The effectiveness of a lay people led community psychiatric rehabilitation program in China: A randomized-control study

1. Introduction

Psychiatric rehabilitation also known as psychosocial rehabilitation has changed the service delivery for people with severe and persistent mental illness. It catalyzed the deinstitutionalization movement in American in early 1970s, moving psychiatric treatments from institution-based to communities. With accumulative evidence, community psychiatric rehabilitation has become the main service delivery model in the Western countries, such as United States, United Kingdom and Europe. In Asia, due to lack of resources and specialized trained rehabilitation professionals, community psychiatric rehabilitation, however, is still in the early stage of development (Balaji, et.al., 2012; Tse, Ran, Huang, Zhu, 2013). Tse, Huang, and Zhu (2013), in addressing Asia mental health care reforms, pinpoint that China has a population of 1.3 billion, with an estimate of 173 million Chinese citizens suffer from diagnosable mental disorders and of whom158 million have never received any treatment (Philips, Zhang, & Shi, 2009). Approximately 16 million Chinese citizens are having severe mental illness and this figure is expected to grow and most of these individuals go without treatment due to lack of community rehabilitation resources (Yu, Liu, & Ma, 2010). The insufficient manpower of mental health professional exacerbates the mental health care problem. Presently China has only 4,000 fully qualified, licensed psychiatrists (Xiang, Yu, & Sartorius, et. al., 2012) and has few professionally trained allied health workers such as rehabilitation counselors, social workers, occupational therapists, and rehabilitation psychologists to work with people with severe, persistent mental illness.

Community psychiatric rehabilitation has proven effective in supporting individuals and their families in recovering from mental illness (Mueser, Bond, Drake, & Resnick, 1998; Mueser, Corrigan, Hilton, et al, 2002; Mueser, Meyer, Penn, Clancy, Clancy, & Salyers, 2006; Penn & Mueser, 1996). The delivery of the evidence-based community rehabilitation services, however, requires health care workers to possess a set of specially trained knowledge and skills. In most developing countries, including China, do not have specially trained mental health personnel. “Task sharing” (Eaton et. al., 2001), a widely adopted strategy, has been used by developing countries to deal with the shortage of qualified mental health workers. The strategy uses lay health workers with appropriate training and supervision to provide access to evidence-based mental health care interventions. The effectiveness of lay people delivered community rehabilitation services, however, has yet to be demonstrated (Balaji, et.al., 2012). Like many developing countries, most mental health hospitals in China provide psychiatric services mainly focusing on symptom reduction with pharmacological treatments with little or no available community psychiatric rehabilitation services. The current pilot study sought to accomplish two goals. The primary aim of the study was to assess the feasibility of a lay people delivered community (LPD) psychiatric rehabilitation program. The second goal was to assess whether LPD community psychiatric rehabilitation program confers greater benefit than the control group for consumers’ social functioning and families’ psychological well-beings.

2. Methods

*2.1. Design*

We used a randomized controlled design to compare the efficacy of LPD community psychiatric rehabilitation to a community drop-in center control group. Participants were randomized to receive either LPD community psychiatric rehabilitation (12-week program) or drop-in center services. Assessments were conducted at baseline, post-treatment (3- month), and follow-up (6-month) by trained research assistants.

*2.2 Participants*

Participants were recruited from two different organizations in Chengdu, a major city in Sichuan, China. The West China Mental Health Center, a major mental hospital in Chengdu, provided a list of possible participants who had been discharged from the hospital during August 1, 2010 - July 31, 2012. The Yulin Community Health Center provided a list of residents in the community who have a diagnosis of mental illness. Each potential participant was interviewed with the Structured Clinical Interview for Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (SCID) for their eligibility of the study by psychiatrists or graduate students who were trained in SCID. After informed consent was obtained for each eligible participant, the participants were randomly assigned to either the LPD community psychiatric rehabilitation group or the drop-in center control group and baseline assessment was conducted.

