



Family intervention

Introduction

Family intervention is used as an adjunct to pharmaceutical therapy and involves the introduction of a patient's immediate family into a psychosocial treatment setting. The goals of family intervention involves improving treatment outcomes, preventing relapse, and improving the family's relationships and understanding of the disorder as well as improving their own mental health, should that be compromised. As such family interventions often have a focus on psychoeducation or improving coping strategies^{1, 2}. These two approaches share common features, including the provision of information on the disorder, emphasizing instructions for medication and treatment adherence. They can also employ cognitive behavioural interventions to improve problem solving and communication skills and reduce expressed emotion^{2, 3}. This type of intervention aims to enhance the capacity of both patients and their families for problem solving and illness management.

The importance of family intervention arises from suggestions that patients from families with high levels of expressed emotion, criticism, hostility or over-involvement may contribute to increasing psychotic relapse in schizophrenia patients^{2, 3}. This type of intervention is particularly important as many patients are treated in outpatient or community care settings, often living at home with their families⁴. Appropriately, families who are well-educated in the disorder will be better equipped to assist mental health professionals in its day to day management⁵. Family intervention may also be protective of the mental health of all members by reducing the stress of the illness on the family unit.

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. Due to the high volume of systematic reviews we have now limited inclusion to systematic meta-analyses. Where no systematic meta-analysis exists for a topic, systematic reviews without meta-analysis are included for that topic. 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.

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-analysis⁶. Reviews reporting less than 50% of items 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



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(RCT) 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, 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)⁷. 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).

adherence. Group family intervention may be more effective than standard care at reducing family burden of the illness.

- Moderate to low quality evidence suggests mutual support groups for caregivers may improve families' and patients' knowledge about mental illness and coping strategies, and reduce stress and burden.

Results

We found 13 systematic reviews that met our inclusion criteria^{1, 2, 4, 5, 8-16}.

- High quality evidence suggests all types of family interventions (with or without individual therapy) reduce relapse rates when compared to standard care. Level of effectiveness was associated with increased number of sessions and results are strongest after one year post treatment.
- High quality evidence suggests family psychoeducation (conveying information about the disorder and promoting better coping) can reduce relapse rates, high expressed emotion in the family, number of days in hospital, and improve relatives' knowledge and patients' social functioning. In the longer term (up to 2 years follow up) family psychoeducation can reduce patients' general psychopathology when compared to other non-specified treatments.
- Moderate quality evidence suggests family intervention improves family coping, patients' quality of life, and medication



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Bird V, Premkuma P, Kenall T, Whittington C, Mitchell J, Kuipers E

Early intervention services, cognitive-behavioural therapy and family intervention in early psychosis: systematic review

The British Journal of Psychiatry 2010; 197(5):350-356

[View review abstract online](#)

Comparison	<p>Between 6 weeks and 18 months of family intervention including psychoeducation, problem-solving and crisis management (2 RCT used individual, 1 RCT used group family intervention) vs. standard care.</p> <p>Sample were all in their first or second episode of psychosis.</p>
Summary of evidence	<p>Moderate to low quality evidence (direct, some consistency, imprecise) suggests family intervention may reduce relapse and hospital admission rates at the end of treatment as well as at 2 year follow up.</p>
Relapse and hospital admissions	
<p style="text-align: center;"><i>No differences between groups in relapse rates;</i></p> <p>End of treatment: 1 RCT, N = 104, [†]RR = 0.58, 95%CI 0.25 to 1.36, <i>p</i> not reported At 2 year follow-up: 1 RCT, N = 104, RR = 0.75, 95%CI 0.39 to 1.43, <i>p</i> not reported</p> <p style="text-align: center;"><i>No differences in hospital admission rates at end of treatment;</i></p> <p>2 RCTs, N = 189, RR = 0.51, 95%CI 0.24 to 1.10, <i>p</i> not reported</p> <p style="text-align: center;"><i>Significant medium effect of reduced relapse and hospital admission rates (combined) for family intervention at end of treatment;</i></p> <p>3 RCTs, N = 293, RR = 0.5, 95%CI 0.32 to 0.80, <i>p</i> not reported, <i>I</i>² = 0%, <i>p</i> = 0.40</p>	
Consistency in results[†]	Consistent for relapse and hospital admission rates (combined), not reported for hospital admission, NA for relapse (1 RCT).
Precision in results[§]	Imprecise
Directness of results	Direct

Chien WT, Norman I



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The effectiveness and active ingredients of mutual support groups for family caregivers of people with psychotic disorders: a literature review

International Journal of Nursing Studies 2009; 46(12): 1604-23

[View review abstract online](#)

<p>Comparison</p>	<p>Effect of mutual support groups for families and caregivers compared to routine care for improving both families' and patients' psychosocial wellbeing.</p>
<p>Summary of evidence</p>	<p>Moderate to low quality evidence (medium sample sizes, unable to assess consistency or precision) suggests mutual support groups for caregivers may improve families' and patients' knowledge about mental illness and coping strategies, and reduce stress and burden.</p>
<p>All outcomes</p>	
<p><i>6 controlled studies (N = 536) compared mutual support intervention groups with routine care, and 4 of these studies reported significant benefits for family- and patient-related outcomes;</i></p> <ul style="list-style-type: none"> 1 study found benefits for reducing patients' personal distress, anxiety, improved management of family life and increased utilisation of community resources. 1 study found individual family interventions improved knowledge of mental illness but reported no other family-related benefits. 2 studies reported significant improvements in families' and patients' psychosocial functioning up to 18 months post-intervention. 2 studies reported no significant differences in any family-related outcomes. All six studies reported difficulties engaging with family carers and had high rates of attrition. <p><i>5 quasi-experimental studies (N = 363) compared mutual support intervention groups with routine care, and 3 of these studies reported significant benefits for family- and patient-related outcomes;</i></p> <ul style="list-style-type: none"> 3 studies reported significant improvements in knowledge of mental illness but reported no other family-related benefits. 1 study reported increased positive attitudes towards the family at 2 months follow up. 1 study reported reduced levels of depression in family members at 1 month follow up. <p><i>9 non-experimental studies assessed mutual support groups;</i></p> <p>4 cross-sectional studies (N = 423) suggested that families receiving mutual support reported lower</p>	



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levels of burden and more adaptive coping strategies.

3 survey studies (N = 757) suggested that families of more chronic patients had greater concerns about prognosis and the future, and family-related issues of care-giving. Support groups increased knowledge and coping.

1 longitudinal study (N = 131) suggested support group participants were more likely to have the patient living at home, with greater demands on care-giving and less service utilisation.

1 cohort study (N = 55) suggested the support group increased the patients' support network and treatment involvement.

