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Dissociative Disorders Among Chinese Inpatients Diagnosed With Schizophrenia

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Abstract

The purpose of the study was to assess the prevalence of dissociative disorders in a sample of Chinese psychiatric inpatients. Participants in the study consisted of 569 consecutively admitted inpatients at Shanghai Mental Health Center, China, of whom 84.9% had a clinical diagnosis of schizophrenia based on the Chinese Classification and Diagnostic Criteria for Mental Disorders, Version 3 (CCMD-3). All participants completed a self-report measure of dissociation, the Dissociative Experiences Scale (DES) and none had a prior diagnosis of a dissociative disorder. Ninety-six randomly selected participants were interviewed with a structured interview, the Dissociative Disorders Interview Schedule (DDIS) and a clinical interview. These 96 patients did not differ significantly from the 473 patients who were not interviewed on any demographic measures or on the self-report measure dissociation. A total of 28 (15.3%, after weighting of the data) patients received a clinical diagnosis of a dissociative disorder based on DSM-IV-TR criteria. Dissociative identity disorder was diagnosed in 2 (0.53%, after weighting) patients. Compared to the patients without a dissociative disorder, patients with dissociative disorders were significantly more likely to report childhood abuse (57.1% versus 22.1%), but the two groups did not differ significantly on any demographic measures. Dissociative disorders were readily identified in an inpatient psychiatric population in China.

Keywords

Abuse; Dissociation; Schizophrenia; Trauma

INTRODUCTION

Various authors have questioned whether the dissociative disorders, including dissociative identity disorder (formerly multiple personality disorder), occur naturally or are iatrogenic disorders (Lalonde, Hudson, Gigante and Pope, 2001; Spanos, 1996; Lilienfeld et al., 1999; Pope, Oliva, Hudson, Bodkin and Gruber, 1999; Merskey, 1995). However, epidemiological studies over the past two decades have shown that dissociative disorders have been under-

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diagnosed in all countries where studies have been conducted (Ross, 1991; Ross, Duffy and Ellason, 2002; Dell, 1998; Vanderlinden, Van, Vandereycken and Vertommen, 1991). Compared to general psychiatric outpatients and other special populations such as individuals in treatment for substance abuse and prisoners convicted of murder (Akyuz, Dogan, Sar and Yargic, 1999; Murphy, 1994; Ross et al., 1992; Dunn, Ryan, Paolo, Van and Fleet, 1995; Lewis, Yeager, Swica and Lewis, 1997; Aderibigbe, Bloch and Walker, 2001; Collins & Jones, 2003), psychiatric inpatients have been studied more frequently and thoroughly (Horen, Leichner and Lawson, 1995; Friedl & Draijer, 2000; Tutkun et al., 1998; Modestin, 1992; Saxe et al., 1993; Latz, Kramer and Hughes, 1995; Knudsen, Draijer, Haslerud, Boe and Boon, 1995; Rifkin, Ghisalbert, Dimatou, Jin and Sethi, 1998; Friedl, Draijer and de Jonge, 2000; Xiao et al., 2006; Ross, Anderson, Fleisher and Norton, 1991; Gast, Rodewald, Nickel and Emrich, 2001). The findings from these studies warrant further research in additional countries.

The prevalence of dissociative disorders may vary depending on the continent where data are gathered, the choice of measures and study controls (Friedl, Draijer and de Jonge, 2000). Although initial studies of trauma and dissociation in China have been conducted recently (Ross and Keyes, 2009; Ross, et al., 2005; 2008; Xiao et al., 2006a; 2006b), the number of studies of dissociative disorders in China is much less than in North America and Europe. Initial research has established that pathological dissociation, including dissociative identity disorder: can be detected in China; cannot be explained by socio-cognitive contamination or iatrogenic influences; and is more frequent in more traumatized subsamples of the Chinese population. Based on the results of these initial studies, we wanted to establish a more accurate prevalence of dissociative disorders among psychiatric inpatients in China, employing a more rigorous research methodology.

