Protective factors in Chinese university students at clinical high risk for psychosis

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ABSTRACT

The role of protective factors in symptom formation and prognosis in schizophrenia has been shown in many studies, but research in the early phases of psychosis is limited, particularly among the nonclinical subjects. Protective factors associated with the severity of symptoms and clinical outcomes might be meaningful to the establishment of prevention systems and to the development of optimal psychosocial interventions prior to the onset of psychosis. The present study compares self-reported levels of self-esteem, social support and resilience of 32 university students at clinical high risk for psychosis (CHR) and 32 healthy controls in a longitudinal study design. Associations between protective factors with symptoms of psychosis were assessed in the CHR group. Individuals at CHR showed significantly lower self-esteem, social support and resilience compared to healthy controls. In the CHR group, lower social support and lower self-esteem were associated with more severe positive, negative and depressive symptoms. Multiple regression analyses revealed that self-esteem was the only significant determinant for negative, depressive symptoms and global functioning. In addition, we found that subjects who were fully recovered at a 6-month follow-up survey were greater resilient and showed lower depressive symptoms at baseline. The result implied that resilience intervention could be effective on early prevention of the onset of psychosis. Moreover, implications and limitations of this study will be discussed.

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1. Introduction

Studies of individuals at clinical high risk (CHR) for psychosis have mostly focused on the help-seeking patients. CHR is conceptualized as clinical high risk for psychosis status and manifests attenuated psychotic symptoms with increased risk of developing psychosis (Woods et al., 2009). There is a lack of research on nonclinical CHR individuals. University students, who are in late adolescence and young adults, belong to the high-incidence age for schizophrenia. Researchers have demonstrated that students with mental health issues are at high risk for college dropout. According to a national survey in USA (Kessler et al., 1995) 86% of students with mental health disorders dropped out of college without completing a degree. This is twice as high as the general college drop-out rate, which is estimated to be between 30% and 40% (Astin and Oseguera, 2005). In addition, students with mental health issues face further risks, including lower academic self-

confidence and conflicted peer relationships (Knis-Matthews et al., 2007; Hartley, 2010), which seriously impaired their quality of life. Long-term studies have shown that a large number of CHR individuals no longer meet criteria for CHR at 1 year to 2 years follow-up (Ziermans et al., 2011; Addington et al., 2011; de Wit et al., 2014). Exploring the protective factors which contribute to the recovery of CHR students can potentially provide significant evidence for effective prevention onset and early psychosocial intervention in CHR. In addition, depression is a frequent comorbidity disorder of schizophrenia (Häfner et al., 2005). Depressive syndromes in schizophrenia are reported in the prodromal stage of the early course, during the first or later psychotic episodes (Bustamante et al., 1994). A review on the incidence and prevalence of depression in schizophrenia shows that the prevalence of depression ranges from 6% to 75% in the course of schizophrenia in general (Siris and Bench, 2003). These findings also draw attention to the assessment of depressive symptomatology among CHR youth (de Vylder et al., 2014), with implications for identification, prevention and early intervention for them. Therefore, in the present study depressive symptoms will be examined as one indication of psychopathologies of CHR students.

It has been theorized that psychosocial factors such as self-esteem, social support and resilience could play a protective role in the maintenance of mental health. Recently, these personal resources have been drawn attention for their possible roles in symptom formation, social function, and prognosis in severe mental disorders, such as depression (Dumont and Provost, 1999) and schizophrenia (Harrow and Jobe, 2007; Ho et al., 2010).

Self-esteem as an important trait of the self-system has a positive impact on mental health and personality development (Leary and Macdonald, 2005). In addition, it is considered as a resource for coping with psychotic symptoms (Taylor and Stanton, 2007). Therefore, a positive personal perception and a strong perception of control would prevent a negative perception of stress on a daily basis; self-esteem as a personal resource has stress-buffering effects to protect youth from the deleterious effects of stress on psychological health (Dumont and Provost, 1999). In psychotic disorders, low self-esteem has been implicated in both the development of delusions (Bentall et al., 2001; Barrowclough et al., 2003) and the maintenance of psychotic symptoms (Garety et al., 2001). However, how levels of self-esteem associate with prodromal psychotic symptoms of psychosis has not been thoroughly explored. As self-esteem can be influenced by therapeutic interventions, the correlation between self-esteem and prodromal psychotic symptoms of psychosis could help improving the methods of treatment (Hall and Tarrier, 2003; Hodgekins and Fowler, 2010).