Consistency in results	Unable to assess, not measure of consistency is reported.
Precision in results	Unable to assess, not measure of precision is reported.
Directness of results	Direct

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

[View review abstract online](#)

Comparison	Integrated family therapy, CBT and motivational interviewing (MI) for substance abuse vs. treatment as usual for 9 months. Only samples with defined schizophrenia spectrum disorders are reported.
Summary of evidence	Low quality evidence (direct, small sample size, unable to assess consistency or precision) is unclear as to any benefit of integrated family therapy for reducing substance use, or improving mental state or global function.

Mental health and substance use

1 RCT, N = 36, had 9 months of integrated intervention treatment of family therapy, CBT, and MI compared to treatment as usual, with evaluations after 9, 12 and 18 months of treatment. Authors reported increased abstinence from all substances except that most frequently used, and no difference in dependence or severity measures at 12 months. They reported decreased relapse rates, decreased negative symptoms at 9 months and 18 months, and decreased positive



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symptoms at 12 months.	
Consistency in results	Unable to assess, not measure of consistency is reported.
Precision in results	Unable to assess, not measure of precision is reported.
Directness of results	Direct

Lincoln TM, Wilhelm K, Nestoriuc Y

Effectiveness of psychoeducation for relapse, symptoms, knowledge, adherence and functioning in psychotic disorders: a meta-analysis

Schizophrenia Research 2007; 96(1-3): 232-245

[View review abstract online](#)

Comparison	Psychoeducation (administered by a therapist, conveying information about the disorder and promoting better coping) with or without family present vs. either waiting list, treatment as usual or non-specific psychosocial intervention.
Summary of evidence	Moderate to low quality evidence (consistent, imprecise, indirect comparisons) suggests family intervention provided significant benefit for reducing rates of relapse at follow up over non-specific comparison groups. Psychoeducation with family was more effective than individual interventions for reducing symptom severity.

Symptom severity post-treatment

A significant difference was reported between family intervention and individual intervention, with family intervention showing the greater effect on reducing symptom severity;

$$Q_b = 10.6, p = 0.00$$

No differences between psychoeducation with family included vs. non-specified comparison;

3 controlled studies, N = 196, d = 0.33, 95%CI -0.26 to 0.93, p = 0.14, Q = 0.58, p = 0.75

No differences between psychoeducation without family included vs. non-specified comparison;

3 controlled studies, N = 117, d = 0.24, 95%CI -0.39 to 0.86, p = 0.23, Q = 3.85, p = 0.15

Relapse rates at 7-12 month follow up



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<p><i>Significantly less relapse rates in the family intervention groups vs. individual therapies;</i> $Q_b = 11.4, p = 0.00$</p> <p><i>Medium size effect of reduced relapse rates in the psychoeducation with family intervention groups vs. non-specified comparison;</i></p> <p>6 controlled studies, $N = 322, d = 0.48, 95\%CI 0.10 \text{ to } 0.85, p = 0.00, Q = 4.78, p = 0.44$</p> <p><i>No differences between psychoeducation without family and non-specified comparison;</i></p> <p>2 controlled studies, $N = 101, d = 0.18, 95\%CI -0.47 \text{ to } 0.82, p = 0.30, Q = 1.72, p = 0.19$</p>	
Consistency in results	Consistent
Precision in results	Imprecise
Directness of results	Indirect (non-specific comparisons)

<p><i>Mattila E, Leino K, Paavilainen E, Åstedt-Kurki P</i></p> <p>Nursing intervention studies on patients and family members: a systematic literature review</p> <p>Scandinavian Journal of Caring Sciences 2009; 23(3): 611-622</p> <p>View review abstract online</p>	
Comparison	Effectiveness of support interventions focussing on the provision of emotional and informational support from a healthcare professional.
Summary of evidence	Low quality evidence (direct, unclear sample size, unable to assess consistency or precision) is unclear as to any benefit of nursing administered support interventions for people with schizophrenia or their families.
Family burden	
<p>1 study investigated support interventions for providing guided discussions between family members regarding needs and concerns with 11-13 sessions over 24 weeks. This study reported improved relationship between patients and family members, as well as patients' functional capacity.</p> <p>1 study investigated educational support programs for providing information and offering practical skills training. In 5 sessions over 10 weeks, educational support reduced the burden of care</p>	



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<p>experienced by the family members, as well as improved social support from the family. 1 study reported no significant benefit of nursing support interventions for family members.</p>	
Consistency in results	Unable to assess, not measure of consistency is reported.
Precision in results	Unable to assess, not measure of precision is reported.
Directness of results	Direct

<p><i>Meis LA, Griffin JM, Greer N, Jensen AC, MacDonald R, Carlyle M, Rutks I, Wilt TJ</i></p> <p>Couple and family involvement in adult mental health treatment: A systematic review</p> <p>Clinical Psychology Review 2013; 33: 275-286 View review abstract online</p>	
Comparison	Effectiveness of family interventions in the USA vs. other psychosocial treatments for adults with a schizophrenia spectrum disorder.
Summary of evidence	Moderate to low quality evidence (1 RCT for each comparison, unable to assess consistency or precision, indirect) suggests group family intervention may improve symptom severity more than individual therapy, with no differences in hospitalisation rates. Longer term family therapy (9 to 18 months) may result in greater improvement than shorter term family therapy (2 to 3 months).
Symptoms and hospitalisation	
<p>1 RCT (N = 106) compared an individual psychosocial intervention (medication management, case management, therapy, and rehab, as needed) to multifamily groups (psychoeducation, family functioning, and social support). At 1 year the multifamily groups showed significantly greater improvements in negative symptoms, and at 2/3 years there were no differences in overall hospitalisation rates, although hospitalisation rates at state (public) hospitals were reduced in the multifamily groups.</p> <p>1 RCT (N = 68) reported no differences in symptoms or hospitalisation rates between Assertive Community Training with individual and multifamily groups, and Assertive Community Training with case management.</p>	



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1 RCT (N = 313) reported no differences in symptoms, hospitalisation rates or family adjustment between ‘applied family management’ interventions and the less intensive ‘supportive family management’ interventions, although applied family management significantly reduced family rejection of patients post-treatment.

1 RCT (N = 108) compared a longer term (9-18 months) psychoeducational family program to a briefer (2–3 month) family intervention for patients with comorbid substance use disorder and reported greater improvements in symptoms for participants assigned to the longer term intervention, although there were no differences in substance use.

