summary of evidence	**Low quality evidence (small samples, unable to assess consistency, imprecise, direct) is unable to determine the benefits of group interventions.**
Patient outcomes	
Group psychotherapy vs. individual therapies *A significant, large effect of fewer hospitalisations and greater improvement in symptoms with group psychotherapy, although there was also a large effect of greater reduction in illness severity reported with individual therapies;* Improved symptoms: 1 study, N = 87, OR = 23.33, 95%CI 2.9 to 187.54, *p* = 0.003 Overall illness severity: 1 study, N = 26, OR = 7.62, 95%CI 1.21 to 47.98, *p* = 0.03	
Group psychotherapy vs. skills training *A significant effect of better medication and illness management with skills training and no differences between groups in symptom severity;* 1 study, N = 41, no statistics are reported	
Group psychotherapy vs. standard hospital treatment *A significant effect of reduced polydipsia with group psychotherapy, however by 2 month follow up there were no differences between groups;* 1 study, N = 12, no statistics are reported	
Group psychotherapy vs. group tasks without a therapy focus *No significant differences were found between groups for illness severity;* 1 study, N not reported, OR = 3.89, 95%CI 0.81 to 18.68, *p* = 0.09	
Group psychoeducation training vs. unstructured group activities *A significant effect of better medication compliance and study retention with group psychoeducation training;* Medication compliance: 1 study, N = 191, OR = 0.53, 95%CI 0.29 to 0.99, *p* = 0.05	

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Study retention: 1 study, N = 112, OR = 3.32, 95%CI 1.09 to 9.39, *p* = 0.03 Group interactive cognitive and behavioural training vs. waitlist control *A significant effect of improved global state with group interactive cognitive and behavioural training and no differences between groups in quality of life, symptoms, or behaviour;* 1 study, N = 40, no statistics are reported Intensive group CBT vs. supportive counselling *A significant effect of improved positive symptoms with intensive group CBT post-treatment, but no differences between groups in symptoms at follow-up (12 to 24 months);* 1 study, N = 87, no statistics are reported Group CBT vs. waitlist control *A significant effect of greater improvement in social phobia, fear of negative evaluation, depression, global state, and quality of life with group CBT;* 1 study, N = 41, no statistics are reported Group coping skills training vs. problem-solving training *A significant effect of improved goal attainment with group coping skills training;* 1 study, N = 14, no statistics are reported Group re-motivational therapy alone or in combination with recreational activities vs. social living discussion or waitlist controls *A significant effect of better social interaction and verbalisation with group re-motivational therapy alone or in combination with recreational activities;* 1 study, N = 32, no statistics are reported Rotating group leaders vs. co-leaders or single leader group therapy *No significant differences were found between groups for illness severity or global function;* 1 study, N = 14, no statistics are reported

Consistency in results	No measure of consistency is reported.
Precision in results	Imprecise where confidence intervals are reported.
Directness of results	Direct

Zygmunt A, Olfson M, Boyer CA, Mechanic D

Interventions to improve medication adherence in schizophrenia

American Journal of Psychiatry 2002; 159(10): 1653-64

View review abstract online

Comparison	**Group interventions (dynamic therapy, psychoeducation, duration 2 weeks to 12 months) specifically for medication adherence vs. various comparison groups, including standard care, waiting list or social skills training.**
Summary of evidence	**Low quality evidence (small samples, unable to assess consistency or precision, direct) is unable to determine the benefits of group interventions for medication adherence.**
Medication adherence	
Daily group psychoeducation vs. weekly group psychoeducation *A significant effect of better medication adherence with daily group psychoeducation;* 1 non-randomised study, N = 100, no statistics are reported Group psychoeducation vs. standard care *A significant effect of better medication adherence with psychoeducation;* 1 non-randomised study, N = 66, no statistics are reported Group therapy vs. skills training *No differences between groups;* 1 RCT, N = 100, no statistics are reported Group therapy vs. waitlist controls *No differences between groups;* 1 RCT, N = 100, no statistics are reported	
Consistency in results	No measure of consistency is reported.

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Precision in results	Unable to assess, no measure of precision is reported.
Directness of results	Direct

Explanation of acronyms

CI = confidence interval, *d* = Cohen's *d* and *g* = Hedges' *g* = standardised mean differences (see below for interpretation of effect size), N = number of participants, *p* = statistical probability of obtaining that result ($p < 0.05$ generally regarded as significant), Q = Q statistic for the test of heterogeneity, RCT = randomised controlled trial, 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; reporting bias – selective reporting of results; 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[7].

† 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) which 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 effect[7].

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, a 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. A 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[8]. 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 can provide an indirect 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 independent 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 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 considerable heterogeneity and over this is considerable heterogeneity. I^2 can be calculated from Q (chi-square) for the test of heterogeneity with the following formula[7];

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

§ 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, these criteria should be relaxed[9].

‖ 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 and is therefore inferred from available evidence. These inferred treatment effect sizes are of lower quality than those gained from head-to-head comparisons of A and B.

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