Social support can have positive effects on mental health, either directly by increasing self-esteem or indirectly by buffering individuals against the deleterious impact of exposure to stress and trauma (Brugha, 2010). These effects may be exerted both prior to and at the onset as well as during the course of disorder, operating to reduce both risk of onset and of relapse. As an example it has been shown that befriending services can lead to improvements in course and outcome (Harris et al., 1999a, 1999b). In addition, Kaiser et al. (2006) have found that satisfaction with social support mediates the relationship between insight and depression in psychosis. However, less attention has been paid to the extent and impact of social networks and support before the onset of schizophrenia. There is strong evidence that the onset of schizophrenia and other psychoses are influenced by exposure to adverse social contexts and experiences over the life course, i.e. Eleutherodactylus to acute and chronic stressors (e.g. Morgan et al., 2010; van Os et al., 2010). It is therefore necessary to investigate whether and how social support influences the prodromal symptoms, in order to provide an evidence for establishment of effective prevention system from the onset of psychosis.

Resilience can be defined as the complex interplay between an individual and his or her environment. In the course of this interplay the individual can influence a successful outcome by using protective factors, defined as the personal qualities or contexts that predict positive outcomes under high-risk conditions (Eageland et al., 1993). Worldwide longitudinal studies on recovery have consistently found that half to two-thirds of people diagnosed with schizophrenia and other major mental disorders significantly improve or recover (Harding and Zahniser, 1994). In the light of these findings researchers explored the innate self-righting potential and resources of patients suffering from psychiatric disorder. The results of a 15-year long-term follow-up study (Harrow and Jobe, 2007) of schizophrenia patients suggested that better outcomes were associated with protective factors, such as greater resilient. In a longitudinal study on individuals who 20-years ago were fully recovered from previously diagnosed schizophrenia, it was found that resilience and good personality i.e. extraversion played a role in sustaining recovery; in addition, these subjects were more resilient (Torgalsboen and Rund, 2009, 2010). Another cohort study (Ruhrmann et al., 2008) reported that in the case of 58 subjects during the early initial prodromal stage, internal control orientation and positive self-concept emerged as additional predictors of subjective impaired quality of life. However, studies on resilience of CHR individuals are still limited and the impact of resilience on the severity of prodromal psychotic symptoms and recovery from the CHR status have not been thoroughly explored.

To our knowledge, there is a lack of studies on protective factors in CHR individuals among university student populations. Therefore, in this study we aimed to investigate whether and to what extent self-esteem, social support and resilience influence the severity of symptoms of non-help-seeking university students in the putative prodromal phase of schizophrenia. By using a longitudinal study design we sought to identify the protective factors associated with recovery, in order to provide evidences for the prevention of an onset (of schizophrenia) among university students at CHR for psychosis. This will provide an opportunity for early psychosocial intervention. We hypothesized that: (1) students at CHR for psychosis show lower self-esteem, social support and resilience compared to healthy controls; (2) low self-esteem, low social support and low resilience are associated with positive symptoms, negative symptoms as well as depressive symptoms and (3) Resilience differs among the CHR students with different clinical outcomes.

2. Methods

2.1. Participants

In the study participated 32 university students at clinical high risk for psychosis (CHR, 13 male and 19 female; age 18.78 ± 1.070) and 32 healthy university students' controls (HC, 13 male and 19 female; age 18.97 ± 0.967). The 32 CHR subjects were selected from 2800 students of the first and second grades. The status of CHR was determined through a two-stage assessment, consisting of screening with questionnaire and an individual meeting as one of the three established criteria for a psychosis-risk syndrome according to the Structured Interview for Psychosis-Risk Syndromes (McGlashan et al., 2010). This study was approved by the Institutional Review Board of Tongji University. All participants provided written informed consent prior to the study.

2.2. Assessment

2.2.1. Detection instruments

The 16-item Prodromal Questionnaire (PQ-16) is a self-report questionnaire used to screen individuals for the risk of psychosis. It consists of nine items on perceptual abnormalities and hallucinations, five items on unusual thought content, delusional ideas and paranoia, and two negative symptoms (Ising et al., 2012). The items were marked true or false according to the participant's subjective experiences in the last month. When an item was marked as false, the item was rated 0; if an item was marked as true, the answer was rated according to the severity of distress experienced from 0 (none) to 3 (severe). The total score was the sum of all the scores. The Chinese version of the PQ-16 (CPQ-16) showed good reliability and validity in screening individuals for the risk of psychosis (Chen et al., 2014). The internal consistency reliability of CPQ-16 in this study was good (Cronbach's $\alpha = 0.72$).

The Structured Interview for Psychosis-Risk Syndromes (SIPS) (McGlashan et al., 2010) is a clinician-administered, semi-structured interview specifically designed to establish the risk of psychosis. The SIPS assesses symptoms in four domains (positive, negative, disorganized, and general symptoms) and rates symptom severity on a 0–6 scale, with 0 representing the absence of a symptom and 6 representing "severe and psychotic". If a positive symptom appears within in the 3–5 range of severity that symptom is considered an "attenuated psychotic symptom". The SIPS diagnoses three types of Psychosis-Risk Syndromes: (1) Attenuated Positive