

“FAMILY MATTERS”: A SYSTEMATIC REVIEW OF THE EVIDENCE FOR FAMILY PSYCHOEDUCATION FOR MAJOR DEPRESSIVE DISORDER

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The first aim of this systematic review was to evaluate the evidence for family psychoeducation (FPE) interventions for major depressive disorder (MDD). A second aim was to compare the efficacy of different modes of delivering face-to-face FPE interventions. Ten studies (based on nine distinct samples) were identified comprising four single-family studies, four multifamily studies, one single versus multifamily comparative study, and one peer-led, mixed-diagnosis study. Seven studies measured patient functioning and six reported positive outcomes. Six studies measured carer's well-being and four reported positive outcomes. Results provide preliminary evidence that FPE leads to improved outcomes for patient functioning and family-carer's well-being for persons with depression. The implications for future development and delivery of FPE interventions for MDD are discussed.

There is considerable evidence demonstrating that family interventions for mental disorders lead to improved outcomes for both patient and carer (Henken, Huibers, Churchill, Restifo, & Roelefs, 2007; Jewell, Downing, & McFarlane, 2009; Lucksted, McFarlane, Downing, & Dixon, 2012; McFarlane, Dixon, Lukens, & Lucksted, 2003). In particular, Family Psychoeducation (FPE) is an evidence-based practice that is recognized as part of the optimal treatment for psychotic disorders by the U.S.'s Department of Health and Human Services Substance Abuse and Mental Health Services Administration (Substance Abuse and Mental Health Services Administration (SAMHSA), 2009) and by the U.K.'s National Institute for Health and Care Excellence (NICE, 2014). Based on models originally developed by Andersen, McFarlane, and Falloon (Anderson, Hogarty, & Reiss, 1980; Falloon, Boyd, & McGill, 1984; McFarlane, Lukens, & Link, 1995), FPE is a method of working with families and carers who are supporting a person with mental illness with the aim of enhancing treatment outcomes by enabling those who are closest to the person to manage the issues that can arise or which may exacerbate the illness. The majority of care for people with depression is provided at home and in most cases the primary caregiver is a relative. The terms carer, relative, and family are therefore used interchangeably throughout this article.

Within the mental health service context, FPE refers to interventions that are educationally oriented. However, FPE is not simply family education per se; that is, FPE is more than just information provision and ensuring that people have an understanding of the illness. It also importantly focuses on the development of problem solving, communication and coping skills, and enhancement of social supports to manage the depression. These interventions differ from traditional family therapy in that they do not assume dysfunction in the family (Dixon et al., 2011). For example, systemic family therapy views dysfunctional family relationships as causing or reinforcing

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symptoms, and interventions are aimed at restructuring these maladaptive patterns of family interactions. In FPE, rather than being part of the problem and requiring psychotherapy, families are considered crucial to the patient's recovery and they are provided with knowledge and skills to support this (Jewell et al., 2009). FPE interventions are based on the premise that if you increase family members' understanding of the illness, this will reduce distress and improve their ability to cope, which will result in improved outcomes for the patient (Anderson et al., 1986). FPE has been shown to predict patient recovery and functioning, relapse and rehospitalization rates, and adherence to medication (McFarlane et al., 1995; Pitschel-Walz, Leucht, Bäuml, Kissling, & Engel, 2001). Although the primary goals of FPE programs have traditionally been improved outcomes for the patient, there is now an increasing focus on also improving carer well-being, recognizing that the two are often interdependent (Lucksted et al., 2012).

Although the majority of research has been conducted with families of patients with psychotic disorders, a number of studies have shown that family functioning is also important in determining the course of major depressive disorder (MDD) (Bolkan et al., 2013; Keitner et al., 1995). While involving the family in treatment for depression is important to a patient's recovery and ongoing functioning, the impact of the care-giving role on the well-being of the person providing the care is substantial. Studies show that while there are both similar and different challenges in supporting a relative with depression compared to psychotic disorders, the overall carer burden is just as significant (Anderson et al., 1986; Angermeyer, Kilian, Wilms, & Wittmund, 2006; van Wijngaarden et al., 2009). Often referred to as "family burden" or "carer burden", the problems most frequently reported by people supporting a person with depression are financial difficulties, feelings of isolation, reduction in social activities, relationship distress, feeling confused, and overwhelmed by depressive symptoms, worry about stigma, worry about the future, and being able to access treatment (Ahlström, Skärsäter, & Danielson, 2009; Highet, McNair, Davenport, & Hickie, 2004; Jeglic et al., 2005; Lemmens, Eisler, Buysse, Heene, & Demyttenaere, 2009). Between 40% and 72% of carers experience clinical levels of depression and anxiety (Coyne et al., 1987; Heru, Ryan, & Madrid, 2005; Jeglic et al., 2005), although for the majority of carers, clinical symptoms tend to alleviate when the depressed relative recovers (Coyne et al., 1987; Jeglic et al., 2005).

In 2012, Luciano and his colleagues published a nonsystematic review evaluating FPE interventions for persons with depression and their carers. On the basis of only four identified studies, they concluded that although more evidence was needed, the emerging research indicated that FPE leads to improved outcomes for patients and family members of people with MDD. A recent study also demonstrated the cost effectiveness of FPE for MDD (Shimodera et al., 2012), and other studies have shown that when FPE is offered to relatives, patients report higher satisfaction with the care they receive (Bolkan et al., 2013).

Despite the apparent efficacy, interestingly, FPE is still not widely available for people with depressive disorders and their families (Frank, Rummel-Kluge, Berger, Bitzer, & Hölzel, 2014; Lucksted et al., 2012). Moreover, some studies have shown that even when offered, FPE programs for depression are underutilized (Kronmüller et al., 2006; Lucksted et al., 2012; Shimazu et al., 2011). Others have suggested that it is organizational factors such as lack of funding and resources that are the major barriers to including families in treatment for MDD (Wirrell, McGill, Kelly, & Bowman, 2014). Also, when carers do not attend programs, this is usually due to practical difficulties of carers in being able to commit to attending programs (Kronmüller et al., 2006; Shimazu et al., 2011). Timing of FPE programs has also been cited as a barrier to effective implementation (e.g., Mental Health Council of Australia, 2012). Some thirty years ago, Anderson et al. (1986) drew attention to the fact that families have different needs at different stages of a depressive illness and that psychoeducation was most critical at the acute stage. In short, to have an impact on mental health outcomes for either patient or carer, FPE programs need to be offered in a cost-effective, accessible, and timely manner. There are a number of different modes of delivering FPE, and although the relative efficacy of these modes has been extensively explored with schizophrenia, this is not the case for MDD (Luciano et al., 2012; Lucksted et al., 2012).