Consistency in results	Unable to assess, not measure of consistency is reported.
Precision in results	Unable to assess, not measure of precision is reported.
Directness of results	Indirect (non-specific) comparisons

Okpokoro U, Adams CE, Sampson S

Family intervention (brief) for schizophrenia

Cochrane Database of Systematic Reviews 2014, Issue 3. Art. No.: CD009802. DOI: 10.1002/14651858.CD009802.pub2

[View review abstract online](#)

Comparison	Any brief family intervention vs. standard care.
Summary of evidence	Low quality evidence (small samples, imprecise) is unable to determine the benefits of brief family interventions.
Hospitalisation	
<i>No differences between groups;</i> 1 RCT, N = 30, RR = 0.50, 95% CI 0.22 to 1.11, <i>p</i> > 0.05	
Relapse	
<i>No differences between groups;</i> 1 RCT, N = 40, RR = 0.50, 95% CI 0.10 to 2.43, <i>p</i> > 0.05	
Family understanding	



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<p><i>A significant improvement in the brief family intervention group; 1 RCT, N = 70, MD = 14.90, 95% CI 7.20 to 22.60, p < 0.05</i></p>	
Consistency in results	Not applicable (1 RCT).
Precision in results	Imprecise
Directness of results	Direct

<p><i>Pfammatter M, Junghan UM, Brenner HD</i></p> <p>Efficacy of psychological therapy in schizophrenia: conclusions from meta-analyses</p> <p>Schizophrenia Bulletin 2006; 32 Suppl 1: S64-80</p> <p>View review abstract online</p>	
Comparison	Psychoeducation (administered by a therapist, conveying information about the disorder and promoting better coping) with family vs. other psychosocial treatments or routine care (control groups not defined).
Summary of evidence	High quality evidence (very large sample sizes, consistent, precise, indirect comparisons) suggests family psychoeducation has a small effect on improving relatives' knowledge, and patients' social function compared to non-specific treatments. There is a moderate effect on reducing high expressed emotion and number of days in hospital. In the longer term (up to 2 years follow up) family psychoeducation improved hospitalisation rates, relapse rates, and patients' general psychopathology.
Post-treatment functioning	
<p><i>Small to medium effect of improvement in post-treatment relatives' knowledge about the disorder; 8 RCTs, N = 3662, g = 0.39, 95%CI 0.31 to 0.46, no p-value reported, Q= 2.04, p = 0.96</i></p> <p><i>Small to medium effect of improvement in patients' social function; 6 RCTs, N = 3362, g = 0.38, 95%CI 0.30 to 0.46, no p-value reported, Q = 2.84, p = 0.72</i></p> <p><i>Medium effect of reduced expressed emotion in the family unit;</i></p>	



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<p>7 RCTs, N = 284, $g = 0.59$, 95%CI 0.39 to 0.83, no p-value reported, $Q = 3.56$, $p = 0.74$ <i>Small effect of reduced days in hospital;</i></p> <p>3 RCTs, N = 3197, $g = 0.27$, 95%CI 0.18 to 0.36, no p-value reported, $Q = 0.39$, $p = 0.82$</p>	
<p>Functioning at follow up</p>	
<p><i>Medium effect of improved general psychopathology;</i></p> <p>4 RCTs, N = 178, $g = 0.40$, 95%CI 0.1 to 0.7, no p-value reported, $Q = 2.1$, $p = 0.56$ <i>Medium to large effect of reduced days in hospital;</i></p> <p>2 RCTs, N = 127, $g = 0.71$, 95%CI 0.35 to 1.06, no p-value reported, $Q = 1.7$, $p = 0.19$</p>	
<p>Functioning at 6-12 month follow up</p>	
<p><i>Medium effect of reduced relapse rates;</i></p> <p>14 RCTs, N = 3838, $g = 0.42$, 95%CI 0.35 to 0.49, no p-value reported, $Q = 16.58$, $p = 0.22$</p>	
<p><i>Small effect of reduced hospitalisation rates;</i></p> <p>13 RCTs, N = 3789, $g = 0.22$, 95%CI 0.14 to 0.29, no p-value reported, $Q = 12.35$, $p = 0.42$</p>	
<p>Functioning at 18-24 month follow up</p>	
<p><i>Medium effect of reduced hospitalisation rates;</i></p> <p>8 RCTs, N = 445, $g = 0.51$, 95%CI 0.32 to 0.70, no p-value reported, $Q = 6.83$, $p = 0.45$</p>	
Consistency in results	Consistent
Precision in results	Precise
Directness of results	Indirect; different control groups' data is combined.

<p><i>Pharoah FM, Rathbone J, Mari JJ, Wong W</i></p> <p>Family intervention for schizophrenia</p> <p>Cochrane Database of Systematic Reviews 2010; (12): CD000088</p> <p>View review abstract online</p>	
Comparison 1	Any family intervention (>5 sessions total, some with educational component) vs. standard care.



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<p>Summary of evidence</p>	<p>Moderate quality evidence (generally moderate to large samples, mostly consistent, mostly imprecise, direct) suggests family intervention may have a small to medium effect for improvements in global and social functioning, family coping and understanding, high expressed emotion, quality of life, compliance with medication, hospitalisation and relapse rates.</p>
<p style="text-align: center;">Hospitalisation</p>	
<p style="text-align: center;"><i>Significant, small to medium-sized effects for reduced hospital admission from 6 months to 18 months follow up, with no differences from 19 months to 3 years;</i></p> <p>Hospital admission: 0-6 months: 3 studies, N = 232, RR = 0.85, 95%CI 0.44 to 1.66, $p = 0.63$; $Q = 4.11$, $p = 0.13$, $I^2 = 51\%$</p> <p>7-12 months: 9 studies, N = 532, RR = 0.78, 95%CI 0.63 to 0.98, $p = 0.032$; $Q = 11.63$, $p = 0.17$, $I^2 = 31\%$</p> <p>13-18 months: 3 studies, N = 228, RR = 0.46, 95%CI 0.30 to 0.69, $p = 0.0002$; $Q = 0.65$, $p = 0.72$, $I^2 = 0\%$</p> <p>19-24 months: 5 studies, N = 375, RR = 0.83, 95%CI 0.65 to 1.07, $p = 0.16$; $Q = 10.49$, $p = 0.03$, $I^2 = 62\%$</p> <p>25-36 months: 2 study, N = 205, RR = 0.91, 95%CI 0.72 to 1.16, $p = 0.46$; $Q = 6.87$, $p = 0.01$, $I^2 = 85\%$</p> <p>Days in hospital at 3 months: 1 study, N = 48, WMD = -6.67, 95%CI -11.59 to -1.75, $p = 0.0079$</p>	
<p style="text-align: center;">Global state: Relapse</p>	
<p style="text-align: center;"><i>Small effects for reduced relapse rates from 7 to 24 months follow up. No differences from 2 to 8 years follow up post-treatment;</i></p> <p>Relapse rates 0-6 months: 3 studies, N = 213, RR = 0.71, 95%CI 0.46 to 1.09, $p = 0.12$, $Q = 0.07$, $p = 0.97$, $I^2 = 0\%$</p> <p>7-12 months: 32 studies, N = 2981, RR = 0.55, 95%CI 0.48 to 0.62, $p < 0.00001$; $Q = 54.29$, $p = 0.01$, $I^2 = 43\%$</p> <p>13-18 months: 3 studies, N = 181, RR = 0.64, 95%CI = 0.47 to 0.88, $p = 0.0057$; $Q = 0.38$, $p = 0.83$, $I^2 = 0\%$</p> <p>19-24 months: 13 studies, N = 1019, RR = 0.64, 95%CI 0.55 to 0.75, $p < 0.00001$; $Q = 35.86$, $p = 0.00034$, $I^2 = 67\%$</p> <p>25-36 months: 4 studies, N = 497, RR = 0.89, 95%CI 0.72 to 1.10, $p = 0.28$; $Q = 9.06$, $p = 0.03$, $I^2 = 67\%$</p> <p>5 years: 1 study, N = 63, RR = 0.88, 95%CI 0.70 to 1.11, $p = 0.30$</p>	



