



# Gender differences in prevalence and correlates of antisocial personality disorder among heroin dependent users in compulsory isolation treatment in China



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## HIGHLIGHTS

- We detected gender differences in correlates of ASPD in a heroin dependent sample.
- Socioeconomic disadvantages were related to ASPD in males while not in females.
- Poly-drug abuse is an independent predictor for ASPD in males while not in females.
- The findings highlight a need for gender-specific interventions.

## ARTICLE INFO

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## ABSTRACT

**Background:** Little is known about gender difference in correlates of antisocial personality disorder (ASPD) among drug users.

**Objective:** To detect gender difference in correlates of ASPD in a Chinese heroin dependent sample.

**Methods:** Structured interviews were conducted among 882 heroin dependent users in two compulsory isolation settings in Changsha, China. Descriptive statistics were employed to report sample characteristics by gender. Bivariate relationships were examined between co-occurring ASPD and variables measuring demographic, drug use, and psychiatric co-morbidities. Multivariate logistic regressions with stepwise forward method were conducted to determine independent predictors for co-occurring ASPD. All analyses examining correlates of co-occurring ASPD were conducted for the total, the male and the female participants respectively to detect both the common and the unique correlates of ASPD by gender.

**Results:** Of the total participants, 41.4% (54.2% of males and 15.4% of females) met the DSM-IV criteria of ASPD. For male participants, lower educational level, unemployment, unmarried, younger age at first heroin use, previous history of compulsory treatment, larger amounts of heroin used per day and poly-drug abuse during past month before admission, as well as psychiatric co-morbidities of lifetime major depressive disorder and borderline personality disorder were independent predictors for co-occurring ASPD; while for female participants, only three variables: younger age at first heroin use, paranoid personality disorder and borderline personality disorder were independent predictors for co-occurring ASPD.

**Conclusions:** Gender differences in prevalence and correlates of ASPD among heroin dependent users were detected. The findings highlight a need for gender-specific interventions.

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**Abbreviations:** ASPD, antisocial personality disorder.

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## 1. Introduction

Antisocial personality disorder (ASPD) is typically the most common co-occurring diagnosis among drug abusers, with the prevalence ranging between 23 and over 80% reported among opioid abusers (Brooner, King, Kidorf, Schmidt, & Bigelow, 1997; Grella, Karno, Warda, Niv, & Moore, 2009; Ladd & Petry, 2003; Mackesy-Amiti, Donenberg, & Ouellet, 2012; Neufeld et al., 2008; Ross et al., 2005). The cognitive

and emotive deficiencies that underlie ASPD, such as poor self-control, ineffective behavioral regulation, and poor decision-making, may facilitate and maintain patterns of drug use (Hasin et al., 2011). The co-morbidity of ASPD in drug users has been linked with earlier onset age of drug use, greater severity of addiction, more psychiatric co-morbidities and social disadvantages (Goldstein et al., 2007; Huang et al., 2009; Moran, Coffey, Mann, Carlin, & Patton, 2006; Mueser et al., 2012; Najt, Fusar-Poli, & Brambilla, 2011; Rosenthal, Nunes, & Le Fauve, 2012; Shand, Degenhardt, Slade, & Nelson, 2011). In spite of adverse correlates of co-morbidity of ASPD in populations with drug use disorders, no studies have reported gender difference in the correlates of ASPD among these populations, which, however, has an important implication for whether a gender-specific strategy is needed when targeting to treat the co-morbidity of ASPD and drug use disorder.

Compulsory isolation treatment is a major treatment modality for drug abusers adopted nowadays in China. By the end of 2008 (the year of the present research being carried out), about 1,126,700 drug abusers were officially registered in China and 103,359 of them were receiving treatment in compulsory isolation settings (National Narcotic Control Commission of China, 2009). It was stipulated in Chinese drug law that drug addicts who refused to receive community-based rehabilitation or failed to keep abstinence in community, or those found by police having a severe drug addiction would be sent for 1–3 years to compulsory isolation treatment centers managed by justice departments (Office of China National Narcotics Control Commission, 2008; Standing Committee of the National People's Congress, 2007; State Council of the People's Republic of China, 2011). As drug users are not allowed to leave these centers, they are considered incarceration sites. Treatments provided in these centers are mainly detoxification, basic medical care, physical training, drug and HIV/AIDS education, behavior correction (however consisting mainly of required manual work) and group therapy, with psychological counseling, job skill training, and anti-relapse training and medicine for treatment of psychiatric disorders is also provided, but still far from enough. As under these conditions of admission and treatment, drug addicts in compulsory isolation treatment might be more severe in drug use and psychopathology, as well as in more social disadvantaged status, than drug users in communities.