One of the key differences in the way FPE is implemented is whether programs are delivered to single-family or multifamily groups. In a climate of limited resources, multifamily programs

would appear to be more cost efficient if found to be as effective. Evolving from its family therapy routes, FPE programs have traditionally been single-family based and often conducted in the family home when the patient was discharged from hospital (Anderson et al., 1980; Falloon et al., 1984). The primary goal of these original programs was to promote patient recovery and prevent relapse by reducing family “Expressed Emotion” (or unsupportive, critical interactions). Starting with an intensive engagement period with the family, the programs emphasized education and problem solving based on the specific needs and goals of the family and patient (e.g., Anderson et al., 1986; Falloon & Shanahan, 1992). In contrast, the multifamily format pioneered by McFarlane, Dixon, and others emphasizes the importance of the mutual support families can derive from joining with others in similar situations (Jewell et al., 2009; McFarlane et al., 2003). Multi-Family Psychoeducation (MFPE) offers opportunities for sharing experiences and joint problem solving, but also encourages families or partners to form a social support network that extends beyond the formal stages of the group. While multifamily groups might seem an obvious benefit in terms of both social networking and cost, there can be a lower treatment compliance rate in multifamily therapy where family members are required to attend a group session, compared to a therapist home visit (Leff et al., 1990). On balance, however, evidence suggests that MFPE can be at least as effective as single-family psychoeducation (SFPE) for psychotic disorders, unless the family are unusually emotionally resilient, have already developed good coping skills, or are from minority groups (Jewell et al., 2009; Lucksted et al., 2012; McFarlane et al., 2003). To date there has been no review of multi- versus single-family interventions for MDD.

A second difference in the implementation of FPE programs is whether FPE programs are peer led or clinician led. In clinician-led programs, patient outcomes such as relapse prevention are often the primary goal, particularly if it is conducted in an in-patient setting and the participants are both patient and relatives (Luciano et al., 2012; Lucksted et al., 2012). Peer-led FPE programs are generally conducted in a community setting and the primary focus is the carer’s well-being (Dixon et al., 2011; Stephens, Farhall, Farnan, & Ratcliff, 2011). The patient is not required to attend and does not have to be receiving treatment; hence, the attitude of the relative with the illness is not a barrier. Peer-led FPE has been shown to be effective in schizophrenia with proponents of this model highlighting both its cost effectiveness as well as the benefits of a group leader who can personally relate to the participants experience (Chien & Chan, 2004; Dixon et al., 2011). However, no study has reviewed the evidence for peer-led FPE for MDD.

A third factor for consideration concerns the homogeneity of multifamily groups. In particular, whether FPE needs to be designed and delivered specifically for people supporting a person with MDD or whether FPE for families caring for a person with any type of mental illness can be equally effective. If heterogeneous groups can be designed to be equally effective, this has significant implications for the provision of FPE. The requirement to recruit a minimum number of participants to conduct a community-based group means programs cannot always be provided at the time which would be of most benefit to the family member, generally at the time the illness is first diagnosed. The more inclusive the participation criteria, the more likely a group will be scheduled in timely manner. To date, no study has evaluated the evidence regarding the effectiveness of mixed-diagnosis groups for people specifically caring for a person with MDD.

As noted, although Luciano et al. (2012) published a recent review of studies evaluating FPE, they only included four FPE intervention studies. A notable limitation was that two of the four identified treatment studies comprised mixed groups of samples diagnosed with various clinical disorders, not limited to depression per se. Hence, the direct effects of FPE for persons with depression and their carers could not be differentiated. On the basis of increasing studies testing the efficacy of FPEs for MDD, it is timely to re-examine this body of literature. Accordingly, the objective of this study was to conduct a systematic review of FPE interventions for MDD and extend it by specifically comparing the efficacy of different modes of FPE interventions. The specific aim was to evaluate the efficacy of face-to-face FPE for persons with depression and their carers; and to evaluate whether the effectiveness was dependent upon delivery mode, including comparison of outcomes for (a) multi-family and single-family psychoeducation, (b) peer-led and

clinician-led groups, and (c) FPE groups for MDD only compared to FPE for any mental illness (mixed-diagnosis groups).

METHOD

Search Methods

The literature search was conducted using the PRISMA framework (Moher et al., 2015). Search terms were selected based on past reviews. Cochrane, Embase, Medline, PubMed, and PsycInfo databases were searched using combinations of the following terms as key words, titles, and subject headings: “family”, “carer”, “caregiver”, “relative”, “spouse”, “partner”, “psychoeducation”, “intervention”, “therapy”, “treatment”, “program”, “depression”, “major depression”, “unipolar depression”, “depressive disorder”, “affective disorder”, “mood disorder”. Bibliographies of identified articles were scanned for further relevant studies and “find similar” or “find citing” functions were used for seminal articles within the PubMed and PsycInfo databases. The search period covered studies published from 1985 to January 2016.

Eligibility Criteria

Studies were eligible for inclusion if they met the following conditions:

Study design. Randomized controlled trials (RCTs) and within-subject studies without a control or comparative group were included if they also met the other inclusion criteria (outlined below).

Participants. Family psychoeducation intervention studies for family/relatives with MDD aged 14–85 years were included. Studies of interventions restricted to families of people with a specific type of depression (e.g., bipolar disorder) and FPE programs for younger children, or for the dependent children of depressed parents were excluded because the psychoeducational interventions for these groups are substantially different and the nature of the presenting issues are also disparate. Moreover, in the case of interventions involving children, these issues have also been explored in other studies including a recent review (Institute of Medicine National Research Council, 2009). For similar reasons, studies of FPE interventions where depression was secondary to a physical or neurological condition (e.g., dementia) were also excluded.

