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FREQUENCY OF BORDERLINE PERSONALITY DISORDER AMONG PSYCHIATRIC OUTPATIENTS IN SHANGHAI

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Abstract

The objective of this study was to investigate the frequency, clinical characteristics, and comorbidity of borderline personality disorder (BPD) among psychiatric outpatients in two clinics at Shanghai Mental Health Center. A cross-sectional investigation was conducted. From 3,075 outpatients screened using the Personality Diagnostic Questionnaire-IV+, 2,284 patients positive for a personality disorder were assessed using the Structured Clinical Interview for *DSM-IV* Personality Disorders. The frequency of BPD among the psychiatric outpatients was 5.8%, with a frequency of 3.5% among males and 7.5% among females ($p < .01$). BPD was found to have extensive comorbidity with Axis I and II disorders. This study proves that BPD does occur in China. The detected frequency among outpatients is lower than that reported in North America.

Borderline personality disorder (BPD) is a complex and serious mental disorder characterized by a pervasive pattern of instability in regulation of emotion, interpersonal relationships, self-image, and impulse control. In the United States, the prevalence of BPD has been estimated at 1.6% (Lenzenweger, Lane, Loranger, & Kessler, 2007) to 5.9% (Grant et al., 2008) of the general population, 10% of psychiatric outpatients, and 20% of inpatients (American Psychiatric Association, 1994). BPD is the most common personality disorder in clinical settings, and is characterized by severe functional impairment (Skodol et al., 2002), substantial treatment utilization (Bender et al., 2001), and a high mortality rate by suicide, which is almost 10% and is 50 times higher than the rate in the general population (Work Group on Borderline Personality Disorder, 2001).

In China, however, the BPD construct has not been uniformly accepted. There is no BPD diagnosis in the third edition of the *Chinese Classification of Mental Disorders* (CCMD-3; Chinese Psychiatry Association, 2000), although a different diagnostic category of impulsive personality disorder (IPD) overlaps extensively with BPD. These criteria describe

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patients comparable to the *DSM* BPD construct (Zhong & Freedom, 2007), but who, unlike *DSM* BPD samples, are found to be over 60% male (Chinese Psychiatry Association, 2000). In contrast, *DSM* indicates that the majority of BPD patients (70%-75%) are female (American Psychiatric Association, 1994). Due to lack of the BPD category in the Chinese diagnostic system, research about BPD in China has been limited; 53 articles were found when the authors searched the China National Knowledge Infrastructure (CNKI) for BPD, and most of these were review articles.

Only two studies have investigated the prevalence of BPD in psychiatric settings in China. Xiao et al. (2006) reported that 1.3% of outpatients and 1.7% of inpatients at Shanghai Mental Health Center met *DSM-IV* criteria for BPD when assessed for dissociative disorders with the Dissociative Disorders Interview Schedule (DDIS). Yang et al. (2000) reported that 7.1% of Chinese psychiatric patients met criteria for BPD when assessed with the Personality Disorder Interview-IV (PDI-IV), after investigating 651 outpatients and 2,023 inpatients, who were not randomly sampled. Neither of these two studies was designed specifically to determine the prevalence of BPD.

A World Health Organization study (Loranger et al., 1994) investigated the prevalence of personality disorders in a sample of 716 psychiatric patients from 14 centers in 11 countries, including Japan, India, Kenya, the United States, and a number of European countries. The prevalence of BPD was 14.5% according to *DSM* criteria and 14.9% according to ICD-10 criteria, indicating that BPD occurs in many different countries, languages, and cultures; however, there was no sample from mainland China. In a study of 4,110 high school students in Hong Kong (Leung et al., 2009), the authors found that 2% met criteria for BPD and that the diagnosis was stable over time, suggesting that BPD is likely to occur in mainland China as well.

We undertook the current investigation in order to determine the frequency of *DSM-IV* BPD in an outpatient setting in Shanghai, China. We also examined the clinical features and Axis I and II comorbidity of BPD.

