

Effectiveness of Family-focused Intervention in Patients with Schizophrenia in Family and Community Practice - A Meta-analysis Study

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Background: Schizophrenia is a pervasive, chronic mental disorder that negatively impacts the biological, socioeconomic and family well being of the patient. Active involvement of family members and other significant individuals appears to benefit overall management.

Objective: To determine the effectiveness of family-focused intervention in improving symptoms of schizophrenia.

Methods: The authors searched for eligible clinical trials in the PubMed, Cochrane Central Register of Controlled Trials, Research Gate, Google Scholar and grey literature databases. Participants should be patients diagnosed to have schizophrenia and interventions should involve the family or be labeled as 'family therapy.' The primary outcome considered was symptom improvement based on the Positive and Negative Symptom Scale (PANSS). Secondary outcomes included quality of life, family functioning and subjective experience of the treatment process. The authors used the RevMan 5.4 software for data analysis. Bias, subgroup and sensitivity analyses were performed. Strength of evidence was assessed using the Grading of Recommendations, Assessment, Development and Evaluations (GRADE) framework.

Results: A total of 1,794 trials were initially identified, of which three publications were included in the review. Two studies used psychosocial approaches whereas one used cognitive behavioral therapy in conjunction with family intervention. Meta-analysis revealed the studies to be heterogeneous based on p values <0.10 and $I^2 >50\%$. Subgroup analysis by type of intervention showed no difference between the intervention and control groups, although there was a positive trend in favor of psychosocial intervention for improvement in PANSS score. Family-based intervention had a significant positive effect on quality of life.

Conclusion: Family-based interventions are effective in the management of schizophrenia, helping to improve quality of life, potentially reducing symptom burden and serving as an adjunct to health institution-based management.

Key words: Family intervention, schizophrenia, meta-analysis

INTRODUCTION

Schizophrenia is a severe mental illness, causing distress not only to the patients but also to their family members. Between 50% and 80% of patients with schizophrenia live with or have regular contact with family members, and rely on relatives for housing, emotional and financial support. Therefore, the quality of their relationships greatly influences patients' outcomes.¹ According to the American Psychiatric Association, schizophrenia is one of the top 20 causes of disability, with

a lifetime prevalence of approximately 0.7%.² Although there has been no nationwide study on the prevalence of psychiatric disorders in the country, a health survey conducted in the Philippines in 2005 by WHO noted that out of 10,075 participants, 0.4% were diagnosed to have schizophrenia.³

Mental healthcare in the Philippines faces continuing challenges including underinvestment, lack of mental health professionals and underdeveloped community mental health services. The aforementioned WHO survey estimated the ratio of mental health workers in the Philippines to be at 2 to 3 per 100,000 people.³ This number roughly translates to the availability of 0.52 psychiatrists and 0.07 psychologists per 100,000 inhabitants, as well as 4.9 mental

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health nurses per 100,000 population.¹ Patients' opportunities to access essential health care resources are limited mainly by economic hardship which seems to be a perpetual problem in the country.

While waiting for the National Mental Health Law which has yet to be enacted despite the urgings of various advocates, it is essential to formulate a multidimensional strategy that will aid in the care of patients with schizophrenia that is practical and attainable by the patient, their family and the community. Although treatments are available, mental health problems are frequently left unaddressed due to the stigma and discrimination attached to the disease resulting in poor health-seeking behavior among patients and their families. Poor health budget allocation, with only 3-5% of the total health budget being allocated to mental health care³, as well as a severe shortage of mental health care providers, are at the core of the weak mental health management system in the Philippines. Recent data from the Philippine Health Information System on Mental Health noted that among those surveyed, only 42% of patients with schizophrenia were given proper treatment.

To alleviate the situation, it is useful to identify appropriate family-focused interventions that are effective for schizophrenia. Armed with such information, family physicians may not only be able to provide more effective care to patients with the condition but may also minimize the emergence of various complications that can result from poor management and control of the disease. Used properly, family-focused interventions may confer a decrease in stress levels within the family as well as in the rates of relapse and subsequent hospitalizations, since acknowledgement and family involvement in patients' care are believed to be significant factors in strengthening and stabilizing their psycho-emotional wellbeing.

