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Marriage and outcomes of people with schizophrenia in rural China: 14-year follow-up study

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ABSTRACT

The influence of marriage on the long-term outcomes of schizophrenia is largely unknown. This study was to examine the impact of marriage on the 14-year outcomes and identify the correlates of marriage among persons with schizophrenia in rural community. All study participants with schizophrenia ($n = 510$) were identified in 1994 in an epidemiological investigation of 123,572 people aged 15 years and older and followed up in 2004 and 2008 in Xinjin County, Chengdu, China. The Patients Follow-up Schedule (PFS) was used in 2004 and 2008. The rate of follow-up in 2008 was 95.9%. Unmarried individuals in 1994 had higher rates of homelessness and suicide, and lower rate of survival in 2004 and 2008 than those married. In 14-year follow-up, unmarried individuals were more likely to be male, to have higher level of psychiatric symptoms and lower rate of full remission of illness, and to report lower level of work functioning, as well as with fewer family members and caregiver, and lower family economic status. The predictors of being married in 2008 included being married in 1994, shorter duration of illness, being female, and lower level of education. Being married is predictive of more favorable 14-year outcomes of persons with schizophrenia in the rural community. Given that marriage can be instrumental for enhancing family-based support and caregiving, as well as improving the community tenure of persons with schizophrenia, it is important to develop programs to enhance opportunity for persons with schizophrenia to get and stay married.

1. Introduction

Marriage is considered an avenue to the achievement of social inclusion for persons with schizophrenia (Baumgartner and Susser, 2012; Yang et al., 2014). Regardless of cultural norms and socio-economic contexts, being married can accrue important benefits to persons with schizophrenia through stronger social networks and support, better quality of life (Salokangas et al., 2001), and reduced risks of criminal behavior and suicide attempt (Ran et al., 2010). Keeping a marriage is crucial for achieving a journey of recovery among couples who are both diagnosed with schizophrenia (Yu and Shim, 2009).

Cross-cultural comparative research has, however, documented lower rates of marriage and higher rates of separation and divorce among persons with schizophrenia when compared with the general population (Cohen et al., 2008; Hutchinson et al., 1999; Saugstad, 1989; Thara and Srinivasan, 1997). On the one hand, persons with schizophrenia encountered barriers to form matrimonial alliances because the most opportune time for courtship and marriage often corresponded with an early, insidious onset of the illness (Isaac et al., 2007; Saugstad, 1989). On the other hand, among those who were married, poorer clinical course of the illness and lower socio-economic status were shown to be predictors of divorce and separation (Saugstad, 1989).

Specifically, research has identified poorer premorbid development as a factor contributing to a lower marriage rate among male when compared with female patients (Salokangas et al., 2001; Saugstad, 1989). In addition, gender-bound role expectation was found to be a factor in determining the chance of marriage in some societies. In a longitudinal study of first episode psychosis in India, the stigma of remaining single for women in conjunction with the cultural expectation that men should serve as the sole breadwinner of the family, were cited as the key factors explaining why more men than women remained single at 10-year follow-up (Thara and Srinivasan, 1997).

As the world's most populous middle-income country, China's rapid social and economic development since the early 1990s has potential impact on the mental health of Chinese citizens (Lee et al., 2007).

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While the population rate of schizophrenia is <1% across the globe (WHO, 2001, 2013), the limited health resources in China suggest that the burden of caregiving resides heavily within the family. This is particularly the case in rural China because most mental health facilities are located in rich coastal areas and major cities than under-developed western areas (Liu et al., 2011). Given the potential benefits of marriage to persons with schizophrenia, tracking the marriage status over time and identifying its correlates can provide critical information for clinicians, mental health practitioners and policymakers to design programs that support marital formation and stabilization as an avenue to achieve inclusion.

This longitudinal study provides a unique opportunity to track the marriage status of persons with schizophrenia over 14 years. This study was to 1) examine whether being married at the baseline is linked with the survival status 14 years later, and 2) identify the correlates of the marriage status in 14-year follow-up.

2. Method

2.1. Study population and data collection method

The study data is derived from the Chengdu Mental Health Project (CMHP), a prospective longitudinal study from 1994 to present on mental illness and mental health services in Xinjin County, Chengdu, China (Ran et al., 2001, 2003, 2004, 2015a,b). All participants with schizophrenia ($n = 510$) were identified in 1994 from an epidemiological investigation of 123,572 people aged 15 years and older in six townships of Xinjin County in Chengdu, the provincial capital of Sichuan province in Southwest China. The study was approved by the University Committee on Human Research Subjects (CHRS) and all respondents gave informed consent at each wave of the study.