One hundred and eight participants with a major diagnosis of schizophrenia were recruited for the study. Admission criteria for the study include: (1) having a diagnosis of schizophrenia or schizoaffective disorder; and (2) being between 16 and 60 years of age; and (3) not having a diagnosis of mental retardation or organic brain syndrome, or a primary diagnosis of substance dependence. The study was approved by the IRB of the West China Mental Health Hospital. Informed consent was obtained from the participants and their respective parents or guardians.

Only 101 participants completed the entire course of study. One participant dropped from the LPD community psychiatric rehabilitation group and six participants from the control group refused to continue in the study due to transportation problems. They did not differ from the rest of the sample in characteristics and functions. Thus, the community psychiatric rehabilitation group consisted of 57 participants and the control group had 44 participants.

*2.3 Assessment measures*

*2.3.1 Psychiatric symptom severity*

A Chinese version of the Positive and Negative Syndrome Scale (PANSS) (Kay et al, 1987) was used to measure psychiatric symptom severity. It is a structured clinical interview consisting of 30 items designed to assess severity of symptoms over the past week on a 7-point (1=Absent to 7=Extreme); higher scores indicate more symptoms severity. The PANSS Raters were trained to an inter-rater agreement of 80% on a series of videotapes for which “gold standard” consensus ratings had been determined by a group of experienced raters. PANSS subscales were used to measure negative symptoms (i.e., blunted affect, passive/apathetic social withdrawal, motor retardation, mannerisms and posturing), positive symptoms (i.e., delusions, hallucinations), and dysphoric mood (i.e., depression, anxiety, guilt, somatic concern). Reported psychometric properties of PANSS include Cronbach’s alpha of 0.73 on the positive scale, 0.83 on the negative scale, and 0.87 on the general psychopathology.

*2.3.2 Social functioning*

A Chinese version of the Personal and Social Performance Scale (PSP)(Juckel et al, 2008; Si et. al., 2011) was used to assess the participant’s social functioning. The PSP scale was developed based on the social functioning component of the DSM-IV social and occupational functioning assessment scale (SOFAS). The scale assesses four main areas of social functioning: socially useful activities; personal and social relationships; self-care; and disturbing and aggressive behaviors. Difficulty in each area is rated on a six-point scale: Absent; Mild; Manifest; Marked; Severe; or Very severe, with lower ratings indicate better social functioning. A global item ranging from 1 to 100 in ten-point intervals is rated by interviewer, where lower scores indicate poorer functioning. Si et. al., (2011) reported the psychometric properties of the Chinese version PSP (PSP-CHN). The internal consistency (Cronbach's alpha = 0.84) and the inter-rater reliability (kappa value = 0.82, ICC = 0.94 for PSP total score) was good. The test–retest reliability was high (intraclass correlation coefficient (ICC) of 0.95). Thus he Chinese

version of the PSP is a convenient and valid instrument to assess the personal and social functions of people with schizophrenia.

*2.3.3 Cognitive functioning (Need more information)*

The WSCT is a measure of abstract conceptual skills, cognitive flexibility and ability to test hypotheses and utilizes error feedback. It requires sorting 128 cards that depict colored numbered shapes into four categories using accuracy feedback given after each trial. When 10 consecutive cards are sorted correctly, the criterion for correct categorization is changed. The test continues until six categories have been completed or until the entire set of 128 cards has been sorted.

*2.3.4 Family functioning (Need more information)*

A Chinese version of the Family Burden Scale of Disease (FBS) was used to assess family burden. The FBS scale has 24 items spread across six factors: economic burden, impact on daily activities, impact on social life, impact on free time, impact on physical health, and impact on mental health. Ratings of 24 items are made a 3-level from 0 to 2, with the higher scores indicating more burdens. The Conbach’s alpha coefficient was 0.874 and split-half reliability was 0.939 for FBS.

A Chinese version of the Family APGAR Index was used to measured family function. The family APGAR Scale scores for five dimensions of family function: adaptability, partnership, growth, affection, and resolution. The scores of scale assess the overall satisfaction with family life and provide a composite measure of perceived family functioning. The total score ranges from 0 to 20. The higher the score, the higher the level of perceived family function. Cronbach’s alpha =0.86 was reported.