Shanghai Mental Health Center consists of a main hospital, a branch hospital, and Shanghai Drug Abuse Treatment Center. The main hospital has two outpatient settings, a psychological counseling department, and a department that treats mainly psychotic disorders. We carried out our study in these two outpatient settings, while the outpatient setting for drug abuse was not involved in the study. The drug abuse treatment center is geographically far away from the outpatient department and has a small caseload; therefore it was not practical to sample this population.

Shanghai Mental Health Center is a tertiary care psychiatric hospital. The average number of outpatient visits per day is 931, including 577 at the outpatient department treating mainly psychotic disorders, 298 at the psychological counseling center, 52 at the branch hospital, and 4 at the drug abuse treatment center. Ninety-five percent of the outpatients come from Shanghai; 56.6% were covered by employer insurance policies, and 43.4% paid cash for their services.

METHODS

SAMPLE

All outpatients at Shanghai Mental Health Center who were eligible to participate in the study were approached to participate; sampling was done from May to November 2006. The inclusion criteria were age from 18 to 60 years, absence of severe medical disease, and an educational level higher than junior high school. This educational cutoff was required because the participants had to be able to read and complete the self-report measures. The exclusion criteria were a diagnosis of schizophrenia with acute psychotic symptoms and inability to cooperate with the study procedures (patients with schizophrenia who were not acutely psychotic were included); mental retardation, dementia, or intellectual impairment due to other reasons; acute posttraumatic personality changes; and difficulties in verbal communication and understanding that prevented participation. The study was approved by the Ethics Committee of Shanghai Mental Health Center, and all participants provided signed informed consent.

Based on a previous study (Xiao et al., 2006), where the prevalence of BPD among outpatients at Shanghai Mental Health Center was 1.3%, we set our required sample size at 3,600 using the formula $n = t^2pq/d^2$, $t = 1.96$, $p = 1.3\%$ ($d = p/10$) (Ling & Shen, 2000). This formula means that $t = 1.96$ is the 95% confidence interval, p is the population proportion, and q is the allowable error.

ASSESSMENT

The Personality Diagnostic Questionnaire-IV+ (PDQ-IV+; Hilsenroth et al., 2003) was used as the initial screening instrument. The PDQ-IV+ is a 99-item, self-administered, true-false questionnaire that yields personality diagnoses consistent with the *DSM-IV*, as well as the two additional personality disorders to which the “plus” refers, passive-aggressive and depressive personality disorders. The Chinese version of the PDQ-IV+ has been proven to have reliability and validity that are satisfactory when it is used with both Chinese psychiatric patients and Chinese normal control subjects (Yang et al., 2002). The Structured Clinical Interview for *DSM-IV* Personality Disorders-II (SCID-II) was used to diagnose BPD. The SCID-II determines whether criteria are met for the 10 *DSM-IV* Axis II personality disorders, as well as depressive personality disorder and passive-aggressive personality disorder. The SCID-II has been used extensively in the English-speaking world (Hilsenroth et al., 2003). The Chinese version has been shown to have good reliability and validity (Dai et al., 2006).

The investigation was carried out by two research teams in the two outpatient settings at Shanghai Mental Health Center. Each research team consisted of one psychiatrist and two nurses. Rater training sessions for administration of the SCID-II were held prior to the beginning of data collection. One senior psychiatrist trained two interviewers how to score the SCID-II, then these two interviewers scored while watching this senior psychiatrist interview a patient with SCID-II. The two raters agreed on the scores for 96 (82%) of the SCID-II items. The interrater reliability of the SCID-II interviews was not addressed as part of the study.

Every twentieth person in one location and every tenth person in the other coming for an appointment was screened with the PDQ-IV+ until a total of 3,402 subjects qualified for participation in the study; of these, 3,075 participants completed the PDQ-IV+, for a response rate of 90.93%. This sampling ratio was chosen in order to equalize the number of participants from each outpatient clinic (there are roughly twice as many visits per day at the clinic treating primarily psychotic patients) and to generate an adequate overall sample size. A total of 2,284 participants with a PDQ-IV+ score ≥ 8 were interviewed by psychiatrists with the SCID-II. The Axis I diagnoses were obtained from the clinical medical records.