This meta-analysis was conducted primarily to determine the effectiveness of family-focused intervention among patients with schizophrenia compared with standard care in terms of improvement of symptoms.

METHODS

Study Design

This meta-analysis included randomized, parallel-group clinical trials involving humans as the clinical subjects.

Inclusion/Exclusion Criteria for Primary Studies

The authors included studies published in peer-reviewed journals indexed in PubMed, Research Gate and Google Scholar, as well as clinical trials registered in the Cochrane Central Register of Controlled Trials and those in the grey literature. They excluded non-comparative clinical trials, outcomes research or real-world data, animal experiments, reviews and case reports.

Participants

The participants in the included studies were clinically diagnosed to have schizophrenia based on the DSM-V criteria for schizophrenia and

have been appropriately evaluated and found to be eligible to receive the interventions. Patients with co-morbidities were excluded from the study.

Interventions

Clinical trials where the intervention described involved the family or was labeled as 'family therapy' were included. The main categories of family therapy approaches considered were: 1) structural or systems intervention; 2) strategic family therapy that is focused on family issues; 3) family-based therapy and its variants like educational and behavioral interventions; and 4) approaches that use family involvement in therapy as treatment partner or therapeutic ally. These family interventions may be delivered as monotherapy or in conjunction with other interventions including standard care.

The control intervention can be placebo or the currently accepted standard treatment. This is usually described in the literature as: 1) standard care or usual treatment; 2) pharmacologic interventions; or 3) patient-only directed educational, psychological or behavioral interventions. Both groups should have similar co-interventions and should not have received any other intervention that might interfere with the outcome of the study.

Outcomes

The primary outcome considered was reported improvement in the symptoms of schizophrenia based on the Positive and Negative Syndrome Scale (PANSS). The authors also looked at improvement in quality of life, family functioning and subjective experience of the treatment process as secondary outcomes.

Search Methods

For the electronic search, the authors used the combination of the terms "schizophrenia" AND ("family" OR "caregiver" OR "family-centered") AND "intervention". They then limited their search by study type to "clinical trials" OR "randomized controlled trials" OR "meta-analysis." They did not use other filters to maximize the yield of their initial search. They searched the following databases for primary studies: PubMed, Cochrane Central Register of Controlled Trials (CENTRAL) in the Cochrane Library, Research Gate, Google Scholar, Open Grey, Grey Literature Report of the New York Academy of Medicine and National Institute for Health and Clinical Excellence. They also reviewed the references listed in the included articles to determine whether there are available citations that might be included.

Data Collection and Analysis

Two reviewers independently carried out all aspects of study selection, 'risk of bias' assessment and data extraction. Any disagreement was resolved through discussion. Studies were identified based on the specified criteria and further assessed by two independent reviewers. The decision to include or exclude was crosschecked by each reviewer and any disagreement was addressed by discussion. They assessed the

risk of bias for each study using the criteria outlined in the Cochrane Handbook for Systematic Reviews of Interventions, according to at least the following domains:

- Bias arising from the randomization process
- Bias due to deviations from intended interventions
- Bias due to missing outcome data
- Bias in measurement of the outcome
- Bias in selection of the reported result
- Any other source of bias

However, studies were not excluded on the grounds of their risk of bias alone.

Data Extraction and Management

A data collection form was developed and made available in printed and soft copy (MS Excel). Study characteristics and outcomes data were extracted, which included the following:

- *Methods:* study design, number of study centers and location, study setting, withdrawals, date of study, follow-up
- *Participants:* number, mean age, age range, gender, severity of condition, diagnostic criteria, inclusion criteria, exclusion criteria, other relevant characteristics
- *Interventions:* intervention components, comparison, fidelity assessment
- *Outcomes:* main and other outcomes specified and collected, time points reported, costs, benefits
- *Notes:* funding for trial, notable conflicts of interest of trial authors, ethical approval

The authors further noted whenever outcome data from any of the included studies were reported in an unusable way.