2.4 Treatments

*2.4.1* *Development of the LPD Community Psychiatric Rehabilitation Program*

Several strategies had been used in the development of the LPD community psychiatric rehabilitation program, namely literature review, expert consultation, and group discussion. Through an extensive literature review, we have identified several models that would be relevant to the current demonstration project. These models include the Illness Management and Recovery (Mueser, Corrigan, Hilton, et. al., 2002), Case Management (Mueser, Bond, Drake, & Resnick, 1998), Psychosocial Rehabilitation (Anthony, Cohen, Farkas, & Gagne, 2002) and the Club House Model (Cella, Besancon, & Zipple, 1997). With input from our consultant (CL) and several discussion meetings among the community psychiatric rehabilitation team members (authors of the article), the structure and contents of the LPD community psychiatric rehabilitation program were formed. Underlying practice principles of our LPD community psychiatric rehabilitation program were drawn from several lines behavioral science research, which found that people are more apt to change when they are in the context of a positive relationship; when they set their own goals; are taught skills; receive support; have positive expectations or hope for the future; and when they believe in their self efficacy (Anthony, Cohen, Farkas, & Gagne, 2002; Bustillo, Lauriello, Horan, & Keith, 1999; Penn & Mueser, 2001). All of these change elements evidenced from the behavioral science research literature become critical ingredients for the LPD community psychiatric rehabilitation services. With these guiding principles, we identified core components for the LPD community psychiatric rehabilitation program. These core components include: psychoeducation to consumers and families (about mental illness, its treatment, and recovery), medication management (use cognitive-behavioral approaches to enhance medication adherence), case management (developing a SMART goal-oriented recovery plan), social skills training (strengthening social support and community re-integration), and stress management training (for the management of stress and persistent symptoms), coping and problem solving training (use counseling, CBT, problem solving skills to deal with personal issues and problems that would interfere with the recovery plan). Table 1 outlines the modules and contents of the LPD community psychiatric rehabilitation program.

< Insert Table 1 Here >

Table 1 Overview of the Topics for the LPD Community Psychiatric Rehabilitation Program Modules

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| --- | --- | --- | --- |
| Module | Topic | Goals | # of 60-min Sessions |
| 1 | Facts about mental illnesses | * Etiology of schizophrenia, a brain disease * Identify symptoms associated with schizophrenia * Dispel myths about schizophrenia * Address stigma, public and self stigma | 2 |
| 2 | Family Psychoeducation | * Education about serious mental illnesses; * Information resources, especially during periods of crises; * Skills training and ongoing guidance about managing mental illnesses; * Problem solving * Social and emotional support | 4 |
| 3 | Recovery and Rehabilitation | * Understand process of recovery and rehabilitation * Increase awareness of recovery * Help clients become aware of   people with schizophrenia who lead productive lives | 2 |
| 4 | Medication Management | * Discuss benefits and side effects of medications * Help clients weigh pros and cons of taking medications * Teach behavioral skills tailoring to facilitate medication adherence | 4 |
| 5 | Social Skills Training | * Basic conversation skills, and getting closer to people, making eye contacts, starting and end a conversation, making and refusing request, expressing opinions to others, and showing appropriate emotions. * Working on correcting deficits in receptive, processing, and sending social skills * Teach strategies for increasing support, such as making friends, and finding places to meet people, * Discuss how building social support can facilitate recovery | 8 |
| 5 | Stress Management | * Explain that stress and biological   vulnerability causes symptoms of schizophrenia   * Discuss strategies for reducing stress and biological vulnerability * The relationship between stress thoughts (automatic negative thoughts), emotions and behavior, cognitive restructuring and mindfulness, and relaxation and breathing techniques. * Healthy and unhealthy stress coping methods, | 8 |
| 6 | Case Management | * Set personal recovery goals * Develop SMART goals * Help consumers and families problem solving issues related to the treatment plan * Case review and modification | 8 |
| 7 | Coping and Problem solving | * Teach consumer to cope with problems and persistent symptoms * Teach problem-solving model * Help clients identify common problems and symptoms that cause distress * Practice coping strategies for persistent symptom | 8 |