We decided to undertake an assessment of inpatients at Shanghai Mental Health Center using a structured interview, the Dissociative Disorders Interview Schedule (DDIS) (Ross, 1997), and a clinical interview. Initial screening would be done with a self-report measure, the Dissociative Experiences Scale (DES) (Bernstein & Putnam, 1986). Rather than using a cutoff score on the Dissociative Experiences Scale to select participants for the structured interview, as in previous studies (Steinberg, Rounsaville and Cicchetti, 1991; Draijer & Boon, 1993; Carlson et al., 1993), we elected to assess participants randomly selected from the full range of scores. Foote and colleagues (Foote, Smolin, Kaplan and Legatt, 2006) have expressed concern that cutoff scores may exclude participants who have diagnosable dissociative disorders.

Although Friedl and Draijer (2000) suggested that the Dissociative Disorders Interview Schedule might lead to over-diagnosis of dissociative disorders, previous research has shown excellent concurrent validity between the Dissociative Disorders Interview Schedule, the Structured Clinical Interview for DSM-IV Dissociative Disorders (SCID-D) (Steinberg, Rounsaville and Cicchetti, 1991; Steinberg, 1995) and an expert clinical diagnosis (Ross, Duffy and Ellason, 2002). We included a clinical interview in our design and, consistent with previous research, we selected the clinical interview as the “gold standard” for a final diagnostic determination.

To our knowledge, the present study provides the first large-scale assessment of dissociative disorders among Chinese psychiatric inpatients using both standardized diagnostic instruments and a clinical interview. In addition, it provides the first attempt to identify a direct relationship between childhood abuse and clinical dissociative disorder diagnoses in China. In order to make an accurate estimate of the prevalence of dissociative disorders, the study participants consisted of a large number of consecutively admitted patients at Shanghai Mental Health Center and all interviews were conducted by skilled psychiatrists who had participated in inter-rater agreement trainings.

Method

Participants

All native Chinese-speaking adult inpatients, ages 18 to 70 years, admitted to the Shanghai Mental Health Center's Psychiatric Inpatient Department between December 2005 and March 2006, were eligible to participate in the study (N=612). Shanghai Mental Health Center is similar to a municipal or state mental hospital in the United States, except that it conducts a great deal of psychotherapy in its outpatient department. Patients who were unable to read or understand the questions, who were acutely unstable, or who had a diagnosis of mental retardation or dementia, were excluded from the study. Trained Chinese psychiatrists from the institution conducted the structured clinical interviews. The two authors from the United States were in charge of rater training and education of the Chinese psychiatrists, who conducted 46 of the clinical interviews. The American authors conducted 50 of the interviews with a Chinese psychiatrist from the research team acting as translator. No formal procedure was used to control for cross-cultural effects of the interviewers.

A total of 20 study participants were assessed by more than one clinical interviewer to assure inter-rater reliability (kappa=0.75, N=20, $p<0.05$). The interviewers were blind to the participants' self-report and structured interview data, and to clinical information about them. Informed consent was obtained from all participants.

Instruments

Dissociative Experiences Scale (Chinese version). The Dissociative Experiences Scale (Bernstein and Putnam, 1986) is a 28-item visual analogue self-report measure for assessment of dissociative experiences used in hundreds of published studies (Dell, 2002; Van Ijzendoorn & Schuengel, 1996). It has good internal reliability and convergent validity (Bernstein & Putnam, 1986; Carlson et al., 1993; Van Ijzendoorn & Schuengel, 1996). The Chinese version of the DES had been used in previous research (Kleindorfer, 2006; Xiao et al., 2006a; 2006b).

Dissociative Disorders Interview Schedule (Chinese version). The Dissociative Disorders Interview Schedule (DDIS) is a 131-item structured interview, which is used to determine DSM-IV diagnoses of somatization disorder, major depression, borderline personality disorder, alcohol and drug abuse, and the five DSM-IV dissociative disorders (Ross, 1997; Ross et al., 1989). Additionally, the DDIS collects information concerning childhood physical and sexual abuse, secondary features of dissociative identity disorder, and extrasensory/paranormal experiences. The DDIS has a good rate of agreement with the Structured Clinical Interview for DSM-IV Dissociative Disorders (kappa=0.74) and a clinical interview (kappa=0.71) (Ross, Duffy and Ellason, 2002). The Chinese version of the DDIS has been used in previous research (Xiao et al., 2006b).