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8 years: 1 study, N = 62, RR = 0.86, 95%CI 0.71 to 1.05, $p = 0.14$

Global state: Not improved

A significant, medium-sized effect for improved global function up to 6 months follow up post-treatment;

Global function “not improved/deteriorated”

By six months: 1 study, N = 77, RR = 0.33, 95%CI 0.17 to 0.62, $p = 0.00066$

By 9 months: 1 study, N = 35, RR = 0.70, 95%CI 0.26 to 1.88, $p = 0.48$

Overall: 2 studies, N = 112, RR = 0.40, 95%CI 0.23 to 0.68, $p = 0.00077$; $Q = 1.65$, $p = 0.20$, $I^2 = 39\%$

Global state: Global Assessment of Function score

A significant improvement in global functioning by 2 years, with no differences in average change scores by 1 year;

GAF endpoint score 0-12 months: 1 study, N = 32, WMD = -10.28, 95%CI -20.34 to -0.22, $p = 0.045$

By 2 years: 2 studies, N = 90, WMD = -8.66, 95%CI -14.37 to -2.94, $p = 0.003$; $Q = 0.17$, $p = 0.68$, $I^2 = 0\%$

SCL-90 score at 2 years: 1 study, N = 80, WMD = -22.01, 95%CI -30.99 to -13.03, $p < 0.00001$

GAF average change score pre- to post-treatment: 1 study, N = 41, WMD = 4.88, 95%CI -3.87 to 13.63, $p = 0.27$

At 1 year: 1 study, N = 40, WMD = 5.25, 95%CI -3.18 to 13.68, $p = 0.22$

Mental state: Brief Psychiatric Rating Scale

A significant improvement in BPRS total score at 1 year;

3 studies, N = 170, WMD = -8.32, 95%CI -10.92 to -5.73, $p < 0.00001$; $Q = 9.32$, $p = 0.01$, $I^2 = 79\%$

No differences in BPRS-negative subscale score at 6 months;

1 study, N = 62, WMD = -0.30, 95%CI -0.90 to 0.30, $p = 0.32$

No differences in BPRS average change score pre- to post-treatment;

3 studies, N = 156, WMD = -0.30, 95%CI -0.76 to 0.17, $p = 0.22$; $Q = 6.32$, $p = 0.04$, $I^2 = 68\%$

Mental state: Positive and Negative Syndrome Scale



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Significant improvement in total and general psychopathology PANSS endpoint scores at 1 year, with no differences in positive or negative PANSS scores;

Total: 2 studies, N = 174, WMD -7.90, 95%CI -11.96 to -3.83, $p = 0.00014$; $Q = 0.07$, $p = 0.80$, $I^2 = 0\%$

General psychopathology: 1 study, N = 142, WMD = -3.60, 95%CI -5.82 to -1.38, $p = 0.0015$

Positive: 1 study, N = 32, WMD = -2.72, 95%CI -6.27 to 0.83, $p = 0.13$

Negative: 1 study, N = 32, WMD = -2.02, 95%CI -5.88 to 1.84, $p = 0.30$

Significant improvement in negative PANSS scores at 18 months, with no differences in total, or positive scores;

Total: 1 study, N = 29, WMD = -6.30, 95%CI -15.98 to 3.35, $p = 0.20$

Positive: 1 study, N = 29, WMD = 0.94, 95%CI -2.16 to 4.04, $p = 0.55$

Negative: 1 study, N = 29, WMD = -5.23, 95%CI -8.43 to -2.03, $p = 0.0014$

Significant improvement in positive and negative PANSS score at 36 months;

Total: 1 study, N = 149, WMD = -10.20, 95%CI -13.55 to -6.85, $p < 0.00001$

Positive: 1 study, N = 149, WMD = -2.60, 95%CI -4.12 to -1.08, $p = 0.00077$

Negative: 1 study, N = 149, WMD = -3.70, 95%CI -4.94 to -2.46, $p < 0.00001$

Significant improvement in positive and negative change scores pre- to post-treatment;

Positive: 1 study, N = 142, WMD = -2.00, 95%CI -3.49 to -0.51, $p = 0.0084$

Negative: 1 study, N = 142, WMD = -4.00, 95%CI -5.81 to -2.19, $p = 0.000016$

Behaviour

Large effect showing poorer behaviour in the family therapy group;

NOSIE endpoint score total: 1 study, N = 142, WMD = 59.10, 95%CI 54.57 to 63.63, $p < 0.0001$

NOSIE positive: 1 study, N = 142, WMD = 33.40, 95%CI 30.52 to 36.28, $p < 0.0001$

Leaving the study early

A significant, small to medium-sized effect of reduced study attrition by 3 years only;

At 3-6 months: 7 studies, N = 552, RR = 0.92, 95%CI 0.59 to 1.42, $p = 0.69$, $Q = 6.31$, $p = 0.28$, $I^2 = 21\%$

At 7-12 months: 10 studies, N = 733, RR = 0.74, 95%CI 0.53 to 1.03, $p = 0.071$, $Q = 8.94$, $p = 0.35$, $I^2 = 10\%$

At 13-24 months: 10 studies, N = 887, RR = 0.74, 95%CI 0.55 to 1.00, $p = 0.050$, $Q = 5.14$, $p = 0.82$, $I^2 = 0\%$



