



## Gender differences in attitudes towards antipsychotic medications in patients with schizophrenia



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### ABSTRACT

Non-adherence was more frequent in male than in female psychiatric patients. This multi-center study in China examined the gender difference with regard to attitude towards antipsychotic medications and its associations with socio-demographic variables, insight, and psychopathology. Patients' basic socio-demographic and clinical data were collected. Psychopathology and insight were measured with the Symptom Checklist-90 (SCL-90) and the Insight and Treatment Attitudes Questionnaire (ITAQ), respectively. Their attitudes towards antipsychotic medications were assessed by two standardized questions. Nearly 39.6% (109/275) males and 31.1% (70/225) females reported negative attitudes towards antipsychotic medications. Binary logistic regression revealed that in males single marital status (OR=2.9, 95% CI=1.3–6.4), rural residence (OR=0.4, 95% CI=0.2–0.7), longer duration of schizophrenia (OR=1.0, 95% CI=1.0–1.1), knowledge of medication (OR=1.5, 95% CI=1.3–1.6) and the SCL-90 hostility subscale (OR=0.9, 95% CI=0.9–1.0) were contributors to negative attitudes. In female patients, knowledge about medications (OR=1.4, 95% CI=1.3–1.6), the SCL-90 somatization (OR=0.8, 95% CI=0.8–0.9) and anxiety (OR=1.1, 95% CI=1.0–1.2) subscales were contributors to negative attitudes. The study suggested that different psychosocial and clinical factors accounted for the negative attitude towards antipsychotic treatment in male and female patients.

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### 1. Introduction

Attitudes towards antipsychotic medications (i.e., first- and second- generation antipsychotics; FGA and SGA) have been proved to be an important predictor of treatment adherence in schizophrenia patients (Eticha et al., 2015; Sendt et al., 2015). Positive attitude towards medications is related to better

treatment outcomes (Baloush-Kleinman et al., 2011; Lincoln et al., 2007; Perkins et al., 2006). Negative attitude is commonly associated with non-adherence to treatment (Buckley et al., 2007), increasing the risk of relapse and hospitalization, violence and suicide (Goff et al., 2010; Law et al., 2008).

Gender differences exist in schizophrenia in terms of clinical presentations, course and outcome, treatment response and adherence rate (Cotton et al., 2009; Koster et al., 2008; Leung and Chue, 2000; Nasser et al., 2002; Ran et al., 2015). For example, compared to female patients, male patients are more likely to be unemployed, live alone (Tang et al., 2007; Thorup et al., 2007), have poorer social networks (Thorup et al., 2007), more severe negative symptoms (Morgan et al., 2008; Moriarty et al., 2001; Shtasel et al., 1992) and cognitive deficits (Han et al., 2012), less severe positive symptoms (Moriarty et al., 2001) and poorer

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functional outcome (Moriarty et al., 2001).

The relationship between attitude toward medications and drug adherence is well recognized (Gatti et al., 2009). Poor treatment adherence is more common in male patients (Fleischhacker et al., 2003; Ochoa et al., 2012; Reichhart et al., 2010; Velligan et al., 2009) and therefore is a strong factor for poor outcome. Few studies have compared the gender differences in attitudes towards antipsychotic medications and investigated factors contributing to the differences. Such studies may help develop suitable interventions to prevent or reduce non-adherence to treatment. This study aimed to examine the gender difference with regard to attitudes towards antipsychotic medications and its associations with socio-demographic variables, insight, and psychopathology in China.

## 2. Methods

### 2.1. Patients and study sites

This is a multi-center study initiated by the Chinese Psychiatric Association involving 16 psychiatric institutions in China conducted between 15 March and 14 April 2013. The detail of sample characteristics was reported elsewhere (Zhou et al., 2015). Briefly, all patients in the participating institutions were consecutively recruited if they met the diagnosis of schizophrenia according to ICD-10 criteria and were able to communicate adequately and comprehend the purpose of the study. Patients with substance abuse/dependence or major medical conditions were excluded.

The study protocol was approved by the Biomedical Ethics Board of the second Xiangya Hospital, Central South University and the ethics committees of the participating institutions. All patients and their family/guardians provided informed consent.