Data Collection and Procedures

Study data were collected in two steps. In the first step, 569 patients completed the demographic measures and the Dissociative Experiences Scale. Based on previous research (Xiao et al., 2006a; 2006b; Ross et al., 2008; Ross et al., 2005), we divided the participants into four categories based on their scores: 0–10, 11–20, 21–40 and greater than 41. We then selected 10% of those scoring from 0 to 10, 30% of those scoring from 11 to 20, 50% of those scoring from 21 to 40, and 100% of those scoring above 41 by means of a random number table. In the second step, 96 participants completed a structured interview with the Dissociative Disorders Interview Schedule (Chinese version) and a clinical interview based on DSM-IV criteria. The clinical diagnosis was used as the final diagnosis and the gold standard.

Statistical Analysis

Continuous variables were analyzed using Student's t tests. If the distribution of these variables was not normal, nonparametric tests were used. Chi-square tests or Fisher's exact tests were used to analyze categorical data. A logistic regression analysis was performed to assess the predictive value of a history of childhood abuse for a dissociative disorder diagnosis. All tests were two-tailed, and p values <0.05 were considered statistically significant. Data are expressed as means and standard deviations. Analyses were performed by using SPSS 11.0 (SPSS Inc., Chicago).

Results

Six hundred and nineteen Chinese-speaking inpatients were qualified to participate in the study: forty three (7.03%) subjects were lost to the study, including twenty three (3.76%) who were discharged, eight (1.31%) who were re-admissions, five (0.82%) who refused follow-up and seven (1.14%) whose information was incomplete. The final number of subjects included in the analysis was 569. Demographic results were: male 378 (66.4%) and female 191 (33.6%) with a ratio of male to female of 1.98:1; age ranged from 18 to 68 years, with a mean=43.7 [SD=12.5]; marital status, single 357 (62.7%), married 135 (23.7%), divorced or separated 73 (12.8%), and widowed 1 (0.2%); 3 (0.5%) participants did not respond to this item. Number of children ranged from 0 to 5, mean=0.33[SD=0.6]; employed status was employed 145 (25.5%), unemployed 82 (14.4%), retired 191(33.6%), other 142 (25.0%); 9 (1.6%) participants did not respond to this item. Educational experience was 87 (15.3%) under junior school, 335 (58.9%) under senior school, 128 (22.5%) college or higher; 15 (2.6%) participants did not respond to this item.

The distribution of Dissociative Experiences Scale scores in the sample is shown in Table 1.

The distribution of primary clinical diagnoses made by the treating clinicians included: schizophrenia (84.9%, N=483), mood disorders (10.5%, N=60), neurosis (0.9%, N=5), and personality disorders (0.1%, N=4), with additional diagnoses (3.0%, N=17) including organic or substance-induced mental disorders. There were no diagnoses of dissociative disorders made by the treating clinicians. All of these participants completed the Dissociative Experience Scale (Chinese version). Their mean score was 12.0 [SD=16.5].

Of the 569 participants included in the analysis, 96 were selected to complete the DDIS and a clinical interview. These 96 participants were compared with the 473 participants who did not take part in step two of the study; they did not differ significantly on all but two of the demographic variables or on mean DES scores (t=0.01, df=567, p<0.99), including age (t=1.96, df=554, p<0.05), gender ($\chi 2$=1.281, df=1, p<0.258), marital status ($\chi 2$=5.386, p<0.14), educational level ($\chi 2$=4.120, df=2, p<0.127), and employment status ($\chi 2$=3.969, df=3, p<0.265). The average number of children was significantly different between the two groups (t=2.44, df=124.47, p<0.016).

Twenty-eight (29.2%) of the 96 subjects who were interviewed clinically met criteria for a DSM-IV dissociative disorder diagnosis. However, a weighted prevalence was calculated based on the number of participants in each dissociation score range who were interviewed in step two of the study. Based on this correction, eighty-seven of the 569 inpatients (15.3%) were predicted to have a DSM-IV dissociative disorder. The diagnoses were distributed as follows (after the weighting procedure): dissociative amnesia, N=29 (5.10%); dissociative fugue, N=3 (0.53%); dissociative identity disorder, N=3 (0.53%); depersonalization disorder, N=9 (1.58%) and dissociative disorder not otherwise specified, N=43 (7.5%) as shown in Table 2.