Intervention. The intervention had to be presented in-person format, and be primarily psychoeducational in nature, comprising both education/information components and skills building. Studies that investigated the efficacy of specific therapies (e.g., cognitive-behavior therapy, marital therapy) rather than psychoeducation were excluded. Self-help interventions (psychoeducation relying on written information) were not included. Interventions had to be delivered weekly or fortnightly over a period of at least 6 weeks, with or without the patient being present; this was based on the recommended minimum number of sessions required for efficacy for FPE for psychotic disorders (Substance Abuse and Mental Health Services Administration (SAMHSA), 2009). Interventions could be clinician or peer led and use open or closed group formats.

Outcome measures. Studies that assessed treatment outcomes with standardized or validated measures for capturing changes in depressive symptoms or other psychological well-being symptoms for either the person with depression and/or their family-carers as a result of an FPE intervention were included. Studies were excluded if participant satisfaction and/or engagement in the FPE program were the only variables assessed, as these variables were not considered to be representative of a well-being outcome. Studies of FPE interventions for carers of patients with a mixture of mental health disorders, but which did not report separate outcomes for the MDD subgroup were also excluded.

Other. Non-English language studies were included where possible and translated using on-line software with further translation by a native speaker if required.

Data Collection and Analysis

Two of the authors (deidentified) conducted the study selection review and coding of articles. Abstracts of all identified studies were initially screened with regard to participant group (specific or possible reference to MDD), intervention type, and study design (case studies excluded). The full texts of remaining articles were reviewed against the eligibility criteria by both authors. For

each study, information was recorded on the study population, design, intervention, outcome measures, and results. Studies were categorized along the following dimensions: (a) single-family or multifamily group intervention, (b) studies where FPE was aimed at families of people with MDD only or studies which were aimed at families of people with MDD and other mental disorders, and (c) studies where FPE was led by clinicians and studies where FPE was led by peers. The selected studies were heterogeneous in quality, design, and in outcomes measured, which did not enable a meta-analysis to be conducted.

Study Quality and Validity Assessment

The methodological quality of the studies was evaluated according to the following eight validity criteria that were adapted from the Consolidated Standards of Reporting Trials (CONSORT) guidelines (Altman, Schulz, & Moher, 2001) and Delphi criteria list (Verhagen et al., 1998): randomization; allocation concealment; blinding of outcome assessments; comparability of groups at baseline; withdrawals and handling of dropouts in analyses; and use of intention-to-treat analysis (ITT); and multiple follow-up assessments. These criteria have been used in previous systematic and meta-analytic reviews to evaluate study quality (e.g., Kangas, Bovbjerg, & Montgomery, 2008). The methodological quality for each of the studies was evaluated according to the eight criterion summarized above, and a point was allocated for each criterion satisfied (range: 0–8 points; See Table S1). A study was deemed as having good internal validity/quality if they scored >4 points. Understandably, as two of the eight criterion were based strictly on RCT methodology (i.e., RCT method and concealment of allocation), the maximum points possible for non-RCTs, pre–post design studies was 6.

RESULTS

Figure 1 presents a summary of the literature search in accord with PRISMA guidelines. From the 5262 studies identified, the full texts of 102 studies were reviewed and a total of 10 studies met inclusion criteria including 2 studies (Bernert et al., 2006; Schomerus et al., 2007) that reported on different outcomes for the same sample. Hence, 10 studies based on nine distinct datasets/samples were included in this review. The most common reason for exclusion was participant factors such as child focus (i.e., less than 14 years), depression was secondary to other issues, or outcomes for depressed participants were not specifically reported.

The characteristics and results of the included studies are summarized in Table 1 (inclusive of the method quality total score). The methodological quality details of these studies are presented in the Table S1. Nine of the ten studies described FPE interventions for patients with MDD or Mood Disorders only. Of these studies, four were single-family psychoeducational (SFPE) studies (Clarkin et al., 1990; Fiorillo, Malangone, & Del Vecchio, 2011; Kumar & Gupta, 2015; Sanford et al., 2006), four were multifamily psychoeducational (MFPE) studies (Bernert et al., 2006; Katsuki et al., 2011; Schomerus et al., 2007; Shimazu et al., 2011), (although two of these MFPE studies were based on the same sample; [Bernert et al., 2006; Schomerus et al., 2007]), and one was a SFPE and MFPE comparative study (Lemmens et al., 2009). Only one MFPE study for people with any mental disorder was identified, and which reported outcomes for nonpsychotic disorders including depression separately (Stephens et al., 2011).

SFPE Studies

Consistent with the traditional model of SFPE (Falloon, 2003), the four identified SFPE interventions included the patient, of which three were based on an RCT design (Clarkin et al., 1990; Fiorillo et al., 2011; Sanford et al., 2006); although two of the three RCTs did not specify the randomization method used inclusive of concealment of allocation used. For the fourth study by Kumar and Gupta (2015), although the design was referred to as an RCT, the description did not strictly meet randomization criterion as participants were allocated to each condition via alternating sequence. For this study, patient outcome measures were only reported. The other three studies reported measures of both patient and family functioning.

