

Distribution and Risk Factors of Disability Attributed to Personality Disorders: A National Cross-sectional Survey in China

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Abstract

Background: Personality disorders can lead to some disability. However, little is known about the disability prevalence and function impairments. This study aimed to describe the disability prevalence attributed to personality disorders, its distribution, impairments of daily activities and social functions, and risk factors in China.

Methods: Using a descriptive and analytic epidemiological method, data from the Second China National Sample Survey on Disability in 2006 were analyzed. The disability prevalence attributed to personality disorders, its distribution in different people and regions, and risk factors were statistically calculated.

Results: Respondents included 1,909,205 adults. The disability prevalence rate attributed to personality disorders in China was 5.9/100,000. The disability rate attributed to personality disorders of males was higher than that of females ($P = 0.012$), while the rate of the unemployed was higher than that of the employed ($P < 0.001$). Furthermore, the rates of unmarried/divorced/widowed people and the illiterate population were higher than those of married and educated people ($P < 0.001$). Regarding the severity of disability attributable to personality disorders, mild disability accounted for a majority or 60% of the respondents. The data showed that disability mainly impaired respondents' ability to engage in daily activities, get along with people, and participate in social situations. According to the case-control study, marriage, employment, and higher education were protective factors of disability.

Conclusions: The prevalence of disability attributed to personality disorders is low in China and always leads to mild disability. The distribution of disability attributed to personality disorders also varies in the Chinese population.

Key words: Disability Prevalence; Epidemiology; Mental Disability; Personality Disorders

INTRODUCTION

Personality disorders are made up of a group of psychiatric disorders that all share a common feature of an enduring, maladaptive behavior pattern markedly deviating from social expectations.^[1] Personality disorders are often diagnosed in early adulthood, and though some symptoms can be mitigated, they last a lifetime. These disorders are prevalent in the general population, with an estimated prevalence rate of 3.9–15.7%.^[2-7] Individuals with personality disorders were more likely to be male, younger, not in marriage, and comorbid with other disorders.^[8] Like other mental disorders, personality disorders can lead to some disability; indeed, a significant increase in disability is observed among people with personality disorders.^[9] People with

personality disorders were more disabled than those without personality disorders according to the score of Short Form Health Survey-12.^[10] Several studies have revealed that personality disorders are strongly associated with disability benefits,^[11,12] even more significantly than mood disorders

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and anxiety disorders.^[13] Personality disorders have also been associated with considerable disease burden. A study found that personality disorders even accounted for more impairment in function than major depressive disorder alone.^[14] Another study by Soeteman *et al.*^[15] indicated that patients with personality disorders experienced a high burden of disease, comparable to that of severe somatic illnesses. Ansell *et al.*^[16] also found that personality disorders were a source of considerable psychological distress and functional impairment equivalent to, and at times exceeding, the distress of mood and anxiety disorders. Furthermore, some studies have found that personality disorders had similar or higher costs to society compared to mood and anxiety disorders.^[17,18] Nevertheless, a study by Rymaszewska *et al.*^[19] indicated a lower degree of social disability from personality disorders than affective or anxiety disorders. To some extent, personality disorders can generally cause disability, decrease quality of life, and pose a burden to society.

Among studies conducted on personality disorders, some have only focused on the prevalence rate and impairment of personality disorders. Furthermore, only a few large-scale studies on personality disorders have been conducted in China; consequently, little is known about the disability prevalence and function impairments.

In 2006, the Chinese government conducted the Second China National Sample Survey on Disability, a national representative population-based survey, to get information on the disability attributed to a variety of diseases, including personality disorders. The survey was designed to describe the prevalence and causes of disability, and to explore the characteristics of people with disabilities in China. It covered all provincial administrative areas in the mainland of China. The present study utilized the data of the national representative survey and aimed to describe the disability prevalence rate attributed to personality disorders, their distribution among different populations and regions, and the impairments on daily activity and social function associated with them. The significance of the present study was to demonstrate that people with personality disorder damage their social functions and even lead to mental disability, using an epidemiological method. This issue was neglected by most studies on mental disorder. There are few specific studies on personality disorder with disability. Therefore, the hypotheses for the study were: (1) personality disorder is a cause of disability though the prevalence rate attributed to personality disorders is low comparing with other mental disorder; and (2) the disability attributed to personality disorders is more likely to be male, younger, not in marriage, and less educated.