None of the 96 participants who received a structured interview and a clinical interview had a dissociative diagnosis recorded in their clinical records: all were diagnosed as suffering from schizophrenia using the Chinese Classification and Diagnostic Criteria of Mental Disorders, Version 3 (CCMD-3). The 68 participants who did not meet criteria for a dissociative disorder, and the 28 patients who did meet criteria did not differ on any demographic measures, including age ($t=0.571$, $df=94$, $p<0.569$), gender ($\chi2=0.009$, $df=1$, $p<0.923$), marital status ($\chi2=1.338$, $p<0.512$), educational level ($\chi2=1.645$, $p<0.462$), employment status ($\chi2=5.545$, $p<0.130$), and number of children ($t=1.434$, $df=94$, $p<0.155$). However, the two groups differed significantly on measures of childhood abuse: 16 (57.1%) of 28 participants with a dissociative disorder reported childhood abuse, compared to 15 (22.1%) of 68 participants without a dissociative disorder. These findings are summarized in Table 3.

A logistic regression analysis indicated that the participants who met the criteria for a dissociative disorder diagnosis were much more likely to have reported childhood sexual abuse (odds ratio=11.17, 95% CI=1.19–104.93, $p<0.05$).

Discussion

The results of the present study indicate that dissociative disorders affect 15.3% of inpatients at Shanghai Mental Health Center, although none of these individuals have received a dissociative disorder diagnosis from treating clinicians. All of the patients with a dissociative disorder were being treated for a clinical diagnosis of schizophrenia. Compared to previous studies in other countries, our results lie in the middle of the range for the prevalence of dissociative disorders among general adult psychiatric inpatients. In general, the studies in North America report a higher prevalence than those in Europe, Turkey and China, as shown in Table 4. The Latz et al. study (1995) is an outlier with a high rate of dissociative disorders compared to the other studies in the Table. This could be due to the fact that the sample is from an American state mental hospital with a distinct patient population.

There are several possible explanations for the variation in findings across countries and continents. First, all studies in Table 4 but one (Tutkun et al., 1998) used structured interviews, either the DDIS or SCID-D, as the only diagnostic tool. Although both structured interviews have good concurrent validity with each other and with the DES and clinical diagnoses, they do not agree perfectly with the gold standard of clinical diagnosis. Second, several studies have used both structured interviews in an effort to identify cases more accurately and to reduce false negatives (Horen, Leichner and Lawson, 1995;Ross, Duffy and Ellason, 2002). Third, there are different diagnostic criteria and traditions on different continents, including the Chinese Classification of Mental Disorders (CCMD), International Classification of Disease (ICD) and DSM systems. Fourth, North American researchers might be more inclined to diagnose dissociative disorders as independent Axis I diagnoses, whereas European and Chinese researchers might be more inclined to include dissociative symptoms within other Axis I diagnoses, such as schizophrenia and mood disorders. The DSM diagnostic system has included a separate section for dissociative disorders since 1980, which is earlier than in ICD or CCMD; this may have made researchers in North America more familiar with and more accepting of dissociative disorders than researchers elsewhere in the world (Aderibigbe, Bloch and Walker, 2001). However, it seems unlikely that any of these factors would influence the results of a standardized structured interview.

All of these factors might, in theory, contribute to an apparent difference in prevalence across continents and cultures, but that seems unlikely. More likely, the true prevalence might vary in different cultures, and features of the health care system might also play a role; for instance, the average length of stay for inpatients at Shanghai Mental Health Center is about three months, compared to less than two weeks in North America. Admission and screening

procedures might vary from one continent to another as well, thereby affecting the prevalence among inpatient samples but not in the general population.