Statistical Analysis

The authors used the RevMan 5 software for the analysis of data. The effect of the intervention was estimated using mean difference together with the appropriate associated 95% confidence interval for the PANSS score. The PANSS scores were calculated by first subtracting the 30 baseline points which correspond to the lowest score of one point on each of the 30 PANSS questions, thus establishing a valid 0 score at the bottom of the scale. This scale is a semi-structured clinical scale, which is well defined and standardized for typological and dimensional assessment of schizophrenic phenomena. Changes in the score were interpreted in the same way for each outcome. When considering treatment effects, they accounted for the risk of bias for the studies that contributed to each outcome. Heterogeneity was assessed by Chi-squared test and I^2 test and the random effect model (REM) was used to

synthesize data. Subgroup analysis was conducted according to type of intervention administered.

Grading the Quality of Evidence

The quality of evidence was assessed using the Grades of Recommendations Assessment, Development and Evaluation (GRADE) standard established by the WHO and international organizations. They assessed the certainty of the evidence (high, moderate, low and very low) using the five GRADE considerations (risk of bias, consistency of effect, imprecision, indirectness and publication bias).

Ethical Considerations

This study was registered with the Research Committee of the Philippine Academy of Family Physicians. It was also registered with AMOSUP Seamen's Hospital Manila where the investigators are affiliated. It was conducted in accordance with the guidelines in the Cochrane Handbook for Systematic Reviews of Interventions and reported following the Preferred Reporting Items for Systematic Reviews and Meta-analysis (PRISMA).

RESULTS

The initial database search yielded 1,794 studies. After removing duplicate articles, 683 studies were identified for further screening for relevance based on their titles and abstracts. Of these, 37 full-text articles were retrieved for further review. However, only three studies were considered eligible to be included in the meta-analysis. The entire selection process including specific reasons for study exclusion are summarized in Figure 1.

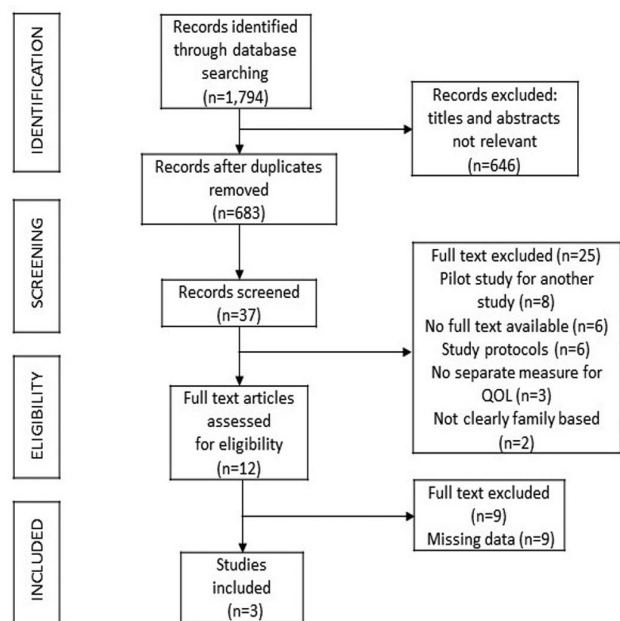


Figure 1. PRISMA diagram of studies reviewed, included and excluded.

Characteristics of Included Studies

All three studies included in this meta-analysis are randomized controlled trials, and their characteristics are summarized in Table 1. All participants are adults clinically diagnosed with schizophrenia based on the latest Diagnostic and Statistical Manual of Mental Disorders (DSM-V).

Study on Cognitive-Behavioral Therapy and Family Intervention

The study by Garety, et al.⁶ is a multicenter, randomized, controlled trial that investigated the effectiveness of cognitive-behavioral therapy

(CBT) and family intervention in decreasing relapse rates and improving symptoms and functioning in patients with non-affective psychosis who had recently relapsed using two pathways. Patients without carers were randomly assigned to one of two groups: treatment as usual or CBT plus treatment as usual. On the other hand, those with carers were assigned to one of three groups: treatment as usual, CBT plus treatment as usual or family intervention plus treatment as usual. The 20 CBT and family intervention sessions, which ran over 9 months and focused on relapse prevention, had no effects on rates of remission and relapse or on days in hospital at 12 or 24 months. In people with carers, CBT significantly improved delusional distress and social functioning. Therapy did not change key psychological processes.

Table 1. Characteristics of included studies.