Three of the four studies reported positive outcomes for patient measures; two of these studies were based in a community setting and adapted Falloon's SFPE model of 12 sessions over

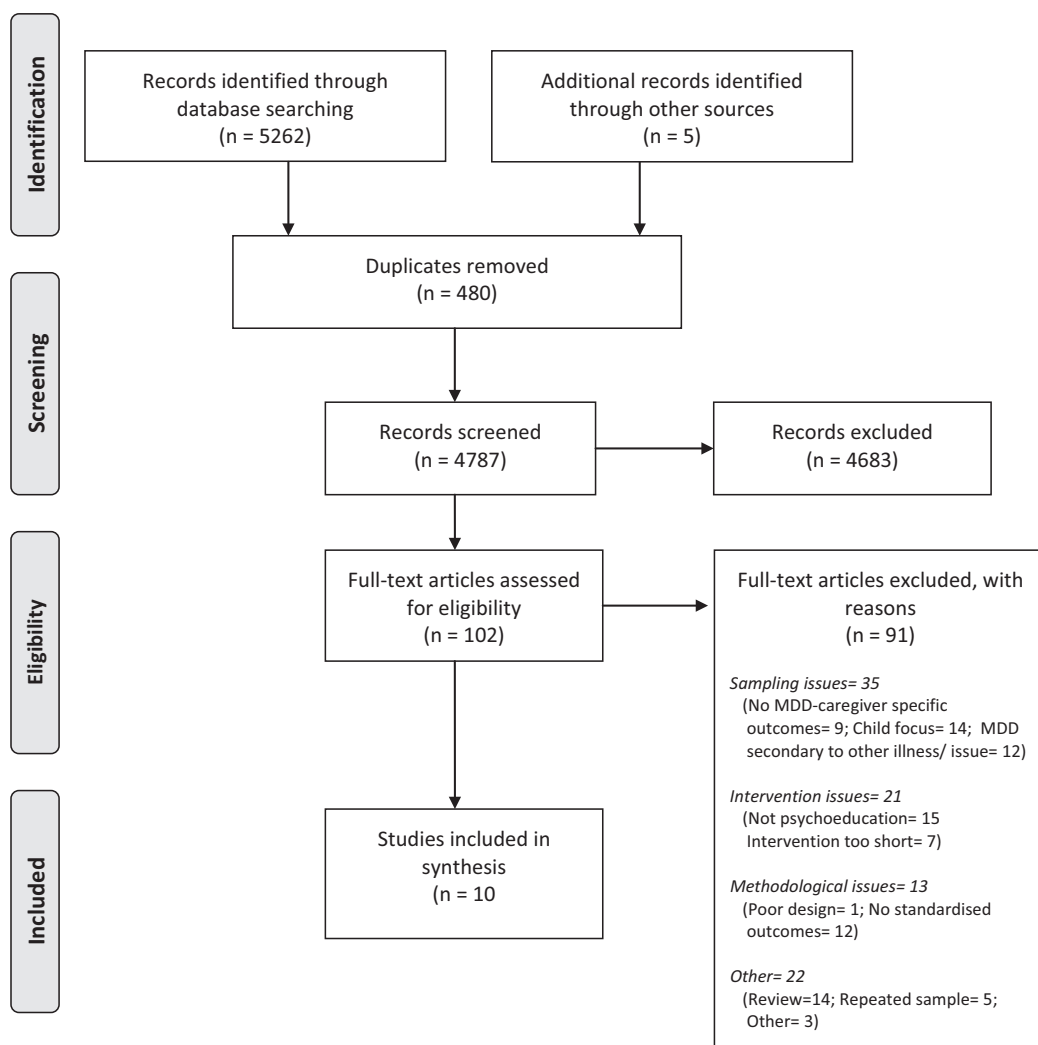


Figure 1. Search and review outcomes.

6 months in the patients home, involving as many family members who opted to be involved (Fiorillo et al., 2011; Sanford et al., 2006). Specifically, the Fiorillo et al. (2011) study comprised adult patients and their families. In contrast, the Sanford et al. (2006) study was based on adolescent patients and their families, and positive effects for family social functioning were reported. Moreover, patient outcomes were found to be mediated by the quality of the relationship between adolescent patient and parents; however, family burden was not assessed. The Sanford et al. study was also found to have medium effect size for patient outcomes after both 3 and 6 months of treatment.

The third study which found positive effects for patient outcomes was conducted in an inpatient setting (Kumar & Gupta, 2015). The researchers utilized a short intervention consisting of four sessions of SFPE conducted over 8 weeks. Kumar and Gupta (2015) reported significant differences in depression symptoms in the intervention group after just one session, with differences in significance peaking 4 weeks after the intervention concluded.

The only SFPE study which reported negative outcomes for patients with MDD (and also included patients with bipolar) was also conducted in an inpatient setting using an RCT design. In particular, Clarkin et al. (1990) program consisted of six sessions with no follow-up sessions after discharge. Patients with MDD had improved at the time of discharge from hospital but by

Table 1 <i>Studies Included in the Review</i>				
Author	Type of study & Method quality score ^a	Sample	Intervention	Measures and timeframe Results
Single-family interventions, all clinician led, and patient included Clarkin et al., 1990; USA	RCT SFPE + TAU versus TAU only (medication plus group therapy) *Quality Score = 5.5	50 hospitalized adult patients with affective disorders + relatives MDD (<i>n</i> = 29), 17 rec'd intervention. Bipol (<i>n</i> = 21), 12 rec'd intervention. *Female 60%. mean age 35.9 (14.5)	6 × 1 hr sessions conducted in hospital focusing on education, family attitude, and coping strategies. Timing of sessions not specified. Part of larger study of FPE intervention for schizophrenia.	Patient Functioning: Global Assessment Scale, Psychiatric Evaluation Form. Family Attitude: Family Attitude Inventory. Admission, Discharge, 6 and 18 months postdischarge. All MDD patients improved symptoms and functioning from admission to discharge. Male MDD patients worse after 6 months, Male and female worse after 18 months compared to TAU. No differences in family measures for MDD patients compared to TAU. No effect sizes reported. Significant improvements on all measures for intervention group compared to TAU for both patients and families. No effect sizes reported.
Fiorillo et al., 2011; Italy	RCT SFPE + TAU versus Control TAU + info package *Quality Score = 1.5	44 patients in community mental health setting with MDD + families, 22 received intervention. *Female 59%, mean age 48.6 (10.8)	12 × 90 min home-based sessions over 6 months. Falloon model of FPE for Schizophrenia with content modified for MDD.	Patient Symptoms and Functioning: Brief Psychiatric Rating Scale, Disability Assess Scale. Family Burden and Social Functioning: Family Problems Qu. Social Network Qu. Pre- and posttreatment

