The Effectiveness of Cognitive Behavioral Therapy on Schizophrenia in China: A Systematic Reveiw

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ABSTRACT

Schizophrenia is a long-term, lifelong chronic disease that must be treated for a long time. In recent years, cognitive-behavioral therapy (CBT) in patients with schizophrenia has attracted clinical attention. However, it is studied limited in non-western culture. Schizophrenia has become a prominent problem in China. However, it still remains unclear to what extent cognitive behavioral therapy can work effectively in the Chinese psychiatry hospital among schizophrenia patients. Therefore, in the current study, we summarized the most up-to-date evidence on the effectiveness of cognitive-behavioral therapy in patients of schizophrenia in China. A systematic review was conducted and eight studies were finally included. It has been shown that a brief format of CBT and mindfulness-psychoeducation can be a promising option to supplement the usual care of schizophrenia in China. More clinical trials are still needed to provide statistical synthesis in this field.

Keywords: *schizophrenia, China, cognitive behavioral therapy, systematic review*

1. INTRODUCTION

Schizophrenia is a group of chronic diseases with unknown etiology, mostly in young adults with slow or subacute onset, clinically often manifested as a syndrome with different symptoms, involving sensory perception, thinking, emotion and behavior, and other disorders as well as in coordination of mental activities. The definition of schizophrenia has changed all the time. For the most updated definition, DSM-5 listed five characteristic symptoms of schizophrenia: delusions, hallucinations, disorganized speech, catatonic behaviors, and negative symptoms. The general presentation of schizophrenia patients is hallucinations and delusions. As the most possible consequence, these symptoms can devastate the social functioning of the patients in a pervasive and persistent manner. Schizophrenia will gradually develop into mental decline, which is the most serious consequence of schizophrenia, the patient is not interested in anything, also does not think forward, even the family will eventually not take the initiative to communicate and change[1].

At present, the epidemiological survey data of different populations around the world show that the prevalence of this disease in different populations, different countries, and different regions is relatively similar, which is about 1%. According to the World Health Organization, schizophrenia affects more than 23 million people around the world, which means that 23 million families have been checked to suffer from this kind of mental illness. The lifetime prevalence of schizophrenia is between 3.8 and 8.4 percent [2]. Schizophrenia occurs often in young adults. The course of the disease is generally protracted, showing repeated attacks, aggravation, or deterioration, and some patients eventually appear recession and mental disability, but some patients can remain cured or basically cured after drug treatment and psychological treatment.

Schizophrenia is a long-term, lifelong chronic disease that must be treated for a long time. At present, the most commonly used treatment is medical treatment including chlorpromazine, perphenazine, trifluoperazine, fluphenazine, haloperidol, clozapine, sulpiride, penfluridol, and other drugs. Besides, physical therapy, such as electrotherapy and electroconvulsive therapy, is also adopted in the treatment. However, there is controversy concerning the effect of medical and physical treatment being the dominant means in the

treatment of schizophrenia [3]. This hesitation mainly concerned the detrimental side effect of drugs (e.g., the potential dangers to white blood cells) and the invasive nature of electroconvulsive therapy. Therefore, other supplementary therapies, such as psychological therapy, could be of potential to enlarge and maintain the medical and physical treatment.

In recent years, cognitive-behavioral therapy in patients with schizophrenia has attracted clinical attention. Meta-analysis supports the efficacy of cognitive-behavioral therapy (CBT) for schizophrenia in western cultures [4]. In cognitive-behavioral therapy, clinicians help patients work on their mistrust of others and sensitivity over suspicions by using traditional cognitive reconstructions on their hallucinations and delusions. Further, by establishing collaboration in the relationship with the patients, social skills will be trained throughout the therapy therefore patients will be expected to have basic communication with others and restore part of their social functioning. Cognitive-behavioral therapy, as an evidence-based treatment, can have the potential to supplement the basic treatment of schizophrenia and can be integrated into the treatment plan in the usual care.