Author	Year of Study	Intervention	Control	Study Setting	Study Participants	Outcomes
Guo, et al. ⁴	2010	Antipsychotic medication plus 12 months of psychosocial intervention consisting of psychoeducation, family intervention, skills training and CBT administered during 48 group sessions	Antipsychotic medication treatment only	China	1,268 randomized patients with early-stage schizophrenia	<p>Combined treatment (family intervention plus CBT) vs medication alone</p> <p>PANSS scores at 6 and 12 months: 37.3 vs 38.8 and 34.7 vs 36.4, respectively (F=0.41; p=0.81)</p> <p>Rates of treatment discontinuation or change due to any cause: 32.8% vs 46.8% (HR=0.62; p<0.001)</p> <p>Quality of life based on SF-36 domain scores at 12 months:</p> <ul style="list-style-type: none"> Physical functioning: 95.2 vs 94.9 (F=0.12; p=0.87) Role-physical: 78.1 vs 73.4 (F=5.13; p=0.006) Bodily pain: 89.9 vs 89.3 (F=2.80; p=0.06) General health: 71.3 vs 67.9 (F=11.09; p<0.001) Vitality: 66.7 vs 60.5 (F=5.33; p=0.005) Social functioning: 86.5 vs 85.0 (F=1.00; p=0.37) Role-emotional: 80.1 vs 72.1 (F=3.98; p=0.02) General mental health: 71.9 vs 70.2 (F=1.57; p=0.21)

Kumar, et al. ⁵	2020	Treatment as usual plus brief family intervention consisting of 2 sessions of psychoeducation (rapport building, education about the disorder, concept of expressed emotions, role of key relatives and family, drugs and their side effects, coping and communication skills, etc.) held 1 week apart followed by 6 group therapy sessions every 2 weeks for 3 months for key relatives	NCI or treatment as usual	India	66 patients and their key relatives were included in the study; 33 in each group (brief psychosocial intervention and NCI)	Brief psychosocial family intervention vs NCI Change in PANSS scores: 10.75 vs 7.87 (t=0.9002; p=0.3728) Change in WHO-QoL 100 scores: 5.06 vs 1.99 (t=2.336; p=0.0240)
Garety, et al. ⁶	2008	Two pathways Patients without carers: treatment as usual or CBT plus treatment as usual Patients with carers: treatment as usual, CBT plus treatment as usual or family intervention (enhanced communication, discussion of up-to-date information about psychosis, problem-solving, reducing criticism and conflict, improving activity, and emotional processing of grief, loss and anger) plus treatment as usual	Treatment as usual	London and East Anglia	301 patients and 83 carers	Family intervention vs treatment as usual Participants with partial or full remission, without further relapse: 70.4% vs 71.4% Months in remission at 12 and 24 months: 7.48 vs 8.79 and 9.93 vs 10.00, respectively Days in hospital at 12 and 24 months: 29.67 vs 35.62 and 30.33 vs 13.88, respectively Family intervention vs CBT Participants with partial or full remission, without further relapse: 70.4% vs 66.7% Months in remission at 12 and 24 months: 7.48 vs 7.85 and 9.93 vs 9.96, respectively Days in hospital at 12 and 24 months: 29.67 vs 21.07 and 30.33 vs 14.07, respectively PANSS Total, effect of intervention vs control at 12 and 24 months: -4.26 vs -1.53 and -3.03 vs -0.03, respectively SOFAS, effect of intervention vs control at 12 and 24 months: 1.90 vs 2.77 and 2.13 vs 2.42, respectively EQ-5D, effect of intervention vs control at 24 months: -5.91 vs -4.68

CBT, cognitive behavioral therapy; EQ-5D, five-dimensional EuroQol instrument; HR, hazard ratio; NCI, non-specific control intervention; PANSS, Positive and Negative Syndrome Scale; SF-36, 36-Item Short Form Health Survey; SOFAS, Social and Occupational Functioning Assessment Scale; WHO-QoL 100, World Health Organization Quality-of-Life 100 Scale.

