Stigma as a stressor and transition to schizophrenia after one year among young people at risk of psychosis

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ABSTRACT

According to stress-vulnerability models, social stressors contribute to the onset of schizophrenia. Stigma and discrimination associated with mental illness may be a stressor for young people at risk of psychosis even prior to illness onset, but quantitative longitudinal data on this issue are lacking. We examined the cognitive appraisal of stigma-related stress as predictor of transition to schizophrenia among young people at risk of psychosis. In Zürich, Switzerland, 172 participants between 13 and 35 years old and with either high or ultra-high risk of psychosis or risk of bipolar disorder were included. With 71 dropouts, transition was assessed during 12 months among 101 participants of whom 13 converted to schizophrenia. At baseline, the cognitive appraisal of stigma as a stressor was measured by self-report, based on the primary appraisal of stigma as harmful and the secondary appraisal of resources to cope with stigma. Positive and negative symptoms were examined using the Positive and Negative Syndrome Scale. Compared with participants who did not convert to schizophrenia, converters had significantly more positive (p < .001) and negative (p < .001) symptoms and reported higher levels of stigma-related harm (p = .003) and stress (p = .009) at baseline. More perceived harm due to stigma at baseline predicted transition to schizophrenia (odds ratio 2.34, 95%-CI 1.19–4.60) after adjusting for age, gender, symptoms and functioning. Stigma stress may increase the risk of transition to schizophrenia. Research is needed on interventions that reduce public negative attitudes towards young people at risk and that support individuals at risk to cope with stigma-related stress.

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1. Introduction

According to the vulnerability-stress model of schizophrenia social stressors contribute to the onset of psychosis, suggesting a sociodevelopmental pathway to psychosis (Morgan et al., 2010; Meyer-Lindenberg and Tost, 2012). This has important implications for prevention and early intervention, since social stressors as well as coping strategies of individuals at risk of psychosis are promising targets for interventions (Kommescher et al., 2014; Miklowitz et al., 2014). As different kinds of social stress increase the risk of schizophrenia, the onset of psychosis may be associated with social defeat and experienced marginalization in general (Selten and Cantor-Graae, 2007). A well-known example are increased rates of schizophrenia among first- and second-generation immigrants who frequently experience discrimination (Morgan et al., 2010; Bourque et al., 2011) which is consistent with the link between racial discrimination and subthreshold positive symptoms in non-clinical samples (Anglin et al., 2014; Oh et al., 2014).

A much less investigated source of social stress and defeat, likely to affect people at risk of psychosis, is the stigma and discrimination associated with mental illness (Gerlinger et al., 2013). According to a stress-coping model of stigma (Lazarus and Folkman, 1984; Major and O'Brien, 2005) the impact of stigma as a potential stressor on a stigmatized individual depends on two cognitive appraisals: the primary appraisal of stigma as harmful, and the secondary appraisal of perceived resources to cope with this threat. Stigma stress occurs if stigma-related harm exceeds one's perceived coping resources. This model has already been applied to people with recurring serious mental illness (Rüsch et al., 2009a,b, 2014d). People with a history of schizophrenia (Thornicroft et al., 2009) as well as with first-episode psychosis (Lasalvia et al., 2014) frequently experience and anticipate discrimination. The at-risk status of psychosis leads to negative reactions among members of the

general public (Yang et al., 2013), and qualitative data indicate that individuals at risk are distressed by the threat of mental illness stigma (Judge et al., 2008). This is supported by previous findings of the current at-risk sample that stress associated with mental illness stigma was inversely related to well-being (Rüsch et al., 2014b,c). In previous research individuals at risk of psychosis reported frequent discrimination, e.g. due to their ethnic minority status, but their discrimination associated with mental illness was not assessed (Saleem et al., 2014). Studies among young people at risk of psychosis that did not examine stigma variables found stress tolerance (Pruessner et al., 2011; Devylder et al., 2013), coping skills (Jalbrzikowski et al., 2014; Schmidt et al., 2014) and social networks (Gayer-Anderson and Morgan, 2013) to be reduced already prior to psychosis onset. Persons at risk reported higher general stress levels than those with first-episode psychosis (Pruessner et al., 2011). A higher transition rate to schizophrenia was associated with physiological stress responses (Walker et al., 2013) as well as with factors accounted for in our study, i.e. symptom levels (Nelson et al., 2013) and impaired functioning at baseline (Cornblatt et al., 2012; Valmaggia et al., 2013).

Despite this impressive body of research, we are not aware of any prospective quantitative studies on stigma variables and their role for transition to schizophrenia among people at risk of psychosis. The aim of the current study was to examine cognitive appraisals of mental illness stigma as a stressor and their impact on transition to schizophrenia after one year. We expected that higher baseline levels of stigma-related stress (in terms of higher perceived stigma-related harm and/or lower perceived resources to cope with stigma) would predict transition to schizophrenia, controlling for baseline levels of global functioning, symptoms, age and gender.