*2.4.2 Treatment protocol*

Figure 1 shows the flow chart of the study. After randomization, the experimental group attended the LPD community psychiatric rehabilitation program modules as shown in Table 1. The module contents were converted to PowerPoint to assist in the group-based delivery of the curriculum. Every session had the same routine, which meant that the whole program was following a structured pattern. Each module led by two CLPW instructors, who were trained on how to deliver the module curriculum. A combination of educational, motivational, and cognitive-behavioral teaching strategies and homework assignments were used in the delivery of the module. Each session lasted 60 minutes, meeting once a week at the length as specified.

The case management module was conducted on an individual basis. This module lasted 12 weeks. Each case manager had 3-5 cases depending on difficulties of the cases, and the availability of the case manager. There were 15 CLPW case managers involved in the study. In addition to working with the participant, the case manager also worked with the family in helping participants learn self-management strategies and pursue their personal goals. In case management, the participant’ s individual goals were often broken down into smaller steps to facilitate a continuously progress towards achieving the goals.

*2.4.3 Drop-in Center control group*

The drop-in center, a part of the community psychiatric rehabilitation program, provided a place for participants to get together to engage in various leisure and hobby activities, such as singing, painting, listening music, arts and crafts and local outings was available to both experimental and control group participants. The drop-in center opens three days a week from 9:00 am to 4:00 pm and is open to the community and the attendance was voluntarily.

*2.5 Training of lay people on community psychiatric rehabilitation*

The Community Lay Psychiatric Workers (CLPWs) were recruited locally from the West China Mental Health Center and local volunteer organizations. The CLPWs must have completed high school education, preferably with a college degree, and with no prior or little training in mental health or psychiatric rehabilitation. We recruited 12 CLPWs from the community volunteer organizations. Many of them had served as volunteers during the 2008 earthquake in Sichuan. Fifteen psychiatric nurses from the West China Mental Health Center who have had no formal training in psychiatric rehabilitation also served as CLPWs. All CLPWs are females with an average 14.6 years of education. Half of the CLPWs have had basic counseling skills training from the 2008 earthquake relief project. These CLPWs would be responsible for delivering the community psychiatric rehabilitation program. Psychiatric professionals (2 psychologists from the United States, 2 psychiatrists from China, and 1 occupational therapist from Hong Kong,) supervised the CLPWs and were responsible for the overall development and implementation of the intervention.

Under the leadership of the second author (CL), the psychiatric rehabilitation team developed a training curriculum based on the community psychiatric rehabilitation program topics and contents. Experts and professional in psychiatric rehabilitation from overseas including the United States, Hong Kong, and Singapore conducted the training. Dependent on the contents of the modules, knowledge based curriculum required four to six hours of didactic training. Modules on skill-based training such as social skills, stress management, counseling and cognitive behavioral therapy skills, case management skills would involve hands on practice and role playing and supervision. Each of the skills training module required 8 to 16 hours. In addition to module training, all case managers received weekly face-to-face or Skype supervision for an hour from the professionals. Competence of the CLPWs was established through observation and demonstration of content knowledge and skills. All CLPWs met the minimum level of competence.

3. Results

*3.1 Sample characteristics*

Demographic characteristics and baseline measures are presented in Table 2. Most of the participants had a diagnosis of schizophrenia and 2% had a diagnosis of schizoaffective disorder. Participants had a mean age of ?? years (SD=??) and were ill for an average of ?? years (SD=??). Participants were more likely to be male (59%), and had a mean education level of ?? years (SD=??). Their WSCT scores showed??? cognitive function. There were no significant differences on the baseline measures between the two groups.

<Insert Table 2 here>