Study on Pharmacotherapy with Psychosocial Intervention

The study by Guo, et al.⁴ focused on the relative effects of atypical antipsychotic drugs and conventional agents on quality of life and psychosocial functioning in patients with early-stage schizophrenia. This 12-month, prospective observational, multicenter trial enrolled 1029 subjects diagnosed with schizophreniform disorder or schizophrenia within 5 years of study initiation. The patients were on monotherapy with one of the following medications: chlorpromazine, sulpiride, clozapine, risperidone, olanzapine, quetiapine or aripiprazole. Psychosocial intervention for patients assigned to the combined treatment group consisted of psychoeducation, family intervention, skills training and CBT, administered according to a detailed treatment manual designed by the principal investigators. The family intervention included an introduction into the program, a discussion of treatment goals and the role of the family in the patient's management, sharing of coping and problem-solving strategies, and encouragement of family communication. In this study, comparisons with pharmacotherapy alone showed a lower risk of any-cause discontinuation with combined treatment. The combined treatment group also exhibited greater improvement in insight, social functioning, activities of daily living and quality of life. A significantly higher proportion of patients receiving combined treatment obtained employment or accessed education.

Study on Treatment as Usual with Psychosocial Intervention

The third included study, published by Kumar, et al.⁵ followed a single-blind, randomized, controlled trial design for 12 months at a tertiary hospital in North India. The investigators assessed the efficacy of using a brief psychosocial intervention (BPI) in addition to treatment as usual in patients with schizophrenia and their carers. The subjects comprised 66 patients and their key relatives, who were randomly allocated to either the BPI group or the non-specific control intervention group (33 in each group). The family intervention consisted of rapport building, education about the disorder (biological

basis, treatability, clarifications of myths/misconceptions, etc.), concept of expressed emotions and their role in outcome, role of key relatives and family, information about drugs and their side effects, compliance issues, information on access to clinical resources, problem-solving techniques/skills, and coping and communication skills. The two psychoeducation sessions were followed by six group therapy sessions for the key relatives every 2 weeks within a period of 3 months, each lasting for 60 to 90 minutes. There was a statistically significant reduction in burden of care and improvement in the quality of life of relatives as well as in the quality of life of patients in the BPI group. Among people with carers, CBT significantly improved delusional distress and social functioning. However, there was a lack of effect of family intervention on relapse, which the authors proposed may be attributable to the low overall relapse rate in this patient population.

Risk of Bias

Most of the studies included in this meta-analysis demonstrated an unclear risk for performance bias, attrition bias, reporting bias and other biases (Figures 2 & 3). This implies that good methods may have been used but were not well reported. However, it is significant to note that two out of three studies were observed to have performance bias. In Kumar, et al.⁵ they reported to allocate participants using a single-blind method which may affect the actual outcomes. Similarly, the study of Garety, et al.⁶ was associated with an unclear risk for performance bias as they included 32 patients with carers who initially refused to participate in the study but were subsequently offered to join the program under the no-carer pathway.

Strength of Evidence

The strength of evidence of the included studies based on the GRADE framework are summarized in Table 3. All three randomized, controlled trials showed low to moderate risk of bias in terms of the primary outcome, which is improvement in the symptoms of schizophrenia based on PANSS scores. Precision, consistency and

Table 2. Effectiveness of family-focused Intervention based on change in PANSS score.

Study or Subgroup	Group	Intervention			N	Group	Control			Comments
		Mean	SD				Mean	SD	N	
Guo, et al. 2010 ⁴ - 6 mos	CT	37.30	0.80	512	MT	38.80	0.80	472	baseline vs 6 months, total scores	
Guo, et al. 2010 ⁴ - 12 mos	CT	34.70	0.50	406	MT	36.40	0.70	338	baseline vs 12 months, total scores	
Kumar, et al., 2020 ⁵	BPI	10.75	9.45	21	NCI	7.87	12.35	19	baseline vs 3 months, total scores	
Garety, et al. 2008 ⁶ - 12 mos	CBT+TAU	-5.90	6.44	109	FI+TAU	-6.44	-7.68	104	baseline vs 12 months, total scores	
Garety, et al. 2008 ⁶ - 24 mos	CBT+TAU	-0.03	3.69	106	FI+TAU	-3.03	7.56	103	baseline vs 24 months, total scores	

BPI, brief psychosocial intervention; CBT, cognitive-behavioral therapy; CT, combined therapy; FI, family intervention; N, number of participants; NCI, nonspecific control intervention; PANSS, Positive and Negative Syndrome Scale; SD, standard deviation; TAU, treatment as usual.

