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Supplementary Material

Article Title: Psychoeducational Interventions for Family Members of People With Schizophrenia: A Mixed-Method Systematic Review

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1. [eTable 1](#) Summary of Excluded Studies

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Supplementary eTable 1: Summary of excluded studies

Studies - authors & country	Reasons for exclusion	Methods	Summary description of the studies
Barrowclough & Tarrier, 1990; Barrowclough et al., 1987; Tarrier et al., 1989; Tarrier et al., 1988 England	Not meeting intervention definition	RCT Included in Cochrane psychoeducation review 2011 and FI review 2010 but as FI in NICE review 2010	FI study Psychoeducation lasted only 2 sessions over 2 weeks, was used as a control rather than an active treatment, to compare with other active interventions.
Bauml et al., 2007; Pitschel-Walz et al., 2006; Pitschel-Walz et al., 1993; Pitschel-Walz et al., 2004 Germany	Not meeting intervention definition	RCT Included in Cochrane psychoeducation review 2011 and NICE Psychoeducation review 2010	Treatment group: N=125 service users and family members; Control: N=111. Treatment was group psychoeducation sessions, separate for service users and family members.
Breitborde et al., 2011 USA	Not meeting intervention definition	RCT in protocol stage	Multi-family psychoeducation is based on McFarlane model of MFG, i.e. a significant problem-solving element and is classified as FI rather than psychoeducation.
Chien & Chan, 2004; Chien et al., 2008 Hong Kong, China	Not meeting intervention definition	RCT	RCT comparing carer-led mutual support group against standard care.
Das et al., 2006 India	Not meeting intervention definition	RCT	A short structured educational programme of 2 sessions over 2 weeks, focusing on explanatory models of schizophrenia.
Gleeson et al., 2010 Australia	Not meeting intervention definition	RCT	The family component of Relapse Prevention Therapy combined psychoeducation and CBT within behavioural family therapy – does not fit inclusion criteria.
Glynn et al., 1993 USA	Not meeting intervention definition	Prospective research design	The relative workshop lasted for 1 day (7 hours), thus does not meet inclusion criteria.
Hazel et al., 2004 USA	Not meeting intervention definition	RCT	The family psychoeducation programme used the MacFarlane model, included both family members and the service users, classified as FI instead of psychoeducation as

			psychoeducation only made up a small fraction of the programme content and design.
Herz, 1996; Herz et al., 2000 USA	Not meeting intervention definition	RCT Included in Cochrane psychoeducation review 2011	Treatment programme was multi-modal, including psychoeducation plus intensive monitoring and intervention to prevent relapse. Primary outcomes and target participants were service users.
Hogarty et al., 1991; Hogarty et al., 1986 USA	Lacking family outcomes or involvement	RCT	1 year and 2 year follow up of the same RCT. Study lacks discussion of any involvement of family members nor report on any family carers' outcomes
Hugen, 1993 USA	Not meeting intervention definition	Single cohort pre-test post-test design	A one-day (7 hours) education workshop in design and the pre-test evaluation was conducted 2 weeks before ix, with post-test evaluation done 3 months after intervention.
Hussain et al., 2009 Ireland	Not meeting diagnostic criteria	Descriptive evaluative study	Service users' diagnosis are primarily severe or profound intellectual disability and co-morbid psychiatric illness. One-off session. Used a prospective evaluation method with 35 next of kin, most were parents, 6 siblings.
Kaufman et al., 2010 U.S.A.	Study quality issue: severely under-recruit participants against sample size target (15 out of 40)	A wait-list controlled pre- and post-test pilot study	Elderly parents (>60 years old) of service users with schizophrenia Treatment arm, N=5; Control arm, n=10, total sample =15 whilst the original plan was to recruit 40. A 10-session over 10 week individual carer programme focusing on education, management skills training and future planning – but not predominantly on education.
Kim & Mueser, 2011 Korea	Study quality issue: only 5 mothers in each arm with unclear procedures	Quasi-experimental study	15 mothers who had strong negative feelings towards their sons with schizophrenia in 3 groups: psychoeducation in groups, via video, vs social skills training.
Levy-Frank et al., 2011 Israel	Not meeting diagnostic criteria	Process outcome model descriptive study design	Service users' diagnoses were not any more specific than SMI.
Berkowitz et al., 1984; Leff et al., 1982 England	Not meeting intervention definition	RCT Included in Cochrane FI review, not in NICE FI review	Multi-modal intervention comprised of education (4 weeks), relatives group (9 months) and FI (ranging from 1 to 25 sessions) with emphasis on early-day FI. Authors concluded that they cannot differentiate effectiveness of different elements of the intervention despite a focus on EE.