In a previous study of a similar population in China (Xiao et al., 2006b), 7 inpatients (N=423) were diagnosed with dissociative disorders using the DDIS, including 2 with dissociative identity disorder. The prevalence of dissociative disorders was considerably lower in the previous study than in the current study (1.7% vs. 15.3%), while the prevalence of dissociative identity disorder was the same (0.5% vs. 0.5%). We believe that our more thorough screening assessment procedure contributed to this difference. As shown in Table 5, we diagnosed markedly more dissociative amnesia, depersonalization disorder and dissociative disorder not otherwise specified (DDNOS) than did the researchers in the previous study. We believe this is due to false negatives on the DDIS in the previous study combined with our more systematic assessment of a representative sample of the inpatient population in the present study. During the clinical interviews we did not make any effort to subtype the cases of DDNOS according to DSM-IV or any other rules. In future research, it will be of interest to determine whether most cases of DDNOS in China are partial forms of dissociative identity disorder or are other types of disorder not listed under DDNOS in DSM-IV.

In the present sample, 11 out of 28 participants positive for a dissociative disorder (prior to weighting the data) scored under 20 on the screening measure, the DES. These individuals were missed in most of the studies in Table 4, and in the previous study in China, due to using a DES cutoff score of 20 prior to administering a structured interview. We also think that dissociative identity disorder might have more distinct features than the other dissociative disorders, which would make it easier to detect with a structured interview. Conversely, it would be easier to miss the other dissociative disorders using only a structured interview, which is the case in the previous study in China.

None of the participants in our study had ever received a dissociative disorder diagnosis or treatment for a dissociative disorder, none claimed to have a dissociative disorder, and dissociative disorders are not included in the CCMD-3. Our results are therefore inconsistent with a socio-cognitive or iatrogenic model of dissociative disorders, since these sources of contamination have been ruled out. We have no specific hypothesis to explain the fact that all 28 individuals with dissociative disorders on clinical interview were diagnosed as having schizophrenia by their treating psychiatrists, based on CCMD-3 criteria. In our sample, 84.9% of the inpatients (483 of 569) had diagnoses of schizophrenia; the treating psychiatrists made no dissociative disorder diagnoses, and the CCMD-3 does not mention dissociative disorders. If the treating psychiatrists observed any dissociative symptoms, they were likely classified as psychotic symptoms. This occurs throughout the world, and is not unique to China (Ross, 2004; Ross and Keyes, 2004; 2009).

In future research, we plan to administer the DES, DDIS and a structured interview that makes DSM-IV diagnoses of schizophrenia in order to study this problem more thoroughly. Based on the present study, it appears that the inpatient population at Shanghai Mental Health Center includes more true cases of schizophrenia than most inpatient samples in other countries, or, alternatively, the Chinese diagnostic criteria yield more diagnoses of schizophrenia that do ICD or DSM criteria. Whichever of these is the case, the clinical diagnoses of schizophrenia made by the treating Chinese psychiatrists apply to most of the inpatient population, not just to those patients with unrecognized dissociative disorders.

It is not surprising that participants with dissociative disorders in our study reported more childhood abuse than those without dissociative disorders. The number of individuals reporting childhood abuse was too small to undertake a more detailed statistical analysis but nevertheless a logistic regression showed childhood abuse to be a significant predictor of dissociation. This

is consistent with findings throughout the dissociative disorders literature (Ross, 1997; 2004). The rate of reported childhood abuse among participants with dissociative disorders was lower than in North America, therefore other types of trauma or life experiences must be making a relatively greater contribution in China. We intend to investigate these factors in future research, but have no specific hypotheses about them at this point.

Our study has several limitations. All participants came from one hospital; therefore the results might not be generalizable to China as a whole. The DES and DDIS had been translated into Chinese and used in the previous study, but there still might be unrecognized problems with the translations, and cultural factors that influenced the validity of the results in some way we didn't recognize. Clinical interviews require a lot of time, and we had to limit the number we conducted, which may have resulted in our under-estimating the true prevalence of dissociative disorders at Shanghai Mental Health Center. Additionally problems with translation during the clinical interviews by the North American authors may have affected the results in some way. Counter-balancing these limitations are the facts that most members of the research team are Chinese psychiatrists working at Shanghai Mental Health Center, the extensive training provided by the two North American team members, and the expertise of the two North American members at diagnosis of dissociative disorders.

