Non-pharmacological interventions for caregivers of patients with schizophrenia: A meta-analysis

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ABSTRACT

It has been estimated that about 50–80% of patients with schizophrenia live with or closely contact with their caregivers, and rely on them for housing, and emotional and financial supports. Caregiving experience is usually described as stressful for their caregivers. Non-pharmacological interventions seem to be beneficial to improving life quality. However, there is still no meta-analysis focused on this topic to give an overview. We searched the electronic databases including PubMed, EMBASE, CINAHL, Cochrane Library and China National Knowledge Infrastructure, respectively from the beginning of database to July 2015 for all the randomized controlled trials evaluating the caregiver interventions. Continuous data were expressed mean differences (MD) with 95% confidential intervals (CIs). Standardized mean difference was planned to express, if different scales were used to measure the same outcome. We pooled the results using a random-effect model. As a result, nine studies met the inclusion criteria, comprising 608 randomized participants. In which, 321 participants were in interventional group, while 287 participants were in control group. Concerning the care burden, there was significant difference found between non-pharmacological interventions and control groups ($n = 290$, MD -2.10, 95% CI -3.46 to -0.74, $P = 0.002$; level of heterogeneity $\tau^2 = 1.81$, $\chi^2 = 62.13$, d$f = 3$, $P < 0.00001$, $I^2 = 95\%$). However, no differences were found in family support, family functioning and satisfaction. Of note, our meta-analysis demonstrated the efficacy of non-pharmacological interventions for caregivers of schizophrenia, and supported the application in the clinical practice. However, all the conclusions should be explained cautiously and further confirmation is required by well-designed trials with large sample.

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1. Introduction

Schizophrenia is a severe mental illness, mainly characterized by the abnormal social behaviors, such as false beliefs, unclear or confused thinking, auditory hallucinations, reduced social engagement and emotional expression (Howes and Murray, 2014). The lack of insight is the crucial point for the diagnosis (Palaniyappan et al., 2011). According to ICD-10 criteria, the diagnosis of schizophrenia is mainly based on the self-reported experiences of the patients and observed behavior reported by others like their caregivers (Jakobsen et al., 2005). Moreover, caregivers also play an important role in the clinical rehabilitation of patients with schizophrenia. Therefore, the issue of caregivers should not be neglected in the field of schizophrenia.

Actually, the caregiving experience is generally described as

stressful for their caregivers (Chan, 2011). It has been estimated that about 50–80% of patients with schizophrenia live with or closely contact with their caregivers, and rely on them for housing, and emotional and financial supports (Saunders, 2003). It has been estimated the quality of caregiving greatly influences the outcomes of patients with schizophrenia, as well as the burden, coping, satisfaction, social support, expressed emotions and psychological morbidity of their caregivers (Kulhara et al., 2012). Moreover, some studies have found a positive correlation between the severity of disease and the burden of caregivers (Awad and Voruganti, 2008). Moreover, stigma around mental illness also contributed to caregiver burden (Tan et al., 2012).

Some pharmacological interventions on the patients with schizophrenia have been suggested to be beneficial to improving the care burden (Tardy et al., 2014). On the other hand, non-pharmacological interventions for caregivers have been regarded as the potential methods for relieving the burden of caregivers in the other diseases like stroke (Legg et al., 2011). The contents of non-pharmacological interventions mainly include

psychoeducation (Sin and Norman, 2013), mutual support (Chien and Norman, 2009), counseling intervention (Shuler, 2014), telephone intervention (Wessling et al., 2006) and internet intervention (Haker et al., 2005). However, there is still no meta-analysis focused on this topic to systematically focus on these interventions.

The possible mechanisms of non-pharmacological interventions are summarized as mental health, emotional interactionandproviding information for the caregivers. Our work aims to determine the efficacy of non-pharmacological interventions on caregivers of patients with schizophrenia, via measuring the burden, coping, social support, satisfaction of their caregivers. Because they are the common outcomes measured in the current clinical trials for caregivers.

2. Methods

2.1. Data sources

We searched the electronic databases including PubMed, EMBASE, CINAHL, Cochrane Library and China National Knowledge Infrastructure, respectively from the beginning of database to July 2015 for all the randomized controlled trials. The search terms in English and their Chinese equivalents were schizophrenia, caregiver(s), carer(s), non-pharmacological intervention, cognitive-behavioral support, mutual support, counseling, psychoeducation and psychosocial support. Concerning the other sources, we looked through trial protocols in order to identify unpublished data. Conference abstracts and reference lists of related reviews were screened to identify additional trials.

2.2. Study selection and data extraction

We would include the randomized controlled trials (RCTs) with either parallel or cross-over design. The participants must be the caregivers of patients with schizophrenia. The interventions for caregivers must be non-pharmacological interventions, e.g. psychoeducation, counseling and mutual support, in comparison with non-intervention. The trials, in which the interventions were given to both of schizophrenia patients and their caregivers, were excluded in our study. The primary outcomes were the changes in care burden score. The secondary outcomes included coping, satisfaction, family functioning and depression. All the outcomes were measured at the endpoint. Two review authors (LC and JL) independently evaluated the possible studies. Another author (JZ) would be consulted, when any disagreement was found. Thereafter, we used the checklists to independently extract details including study design, characters of study population, number of randomized participants, intervention and main outcomes. The risk of bias (random sequence generation, allocation concealment, patient blind, assessor blind, drop-out or withdraw, selective report) was evaluated as low risk, unclear risk, or high risk.