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<p>At 25-36 months: 3 studies, N = 290, RR = 0.42, 95%CI 0.26 to 0.67, $p = 0.00029$, $Q = 0.81$, $p = 0.67$, $I^2 = 0\%$</p> <p>At >36 months: 1 study, N = 63, RR = 1.72, 95%CI 0.71 to 4.16, $p = 0.23$</p>
<p>Compliance with medication</p>
<p><i>A significant, small to medium-sized effect of increased medication compliance with family intervention, with no differences for compliance with community care;</i></p> <p>Poor compliance with medication: 10 studies, N = 695, RR = 0.60, 95%CI 0.49 to 0.73, $p < 0.00001$, $Q = 17.22$, $p = 0.05$, $I^2 = 48\%$</p> <p>Community care at 1 year: 1 study, N = 51, RR = 0.68, 95%CI 0.41 to 1.11, $p = 0.12$</p> <p>Community care at 2 years: 1 study, N = 51, RR = 0.85, 95%CI 0.55 to 1.30, $p = 0.45$</p> <p style="text-align: center;">Months on medication</p> <p>By 6 month follow up: 1 study, N = 63, WMD = 0.40, 95%CI -0.34 to 1.14, $p = 0.29$</p> <p>By 18 month follow up: 1 study, N = 60, WMD = 1.6, 95%CI -1.10 to 4.30, $p = 0.24$</p>
<p>Death</p>
<p><i>No differences in death rates;</i></p> <p>Suicide: 7 studies, N = 377, RR = 0.79, 95%CI 0.35 to 1.78, $p = 0.56$, $Q = 6.51$, $p = 0.37$, $I^2 = 8\%$</p> <p>Other causes: 4 studies, N = 176, RR = 0.78, 95%CI 0.19 to 3.11, $p = 0.72$, $Q = 1.34$, $p = 0.71$, $I^2 = 0\%$</p>
<p>Social Function: General</p>
<p><i>A significant, medium-sized effect of family intervention on improved general social function;</i></p> <p>2 studies, N = 116, RR = 0.51, 95%CI 0.35 to 0.72, $p = 0.00019$, $Q = 4.05$, $p = 0.004$, $I^2 = 75\%$</p> <p><i>A significant effect of family intervention on improved general social function;</i></p> <p>At 1 year: Social Function scale: 3 studies, N = 90, WMD = -8.05, 95%CI -13.27 to -2.83, $p = 0.0025$, $Q = 5.45$, $p = 0.07$, $I^2 = 63\%$</p> <p>At 2 years: Social disability scale: 1 study, N = 150, WMD = -0.51, 95%CI -1.38 to 0.36, $p = 0.25$</p> <p>At 3 years: Social disability scale: 1 study, N = 150, WMD = -1.94, 95%CI -2.90 to -0.98, $p = 0.00069$</p>
<p>Social Function: Employment</p>



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<p><i>No differences in employment;</i></p> <p>At 6-12 months: 5 studies, N = 285, RR = 1.06, 95%CI 0.89 to 1.25, $p = 0.53$, $Q = 3.11$, $p = 0.54$, $I^2 = 0\%$</p> <p>At 2 years: 1 study, N = 51, RR = 1.33, 95%CI 0.84 to 2.10, $p = 0.22$</p> <p>At 3 years: 1 study, N = 99, RR = 1.19, 95%CI 0.92 to 1.55, $p = 0.18$</p>
<p><i>No differences in work ability</i></p> <p>By 4 months: 1 study, N = 77, RR = 0.31, 95%CI 0.09 to 1.03, $p = 0.055$</p> <p>By 9 months: 1 study, N = 35, RR = 1.68, 95%CI 0.17 to 16.91, $p = 0.66$</p>
<p>Social Function: Living independently</p>
<p><i>No differences between groups;</i></p> <p>At 1 year: 3 studies, N = 164, RR = 0.83, 95%CI 0.66 to 1.03, $p = 0.087$, $Q = 0.33$, $p = 0.85$, $I^2 = 0\%$</p> <p>At 3 years: 1 study, N = 99, RR = 0.82, 95%CI 0.59 to 1.14, $p = 0.24$</p>
<p>Social Function: Imprisonment</p>
<p><i>No differences between groups;</i></p> <p>1 study, N = 39, RR = 0.95, 95%CI 0.22 to 4.12, $p = 0.95$</p>
<p>Family outcome: Coping and understanding</p>
<p><i>A significant small to medium-sized effect of family intervention for understanding the patient better, reducing family burden and giving family support;</i></p> <p>Family not coping better at 6 months: 1 study, N = 63, RR = 0.79, 95%CI 0.60 to 1.03, $p = 0.086$</p> <p>Patient coping poorly with key relatives at 9 months: 1 study, N = 39, RR = 1.11, 95%CI 0.45 to 2.70, $p = 0.82$</p> <p>Family not understanding patient better at 6 months: 1 study, N = 63, RR = 0.58, 95%CI 0.39 to 0.87, $p = 0.009$</p> <p>Insufficient care or maltreatment by family at 6 months: 1 study, N = 77, RR = 0.53, 95%CI 0.22 to 1.24, $p = 0.14$</p> <p>Insufficient care or maltreatment by family at 9 months: 1 study, N = 34, RR = 0.39, 95%CI 0.08 to 1.87, $p = 0.24$</p> <p>Coping effectiveness at 6 months: 1 study, N = 49, WMD = -0.50, 95%CI -1.85 to 0.85, $p = 0.47$</p> <p>Family Support Service Index at 3 months: 1 study, N = 48, WMD = 0.86, 95%CI 0.21 to 1.51, $p = 0.0097$</p> <p>Family Assessment Device at 3 months: 1 study, N = 48, WMD = -6.56, 95%CI -10.50 to -2.62, $p =$</p>



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0.0011	
Family Burden Interview Schedule at 3 months: 1 study, N = 48, WMD = -7.01, 95%CI -10.77 to -3.25, $p = 0.00025$	
Family Burden at 12 months: 1 study, N = 51, RR = 0.53, 95%CI 0.21 to 1.37, $p = 0.19$	
Family Burden at 0-18 months: 1 study, N = 60, WMD = -0.40, 95%CI -0.71 to -0.09, $p = 0.010$	
Family Burden at 2 years: 1 study, N = 51, RR = 1.92, 95%CI 0.19 to 19.90, $p = 0.58$	
Family outcome: Expressed emotion	
<i>A significant medium-sized effect of family intervention on reducing levels of family over-involvement, criticism, hostility and high expressed emotion;</i>	
Overall levels: 1 study, N = 75, RR = 0.90, 95%CI 0.68 to 1.19, $p = 0.46$	
Family over-involvement: 1 study, N = 63, RR = 0.40, 95%CI 0.22 to 0.73, $p = 0.0027$	
Criticism: 1 study, N = 63, RR = 0.44, 95%CI 0.24 to 0.81, $p = 0.0082$	
Hostility: 1 study, N = 87, RR = 0.35, 95%CI 0.18 to 0.66, $p = 0.0013$	
High family expressed emotion: 3 studies, N = 164, RR = 0.68, 95%CI 0.54 to 0.86, $p = 0.0013$	
$Q = 6.24, p = 0.04, I^2 = 68\%$	
Warmth: 1 study, N = 24, WMD = 0.47, 95%CI -0.29 to 1.23, $p = 0.23$	
Quality of Life and Insight: Average endpoint score	
<i>A significant effect of family intervention for increasing patients' quality of life scores at 2 years;</i>	
At 1 year: 1 study, N = 50, WMD = -5.05, 95%CI -15.44 to 5.34, $p = 0.34$	
At 2 years: 1 study, N = 213, WMD = 19.18, 95%CI 9.78 to 28.58, $p = 0.000063$	
<i>No differences in insight;</i>	
Pre- to post-treatment: 1 study, N = 37, WMD = 0.02, 95%CI -1.03 to 1.07, $p = 0.97$	
At 1 year: 1 study, N = 40, WMD = 0.94, 95%CI -0.50 to 2.38, $p = 0.20$	
Consistency in results	Consistent where applicable except hospital admission, relapse, BPRS change scores, global state and general social function.
Precision in results	Imprecise for hospital admission, relapse at 0-6 months, global state at 9 months, study attrition, death, employment, work ability at 9 months, imprisonment, coping, maltreatment, family burden, and expressed emotion. Unable to assess WMDs; not standardised measure.
Directness of results	Direct