Our study supports two main conclusions: the dissociative disorders affect at least 15% of general adult psychiatric inpatients in our sample, and therefore are likely to be present in other settings in China; and the disorders cannot be accounted for by contamination or iatrogenesis. It is possible that some of the dissociative disorders diagnosed by the DDIS and the clinicians in our study were mistakenly identified cases of Chinese possession syndromes. Such cases have been described in the literature on Chinese psychopathology (Chiu, 2000; Gaw, Ding, Levine, and Gaw, 1998; Li, Sun and Fang, 1992). However, even if this was the case, it would only result in reclassifying cases within the dissociative disorders category, and therefore would not affect the overall prevalence of dissociative disorders in our sample. This is so because trance possession disorder is a dissociative disorder. Additional research should be undertaken in China and in other countries and continents including elsewhere in Asia, and in Africa, South America and Eastern Europe.

In summary, our findings indicate that dissociative disorders can be identified among psychiatric inpatients in China. Although all cases were diagnosed with schizophrenia before, and some cases could perhaps be better understood as examples of trance possession disorder, which is not diagnosed by the DDIS, the overall prevalence of dissociative disorders does not appear to have been influenced by contamination from professionals or the culture, or by demographic factors. The prevalence of dissociative disorders in the sample was in the middle of the range for studies conducted in Turkey, Europe and North America.

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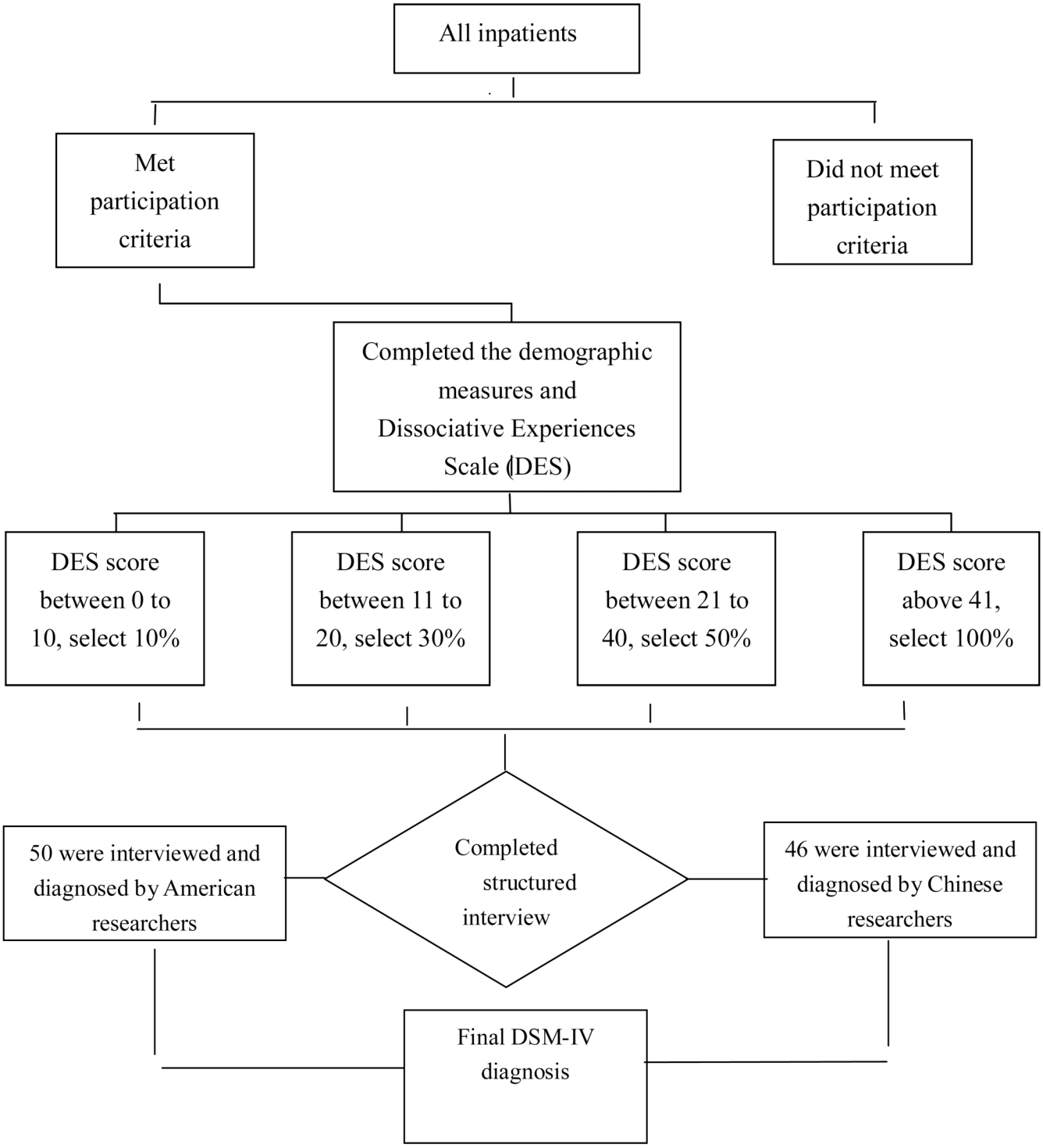