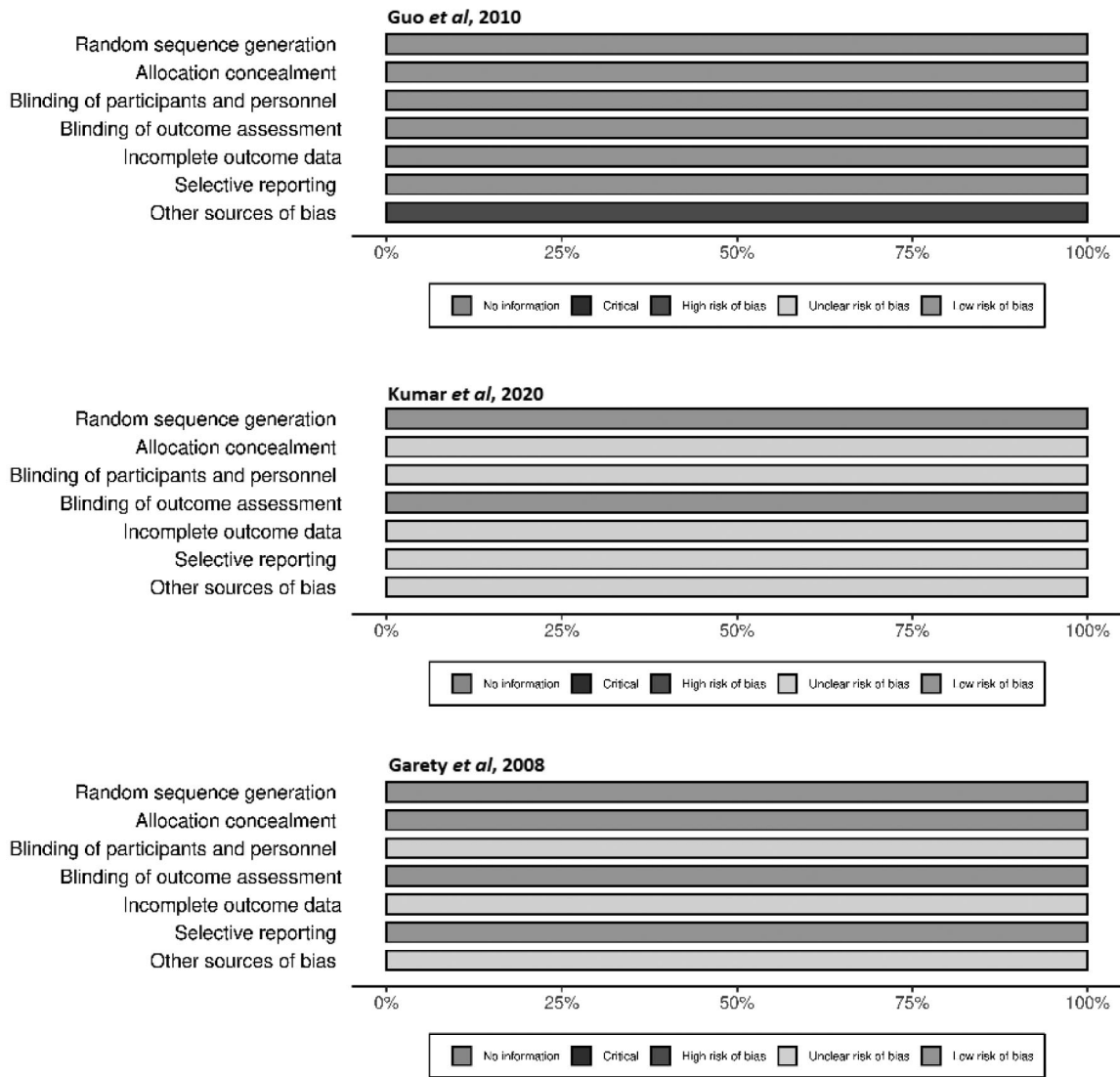


Figure 2. Individual risk of bias assessment.