STATISTICS

Version 13.0 Statistical Program for Social Sciences (SPSS) software was used to conduct the data analysis. Between-group comparisons involving categorical data were computed by means of the chi-square statistic corrected for continuity.

RESULTS

Of the 3,402 participants, 327 dropped out, with 3,075 (90.4%) completing the study. Among the 3,075 participants, there were 1,353 males and 1,722 females. The mean age was 32 years ($SD = 10.0$). Of the 3,075 participants, 1,606 (52.2%) had never been married, 1,294 (42.1%) were married, 151 (4.9%) were divorced, 74 (2.4%) were separated or remarried, and for 50 (1.6%) marital history was missing; 544 (17.7%) were students, 1,773 (57.7%) were unemployed, 467 (15.2%) were employed, 136 (4.4%) were retired, and 155 (5.0%) responded that they were 'other,' without specifying what this was; 617 (20.1%) had nine years of education, 1,082 (35.2%) had twelve years, and 1,376 (44.7%) had more than twelve years. In the psychosis clinic there were 1,673 participants, including 713 (42.6%) males and 960 (57.4%) females. In the psychological counseling clinic there were 1,402 participants, including 641 (45.7%) males and 761 (54.3%) females.

Based on the PDQ-IV+ scores, 2,284 (74.3%) participants were positive for a personality disorder. These subjects were interviewed by psychiatrists using the SCID-II; 980 (31.9%) were diagnosed with a personality disorder on the SCID-II, including 178 with BPD. The overall frequency of BPD among the psychiatric outpatients was 5.8%. The frequency in the psychological counseling department (7.0%) was higher than in the psychotic disorder outpatient department (4.8%), $\chi^2 = 6.820$, $p < .01$. The data in Table 1 show that the frequency of BPD was higher among the 1,722 female patients (7.5%) than among the 1,353 males (3.5%), $p = .01$.

The data in Table 2 show the co-occurrence of Axis I and II disorders among the 178 BPD participants. According to the clinical diagnoses made by the attending psychiatrists using CCMD-3 criteria, of these 178 BPD participants, in 12.7% the diagnoses were unknown because they could not be found in the medical records. Only 7.3% of them received a clinical diagnosis of a personality disorder. Axis II diagnoses are rarely made in China, so this low rate of clinical personality disorder diagnoses is not surprising. According to the research diagnoses from our study group using *DSM-IV* criteria, in terms of the Axis II disorders, 124 BPD participants (63.8%) met criteria for one or more other personality disorders. The most frequent co-occurring Axis II diagnoses were depressive personality

disorder (35.4%), paranoid personality disorder (20.3%), avoidant personality disorder (15.2%), and narcissistic personality disorder (12.9%). For paranoid (male 35.4%, female 14.6%, $\chi^2 = 9.401$, $v = 1$, $p = .002$), narcissistic (male 22.9%, female 9.2%, $\chi^2 = 5.836$, $v = 1$, $p = .016$), and obsessive-compulsive (male 22.9%, female 7.1%, $\chi^2 = 7.808$, $v = 1$, $p = .005$) personality disorders, the rate in males was significantly higher than in females. There was no significant difference between genders for the other types of personality disorder.

DISCUSSION

The frequency of BPD among psychiatric outpatients in Shanghai, China was 5.8%, which is lower than the rate reported in the United States (15%–20%) (Hylter & Lyons, 1988; Kass et al., 1985; Morey, 1988; Oldham et al., 1995; Widiger & Weissman, 1991) and the mean rate (10%) reported in *DSM-IV*. There may be some reasons for this difference.