At baseline (1994), study participants were screened for psychosis using face-to-face interviews with heads of household or key informants (if head of household was not available) through administering the Psychoses Screening Schedule (PSS) (Ran et al., 2001). Case ascertainment for a diagnosis of schizophrenia according to the ICD-10 criteria (WHO, 1992) was based on the standardized administration of the Present State Examination (PSE-9) by trained psychiatrists (Ran et al., 2001). The PSE-9 is designed to assess the individual's present mental state in order to identify any mental pathology. The Patients Follow-up Schedule (PFS) was used in 2004 and 2008 to collect information about demographic characteristics, clinical symptoms, treatment information, criminal behavior, social functioning, and social support (Ran et al., 2010, 2015a,b).

Of the 510 participants recruited in 1994, we successfully followed up and collected information on 98.0% (total 500 cases) and 95.9% (total 489 cases) 10 years later in 2004 and 14 years later in 2008, respectively (Ran et al., 2009, 2015a,b). For participants who were alive at the follow-ups in 2004 and 2008, at least one person familiar with each participant's life and circumstances and the participants themselves were interviewed. For deceased participants and those who were not tracked, the next-of-kin or at least one person familiar with the participant was interviewed (Ran et al., 2011, Ran et al., 2015a,b). In addition, information from the death certification and suicide note, where applicable, was obtained.

2.2. Measurement

The principal assessment tools included the PSE-9 and Social Disability Screening Schedule (SDSS), administered to measure the symptoms and the level of social disability of participants in the baseline investigation in 1994 (Ran et al., 2001, 2003, 2004), and the SDSS, the Positive and Negative Syndrome Scale (PANSS) and Global Assessment of Functioning (GAF), administered in 2008 to measure the positive and negative symptoms and the individual's overall functioning level (Ran et al., 2015a,b). Higher SDSS scores indicate a lower level of social functioning. The GAF is a numeric scale ranging from 0 through 100 used by mental health clinicians and physicians to rate the social, occupational, and psychological functioning of adults. Higher GAF scores indicate a higher level of overall functioning.

The key outcome variables are marital status and outcomes at follow-ups (e.g., survival, symptoms, social functioning, etc.). Marital status is a binary variable indicating whether participants were married or unmarried. Survival outcome is based on whether or not the participants were alive and living in the community. The classification of each death as a result of suicide or other causes represented the consensus opinion of interviewers and independent researchers after reviewing all information obtained during the interviews. Information from the death certification and suicide note (where applicable) was also obtained. Participants were defined as homeless and lost to follow-up if informants reported that they had wandered and slept in public places and that their whereabouts was unknown (Ran et al., 2009).

Correlates of the marriage status included socio-demographic, clinical, and family variables. Social-demographic variables included sex, age, and educational attainment. Clinical characteristics included age of first onset of psychosis, duration of mental illness, suicidal attempt, whether or not taking psychiatric medication, mental health status at the time of the interview. Family variables included number of family members, family economic status, caregiver status, and maltreatment of participants by family members.

Criminal behavior was assessed according to the participants' and informants' report on whether or not participants had engaged any criminal activities, including theft, physical and sexual assaults, and murder. Suicidal attempt was constructed as a binary variable, code "yes" if a suicide attempt was reported by participants or informants. Mental health status, categorized as "full remission," "partial remission," or "marked symptoms/deteriorated," was assessed by symptoms and social functioning. Participants were also asked whether or not they once took any antipsychotic medication. Caregiver status was measured by whether or not the participants reported to have at least one person (e.g., family member or others) to provide care (e.g., food, housing, financial support, treatment, etc.). Family economic status/level was defined according to whether family income is above or below the mean level of local people.

2.3. Statistical analysis

To examine whether being married at the baseline is linked with the survival status, cross-tabulation and Chi-square (χ^2) test were employed. Changes of marriage status were then tracked for surviving participants in 2004 and 2008. To compare those who were married and those who were not married in socio-demographic, clinical symptoms, social functioning, and other characteristics, Chi-square (χ^2) test or Fisher's exact test was employed for categorical variables and independent sample *t*-tests (two-tailed) for continuous variables. A multivariate logistic regression analysis was used to identify the predictors of participants married in 2008. The marriage status (married or unmarried) in 2008 was considered the dependent variable, while all the other variables from 1994 evaluation (baseline data) were the independent variables. Statistical analyses were performed using SPSS Windows software (version 20.0).

3. Results

Of the 510 persons with schizophrenia at baseline in 1994, 10 and 21 were excluded, respectively, in 2004 and 2008 due to loss to follow-up. Informants were available for all the included participants. In 2008, information on 300 study participants was provided by both study participants and their informants, and information on 189 participants was provided by their informants only.

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