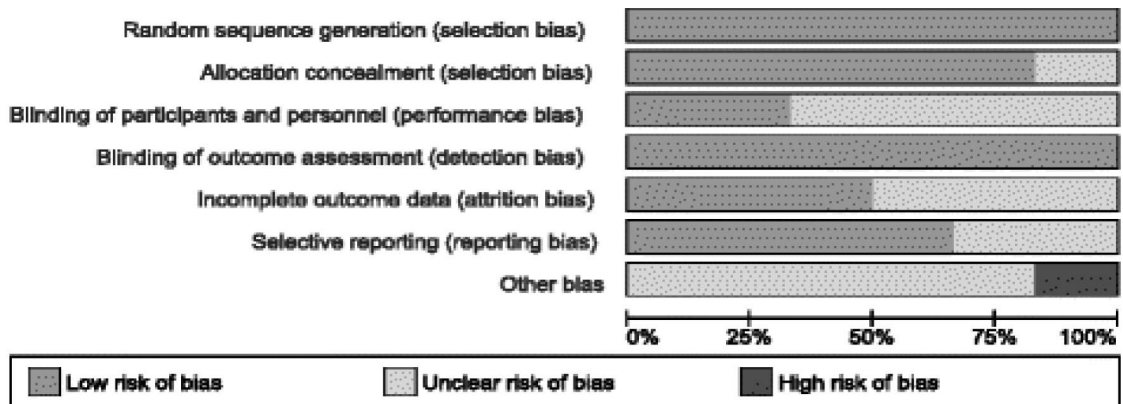


Figure 3. Overall risk of bias assessment.

applicability of recommendations to the target population were moderate to high. Publication bias is judged to be minimal. While different outcome measures were used to estimate quality of life in the studies reviewed, the results obtained were consistently statistically significant, particularly in the medium to long term.

Improvement in Symptoms

Effect on PANSS Score

Overall, from the three included articles, outcomes from a total of 2190 respondents were analyzed: 1154 in the intervention group and 1036 in the control group. As presented in Figure 4, the analysis identified an overall size effect of -1.10 (95% CI, -2.23 to 0.08). The combined results revealed a greater change in PANSS score in the intervention group albeit not statistically significant. This was driven by 3 out of 5 analyses favoring intervention. Two analyses showed a non-statistically significant difference between control and intervention. Notably, results showed a large heterogeneity among the included studies ($\chi^2 = 417.93, p < 0.0001; I^2 = 99\%$).

Impact on Quality of Life

Improvements in quality of life represent evidence of a good treatment outcome for patients with schizophrenia according to Guo, et al.⁴ Improved quality of life outcomes in the combined treatment group were demonstrated not only in the mental health domains but also in physical health domains, suggesting that combined treatment

may afford the best combination of effectiveness and improved quality of life.

According to Kumar, et al.⁵ there is a statistically significant improvement in the quality of life of patients in both groups (BPI and non-specific control intervention). Increased awareness, availing support from all possible resources, and reduced expression of negative emotions toward their patients might be the key determining factors for these beneficial outcomes in the patients.

Based on the study by Garety, et al.⁶ having a carer may improve the response to a psychological intervention which significantly improves the quality of life of the patients and also benefits social functioning whether from CBT or family intervention.

The use of different outcome indicators in the various trials, specifically SF-36, WHO-QoL 100 and EQ-5D in the studies by Guo, Kumar and Garety, respectively, precludes direct comparisons due to lack of a common statistic. All quality-of-life results included in this analysis are summarized in Table 1.

Family Functioning and Subjective Experience of Treatment

No clear data could be extracted from any of the three studies on the other secondary outcomes of interest, namely, family functioning and patients' subjective experience of the treatment process.

DISCUSSION

Mental disorders are becoming increasingly prevalent but remain poorly understood,⁷ making their management difficult. This meta-

Table 3. Summary of key outcomes and strength of evidence.

Outcome	Study Design: No of Studies	Strength of Evidence using GRADE
Primary outcome		
Symptom improvement	RCT: 3	Moderate
Secondary outcomes		
Quality of life	RCT: 3	High
Family functioning	NA: 0	Insufficient
Subjective experience of treatment	NA: 0	Insufficient

GRADE, Grading of Recommendations, Assessment, Development and Evaluations framework; RCT, randomized, controlled trial.