Family intervention

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Comparison 2	Behavioural family based interventions vs. supportive family based interventions (>5 sessions).
Summary of evidence	Moderate quality evidence (precise, direct, large sample) suggests no additional benefit of behaviourally focused family interventions for global state or study compliance compared to supportive family interventions.
Global state: Unstable (0-6 months)	
<i>No differences between groups;</i> 0-6 months of treatment: 1 study, N = 528, RR = 1.08, 95%CI 0.88 to 1.33, $p = 0.45$	
Compliance: Leaving the study early and/or poor compliance with treatment protocol	
<i>No differences between groups;</i> At 30 months: 1 study, N = 528, RR = 0.96, 95%CI 0.88 to 1.05, $p = 0.42$	
Consistency in results	Not applicable, one study.
Precision in results	Precise for compliance only.
Directness of results	Direct
Comparison 3	Group family based interventions vs. individual family based interventions (>5 sessions).
Summary of evidence	Moderate to low quality evidence (moderate to large samples, direct, inconsistent, imprecise) showed no difference for reducing relapse, but favours individual intervention for living independently, although this outcome is of low quality due to very small sample.
Global state: Relapse	
<i>No differences between groups;</i> At 7-12 months: 2 studies, N = 195, RR = 0.70, 95%CI 0.41 to 1.22, $p = 0.21$, $Q = 3.67$, $p = 0.06$, $I^2 = 73\%$ At 19-24 months: 3 studies, N = 197, RR = 0.71, 95%CI 0.48 to 1.05, $p = 0.088$, $Q = 0.65$, $p = 0.42$, $I^2 = 0\%$ More than one relapse at 19-24 months: 1 study, N = 172, RR = 0.71, 95%CI 0.34 to 1.50, $p = 0.38$	
Compliance with treatment	



Family intervention

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<p><i>No difference in compliance with treatment;</i> 2 studies, N = 195, RR = 1.35, 95%CI 0.84 to 2.17, $p = 0.21$, $Q = 2.23$, $p = 0.14$, $I^2 = 55\%$ <i>No difference in compliance with medication;</i> 1 study, N = 172, RR = 1.00, 95%CI 0.50 to 1.99, $p = 0.99$</p>	
<p>Living independently</p>	
<p><i>A significant, large effect favouring individual family intervention over group family intervention for the ability to live independently;</i> 1 study, N = 23, RR = 2.18, 95%CI 1.09 to 4.37, $p = 0.028$</p>	
<p>Family expressed emotion</p>	
<p><i>No differences between groups at 2 years;</i> 1 study, N = 23, RR = 0.94, 95%CI 0.45 to 1.92, $p = 0.86$</p>	
Consistency in results	Significant heterogeneity reported for relapse and compliance, NA for other outcomes (one study only).
Precision in results	Imprecise for all outcomes.
Directness of results	Direct

<p><i>Pitschel-Walz G, Leucht S, Bauml J, Kissling W, Engel RR</i> The effect of family interventions on relapse and rehospitalization in schizophrenia--a meta-analysis Schizophrenia Bulletin 2001; 27(1): 73-92 View review abstract online</p>	
Comparison 1	All family interventions (psychoeducation or therapeutic, duration range 2 weeks to 4 years) vs. standard care.
Summary of evidence	High quality evidence (large samples, consistent, precise, direct) suggests family intervention reduces relapse rates. Longer treatment duration has greater effect. Benefit was seen regardless of intervention type and criteria for relapse.
<p>Relapse rates</p>	



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<p><i>A significant reduction in relapse rates with family intervention at 2 years;</i> 14 studies, N = 874, ES = 0.20, 95%CI 0.14 to 0.27, $p < 0.0001$</p> <p><i>Long-term treatment had a larger effect on relapse rates than short-term treatment;</i> Short-term: N = 571, ES = 0.14, 95%CI 0.06 to 0.22, $p < 0.005$, $Q = 3.83$, $p > 0.5$ Long-term: N = 287, ES = 0.3, 95%CI 0.19 to 0.41, $p < 0.0001$, $Q = 2.72$, $p > 0.5$</p> <p><i>No differences according to intervention type;</i> Psychoeducation: N = 648, ES = 0.18, 95%CI 0.11 to 0.26, $p < 0.0001$, $Q = 11.1$, $p > 0.1$ Therapeutic: N = 210, ES = 0.23, 95%CI 0.1 to 0.36, $Q = 0.65$, $p > 0.5$</p> <p><i>No differences according to relapse criteria;</i> Symptom severity: N = 329, ES = 0.2, 95%CI 0.09 to 0.30, $p < 0.001$, $Q = 3.13$, $p > 0.5$ Rehospitalisation: N = 529, ES = 0.19, 95%CI 0.11 to 0.28, $p < 0.0001$, $Q = 9.03$, $p > 0.1$</p> <p><i>No differences according to sample selection;</i> Schizophrenia alone: N = 521, ES = 0.24, 95%CI 0.17 to 0.29, $p < 0.0001$, $Q = 8.97$, $p > 0.5$ Mixed sample: N = 347, ES = 0.12, 95%CI 0.02 to 0.23, $p < 0.05$, $Q = 0.12$, $p > 0.5$</p>	
Consistency in results	Consistent
Precision in results	Precise
Directness of results	Direct
Comparison 2	Family interventions (psychoeducation or therapeutic, duration range 2 weeks to 4 years) combined with individual patient interventions (including psychoeducation, social skills training, supportive therapy or cognitive therapy) vs. standard care.
Summary of evidence	Moderate to high quality evidence (large samples, precise, direct, results appear consistent) suggests family intervention combined with patient intervention is more effective than usual care for reducing relapse rates.
Relapse rates	
<p><i>A significant effect of fewer relapses with family intervention + individual patient therapy;</i> 5 studies, N = 523, ES = 0.18, 95%CI 0.16 to 0.29, $p < 0.0001$ In the first year: ES = 0.13, 95%CI 0.04 to 0.25, $p = 0.03$ In the second year: ES = 0.23, 95%CI 0.12 to 0.33, $p < 0.0001$</p>	