Berkowitz et al., 1990; Leff et al., 1989 UK	Not meeting intervention definition	RCT comparing family therapy/ intervention with relatives groups for family members of people with schizophrenia from high EE household. Included in NICE FI review and Cochrane FI review	RCT comparing family therapy/ intervention + education with relatives groups + education for families of people with schizophrenia and high EE. All have education prior to being randomised into 2 treatment conditions: relatives' group. Treatment effects measured are correlated to the 2 conditions, not limited to psychoeducation.
Li et al., 2004 China Chinese paper	Not meeting intervention definition	RCT Included in Cochrane psychoeducation review	Too multi-modal and complex to be categorised as psychoeducation Treatment condition is family psychological intervention with 3 stages: 1. To familiarise service users and families with knowledge of schizophrenia, information on medication and coping with side effects (2 x 30 minutes sessions/ weeks); 2. Crisis intervention and communication skills was demonstrated to service users and family, service users' harmful behaviour corrected (60 minutes/month); 3. Organise seminars for service users and families together to exchange experiences (120 minutes/ 2 months)
Lowenstein et al., 2010 UK	Not meeting intervention definition	Within subject pre-& post test design	The carers group is described as cognitively orientated carers group and seems to include a high proportion of cognitive elements alongside psychoeducation.
Magliano et al., 2006a; Magliano et al., 2006b Italy	Not meeting intervention definition	Quasi-experimental study	The intervention is based on Falloon et al (1985) model, so is a FI, not psychoeducational (2006a) Magliano et al 2006a reports on the staff training element related to the trial (2006b).
McFarlane et al., 1995a; McFarlane et al., 1995b USA	Not meeting intervention definition	RCT, included in NICE FI review and Cochrane FI review	Multi-modal intervention emphasising on FI
McGill et al., 1983 USA	Not meeting intervention definition	RCT	RCT to evaluate a 9-month individual-FI programme involving service users and family members. The 2 education session form part of the comprehensive programme.
Moxon & Ronan, 2008	Not meeting intervention	RCT with waitlist control	Programme consisted of 3 (1.5 hours each) sessions lasting over 2 weeks, brief intervention that fell outside of the