Table 1 Continued					
Author	Type of study & Method quality score ^a	Sample	Intervention	Measures and timeframe	Results
Sanford et al. (2006) Canada	RCT SFPE + TAU versus TAU (medication + supportive counseling). *Quality Score = 6	31 Adolescents diagnosed with MDD using K-SADS-P. 16 received intervention. * Female: 64%; mean age 15.6 (1.1)	12 × 90 min SFPE home- based sessions over 6 months with one booster session at 9 months. Based on Falloon model of FPE.	Patient Symptoms: Reynolds Adolescent Depression Scale. Patient Social Functioning: Struct. Social Adj. Interview Family functioning, Family Assessment Device. Baseline, 2 weeks, 3, 6 & 9 months	Improvements in patient symptoms and social functioning at both time points compared to TAU mediated by parent/adolescent relationship. Medium effect size on both measures No significant difference in family functioning compared to TAU.
Kumar and Gupta (2015) India	RCT SFPE + TAU versus TAU (medication + supportive counseling). *Quality Score = 4.5	80 adults diagnosed with MDD + family- carer. 38 received intervention *Female 40%; mean age 33 (11.63)	4 sessions delivered fortnightly.	Patient Symptoms: Hamilton Dep Rating Scale (HDRS), GAF, Psychological General Well-being Index (PGWBI) Baseline, 2, 4, 8, 12 weeks	Sig diff in mean HDRS for intervention group compared to TAU from 4 weeks with difference peaking at 12 weeks. Sig diff in mean GAF and PGWB in intervention group at 12 weeks. No effect sizes reported

Table 1 Continued					
Author	Type of study & Method quality score ^a	Sample	Intervention	Measures and timeframe	Results
Multifamily interventions, all clinician led, and patient excluded Bernert et al. (2006) Schomerus et al. (2007) Germany	Within-subjects MFPE, with control group *Quality Score = 2	MFPE for spouses of MDD output. (<i>n</i> = 66). Interv. plus control group of nonattendees (<i>n</i> = 50). Participant gender and age not provided.	12 sessions over 6 months covering information, coping strategies, and comm. skills. One booster session 3 months postprogram.	Carer Burnout: Maslach Burnout Inventory; Spouse psychological distress: BAI, BDI. Baseline, postprog., 3 months, 6 month f/u.	No sig. effect on burnout pre-postprogram or compared to control. No significant effect on distress at any time point compared to control. 96% positive program evaluation rating.
Katsuki et al. (2011), Japan	Within-subjects MFPE, no control group *Quality Score = 2	32 relatives of adult inpatients and outpatients diagnosed with MDD **Female 72%, male 28%. Mean age 61.7 (12.5)	4 × 2 hr sessions over 6 weeks. Based on McFarlane model but without patient. 30 mins psychoeducation and 90 min group sharing and problem solving.	Carer psychological distress: K6. Caregiver burden: Zarit Burden Interview, Dysfunction in Ordinary Family Life Scale; Family Expressed Emotion: Family Attitude Scale. Pre- and postintervention measures.	Carer distress, care burden, and families expressed emotion all showed statistically significant improvements. Number of relatives indicating clinical levels of depression and anxiety reduced from 16 (50%) to 3 (9.3%) after intervention. Medium effect size on all measures.

Table 1
Continued

Author	Type of study & Method quality score ^a	Sample	Intervention	Measures and timeframe	Results
Shimazu et al. (2011) Japan	RCT MFPE + TAU versus TAU (medication + supportive psycho-therapy fortnightly) *Quality Score = 6.5	Adult relatives of outpatients with MDD living with patient. MFPE for carers, $n = 54$. 24 received intervention. *44% female, mean age 59.2 (14.6). **56% female, mean age 59 (11.4)	4 bi-weekly sessions over 6 weeks, 30 mins psychoed and 90 min group sharing and problem solving. Max 5 participants per group	Patient symptoms/ remission: Hamilton Rating Scale, BDI; Family Expressed Emotion: Family Attitude Scale, Five- Minute Speech Samples, Baseline and 9 months posttreatment	Patient Relapse over 9 months: significant improvement v TAU. No signif. change in family expressed emotion and no interaction affect with patient symptoms. No effect sizes reported.
Single-family versus multifamily interventions, clinician led, and patient included Lemmens et al., 2009; Belgium	RCT. MFPE + TAU versus SFPE + TAU versus TAU (2–3 months in- patient treatment including indiv/group therapy and medication. *Quality Score = 6	83 hospitalized patients diagnosed with MDD and partners. *MFPE ($n = 35$), female 80%, mean age 43.9 (8.3). *SFPE ($n = 25$), female 64%, mean age 40.2 (9.1) *TAU ($n = 23$), female 69.9%, mean age 43.2 (8.4)	SFPE: 6 bi-weekly 90 min sessions: education and skills within systemic framework. Children attend two sessions. 3 months follow up session. MFPE: Groups of 4–7 patients and partner. More emphasis on group problem solving.	Patient depression: BDI, Hamilton Rating Scale; Patient medication use; Rehospitalization rates; Subjective emotional health of patient/ partner, rating by each other: Dyadic Adjustment Scale Measures after 3 months (discharge) and 15 months	Both intervention groups showed signif better outcomes versus TAU on all measures after 15 months. MFPE group slightly better than SFPE but differences not significant (small sample). No effect sizes reported.

Table 1 Continued					
Author	Type of study & Method quality score ^a	Sample	Intervention	Measures and timeframe	Results
Mixed-diagnosis multifamily groups, peer led, and patient excluded Stephens et al., 2011; Australia	Within subjects study without control group *Quality Score = 1	459 Relatives of patients with any mental illness. Patient diagnosis subgroup (<i>n</i> = 159), psychotic disorder = 66%, mood disorder 39%, anxiety disorder 21%. **Female: 77.9%. mean age 55.19 (10.14)	“Well Ways” peer-led Family to Family MFPE, 8 weekly 3 hr sessions. Participants encouraged to develop support groups postprogram.	Negative consequences of Care giving: (worrying, tension, supervision, urging); Involvement Evaluation Questionnaire – 27 core items Caregiver psychological distress: GHQ-12 Preprogram, 3/ postprogram, 3/ 6 months follow-up	Positive outcomes on all measures, small effect size. Mostly continued to improve over 6 months. Psychotic benefited more than nonpsychotic on worrying. Females benefited more than male on tension.
<i>Notes.</i> NB, *patient demographics, **carer demographics; ^a Methodological Quality Score – for full details of criterion scores – see also Table S1.					