Chart 1.
The Flow Chart for the Study.

Table 1

The distribution of dissociation scores among psychiatric inpatients at Shanghai Mental Health Center.

Group	DES* score	Number of Participants	Proportion selected	Number Participating
A	0 to 10	416	10%	37
B	11 to 20	113	30%	31
C	21 to 40	21	50%	10
D	Above 41	19	100%	18
Total		569		96

DES=Dissociative Experiences Scale

Table 2

The prevalence of dissociative disorders at Shanghai Mental Health Center.

Diagnosis	Number (raw data)	Percent	Number(weighted data)	Percent
Dissociative Amnesia	11	11.5	29	5.1
Dissociative Fugue	1	1.0	3	0.5
Dissociative Identity Disorder	2	2.1	3	0.5
Depersonalization Disorder	4	4.2	9	1.6
Dissociative Disorder Not Otherwise Specified	10	10.4	43	7.5
Total	28	29.2	87	15.3

Table 3

Reported childhood abuse among inpatients with and without dissociative disorders at Shanghai Mental Health Center.

Group	Dissociative Disorders diagnosed by clinical interview		
	Yes (N=28)	No (N= 68)	Total (N=96)
Childhood abuse [a]	16 (57.1%)	15 (22.0%)	31 (32.3%)
No childhood abuse	12	53	65

[a] Continuity corrected $\chi 2=9.619$, df=1, p=0.002

Table 4

Studies of the prevalence of dissociative disorders among psychiatric inpatients in different countries.

Study	Location	Total subjects	Subjects completing the instruments	DID%	DD%	Instruments
Ross et al. 1991	Canada	299	80	3.3	20.7	DDIS
Saxe et al. 1993	U.S.	110[a]	20	3.6	15.0	DDIS
Latz et al. 1995	U.S.	175	176	12.0	46.0	DDIS
Knudsen et al. 1995	Norway	101	23	4.9	7.9	SCID-D
Modestin et al. 1996	Switzerland	207	37	0.4	5.0	DDIS
Tutkun et al. 1998	Turkey	166	40	5.4	10.2	DDIS
Rifkin et al. 1998	U.S.	100	100	1.0	N/A	SCID-D
Friedl et al. 2000	Netherlands	122	56	1.7	8.2	SCID-D
Horen et al. 1995	Canda	48	11	6	17	DDIS
Ross et al. 2002	U.S.	201	110	7.5	40.8	DDIS
Gast et al. 2001	Germany	115	14	0.9	4.3	SCID-D
Present Study	China	569	96	0.5a	15.3a	DDIS

[a]After weighting the data.

DID=dissociative identity disorder; DD=dissociative disorder; DDIS=Dissociative Disorders Interview Schedule; SCID-D=Structured Clinical Interview for DSM-IV Dissociative Disorders.

Table 5

Two studies of the prevalence of dissociative disorders at Shanghai Mental Health Center.

Dissociative disorder	Number of Participants With Diagnosis (%)	
	Previous study (N=423)	Present study (weighted) (N=569)
Dissociative amnesia	1 (0.2)	29 (5.1)
Dissociative fugue	0	3 (0.5)
DID	2 (0.5)	3 (0.53)
Depersonalization disorder	1 (0.2)	9 (1.6)
DDNOS	3 (0.7)	43 (7.5)
Total	7 (1.7)	87 (15.3)