New Zealand	definition		eligibility criteria
Mullen et al., 2002 Australia	Not meeting diagnostic criteria	Pre and post evaluation study.	No inclusion or exclusion criteria for service users and their family carers. Data on their knowledge and attitude to treatment were reported together.
Nasr & Kausar, 2009 Pakistan	Study quality issue: follow up data cannot be found	Quasi-experimental study	9 service users/ 8 carers lost to FU. 6-month FU data cannot be found in the paper despite the paper reported FU was conducted.
Paranthaman et al., 2010 Malaysia	Not meeting intervention definition	Cluster(not randomised) - Controlled trial	5 module-programme includes 5 lectures each lasting an hour in duration over 2 weeks, delivered by trained staff. Intervention period <2 weeks.
Pickett-Schenk et al., 2008 USA	Not meeting intervention definition	RCT with waitlist control	Family-led education programme to families
Pitman & Matthey, 2004 Canada and Australia	Not meeting diagnostic criteria	Descriptive pre and post-intervention design	Participants were children of parents or siblings diagnosed with a mental illness. Diagnosis amongst the parents and siblings were mostly affective disorders (bipolar or depressive) – 70%.
Ran et al., 2003 China	Lacking family outcomes	Cluster RCT Included in NCIE FI review (2010) and the Cochrane FI review (Xia et al, 2011)	FI study focusing on patient outcomes. Limited independent data on family members' outcomes.
Raskin et al., 1998 U.S.A.	Not meeting diagnostic criteria	Descriptive evaluative design	Targeting paid/ formal caregivers in residential homes of veterans who have a chronic mental illness, 60% believed to be schizophrenia.
Reza et al., 2004 Iran	Not meeting diagnostic criteria	Solomon's experimental design	Participants were family members of service users with schizophrenia (n=170) and mood disorder (n=174).
Sefasi et al., 2008 Malawi	Study quality issues: no data on randomisation of study design despite the term RCT is used in its method.	RCT	90 service users with schizophrenia and their family caregivers. No data on the intervention program. No data on randomisation or study design No data on post-treatment outcome measures
Shin & Lukens, 2002 U.S.A.	Lacking family outcomes	RCT included in NICE review on psychoeducation (2010), but was	A parallel study to Shin 2004. Shin & Lukens (2002) focuses on service users as participants and patient outcomes.

		excluded from Cochrane review on psychoeducation as deemed to be too complex an intervention.	
Smerud & Rosenfarb, 2008 U.S.A.	Study quality issues: not empirical research	Secondary research	Irrelevant, secondary research and reporting on FI studies and therapeutic alliance
Solomon, 1996 USA	Not meeting diagnostic criteria	RCT	The relatives participated in the trial were of a family member with schizophrenia (63.5%) or a major affective disorder (36.5%).
Sota et al., 2008 Japan	Study quality issues: all participants have more than 1 treatment condition but data reported is all merged.	non-equivalent group design	The study described itself as a comparative study to compare 3 modes of family psychoeducation to family members, however, the 3 programmes (1. 2x 2 hr session over 2 day; 9 sessions for larger group; 5 sessions for larger groups – not sure over what timeframe) were run longitudinally over 8 years and some carers attended more than 2 programmes, and the reported data was all merged into 1.
Stephens et al., 2011 Australia	Not meeting intervention definition	Longitudinal evaluative study	Led by facilitators who have lived experiences as carers Uncertain proportion of carers of people with psychosis.
Tomaras et al., 2000 Greece	Not meeting intervention definition	Controlled trial	Testing combined individual PSI and psychoeducation on family carers vs individual PSI alone. No clinical outcomes investigated concern carers/ families.
Xie, 2006 China Chinese paper	Not meeting intervention definition	RCT included in Cochrane psychoeducation review 2011	Brief program included 2 sessions per week whilst patients were inpatient.
Worakul et al., 2007 Thailand	Not meeting intervention definition	Single cohort pre- and post intervention design	A one-day psychoeducation programme using didactic teaching and group discussion, for relatives of people with schizophrenia. Outcomes are knowledge and attitude, both were found to be improved after the programme (statistically significant). Satisfaction is high.
Yoshimura, 1991 Japan	Lacking family outcomes	Cohort study	Intervention studied is not reported in good enough details and far removed from psychoeducation. No family carers' outcomes are reported.