2. Method

2.1. Participants

Participants were recruited in the region of Zürich, Switzerland, in the context of a larger study on early recognition of psychosis (for further details of study design, recruitment and inclusion criteria see Theodoridou et al., 2014; Rüsch et al., 2014b). After complete description of the study to participants, written informed consent was obtained, in case of minors including the written informed consent of their parents. The study was approved by the regional ethics committee of Zürich, Switzerland. After each assessment participants were informed whether they fulfilled at-risk criteria. They were also told that most people at risk do not develop psychosis and were offered treatment recommendations, if appropriate.

At baseline, data were available from 172 German speaking persons between 13 and 35 years of age (M = 21.4 ± 5.8) of whom 70 (41%) were female. Participants had to fulfill at least one of the following three inclusion criteria: high-risk status for psychosis assessed by the adult (Schultze-Lutter et al., 2007) or children-youth (Schultze-Lutter and Koch, 2009) version of the Schizophrenia Proneness Interview, with at least one cognitive–perceptive basic symptom or at least two cognitive disturbances; or ultra-high-risk status for psychosis as rated by the Structured Interview for Prodromal Syndromes (Miller et al., 2003), with at least one attenuated psychotic symptom, or at least one brief limited intermittent psychotic symptom, or state-trait criteria (reduction in global assessment of functioning of >30% in the past year, plus either schizotypal personality disorder or first degree relative with psychosis); or risk for bipolar disorder, defined by a score ≥14 in the Hypomania Checklist, a self-report measure of life-time hypomanic symptoms (Angst et al., 2005). Among the 172 participants, 138 (80%) fulfilled high risk, 85 (49%) ultra-high risk criteria for psychosis, and 135 (79%) risk criteria for bipolar disorder. Twenty-two (13%) participants fulfilled only risk criteria for bipolar disorder, but not high or ultra-high risk psychosis criteria.

Exclusion criteria for study participation were life-time schizophrenic, substance-induced or organic psychosis, bipolar disorder as well as current substance or alcohol dependence; age below 13 or above 35 years; or low intellectual abilities with IQ < 80. Current axis-I comorbidity, assessed by the Mini International Neuropsychiatric Interview based on DSM-IV criteria (Sheehan et al., 1998), was common: 55% had a major depressive and 42% an anxiety disorder diagnosis. Of the 172 participants, 71 (41%) were lost to follow-up after one year. Among the 101 completers, 13 had converted to schizophrenia after one year; with respect to other psychotic disorders, six participants developed bipolar disorder and three acute and transient psychotic disorders.

2.2. Measures

The cognitive appraisal of mental illness stigma as a stressor was assessed by a previously validated 8-item self-report measure (Rüsch et al., 2009b), based on Lazarus and Folkman's (1984) conceptualization of stress appraisal processes, with four items on the primary appraisal of stigma as harmful (e.g., "Prejudice against people with mental illness will have harmful or bad consequences for me"; M = 3.4 ± 1.6; Cronbach's alpha = .92) and four on the secondary appraisal of perceived coping resources (e.g., "I have the resources I need to handle problems posed by prejudice against people with mental illness"; M = 4.9 ± 1.2; Cronbach's alpha = .77). Higher mean scores, from 1 to 7, indicate stronger agreement. As in previous studies (Rüsch et al., 2009a,b, 2014a,b,d) a single stress appraisal score was computed by subtracting perceived coping resources from perceived harm, higher scores between −6 and +6 equalling more stigma stress.

Symptoms were assessed by the Positive and Negative Syndrome Scale (Kay et al., 1987), yielding positive (M = 12.5, SD = 4.2) and negative symptom scores (M = 13.5, SD = 5.4). Global functioning was assessed using the Global Assessment of Functioning Scale (M = 55.7, SD = 14.0) (American Psychiatric Association, 1994). The transition to schizophrenia was assessed twelve months after baseline according to ICD-10 criteria (World Health Organisation, 1992). Time of transition was recorded as months after baseline based on information from participants and, with the consent of participants, from their mental health care providers and clinical charts, if available.

2.3. Analyses

First, we compared baseline characteristics of dropouts (n = 71) versus completers (n = 101) after one year using t-tests for independent samples and chi-square tests. Second, correlations between predictor variables were examined using Pearson correlations (Table 1). Third, predictor variables were compared by chi-square or t-tests between participants with a transition to schizophrenia after one year and those without (Table 2). Fourth, in a two-step multiple logistic regression on transition to schizophrenia after one year, we examined whether predictor variables accounted for independent variance of transition to schizophrenia (Table 3). In the regression's first step we entered only those predictor variables that were significant in the previous analytic step (as reported in Table 2); in the second step we also controlled for the other baseline variables. We then repeated both regression steps, (i) controlling for antipsychotic medication at baseline and (ii) excluding those participants that had only fulfilled at-risk criteria for bipolar disorder.

In the main regression analyses the stigma stress difference score was not included as independent variable, in addition to primary/secondary appraisals, to avoid multicollinearity (see Table 1 for the high correlations between stigma stress and both underlying appraisals). On the other hand, stigma stress alone as independent variable (instead of primary/secondary appraisals) induces equality constraints because in the constrained model, with stigma stress difference score as independent variable, primary and secondary appraisals are forced to have