First, the frequency of BPD may be different in different cultures and regions. Two prior studies done in China (Xiao et al., 2006; Yang et al., 2000) both showed a lower prevalence of BPD than that found in the United States. There may be some cross-cultural issues that influence the identification of *DSM-IV* criteria for BPD, such as those for behavioral control and emotional expressions. In the *DSM-IV* criteria, reckless driving, promiscuous sex, and substance abuse are used to define the behavioral symptoms of BPD. It is questionable whether these criteria are suitable to identify BPD patients with a Chinese cultural background. First, the personal car is still uncommon in China, especially in rural areas. Second, sex has been a taboo topic for a long time in Chinese culture, which may greatly decrease the frequency of promiscuous sex as a behavioral symptom of BPD. Third, many drugs, such as marijuana and cocaine, are rigidly controlled in China, which has greatly limited accessibility to them. Therefore we have reasons to assume that the frequency of BPD in our sample could be lower than the true frequency because of these potential limitations of the *DSM-IV* criteria in the Chinese culture.

In our study, we counted the reported frequency of PDQ-IV+ items for BPD in these 178 BPD patients. We found that item 106d (substance abuse, 12%), item 106b (promiscuous sex, 22%), and item 106f (reckless driving or riding bicycle, 26%) are the least frequent symptoms reported by BPD patients, compared with other items as follows: item 58 (unstable emotion, 87%), item 100 (frantic efforts to avoid real or imagined abandonment, 78%), item 93 (transient dissociative symptoms, 77%), item 78 (difficulty in controlling anger, 74%), item 32 (identity disturbance, 67%), item 45 (self-mutilating or suicide, 66%), item 101 (intense interpersonal relationships, 64%), item 106a (extravagancy, 64%), item 69 (chronic feelings of emptiness and worthlessness, 62%), item 106e (binge eating, 60%), and item 106c (alcoholic, 35%).

Second, methodological issues may have influenced the frequency rate in our study, such as the source of our sample, the presence of Axis I disorders, and the instruments used. The most common form of mental health service supported by the government in China is medication management of severe and psychotic disorders. The frequency of BPD in the two clinics at Shanghai Mental Health Center may be reduced by the expectations of Chinese citizens that psychiatrists treat mainly, or exclusively, severe and psychotic

disorders. The rate of BPD might have been higher if we had sampled patients from the Drug Abuse Treatment Center or from another institution. Additionally, the high rate of clinical diagnoses of schizophrenia (10.7%) among the 178 participants with BPD may have skewed the findings in some way. In future research, structured interviews for a wide range of Axis I disorders should be employed in order to determine whether these are cases of *DSM-IV* schizophrenia or a reflection of different clinical diagnostic practices in China. We did not analyze the characteristics of the nonparticipants; if we had done so, we might have identified a sampling bias or other limitation of the study. We did not test the interrater reliability of the SCID-II interviews in the study, which is also a limitation. Additionally, in future research it would be useful to assess functional impairment, service utilization, and suicidality in a BPD sample; our not doing so is another limitation of the current study.

The present study shows that a wide range of symptoms is seen in Chinese patients meeting *DSM-IV* criteria for BPD. In our study, we found the most common disorder associated with BPD to be depression (39.3%), which is consistent with findings in the United States (Gunderson & Links, 2008; Skodol, Stout, & McGlashan, 1996). In contrast to findings in the United States, we found that only 0.6% of BPD patients had comorbid substance abuse, which is far lower than in previous reports (Gunderson & Links, 2008; Skodol, Oldham, & Gallaher, 1999). The main reason for this finding, we think, is the sample used in our study. Patients with substance abuse receive treatment mainly at Shanghai Drug Abuse Treatment Center, which is one of the branches of Shanghai Mental Health Center. This center was not involved in our study; therefore the prevalence of substance abuse was lower than might be expected in our sample.