Family intervention

Consistency in results	No measure of heterogeneity reported, results appear consistent.
Precision in results	Precise
Directness of results	Direct
Comparison 3	Family interventions (psychoeducation or therapeutic, duration range 2 weeks to 4 years) vs. individual patient interventions (including psychoeducation, social skills training, supportive therapy or cognitive therapy).
Summary of evidence	Moderate quality evidence (inconsistent, precise, indirect) suggests in the short term family intervention benefits relapse rates but in the long term individual therapy may be more beneficial.
Relapse rates	
<p><i>No differences between groups overall;</i> 7 studies, N = 407, ES = 0.01, 95%CI -0.09 to 0.11, $p > 0.5$, Q = 35.1, $p < 0.001$</p> <p><i>No differences in the first year;</i> ES = 0.0, 95%CI -0.13 to 0.12, $p = 10.0$, Q = 14.6, $p < 0.001$</p> <p><i>A significant effect of fewer relapses with family intervention in the second year;</i> ES = 0.46, 95%CI 0.26 to 0.62, $p < 0.0001$, Q = 6.09, $p < 0.05$</p> <p><i>A significant effect of fewer relapses with family intervention in the third year;</i> ES = -0.28, 95%CI -0.48 to 0.05, $p < 0.0001$</p>	
Consistency in results	Inconsistent
Precision in results	Precise
Directness of results	Indirect comparisons
Comparison 4	Family interventions (psychoeducation or therapeutic, duration range 2 weeks to 4 years) combined with individual patient interventions (including psychoeducation, social skills training, supportive therapy or cognitive therapy) vs. individual patient interventions.
Summary of evidence	Moderate quality evidence (large samples, indirect, precise, unable to assess consistency) suggests family intervention combined with individual therapy did not provide significant benefit over individual therapy alone.



Family intervention

Relapse rates	
<i>No differences between groups;</i> 4 studies, N = 215, ES = 0.04, 95%CI -0.10 to 0.17, $p > 0.5$	
Consistency in results	No measure of heterogeneity is reported.
Precision in results	Precise
Directness of results	Indirect comparisons
Comparison 5	Family interventions (psychoeducation or therapeutic, duration range 2 weeks to 4 years) of higher intensity vs. family interventions of lower intensity.
Summary of evidence	Moderate quality evidence (precise, unable to assess consistency) suggests more intensive family intervention provided greater reduction in relapse rates than less intensive family intervention.
Relapse rates	
<i>A significant effect of fewer relapses with family intervention;</i> 8 studies, N = 659, ES = 0.10, 95%CI 0.03 to 0.18, $p < 0.01$	
Consistency in results	No measure of heterogeneity is reported.
Precision in results	Precise
Directness of results	Direct

Pilling S, Bebbington P, Kuipers E, Garety P, Geddes J, Orbach G, Morgan C

Psychological treatments in schizophrenia: I. Meta-analysis of family intervention and cognitive behaviour therapy

Psychological Medicine 2002; 32(5): 763-782

[View review abstract online](#)

Comparison 1	Family intervention vs. other psychosocial therapy.
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Family intervention

<p>Summary of evidence</p>	<p>Moderate quality evidence (large samples, indirect, mostly consistent, imprecise) suggests family intervention improved relapse rates compared to all other psychosocial therapies. Family intervention reduced readmission rates but had no effect on dropout rates, expressed emotion or medication compliance.</p>
<p>Relapse rates</p>	
<p style="text-align: center;"><i>A significant effect of fewer relapses with family intervention;</i></p> <p style="text-align: center;">In the first 12 months</p> <p>Compared to all other treatments: 11 studies, N = 729, OR = 0.52, 95%CI 0.31 to 0.89, NNT 8, Q = 23.04, $p < 0.01$</p> <p>Compared to other active treatments: 5 studies, N = 357, OR = 0.67, 95%CI 0.71 to 0.31, NNT -23, Q = 10.50, $p = 0.03$</p> <p style="text-align: center;"><i>In the first 1-2 years</i></p> <p>Compared to all other treatments: 6 studies, N = 264, OR = 0.57, 95%CI 0.18 to 1.82, NNT 13, Q = 17.39, $p < 0.01$</p> <p>Single family treatment only vs. all other treatments: 5 studies, N = 148, OR = 0.42, 95%CI 0.11 to 1.64, NNT 6, Q = 9.44, $p = 0.06$</p>	
<p>Readmission rates</p>	
<p style="text-align: center;"><i>A significant effect fewer readmissions with family intervention;</i></p> <p style="text-align: center;">In the first 12 months</p> <p>Compared to all other treatments: 4 studies, N = 242, OR = 0.38, 95%CI 0.10 to 1.40, NNT 15, Q = 11.79, $p < 0.01$</p> <p>Single family treatments vs. all other treatments: 3 studies, N = 143, OR = 0.22, 95%CI 0.09 to 0.51, NNT 3, Q = 0.76, $p = 0.68$</p> <p style="text-align: center;"><i>In the first 2 years</i></p> <p>Compared to all other treatments: 6 studies, N = 638, OR = 0.47, 95%CI 0.23 to 0.96, NNT 11, Q = 15.60, $p < 0.01$</p> <p>Single family interventions vs. all other treatments: 3 studies, N = 187, OR = 0.24, 95%CI 0.12 to 0.47, NNT 4, Q = 1.18, $p = 0.55$</p>	
<p>Treatment adherence</p>	



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<p><i>No differences between groups;</i></p> <p>Compared to all other treatments: 16 studies, N = 1284, OR = 1.06, 95%CI 0.76 to 1.48, Q = 17.60, $p = 0.28$</p> <p>Compared to other active therapy: 6 studies, N = 641, OR = 0.64, 95%CI 0.34 to 1.20, Q = 10.04, $p = 0.07$</p> <p>Single family treatments vs. other active therapy: 4 studies, N = 423, OR = 0.62, 95%CI 0.30 to 1.31, Q = 4.36, $p = 0.22$</p> <p>Group family treatments vs. active treatments: 2 studies, N = 218, OR = 0.53, 95%CI 0.08 to 3.46, Q = 1.48, $p = 0.23$</p> <p>Single family treatments compared to all other treatments: 5 studies, N = 393, OR = 0.63, 95%CI 0.40 to 1.01, Q = 2.48, $p = 0.65$</p>	
<p>Expressed emotion</p>	
<p><i>No differences between groups;</i></p> <p>Single family treatments compared to all other treatments: 4 studies, N = 114, OR = 0.90, 95%CI 0.48 to 1.72, Q = 3.08, $p = 0.38$</p>	
Consistency in results	Consistent for all except relapse and readmission – compared to all other interventions.
Precision in results	Imprecise for all except readmission – single family intervention.
Directness of results	Indirect comparisons
Comparison 2	Family intervention vs. standard care.
Summary of evidence	Moderate quality evidence (large samples, direct, consistent, imprecise) suggests family intervention improves relapse rates compared to standard care in the first year (though effect was not sustained in the long term). Group family intervention was more effective than standard care for reducing family burden of the illness.
<p>Relapse rates</p>	
<p><i>A significant, medium-sized effect of fewer relapses in the first 12 months of treatment with family intervention;</i></p> <p>6 studies, N = 355 patients, OR = 0.37, 95%CI 0.23 to 0.60, no p value reported, NNT 6, Q = 4.31, $p = 0.51$</p> <p><i>No differences between groups by 4-15 months after treatment (single family treatment only);</i></p> <p>4 studies, N = 228 patients, OR = 0.70, 95%CI 0.27 to 1.76, no p value reported, NNT 19, Q = 7.0,</p>	