Schizophrenia has become a prominent problem in China, so we need to study the treatment of schizophrenia in China. However, it still remains unclear to what extent cognitive behavioral therapy can work effectively in the Chinese psychiatric hospital among schizophrenia patients. A proper summary of the updated evidence can have benefits to the clinical practice and help clinicians decide the treatment options. Therefore, in the current study, we will summarize the most up-to-date evidence on the effectiveness of cognitive-behavioral therapy in patients of schizophrenia in China.

2. METHOD

The current systematic review followed the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) [5].

2.1. Identification and selection of studies

A comprehensive search in four international databases: PubMed, PsycINFO, and Medline was performed up to September 2021 and updated in October 2021. The search terms combined Mesh terms and text words (wildcards were used if necessary) indicative of (1) schizophrenia, (2) cognitive-behavioral therapy, and (3) China. The full search string can be found in table 1 of the supplementary material. Reference lists of relevant reviews and included articles in the current review were examined. The articles citing the included articles were also examined in case of missing studies beyond the period in which the initial search was carried out.

Studies were included eligible if the following criteria were fulfilled:

a) The primary focus should be the treatment of schizophrenia in China;

b) only studies with participants situated in the mainland of China, HongKong, Macau, and Taiwan were included;

c) the intervention should be explicitly specified as cognitive behavioral therapy;

d) the study should be designed as clinical trials;

e) publications in Chinese or English were all included.

Unpublished data of any form including dissertations, conference proceedings were excluded. When multiple publications with available data from the same study cohort were available, the publications with the longest period of follow-up length were included. If equal, the studies with the largest number of total participants were included.

Zotero was used for importing the initially identified records from the databases and for removing duplicates. Title/Abstract screening, full-text screening, and data extraction of records were conducted by two researchers (Han Zhou and Haining Cui) independently. Disagreements were resolved with the help of a senior reviewer.

2.2. Data extraction

The following information was extracted:

(1) Identification: name of the first author, publication year; (2) Study population: sample size, gender distribution, age; (3) Intervention detail: Hospital and home, CBT and medication, and follow-up details if applicable.

2.3. Qualitative synthesis

For each intervention implemented in the Chinese universities, we determined the following features: the psychotherapeutic orientation (CBT), the format to deliver the intervention (group, self-help, blended, etc), and the quality of the intervention (manual-based, delivered by professionals). A qualitative synthesis based on these features was also conducted.

3. RESULTS

A total of 40 records were identified in the search. After removal of other treatment, duplicate, different population, and different outcomes, the Titles, and Abstracts of 28 articles were screened for eligibility. Full texts of eight articles were included. The major reasons for exclusion were that only include unrelated

treatment(n=14), or focused on a different study population (e.g. population in other countries etc.; n=4), or resulted in different outcomes(n=1),or included duplicate(n=1). Then, all eight studies were included in the qualitative synthesis which is presented below.

The study of Li[6], it aimed to compare the efficacy of CBT and supportive therapy (ST) for patients with schizophrenia in China. The research uses a multicentre randomized controlled, single-blinded, parallel-group trial enrolled a sample of 192 patients with schizophrenia. All patients were offered 15 sessions of either CBT or ST over 24 weeks and followed up for an additional 60 weeks. Both CBT and ST combined with medication had benefits on psychopathology, insight, and social functioning of patients with schizophrenia. CBT was significantly more effective than ST on overall, positive symptoms and social functioning of patients with schizophrenia in the long term.

3.1. Effectiveness of Brief CBT and group CBT

Liu's study[7] aims to offer a preliminary assessment of the effectiveness of a brief CBT intervention concentrating on relapse prevention and positive symptom management in a Chinese first-episode schizophrenia (FES) group. Eighty outpatients with FES (as defined by the DSM-IV), aged 16 to 45, and using an atypical antipsychotic were enrolled in this randomized controlled experiment. Patients were randomly assigned to either 10 sessions of individual CBT (intervention group) or TAU alone (control group) (control group). Symptoms, relapse, hospitalization, insight, and social functioning were assessed at baseline and then again after treatment. When compared to the control group, patients in the intervention group exhibited considerably better gains in positive symptoms, general psychopathology, and social functioning at 12 months, as well as significantly reduced rates of recurrence. Despite the fact that both groups' negative symptom and insight scores improved significantly from baseline, no group differences were discovered. This RCT shows that FES patients can benefit considerably from CBT aimed at relapse prevention and positive symptom management, with gains lasting for a year after therapy.