As shown in the Table 2, we found that BPD had extensive comorbidity with other Axis II personality disorders: 63.8% of the BPD patients met criteria for at least one other *DSM-IV* personality disorder. The most common co-occurring Axis-II disorder was depressive personality disorder (35.4%), which is similar to the finding McGlashan et al. (2000) reported (37.7%). Additionally, in our study we found a frequent co-occurrence of BPD and paranoid, avoidant, and narcissistic personality disorders, which is consistent with previous studies (Dahl, 1986; Frances et al., 1984; Pfohl et al., 1986). This result is also consistent with the view that narcissistic personality is the male variant of BPD (Gunderson, 1988). In our study we found that the rate of co-occurring antisocial personality disorder (APD) in BPD was only 1.1%, which is lower than in several previous studies (McGlashan et al., 2000; Nurnberg et al., 1991; Stuart et al., 1998; Zanarini et al., 1987). This finding may be due to our sample characteristics. The highest rates of comorbidity between BPD and APD were found in studies in which the borderline sample contained a high rate of substance abusers, or was composed of borderline patients remanded for treatment by the criminal justice system.

CONCLUSIONS

Our study proves that BPD does occur in China. The detected frequency among outpatients is lower than that reported in North America.

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TABLE 1

Prevalence of Borderline Personality Disorder by Age Groups and Gender at Shanghai Mental Health Center (1,353 males, 1,722 females)

| Age group | Male, <i>n</i> (%) | Female, <i>n</i> (%) | Total, <i>N</i> (%) | χ^2 (<i>v</i> = 1) | <i>p</i> |
|-----------|--------------------|----------------------|---------------------|--------------------------|----------|
| 18–24 | 22 (5.3) | 49 (10.9) | 71 (8.2) | 9.067 | .003 |
| 25–34 | 19 (3.8) | 69 (11.3) | 88 (7.9) | 21.263 | .000 |
| 35–4 | 6 (2.3) | 10 (2.5) | 16 (2.4) | 0.038 | .846 |
| 45–60 | 1 (0.6) | 2 (0.8) | 3 (0.7) | 0.50 | .823 |
| Total | 48 (3.5) | 130 (7.5) | 178 (5.8) | 22.321 | <.01 |

TABLE 2

178 Outpatients with Borderline Personality Disorder Comorbidity with Axis I and Axis II Disorders

| Axis I disorders | N | % |
|--|----------|----------|
| Psychotic disorders | 23 | 12.9 |
| Schizophrenia | 19 | 10.7 |
| Paranoid disorder | 2 | 1.1 |
| Acute and transient psychosis | 2 | 1.1 |
| Mood disorders | 82 | 46.1 |
| Depressive episode | 70 | 39.3 |
| Bipolar disorder | 9 | 5.1 |
| Dysthymia | 3 | 1.7 |
| Stress-related disorders | 12 | 6.7 |
| Neurotic disorders | 23 | 12.9 |
| Phobia | 5 | 2.8 |
| Anxiety disorder | 11 | 6.2 |
| Obsession | 5 | 2.8 |
| Somatoform disorders | 2 | 1.1 |
| Physiological disorders related to psychological factors | 3 | 1.7 |
| Eating disorder | 1 | 0.6 |
| Non-organic sleep disorders | 2 | 1.1 |
| Substance abuse | 1 | 0.6 |
| Axis II disorders | | |
| Paranoid | 36 | 20.3 |
| Schizoid | 8 | 4.5 |
| Schizotypal | 11 | 6.2 |
| Antisocial | 2 | 1.1 |
| Histrionic | 13 | 7.3 |
| Narcissistic | 23 | 12.9 |
| Avoidant | 27 | 15.2 |
| Dependent | 12 | 6.7 |
| Obsessive-compulsive | 21 | 11.8 |
| Negativistic | 22 | 12.4 |
| Depressive | 63 | 35.4 |

Note. All the Axis I diagnoses are according to the clinical diagnoses from the attending psychiatrists using CCMD-3; all the Axis II diagnoses are according to the research diagnoses from our study group using *DSM-IV*.