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$p = 0.07$	
Suicide and dropout rates	
<p><i>No differences between groups for suicide rates;</i></p> <p>6 studies, N = 1284 patients, OR = 0.88, 95%CI 0.33 to 2.32, , no p value reported, Q = 5.10, $p = 0.27$</p> <p><i>No differences between groups for dropout rates;</i></p> <p>10 studies, N = 643 patients, OR = 1.24, 95%CI 0.72 to 2.14, no p value reported, Q = 10.52, $p = 0.31$</p>	
Family burden	
<p><i>A significant effect of reduced burden with single family intervention, and no effect of group family treatment;</i></p> <p>Single family treatment: 2 studies, N = 105, WMD = -0.42, 95%CI -0.88 to -0.03, no p value reported, Q = 1.41, $p = 0.24$</p> <p>Group family treatment: 3 studies, N = 146, WMD = -0.14, 95%CI -0.76 to 0.47, no p value reported, Q = 6.88, $p = 0.03$</p>	
Consistency in results	Consistent for all except readmission rates at 12 months and 2 years.
Precision in results	Imprecise for all except relapse at 12 months and readmission – single family intervention.
Directness of results	Direct

Taylor TL, Killaspy H, Wright C, Turton P, White S, Kallert TW, Schuster M, Cervilla JA, Brangier P, Raboch J, Kališova L, Onchev G, Dimistrov H, Mezzina R, Wolf K, Wiersma D, Visser E, Kiejna A, Piotrowski P, Ploumpidis D, Gonidakis F, Caldas-de-Almeida J, Cardoso G, King MB

A systematic review of the international published literature relating to quality of institutional care for people with longer term mental health problems

BMC Psychiatry 2009; 9: 55

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Family intervention

<p>Comparison</p>	<p>Family intervention and psychoeducation vs. other psychosocial treatments or routine care.</p> <p>This review reports both primary investigations and reviews pertaining to family intervention. Results from reviews have been reported in more detail above (see Pharoah 2006; Pilling 2002; and Pfammatter 2006), so are not included here.</p>
<p>Summary of evidence</p>	<p>Moderate quality evidence (precise, indirect, large sample, unable to assess consistency) suggests family psychoeducation significantly improved understanding, expressed emotion, social function, relapse rates.</p> <p>Moderate to low quality evidence (indirect, imprecise, moderate sample size, unable to assess consistency) suggests family psychoeducation reduced relapse rates and improved treatment adherence.</p>
<p>Rehospitalisation rates</p>	
<p><i>A significant, small effect of fewer rehospitalisations with family intervention and psychoeducation;</i></p> <p>At 12 month follow up: 1 RCT, N = 163, RR = 0.56, 95%CI 0.33 to 0.92, <i>p</i> not reported</p> <p>At 24 month follow up: 1 RCT, N = 153, RR = 0.70, 95%CI 0.50 to 0.97, <i>p</i> not reported</p>	
<p>Treatment adherence</p>	
<p>1 RCT, N = 101, compared family and patient psychoeducation to psychoeducation plus supportive therapy, and to treatment as usual. They reported the highest rates of treatment adherence in the group receiving family and patient psychoeducation with supportive therapy.</p>	
<p>Consistency in results</p>	<p>Not applicable (1 RCT).</p>
<p>Precision in results</p>	<p>Precise for dichotomous general function outcomes, imprecise for rehospitalisation outcome.</p>
<p>Directness of results</p>	<p>Indirect comparisons.</p>



Family intervention

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	Family intervention (with or without patient present, duration 4-24 months) specifically for medication adherence vs. various comparison groups, including standard care, psychoeducation, or case management.
Summary of evidence	Moderate to low quality evidence (indirect, large sample, unable to assess consistency or precision) suggests unclear overall benefit of family interventions for improving medication adherence.
Medication adherence	
<p>12 studies (N = 1431) investigated family interventions, employing psychoeducational, behavioural and problem solving strategies compared to varying control conditions.</p> <p>3 of 12 studies reported significant improvements in medication adherence for participants in family interventions compared to controls. One of these 3 studies reported improvements for family behavioural management compared to intensive case management. Another reported improvements for culturally modified behavioural family therapy (modified to emphasize close monitoring of adherence, reinforcement of the care provider's role in supervising medication, practical information about taking medications, and respect for prevailing cultural beliefs concerning mental illness) compared to standard behavioural family therapy. The third reported improvements for family psychoeducation compared to standard care. The remaining 9 studies all varied in their comparisons.</p>	
Consistency in results	Unable to assess, no measure of consistency is reported.
Precision in results	Unable to assess, no measure of precision is reported.
Directness of results	Indirect comparisons.



Family intervention

Explanation of acronyms

BPRS = Brief Psychiatric Rating Scale, CES-D = Centre for Epidemiologic Studies Depression Scale CI = Confidence Interval, d = Cohen's d and g = Hedges' g = standardized mean differences (see below for interpretation of effect size), ES = effect size, GAF = Global Assessment of Function Scale, I^2 = the percentage of the variability in effect estimates that is due to heterogeneity rather than sampling error (chance), MRSS = Morningside Rehabilitation Status Scale, N = number of participants, NNT = 'number needed to treat' statistic, NOISE: Nurses' Observation Scale for Inpatient Evaluation, OR = odds ratio, p = statistical probability of obtaining that result ($p < 0.05$ generally regarded as significant), PANSS = Positive and Negative Syndrome Scale, PSE = Present State Examination, Q = Q statistic (chi-square) for the test of heterogeneity, Q_b = Q statistic for between group heterogeneity, RCT = randomized controlled trial, RR = risk ratio, SAS = Simpson and Angus Scale, SCL-90 = Symptom Checklist-90, vs = versus, WMD = weighted mean difference



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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 small¹⁷.

† Different effect measures are reported by different reviews.

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. Less than 0.4 represents a small effect, around 0.5 a

medium effect, and over 0.8 represents a large effect¹⁷.

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 ¹⁸. InOR stands for logarithmic OR where a InOR of 0 shows no difference between groups. Hazard ratios measure the effect of an explanatory variable on the hazard or risk of an event.

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



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identified (100% specificity = not identifying anyone as positive if they are truly not).

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 unforeseen 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 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 formula¹⁷;

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

§ 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 relaxed¹⁹.

|| 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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