Reference list for the summary table of excluded studies

- Barrowclough C, TARRIER N. (1990). Social functioning in schizophrenic service users. *Soc Psych & Psych Epid.* 1990, 25, 125-129.
- Barrowclough C, TARRIER N, Watts S, Vaughn C, Bamrah J S, Freeman HL Assessing the functional value of relatives' knowledge about schizophrenia: a preliminary report. *Brit J Psychiat.* 1987; 151, 1-8.
- Bauml J, Pitschel-Walz G, Volz A, Engel RR, & Kissling W. Psychoeducation in schizophrenia: 7 year follow-up concerning rehospitalisation and days in hospital in the Munich Psychosis information project study. *J Clin Psychiatry.* 2007; 68(6), 854-861.
- Berkowitz R, Eberlein-Fries R, Kuipers L, & Leff J. (1984). Educating relatives about schizophrenia. *Schizophrenia Bulletin*, 10(3), 418-429.
- Berkowitz R, Shavit N, & Leff J P. Educating relatives of schizophrenic service users. *Soc Psych & Psych Epid.* 1990; 25 (4), 216-220.
- Breitborde NJ, Moreno FA, Mai-Dixon N, Peterson R, Durst L, Bernstein B, Byreddy S, McFarlane, W. R. Multifamily group psychoeducation and cognitive remediation for first-episode psychosis: a randomized controlled trial. *BMC Psychiatry.* 2011;11, 9.
- Chien W-T, Chan SW. One-year follow-up of a multiple-family-group intervention for Chinese families of service users with schizophrenia. *Psychiat Serv.* 2004; 55(11), 1276-1284.
- Chien, W-T, Thompson DR, & Norman I. Evaluation of a peer-led mutual support group for Chinese families of people with schizophrenia. *Am J Community Psychol.* 2008; 42(1-2), 122-134.
- Das S, Saravanan B, Karunakaran KP, Manoranjitham S, Ezhilarasu P, Jacob KS. Effect of a structured educational intervention on explanatory models of relatives of service users with schizophrenia: Randomised controlled trial. *Brit J Psychiat.* 2006; 188 (MAR.), 286-287.
- Gleeson JFM, Cotton SM, Alvarez-Jimenez M, Wade D, Crisp K, Newman B, Spiliotacopoulos D, McGorry PD. Family outcomes from a randomized control trial of relapse prevention therapy in first-episode psychosis. *J Clin Psychiatry.* 2010; 71(4), 475-483.
- Glynn SM, Pugh R, Rose G. Benefits of relatives' attendance at a workshop on schizophrenia at a state hospital. *Psychos Rehabil J.* 1993; 16(4), 95-101.
- Hazel NA, McDonnell MG, Short RA, Berry CM, Voss WD, Rodgers ML, Dyck DG. Impact of multiple-family groups for outservice users with schizophrenia on caregivers' distress and resources. *Psychiat Serv.* 2004; 55(1), 35-41.
- Herz MI. Psychosocial treatment. *Psychiatric Annals.* 1995; 26, 531-535.
- Herz MI, Lamberti JS, Minz J, Scott R, O'Dell SP, McCartan L, Nix G. A program for relapse prevention in schizophrenia: a controlled study. *Arch Gen Psychiat.* 2000; 57(3), 277-283.
- Hogarty GE, Anderson CM, Reiss DJ, Kornblith SJ & et al. Family psychoeducation, social skills training, and maintenance chemotherapy in the aftercare treatment of schizophrenia: II. Two-year effects of a controlled study on relapse and adjustment. *Arch Gen Psychiat.* 1991; 48(4), 340-347.
- Hogarty GE, Anderson CM, Reiss DJ, Kornblith SJ, Greenwald DP, Javna CD, Madonia MJ. Family psychoeducation, social skills training, and maintenance chemotherapy in the aftercare treatment of schizophrenia. I. One-year effects of a controlled study on relapse and expressed emotion. *Arch Gen Psychiat.* 1986; 43(7), 633-642.
- Hugen B. The effectiveness of a psychoeducational support service to families of persons with a chronic mental illness. *Res Social Work Prac.* 1993; 3(2), 137-154.