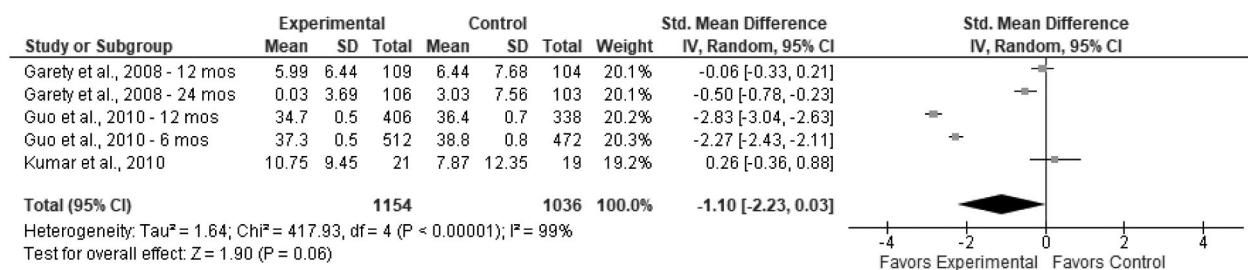


Figure 4. Effectiveness of family-based intervention based on change in PANSS score.

analysis was conducted to determine the effectiveness of family-focused intervention among patients with schizophrenia in terms of symptoms improvement and psychoeducation, with a view to improve quality of life as a consequence. Based on the included studies, it can be inferred that family-focused interventions, specifically psychoeducation, may be effective in improving symptoms among adults with schizophrenia. Upon analysis of the three studies pertaining to the improvement of symptoms as measured by the PANSS score, the combined results were noted to favor family intervention over standard treatment regimens, though not statistically significant.

In the context of a large medication trial, the authors have found data suggesting that regardless of the patient's symptoms, having a supportive "family," able to work collaboratively with the treatment team from the onset of treatment through stabilization, may improve outcomes. Conversely, in the absence of a supportive family, patients have a tendency not to stay on their medication or remain in treatment even in well-staffed settings. The strength of evidence for symptom improvement and quality of life in response to family intervention range from moderate to high, according to GRADE criteria. These data are consistent with the recent schizophrenia guidelines for family education and psychoeducation.

Patients with schizophrenia manifest debilitating impairments in social and occupational functioning. Simultaneously, their family members are often faced with their own challenges.⁸ Aside from the stigma of having a relative with mental illness, they are burdened with considerable responsibility and must make significant adjustments to help manage the illness and to support the person with schizophrenia. Knowledge of effective coping strategies and problem-solving skills aid in protecting the affected family member against a relapse.⁹ Moreover, the significant others play critical roles in ensuring compliance with treatment and making appropriate referrals to the attending physician when symptoms of psychosis appear. In most situations, physicians also rely on the history provided by family members to formulate their plan of management.

Family intervention may play a significant part in the management of patients with schizophrenia in collaboration with their physician. Family members can create an environment that is therapeutic for a relative who has schizophrenia, since their physical and social interactions often greatly affect the severity of the patients' symptoms and their eventual recovery.¹⁰ A positive relationship coming from the family and significant others gives the patient a reliable source of information, sympathy, encouragement and hope, all of which are essential for managing the disease.¹¹ Thus, it may be important that mental health services promote the participation of relatives in psychoeducational interventions, helping to build a proper family emotional environment that benefits the caregivers, patients and their family relationship.

One major limitation of this study is that like most systematic reviews and meta-analyses, it is based on summary data extracted from publications. This inevitably limits the range and scope of analyses that can be performed. Furthermore, information on some of the secondary outcomes of interest, which should be considered by clinicians handling patients with schizophrenia in actual practice, are not explicitly included in the studies analyzed.

CONCLUSION AND RECOMMENDATION

The findings of this meta-analysis suggest that family-based interventions may be effective in the management of schizophrenia in daily practice. In particular, various family intervention approaches have been shown to help improve quality of life and potentially reduce the burden of symptoms on patients and their family members. They also serve as an important adjunct to conventional health institution-based management.

Based on the evidence gathered, the authors believe that family practitioners, as the usual point of contact of patients with mental health disorders with the healthcare system as well as their long-term case managers, may routinely incorporate well-proven family-based techniques in their plan of management for cases of schizophrenia. They also encourage further research on this topic to be conducted locally to strengthen treatment recommendations for the Philippine population.

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