2.3. Data synthesis

Continuous data were expressed mean differences (MD) with 95% confidential intervals (CIs). Standardized mean difference was planned to express, if different scales were used to measure the same outcome. When there were multiple parallel interventional groups, we combined all relevant experimental groups of the study into a single group to compare with control group. Concerning the missing standard deviations for changes from baseline, we calculated them with CIs, standard errors, t or P valuesfor differences in means. When the levels of significance were reported (such as $P < 0.05$) rather than exact P values, we would use a conservative approach to take the P value at the upper limit (e.g. for $P < 0.05$ take $P = 0.05$, for $P < 0.01$ take $P = 0.01$), according to the principles provided in Cochrane handbook (Higgins and Green, 2011). We pooled the results using a random-effect model. When there was significant clinical heterogeneity, we gave a descriptive summary of the results. The publication bias was to be analyzed with a funnel plot if more than 10 studies were found. Subgroup analysis was carried out based on the different interventions on caregivers.

3. Results

3.1. Description of study

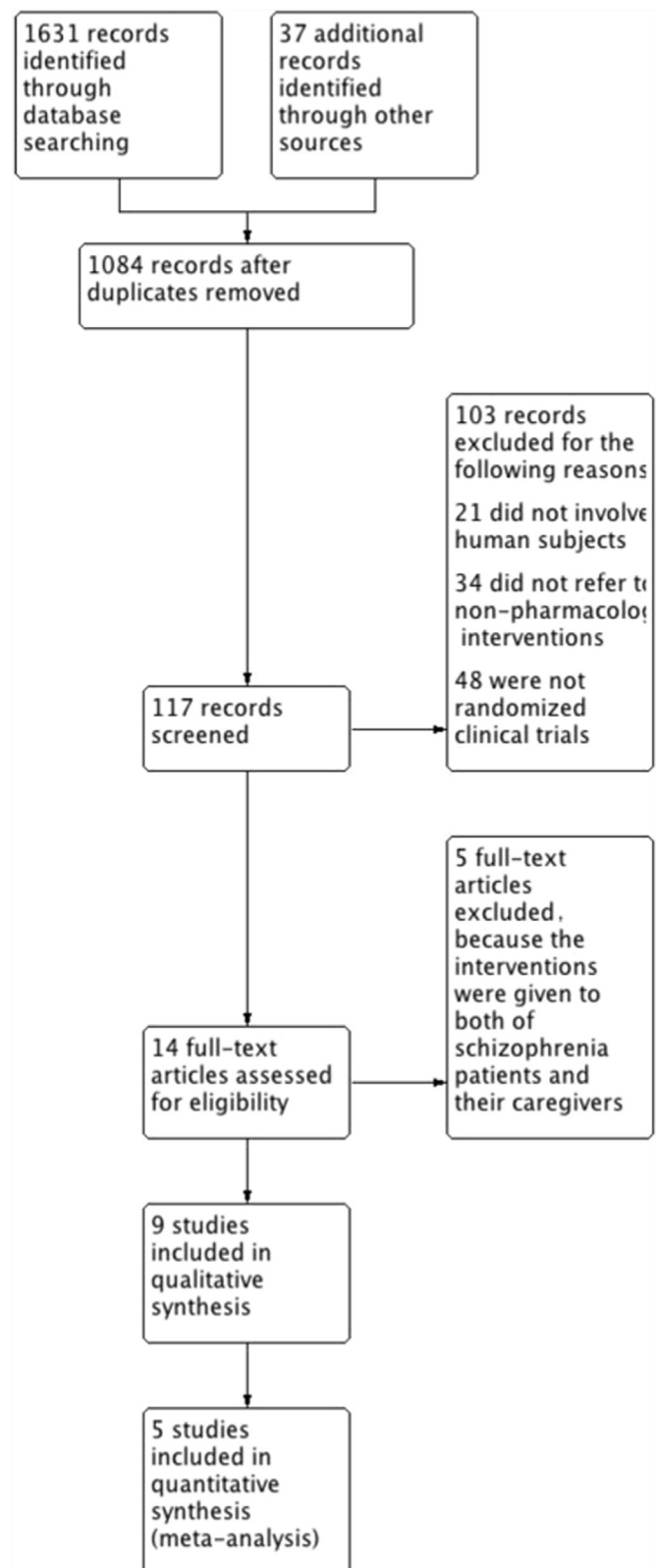A total of 1631 references were found through database

Fig. 1. Flow diagram of the selection process.

searching, while 37 records were detected in the other sources. After excluding duplicates, there were 1084 references identified (Fig. 1). By screening of titles and abstracts, the full-text of 14 studies were obtained and assessed for eligibility. As a result, nine studies met the inclusion criteria, comprising 608 randomized participants (Szmukler et al., 1996; Chou et al., 2002; Chien et al.,