- Hussain I, Delaney Warner M, Hallahan B. Psycho-education of families in relation to their siblings' psychiatric illness. *Ir J Psychol Med.* 2009; 26(2), 69-72.
- Kaufman AV, Scogin F, MacNeil G, Leeper J, Wimberly J. Helping aging parents of adult children with serious mental illness. *J Soc Serv Res.* 2010; 36(5), 445-459.
- Kim C, Mueser KT. The effects of social skills training vs. Psychoeducation on negative attitudes of mothers of persons with Schizophrenia: A pilot study. *Psychiatry Investig.* 2011; 8 (2), 107-112.
- Leff J, Berkowitz R, Shavit N, Strachan A, Glass I, Vaughn C. A trial of family therapy v. a relatives group for schizophrenia. *Brit J Psychiat.* 1989; 154, 58-66.
- Leff J, Kuipers L, Berkowitz R, Eberlein-Vries R, Sturgeon D. A controlled trial of social intervention in the families of schizophrenic service users. *Brit J Psychiat.* 1982; 141, 121-134.
- Levy-Frank I, Hasson-Ohayon I, Kravetz S, Roe D. Family psychoeducation and therapeutic alliance focused interventions for parents of a daughter or son with a severe mental illness. *Psychiatry Res.* 2011; 189(2), 173-179.
- Li Y, Jia JD, Zhang MS. Influence of family mental intervention on social function, family ienvironment and relapse in first episode schizophrenia. *Chinese J Clin Rehabil.* 2004; 21, 184-185.
- Lowenstein J, Butler D, Ashcroft K. The efficacy of a cognitively orientated carers group in an early intervention in psychosis service--A pilot study. *J Psychiatr Ment Health Nurs.* 2010; 17(7), 628-635.
- Magliano L, Fiorillo A, Malangone C, De Rosa C, Maj M. Service user functioning and family burden in a controlled, real-world trial of family psychoeducation for schizophrenia. *Psychiat Serv.* 2006a; 57(12), 1784-1791.
- Magliano L, Fiorillo A, Malangone C, De Rosa C, Maj M, Family Intervention Working. Implementing psychoeducational interventions in Italy for service users with schizophrenia and their families. *Psychiat Serv.* 2006b; 57(2), 266-269.
- McFarlane WR, Link B, Dushay R, Marchal J, Crilly J. Psychoeducational multiple family groups: four-year relapse outcome in schizophrenia. *Fam Proc.* 1995a; 34(2), 127-144.
- McFarlane WR, Lukens E, Link B, Dushay R, & et al. Multiple-family groups and psychoeducation in the treatment of schizophrenia. *Arch Gen Psychiat.* 1995b; 52(8), 679-687.
- McGill CW, Falloon IR, Boyd JL, Wood-Siverio C. Family educational intervention in the treatment of schizophrenia. *Hosp & Comm Psych.* 1983; 34(10), 934-938.
- Moxon AM, Ronan KR. Providing information to relatives and service users about expressed emotion and schizophrenia in a community-support setting: A randomized, controlled trial. *Clin Schiz & Related Psych.* 2008; 2 (1), 47-58.
- Mullen A, Murray L, Happell B. Multiple family group interventions in first episode psychosis: enhancing knowledge and understanding. *Int J Ment Heal Nurs.* 2002; 11(4), 225-232.
- Nasr T, Kausar R. Psychoeducation and the family burden in schizophrenia: A randomized controlled trial. *Annals Gen Psychiat.* 2009; 8, 17.
- Paranthaman V, Satnam K, Lim JL, Amar-Singh HSS, Sararaks S, Nafiza MN, Ranjit K, Asmah ZA. Effective implementation of a structured psychoeducation programme among caregivers of service users with schizophrenia in the community. *Asian J Psychiatr.* 2010; 3(4), 206-212.