6 months, in the case of men, and by 18 months for women, patient functioning was actually worse in the intervention group than the nonintervention (treatment as usual: TAU) group. Measures of family burden and attitudes showed similar patterns. This was not the case with the bipolar patients; these patients and their families who received the intervention continued to improve in their functioning over time compared to the control group.

For these four SFPE studies, three scored at least 4 on the quality ratings (Clarkin et al., 1990; Kumar & Gupta, 2015; Sanford et al., 2006) indicating sound methodology, with the strongest quality demonstrated by the Sanford et al. (2006) adolescent trial. The fourth study by Fiorillo et al. (2011) was evaluated to have very low methodological quality. This was the only study identified which was not published in manuscript format. Rather, only a conference abstract was available in the referenced journal. Hence, only scant methodological information in accord with CONSORT guidelines was available to evaluate the methodological quality.

MFPE Studies

From the four identified MFPE studies, as aforementioned, two were based on the same dataset/sample (Bernert et al., 2006; Schomerus et al., 2007), and the researchers utilized a within-subject designs with a nonrandom control group of nonattendees. These two studies scored low on methodological quality as minimal information was reported on design and analytical issues. The other two studies comprised an RCT design (Shimazu et al., 2011) which was assessed to have strong methodological quality, and a pre-post study design (Katsuki et al., 2011), which was evaluated to have low quality due to minimal information being reported pertaining to CONSORT criteria.

None of the MFPE interventions included the patient and only the RCT by Shimazu et al. (2011) measured patient outcomes in addition to family functioning. These researchers found a significant improvement in patient time to relapse over a 9-month follow-up period compared to the control condition. All four MFPE studies measured family functioning; one reported positive effects (Katsuki et al., 2011) and three (including the two related studies) did not (Bernert et al., 2006; Schomerus et al., 2007; Shimazu et al., 2011). In particular, Katsuki et al. (2011) utilized the same MFPE program as Shimazu et al. (2011) with a different sample and found significant improvements in carer psychological distress and carer burden, using a pre-post design, with medium effect size; although no longer-term follow-up measures were reported. However, while Shimazu et al. found positive outcomes for patients, family expressed emotion did not improve. The two related studies using an MFPE intervention designed for spouses of people with MDD reported no significant difference in carer outcomes (including carer burnout, depression, and anxiety symptoms) compared to a nonattendee control group postprogram and up to 6-month follow-up (Bernert et al., 2006; Schomerus et al., 2007). Interestingly, the intervention was longer than the one reported by Katsuki et al. and Shimazu et al. (see Table 1).

MFPE versus SFPE Program

Only one published study was identified that directly compared outcomes between a MFPE and SFPE intervention utilizing an RCT design (Lemmens et al., 2009) with strong methodological quality. The intervention consisted of six sessions in an in-patient setting with a 3-month follow-up session postdischarge. Given all groups included the patient, the authors primarily focused on measures of patient functioning rather than family functioning. By 15 months postdischarge, patient depressive symptoms, medication use, and rehospitalization rates were significantly better for both the intervention groups compared to a TAU/control group. Patients and their partners also rated each other's subjective emotional health after 15 months, and both intervention groups reported better outcomes compared to the TAU control; although no significant difference emerged between the two FPE formats.

FPE Program

Only one non-RCT FPE study based on a mixed-diagnosis group was identified (Stephens et al., 2011), and was evaluated to have low methodological quality as minimal information was reported pertaining to key design factors. The FPE intervention consisted of eight 3-h weekly sessions over 2 months and was also the only peer-led intervention identified. The researchers focused

on carer outcomes and found significant improvement in carer psychological distress, worrying, and tension with small effect sizes. Participants with psychotic relatives improved significantly more on “worrying” than the nonpsychotic group, but no other significant interactions with patient diagnosis were found.

DISCUSSION

The overarching objective of this review was to systematically evaluate the published literature regarding the efficacy of FPE interventions for persons caring for individuals with MDD. The findings indicate tentative support for FPE for MDD based on a small number of international studies. Although the majority of trials ($k = 8$) were published in English, two were based on Japanese samples, one was Italian, one was Belgium, and one was based on an Indian sample (see Table 1). The two related studies were derived from a German sample and the work was translated from German. Overall, the findings are consistent with the preliminary findings from Luciano et al. (2012) nonsystematic review, and also with the evidence of FPE for other disorders, particularly schizophrenia and bipolar disorder (Lucksted et al., 2012). The results of this systematic review extend the existing evidence base and build on Luciano et al.’s narrative review, by identifying eight additional studies (based on seven distinct samples) and separately exploring the outcomes of FPE interventions for patients and family–carers, which has not been previously evaluated. Of the seven studies measuring patient variables, only the SFPE study by Clarkin et al. (1990) failed to find a positive effect for patient outcomes, and interestingly, found the intervention made MDD patient functioning worse. The authors suggested this may be because the intervention was designed primarily for those with psychotic disorders and it is possible that the three subsequent SFPE studies found positive results because the intervention was tailored more specifically for MDD (Fiorillo et al., 2011; Sanford et al., 2006). Taken together, these outcomes suggest that FPE needs to be specifically tailored to the needs of MDD patients and their families/carers.

When reviewing the evidence on family–carer outcomes from FPE interventions, it is important to distinguish between the types of carer outcomes that were reported. These comprised two main categories; measures of family attitude/expressed emotion and measures of carer well-being/perceived burden. The former tended to be used in interventions where the focus of the intervention was on improving patient functioning and where family attitude was hypothesized to be a mediator for this change. The latter tended to be used for interventions aimed at improving well-being of the carer. Of the four studies which measured family attitudes or expressed emotion, only one of these studies which was a clinician-led MFPE was found to have a positive effect for this measure based on a non-RCT design (Katsuki et al., 2011).