As thus, the current study went further than previous research to seek to detect gender difference in the correlates of ASPD among a sample of heroin dependent users in compulsory isolation treatment. Correlates of ASPD examined in the current study fell into three areas: demographics, drug use and psychiatric co-morbidities. To be specific, the aims of this study were:

- (1) to examine the demographic, drug use and psychopathological correlates of co-occurring ASPD by gender among a sample of heroin dependent users admitted in two selected compulsory isolation treatment settings in Changsha, China.
- (2) to detect the gender difference in correlates of ASPD among this sample of heroin dependent users.

## 2. Method

### 2.1. Participants

Subjects in this study were recruited consecutively from admissions of two compulsory isolation settings for treatment of heroin dependence in Changsha, China, between March 10 and October in 2008. The two compulsory isolation settings were the Hunan Xinkaipu Compulsory Isolation Drug Rehabilitation Center for males and the Hunan Baimalong Compulsory Isolation Drug Rehabilitation Center for females, selected for their large capacities of admissions. The inclusive criteria were: (1) admission was due to heroin use; (2) capable of effective communication; and (3) meeting the DSM-IV criteria for heroin dependence. Subjects were guaranteed that all personal information was

strictly confidential. Data were collected by individual interview. Finally, we recruited 882 heroin dependent entrants who completed the interview, with 590 males recruited from the Hunan Xinkaipu Isolation Compulsory Drug Rehabilitation Center, and 292 females from the Hunan Baimalong Isolation Compulsory Drug Rehabilitation Center.

Signed informed consent form was obtained from each subject. The research has been approved by the Ethics Committee of Second Xiangya Hospital of Central South University.

### 2.2. Structured interview

Subjects were administered a structured interview. All screening and interviews were conducted by four trained psychiatrists. Sections addressed demographics and drug use histories over the month preceding admission were measured using a locally-designed format. DSM-IV current diagnosis of heroin dependence and other substance use disorders, lifetime and current diagnoses of major depressive disorder and current diagnosis of dysthymia were obtained using the Structured Clinical Interview for DSM-IV-Axis I Disorders—Patient Edition (SCID-I/P, Chinese version) (First, Spitzer, Gibbon, & Williams, 2002; Phillips et al., 2009). We defined in this study a current diagnosis as meeting the DSM-IV diagnostic criteria during 30 days before admission. Diagnoses of ASPD as well as avoidant personality disorder, passive-aggressive personality disorder, paranoid personality disorder, depressive personality disorder and borderline personality disorder which often occurred among substance users were obtained using the Structured Clinical Interview for DSM-IV Axis-II Disorders (SCID-II, Chinese version) (Dai et al., 2006; First, Gibbon, Spitzer, Williams, & Benjamin, 1997).

All interviews were administered at least 30 days after admission, with subjects enrolled within a few days or just before the interview. All interviewed study participants exhibited no significant or visible drug withdrawal symptoms before or during the interviews.

### 2.3. Statistical analyses

Data were first analyzed to provide information regarding the study sample by gender, with male–female comparisons being conducted using Chi-square tests and *t*-test. Univariate logistic regressions were applied to examine bivariate associations between co-occurring ASPD and variables measuring demographics, drug use, and psychiatric co-morbidities, then multivariate logistic regressions with stepwise forward method were conducted to determine independent predictors for co-occurring ASPD, with Hosmer–Lemeshow chi-square tests adopted to test the goodness of fit of the final model. All analyses examining correlates of co-occurring ASPD were conducted for the total, the male and the female participants respectively to detect both the common and the unique correlates of ASPD by gender. Significant level was set at  $P < 0.05$ .

## 3. Results

### 3.1. Participant characteristics

Participant characteristics of the study sample are provided in Table 1. Compared to male participants, females were significantly younger, less educated, more likely to be divorced or widowed, more likely to be unemployed, and in a significantly lower income level. Female participants also reported a younger age at first heroin use and less amounts of heroin used per day over the month before admission. Male participants had significant higher proportions of ASPD, passive-aggressive personality disorder and avoidant personality disorder than female participants. Of the total participants, 41.4% (54.2% of males and 15.4% of females) met the DSM-IV criteria of ASPD.

Characteristics of participants with ASPD were provided in Table 2. Of the participants with ASPD, females were younger, less educated, with a younger age of first heroin use and used less heroin per day

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