- Pickett-Schenk SA, Lippincott RC, Bennett C, Steigman PJ. Improving knowledge about mental illness through family-led education: The journey of hope. *Psychiat Serv.* 2008; 59 (1), 49-56.
- Pitman E, Matthey S. The SMILES Program: A group program for children with mentally ill parents or siblings. *Am J Orthopsychiatry.* 2004; 74(3), 383-388.
- Pitschel-Walz G, Bauml J, Bender W, Engel RR, Wagner M, Kissling W. Psychoeducation and compliance in the treatment of Schizophrenia: Results of the Munich psychosis information project study. *J Clin Psychiatry.* 2006; 67 (3), 443-452.
- Pitschel-Walz G, Boerner R, Mayer C, Engel RR, Peuker I, Welschehold M, Bauml J, Buttner P, Kissling W. Psychoeducational groups for schizophrenia patients and their relatives: influence on knowledge, attitudes and familial expressed emotions. *Pharmacopsych.* 1993; 26, 186.
- Pitschel-Walz G, Boerner R, Mayer C, Wagner M, Engel RR, Peuker I, Welschehold M, Bender W, Bauml J, Buttner P, Kissling W. Effects of psychoeducational groups for schizophrenic service users and their relatives on knowledge, compliance and relapse. *Pharmacopsychiatry.* 2004; 28, 204.
- Ran MS, Xiang MZ, Chan CLW, Leff J, Simpson P, Huang MS, Shan YH, Li SG. Effectiveness of psychoeducational intervention for rural Chinese families experiencing schizophrenia - A randomised controlled trial. *Soc Psych & Psychc Epid.* 2003; 38 (2), 69-75.
- Raskin A, Mghir R, Peszke M, York D. A psychoeducational program for caregivers of the chronic mentally ill residing in community residences. *Comm Ment Health J.* 1998; 34(4), 393-402.
- Reza GG, Shikha M, Habibollah T, Ali AG. Efficacy of a Psychoeducational Programme for the Social Adjustment of Psychiatric Service users. *Hong Kong J Psychiat.* 2004; 14(3), 7-14.
- Sefasi A, Crumlish N, Samalani P, Kinsella A, O'Callaghan E, Chilale H. A little knowledge: caregiver burden in schizophrenia in Malawi. *Soc Psych. & Psych. Epid.* 2008; 43(2), 160-164.
- Shin SK, Lukens EP. Effects of psychoeducation for Korean Americans with chronic mental illness. *Psychiat Serv.* 2002; 53, 1125-1131.
- Smerud PE, Rosenfarb IS. The Therapeutic Alliance and Family Psychoeducation in the Treatment of Schizophrenia: An Exploratory Prospective Change Process Study. *J Consult Clin Psychol.* 2008; 76 (3), 505-510.
- Solomon P. Moving from psychoeducation to family education for families of adults with serious mental illness. *Psychiat Serv.* 1996; 47(12), 1364-1370.
- Sota S, Shimodera S, Kii M, Okamura K, Suto K, Suwaki M, Fujita H, Fujito R, Inoue S. Effect of a family psychoeducational program on relatives of schizophrenia service users. *Psychiatry Clin Neurosci.* 2008; 62(4), 379-385.
- Stephens JR, Farhall J, Farnan S, Ratcliff KM. An evaluation of Well Ways, a family education programme for carers of people with a mental illness. *Aust NZ J Psychiat.* 2011; 45(1), 45-53.
- Tarrier N, Barrowclough C, Vaughn C, Bamrah J, & et al. Community management of schizophrenia: A two-year follow-up of a behavioral intervention with families. *Brit J Psychiat.* 1989; 154, 625-628.
- Tarrier N, Barrowclough C, Vaughn C, Bamrah JS, Porceddu K, Watts S, Freeman H. The community management of schizophrenia. A controlled trial of a behavioural intervention with families to reduce relapse. *Brit J Psychiat.* 1988; 153, 532-542.
- Tomaras V, Mavreas V, Economou M, Ioannovich E, Karydi V, Stefanis C. The effect of family intervention on chronic schizophrenics under individual psychosocial treatment: a 3-year study. *Soc Psych & Psychc Epid.* 2000; 35(11), 487-493.

- Worakul P, Thavichachart N, Lueboonthavatchai P. Effects of psycho-educational program on knowledge and attitude upon schizophrenia of schizophrenic service users' caregivers. *J Med Assoc Thai*, 2007; 90 (6), 1199-1204.
- Xie Y. Effects of mental health education on the accompanying dependants of hospitalised schizophrenics. *Journal of Clinical Psychosomatic Diseases*. 2006; 12(4), 297-298.
- Yoshimura M. Supportive psycho-educational intervention for schizophrenics' families: Influencing family dynamics. *Jpn J Psychiatry Neurol*. 1991; 45 (3), 601-615.