Six studies measured carer well-being or carer burden and four of these studies documented positive effects which were based on variable designs (Fiorillo et al., 2011; Katsuki et al., 2011; Lemmens et al., 2009; Stephens et al., 2011). Specifically, three of the four studies with positive carer outcomes were evaluated to have low methodological quality (Fiorillo et al., 2011; Katsuki et al., 2011; Stephens et al., 2011), whereas the fourth study by Lemmens et al. (2009) was evaluated to have strong methodological quality. The remaining two studies which assessed carer burn-out were based on the same dataset (Bernert et al., 2006; Schomerus et al., 2007). In this sample, baseline levels of carer distress were not significantly different from the general population and the authors of these studies acknowledged that the timing of the program could explain outcomes as the intervention was not offered at the acute stage of the illness when distress is likely to be highest (Anderson et al., 1980). These studies did not include any longer-term follow-up measures and, as Bernert et al. (2006) propose, the benefits families derive from improved coping skills and building greater support networks may be more apparent in the longer term rather than immediately postintervention.

In summary, this pattern of results suggests that FPE interventions are beneficial to patient functioning and also for family–carer well-being. Notably, the findings suggest that the FPE interventions for depression were not consistently associated with improvements in family attitudes/expressed emotion, which have been argued to be important variables that mediate patient recovery. This further supports the view that family functioning is a solution rather than a cause of depression (Jewell et al., 2009), and that outcomes such as carer well-being and reduced carer burden

may themselves be the most significant variables underpinning improved patient outcomes rather than via changes in expressed emotion or family attitudes (Shimazu et al., 2011). It is noteworthy that even the studies that failed to show a positive effect for carer outcomes mostly reported high family–carer satisfaction with the FPE program (Bernert et al., 2006; Sanford et al., 2006; Schomerus et al., 2007; Shimazu et al., 2011).

The current findings also revealed that the length of the intervention did not appear to determine whether participants reported positive effects. Participants who attended the shortest interventions (four sessions over 6 weeks) reported positive longer-term effects (e.g., Shimazu et al., 2011), which was similar to participants who had been offered longer intervention programs (e.g., Fiorillo et al., 2011). However, the successful shorter FPE interventions mostly have a common focus on joint problem solving, peer support and networking, and previous authors have suggested that if these elements are included, an extended intervention length is not critical (Katsuki et al., 2011; Shimazu et al., 2011; Stephens et al., 2011). However, while this peer support element was missing from the recent four session SFPE study by Kumar and Gupta (2015), which also reported positive outcomes, this study did not report longer-term outcomes for either patients or their carers.

In terms of evaluating the evidence for different modes of FPE interventions, the current findings provide preliminary evidence that MFPE is at least as effective as SFPE in improving outcomes for patients with MDD, and that MFPE may be more effective than SFPE in improving outcomes for family–carers. This is consistent with studies that compare SFPE and MFPE groups for schizophrenia, with these studies suggesting that the mutual support problem solving and the extended social network offered by MFPE provides a significant advantage to relatives (Jewell et al., 2009; McFarlane et al., 1995).

Another dimension of the MFPE versus SFPE comparison is the question of whether the person with depression is included in the FPE intervention. In this review, consistent with the Falloon et al. (1984) model on which most SFPE is based, all identified SFPE studies included the patient. In the McFarlane et al. (1995) MFPE model for schizophrenia, clinically stable patients were also included in the treatment alongside their relatives. However, in the four MFPE studies identified in this review, consistent with their increased focus on family–carer outcomes, the person with depression was not included in the FPE intervention. In contrast, in the Lemmens et al. (2009) study which evaluated MFPE and SFPE, patients were included in both formats; and results showed positive outcomes for both patient and carer with no significant differences between formats. On the basis of the evidence to date, it is difficult to assess whether including or not including the patient in FPE is preferable. Further comparative research is needed that examines both patient and carer outcomes for both models as well as hybrid models where some sessions include the person with depression and some sessions are conducted exclusively with the family–carers so that there is an opportunity to specifically focus on their needs.

Only one non-RCT study of a peer-led group was identified with low methodological quality (Stephens et al., 2011). The researchers found significant improvements in well-being for relatives of patients with depressive or anxious disorders, providing some initial support for peer-led interventions for FPE in depression. This study used an intervention that was provided to family–carers of people across mixed-diagnosis groups and no studies were identified that investigated the impact of peer-led FPE groups designed specifically for families of MDD patients. In light of the notable paucity of studies in this field, it is not yet possible to determine whether peer-led interventions are equally effective as clinician-led programs. In a climate of limited resources, peer-led groups have the potential to play a significant role in FPE for MDD and more research on this topic is clearly warranted.

Three studies provided preliminary evidence indicating that FPE might be more effective for both the person with depression and their family–carers when it is targeted specifically at MDD compared to FPE that is aimed at any mental disorder. In the SFPE study by Clarkin et al. (1990), although the families of patients with MDD were treated separately, the program was not tailored to MDD and the authors found that neither the person with MDD nor their relatives reported significant benefits. As aforementioned, the authors suggested that this may be because the treatment had been primarily designed for people with schizophrenia. Stephens et al. (2011) also cited this as a reason why the “Well-Ways” MFPE program for carers of people with any mental disorder

showed better outcomes for families of persons with psychotic disorders compared to those with nonpsychotic disorders, including MDD.

The need for specifically targeted interventions is also suggested by the findings from a study by van Wijngaarden et al. (2009) who identified a number of differences between family-carers of people with schizophrenia and MDD with regard to what had the greatest impact on their well-being. Specifically, they found that family-carers of persons with depression identified relationship difficulties and ability to communicate with their relative as key strains, whereas those with schizophrenia tended to report more strain as a result of the practical care that had to be provided to their relative and worry about the person's future functioning. This pattern of findings suggests that FPE for psychotic disorders may need to be separated from FPE for nonpsychotic disorders to effectively address the differing issues experienced by these carer groups.