### 2.2. Instruments and evaluation

A standardized data collection form was designed to collect data for basic-demographic and clinical characteristics. Insight was assessed with the Insight and Treatment Attitudes Questionnaire (ITAQ) (McEvoy et al., 1989). The ITAQ consists of 11 items with each rated on a 3-point scale: 0=no insight, 1=partial insight, 2=good insight. Items 1–5 assess “awareness of illness” and items 6–11 assess “knowledge of medication”, with higher scores indicating better insight.

The self-report psychometric instrument Symptom Checklist-90 (SCL-90) is a 90-item self-report scale that measures 9 psychiatric symptom clusters including (1) somatization; (2) depression; (3) anxiety; (4) phobic anxiety; (5) obsession and compulsion; (6) paranoid ideation; (7) psychoticism; (8) hostility and (9) interpersonal sensitivity (Chen and Li, 2003). Each item rated from 0 to 4, giving a total score of 360.

Attitude towards antipsychotic medications was also examined by asking two standard questions: ‘Do you think you need antipsychotic medication/or did medication treatment help?’ And ‘Why do you think so?’ The attitudes were dichotomized for research purposes as negative or positive by a trained psychiatrist in each participating institution based on the information provided, the negative attitude was defined as a conviction that the medication is not needed or the medication has more adverse effects than benefit and would do physical harm. Positive attitude refers to the opinion that medication is needed and taking it would be beneficial even if it has the potential to cause side effects. All the sixteen interviewers were trained in the judgment of reported attitude towards antipsychotic medications using standard reliability procedures prior to the main study. The kappa values of their judgment on reported attitude towards antipsychotic medications in 20 schizophrenia patients were above 0.85.

### 2.3. Statistical analysis

Analyses were conducted with the SPSS 19.0 for Windows statistical package. The demographic and clinical characteristics were compared between males and females and between positive and negative attitudes in both genders separately, using independent samples *t*-test and chi-square test, as appropriate. The independent association between gender and negative attitude was examined using binary logistic regression with negative attitude as the dependent variable and gender as the independent variable after controlling for the demographic and clinical characteristics that significantly differed between genders in the above univariate analyses. Binary logistic regression model was used to examine the factors independently contributing to negative attitude towards antipsychotic treatment in males and females, separately. All variables with a *p* value  $\leq 0.10$  in the above univariate analyses were included as independent variables in the regression model. The level of significance was set at 0.05 (two-tailed).

## 3. Results

### 3.1. Demographic and clinical characteristics of the study sample

Altogether 514 patients were invited to participate in the study; 500 (275 males and 225 females) met study criteria and completed the assessments giving a participation rate of 97.2%. Of the 500 patients, 109 (39.6%) male and 70 (31.1%) female patients reported negative attitude towards medications ( $p < 0.05$ ). There were significant differences in terms of marital status, residence, number of previous psychiatric hospitalizations and the somatization subscale of SCL-90 between male and female patients (Table 1). After controlling for marital status, residence, number of previous psychiatric hospitalizations, male gender remained significantly associated with negative attitude towards antipsychotic medication ( $p=0.02$ , OR=1.8, 95% CI=1.1–2.2).

### 3.2. Attitudes and its independent contributors to antipsychotic medication in male patients

The differences between male patients with negative and positive attitudes in relation to socio-demographic and clinical characteristics are shown in Table 2. There were significant differences between the two groups in terms of marital status, residence, length of illness, the “awareness of illness”, “knowledge of medication” and total scores of the ITAQ, and the hostility subscale of SCL-90. Binary logistic regression model revealed that being single (OR=2.9, 95% CI=1.3–6.4), longer illness duration (OR=1.0, 95% CI=1.0–1.1), rural residence (OR=0.4, 95% CI=0.2–0.7), awareness of medication (OR=1.5, 95% CI=1.3–1.6), and the hostility subscale of SCL-90 score (OR=0.9, 95% CI=0.9–1.0) were the contributors to negative attitude (Table 3).

### 3.3. Attitudes and its independent contributors to antipsychotic medications in female patients

The differences between female patients with negative and positive attitudes in relation to socio-demographic and clinical characteristics are shown in Table 4. There were significant differences between the two groups in terms of awareness of illness, knowledge of medication and total scores of ITAQ and all the subscale scores of SCL-90 (Table 2). Binary logistic regression model revealed that awareness of medication (OR=1.4, 95% CI=1.3–1.6), and the somatization (OR=0.8, 95% CI=0.8–0.9) and anxiety (OR=1.1, 95% CI=1.0–1.2) subscales of SCL-90 score

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