Guo [8]recruited a total of 220 individuals with schizophrenia from four Beijing districts to examine the benefits of brief CBT for Chinese patients with schizophrenia in the community. They were given either brief CBT plus therapy as usual (TAU) or TAU alone at random. Patients were evaluated by raters who were blind to group assignment at baseline, post-treatment, and at 6- and 12-month follow-ups. Results Patients who received brief CBT demonstrated greater improvement in overall symptoms, general psychopathology, insight, and social functioning at the post-treatment evaluation and 12-month follow-up. In total, 37.3% of those in the brief CBT plus TAU group experienced a clinically significant response, while only 19.1% of those in the TAU alone group experienced the clinical significant change (P = 0.003).

Group formate was also examined as identified in the current review. Researchers compare the feasibility and effectiveness of Group CBTp plus therapy as usual in clinical practice to psychoeducation group plus treatment as usual in Wong's 2019 study[9]. Both interventions consisted of seven consecutive weekly sessions, followed by a booster session four weeks later. Each group was made up of 48 out-patients and day-patients with schizophrenia spectrum illnesses. Patients who got group CBTp (n = 25) improved their delusions much more than those who received psychoeducation (n = 23). Nearly 61 percent of individuals in the CBTp group experienced a 50% drop in their illusion score.

3.2. Effectiveness of Mindfulness psychoeducation

The third wave of CBT is also identified in our reviewing process. Two studies were found on mindfulness psychoeducation to improve the social functioning and insight of schizophrenia patients[10,11]. A multisite randomized controlled trial with 107 out-patients with schizophrenia was done in Chien 2014, with 36 and 35 receiving 6-month mindfulness-based psychoeducation and a standard psychoeducation treatment, respectively, and 35 receiving routine care alone. When compared to the other two groups, the mindfulness-based psychoeducation group reported significantly better improvements in psychiatric symptoms, psychosocial functioning, insight into illness/treatment, and duration of hospital readmissions across 24 months [10].

Another multi-center randomized clinical trial conducted by the same research group with long-term follow-up aimed to examine the effects of a mindfulness-based psycho-education group intervention for adult patients with early-stage schizophrenia over an 18-month follow-up. A multisite randomized controlled trial with 107 out-patients with schizophrenia was done in Chien 2014, with 36 and 35 receiving 6-month mindfulness-based psychoeducation and a standard psychoeducation treatment, respectively, and 35 receiving routine care alone. When compared to the other two groups, the mindfulness-based psychoeducation group reported significantly better improvements in psychiatric symptoms, psychosocial functioning, insight into illness/treatment, and duration of hospital readmissions across 24 months. Over the 18-month follow-up, the mindfulness-based group showed significantly greater improvement in functioning (p = 0.005), duration of psychiatric re-hospitalizations (p = 0.007), psychotic symptoms (p = 0.008), and illness insight (p = 0.001) than the other two groups, with moderate to large effect sizes (Cohen's d = 0.49-0.98). The mindfulness-based

intervention led in significant increases in gray matter volume and density in brain regions related to attention and emotional control, according to additional MRI findings[11].