Importantly, however, van Wijngaarden et al. (2009) suggest that these differences may arise from the care-giving context rather than the illness. Because schizophrenia typically starts in young adulthood, care is typically provided by parents, who are not necessarily living with the person full time. Onset of MDD is typically later, and the primary carer is most often the spouse or partner who is more likely to be spending many hours a day with the person and coping with a complete change in the person with whom they first formed a relationship. Thus, the positive outcomes for interventions specifically targeted at MDD may be because the interventions were able to better reflect the needs of partner-carers while the mixed-group FPE interventions were trying to address the needs of partner-carers, parent-carers, and others. Unfortunately, there were insufficient studies identified in this review that clearly distinguished between couple dyads versus other family members/relatives; however, it is possible that the nature of the relationship (as partner, parent, or other) will affect the degree to which FPE is effective. This highlights the clear need for further research exploring the components of FPE that account for positive outcomes, the degree to which outcomes are affected by relationship type, and further work regarding whether FPE should be adapted for different relationship carer groups (e.g., parent, partner, etc.).

The findings from this review also need to be considered in context of limitations including gaps in the available evidence base. First, in relation to the limitations pertaining to the method of this review, the studies identified were based on trials published in peer review journals inclusive of conference abstracts. It is therefore possible that other FPE-based trials for MDD may have been missed, but which have yet to be published in peer review journals. Second, as noted, due to developmental considerations the current review was restricted to studies based on patient samples within a minimum age of 14 years or older. Interestingly, only one adolescent study was identified based on a SFPE intervention, and the findings were comparable to other SFPE studies based on adult samples. Notwithstanding these two limitations, this is the first most comprehensive systematic review which has focused on evaluating the efficacy of FPE in MDD. In doing so, as aforementioned, we identified two related non-English trials thus enabling a more international evaluation of this field.

Importantly, the findings from this review accentuated a number of limitations and gaps in this field. Only 50% of trials identified (i.e., $N = 5$) were based on an RCT design. Second, no studies reported level of session attendance by participants; hence, it cannot be determined whether results were influenced by treatment dosage effect. Third, only one study directly compared outcomes for a SFPE versus an MFPE intervention, and only one study of a peer-led program reported outcomes for families of people with nonpsychotic disorders. A fourth limitation in this field is that only two studies measured follow-up outcomes beyond 6 months to determine treatment retention effects. Fifth, there was little consistency in the measures used across studies; consequently, this precluded a meta-analysis from being conducted.

In terms of methodological quality, given the criteria used, RCT designs had greater scope of incurring a higher score. Indeed, five of the ten studies were evaluated to have adequate-to-strong methodological quality. Four of these five trials comprised RCTs (Clarkin et al., 1990; Lemmens et al., 2009; Sanford et al., 2006; Shimazu et al., 2011), whereas one was based on a "pseudo" RCT design as patients were alternatively allocated to trial conditions (Kumar & Gupta, 2015). As aforementioned, the fifth RCT study (Fiorillo et al., 2011) scored very low on methodological quality as this was the only study identified which was not published in full manuscript format. Moreover, of the five RCTs, three of the trials failed to report on whether assessors were blind,

whereas for two of the trials there was no reporting of whether concealment of allocation occurred during the randomization process. Overall, from the nine distinct study samples identified, the majority ($k = 7$) of authors failed to report on handling of missing data, drop-outs, and/or whether an ITT analyses was utilized. Given this information is vital for determining quality of analyses, as well as facilitating in identifying discernible patterns of drop-out trends, researchers need to ensure to document this information for future published trials in this field.

Collectively, these findings attest to the need for more rigorously designed RCTs using standardized measures that address both patient and carer outcomes over longer time periods. Indeed, it is promising that recent published protocols suggest that these gaps will begin to be addressed (e.g., Frank et al., 2015; Katsuki et al., 2014). Meta-analyses to identify strength of treatment effects, comparative clinical trials where FPE is combined with effective individual treatments for patients (e.g., cognitive-behavioral therapy), and a better understanding of what limits uptake of FPE for MDD will further consolidate the evidence base in future years.

The finding that MFPE is at least as effective for the person with MDD and potentially also for the family-carers has significant cost and resource implications for potential providers of FPE. Furthermore, the finding that FPE programs that are targeted at MDD (or at least at nonpsychotic disorders), generally achieve better outcomes for MDD patients and carers, is also relevant to the further evaluation and dissemination of FPE protocols. However, there is also a need for FPE at the acute stage of the illness (Anderson et al., 1986); yet, MFPE programs are often provided at the less acute stage due to having to wait for sufficient participant numbers to form groups. Models of FPE that can balance the need for timeliness with the benefits of MFPE need to be developed and tested for efficacy. On-line psychoeducation is now becoming common place for many disorders, particularly for providing information about the illness and treatment options (Stjernswärd, 2012) and guided self-help as a mode of delivery for psychoeducation is beginning to be investigated (e.g., McCann, Songprakun, & Stephenson, 2015). In addition to the advantages pertaining to cost and participant reach, providing at least some sessions of an FPE program on-line may provide opportunity to tailor program content to different participant needs and to provide some initial psychoeducation at the time it is most needed. Nevertheless, the importance of connecting with other family-carers in the same situation is a consistent theme arising from research into what is important in FPE and this needs to be built into any on-line protocol (Stjernswärd, 2012). It may be that a combination of on-line education sessions and face-to-face sessions, primarily addressing skills and support components of FPE is an effective option. Such a model may also offer opportunities for peer-led sessions which could complement the clinician-led sessions. In summary, further research is needed into FPE intervention models that are both flexible in delivering content for differing participant needs and sensitive to the organizational resource constraints.

The results from this systematic review highlight the promising outcomes that may be gained by offering FPE for depression for both the patient and their family-carers. The findings also provide preliminary evidence that MFPE may be as effective as SFPE for patient outcomes and may be potentially more effective for family-carers. If this is the case, it is important to consider how multifamily interventions can be offered in both a timely and resource efficient manner. Given the infancy of this field, further well-designed RCTs are clearly warranted to confirm the optimal delivery format and the types of outcomes that align with the needs for people living with depression and their family members.

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SUPPORTING INFORMATION

Additional Supporting Information may be found in a supplemental file next to the online version of this article:

Table S1. Methodological Quality of Studies.

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