3.3. Integrated care for schizophrenia

In She 2017[12], the researcher established and evaluated a new model of "intensive-consolidation" two-stage integrated care (IC) for inpatients with schizophrenia. Chinese in patients with schizophrenia (n=170) diagnosed according to DSM-IV. They were randomly assigned to antipsychotic medication-alone (n=84) or two-stage IC (n=86) and followed up for 12 months. The IC approach involved intense treatment (antipsychotics with cognitive behavior therapy and rehabilitation treatment) while in the hospital and three-time consolidation treatments at clinics with three-month intervals. The risk of relapse in the IC group was significantly lower than in the medication-alone group (p=0.012); the IC group demonstrated considerable improvement in positive symptoms over time, as well as higher improvement in self-care and less aggressive behaviors (all p0.008). The data suggest the feasibility and effectiveness of the proposed two-stage integrated care model as an intervention for schizophrenia inpatients in the middle acute phase.

In another study [13], researchers designed a community-based comprehensive intervention incorporating cognitive behavioral therapy to test its impact on clinical symptoms, social functioning, internalized stigma, and discrimination among schizophrenia patients. A randomized controlled study was conducted with a control group (n=158) and an intervention group (n=169). The comprehensive intervention was provided to the intervention group (strategies against stigma and discrimination, psycho-education, social skills training, and cognitive behavioral therapy). Face-to-face interviews were given to the control group.

4. DISCUSSION

In the current review, we only identify eight relevant studies that examined CBT on the schizophrenia in Chinese population. It has been encouraging to find that CBT was applied in psychosis, although many questions still require further study. With this limited number of studies, we have found some evidence of the CBT working for the psychosis symptoms in the Chinese context.

CBT aims to support an individual in reducing their level of distress by recognizing and modifying their unhelpful interpretations, along with any unhelpful maintaining factors. We have learned about the effects and comparative results of CBT in these included studies. It is of note that CBT can facilitate adherence to the medication in the acute phase if the patients receive proper CBT in the first stage of the illness. Besides, we found that CBT can reduce the discrimination and the degree of psychological distress in the inclusions. These collectively indicated that CBT can be a useful intervention to supplement the first-line treatment of schizophrenia and help to improve their psychological competency.

Brief cognitive-behavioral therapy (CBT) is an emerging community-based treatment for schizophrenia; however, more research is needed, particularly in non-Western nations. Individual cognitive behavioral therapy for psychosis (CBTp) appears to be effective, but there is little evidence for presenting CBTp in a group setting or in the Asian context. In persons with persistent psychotic symptoms, group CBTp can be an effective supplementary psychological intervention for improving happy psychotic episodes, and it can be used in normal clinical practice.

Current psychosocial interventions in schizophrenia are evidenced to improve patients' illness-related knowledge, mental status, and relapse rate, but substantive benefits to patients, such as their functioning and insight into the illness, remain uncertain. Mindfulness-based psychoeducation appears to be a promising approach to treatment for Chinese patients with schizophrenia. For Chinese individuals with schizophrenia, mindfulness-based psychoeducation looks to be a promising therapy option. Adults with early-stage schizophrenia may benefit from a mindfulness-oriented psycho-education group intervention that has long-term effects on their functioning and mental health. Although psychoeducational programs for adults with schizophrenia have been demonstrated to prevent relapses, few studies have found significant improvements in patients' illness awareness and insight, functioning, symptom intensity, or hospital readmission rates.

In patients with schizophrenia, integrated treatment can lower the rate of relapse and improve personal and social skills. The data suggest the feasibility and effectiveness of the proposed two-stage integrated care model as an intervention for schizophrenia inpatients in the middle acute phase. The concept is especially useful for countries whose medical resources are concentrated in developed areas.

Some limitations should be mentioned. First, our results were limited by the small number of inclusions which inhibit further data synthesis, and also limit our generalization to other groups of characteristics than the population included in the studies. Secondly, the long-term treatment effect still warranted more attention. Although we've identified several well-designed longitudinal controlled trials, most of the inclusions were without proper follow-up. This limited us to make firm conclusions on the maintenance of the treatment effect.

5. CONCLUSION

Overall, we concluded that cognitive-behavioral therapy was used combined with the usual care to treat schizophrenia in China and can be a potential supplement to the first-line medication to help alleviate the discrimination and improve the adherence to the following treatment.

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