METHODS

Study population

The data of this study were derived from the Second China National Sample Survey on Disability, which was conducted from April 1 to May 31, 2006. Stratified, multiphase, and cluster probability sampling was used in the survey. A total

of 734 counties, 2980 towns, and 5964 communities were selected in the survey. Among all, 2,526,145 respondents in 771,797 households from 31 different provinces were investigated. Details of the survey protocol and sampling procedures are described elsewhere.^[20]

Screening and diagnosis of disability attributed to personality disorders

The survey included two phases: screening and diagnosis. For children under 7 years of age, pediatricians made the health examination. For subjects aged 7 years and above, screening was conducted by trained interviewers using standard screening instruments. If any question about psychiatric disability was positive, the subjects were suspected to be disabled, and were examined and diagnosed by trained psychiatrists. The subjects' psychiatric disability and severity were assessed using the World Health Organization Disability Assessment Schedule 2.0 (WHODAS 2.0). The subjects whose score of WHODAS 2.0 higher than 51 were identified as disability. Psychiatric disability was classified into four degrees: mild, moderate, severe, and extremely severe. Furthermore, mental disorders in this survey were diagnosed according to the criteria found in the 10th revision of the International Statistical Classification of Diseases (ICD-10);^[21] mental disability could only be attributed to a maximum of two kinds of mental disorders.

Impairments of daily activities and social function of people with disabilities were evaluated in six domains by psychiatrists: understanding and communicating, physical movement, self-care, getting along with people, life activities, and social participation. Every domain was graded into five categories: without difficulty, mild difficulty, moderate difficulty, severe difficulty, and extreme difficulty.^[22] All the interviewers in the survey were trained uniformly. All the classifications, grading standards, and instruments were pretested in the pilot study with satisfied reliability and validity.

This Second China National Sample Survey on Disability was approved by the Chinese State Council, and informed consent was obtained from the participants or their next of kin. The utilization of the data was permitted by the China Disabled Persons' Federation.

Statistical analysis

Chi-square test was used to compare the different distribution of disability prevalence rates in different people and regions and to examine the difference in proportions of people with difficulty severities in daily activities and social functions between those of disabled people with personality disorders and those of disabled people with other mental disorders. To investigate the risk factors of disability attributed to personality disorders, we conducted a 1:3 case-control study; cases included all respondents with disability attributed to personality disorders. Each case was matched to three healthy controls in the original database by gender and age using a propensity score. Conditional logistic regression was utilized to conduct this analysis. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated. All statistical analyses were

performed using the SPSS version 20.0 (SPSS Inc., Chicago, IL, USA). A $P < 0.05$ was set as statistically significant.

RESULTS

Demographic distribution

A total of 2,526,145 people were interviewed in this survey and 1,909,205 people were over 18 years old. For the sample aged 18 years and over, 49.8% were male, 79.8% were married, and the average age was 44.6 ± 16.4 years. A total of 71.6% of the respondents were employed. However, only 21.2% of the respondents had received at least a high school education.

Disability prevalence rate attributed to personality disorders in Chinese adults and its sociodemographic distribution

Among the 151,627 disabled people aged 18 years and over who were identified in the survey, 15,155 (10.0%) people were identified as mentally disabled and 3647 (2.4%) had multiple disabilities. A total of 112 people had personality disorders according to the ICD-10, including 22 who had multiple disabilities. The disability prevalence rate attributed to personality disorders in Chinese adults was 5.9/100,000.

Table 1 shows the disability prevalence attributed to personality disorders and prevalence ratios by different distributions in Chinese adults. Overall, the disability

prevalence rate of males was 1.6 times higher than that of females ($P = 0.012$). The disability prevalence rate of unmarried and divorced/widowed people was significantly higher than that of married people ($P < 0.001$), while the prevalence rate of the unemployed was 4.4 times higher than that of the employed ($P < 0.001$). Furthermore, people with higher education levels had statistically lower prevalence rates compared to people with lower education levels ($P < 0.001$). Although the disability prevalence rates attributed to personality disorders varied in three economic areas without statistical differences ($P = 0.551$), the highest was in the Central Area, followed by the Western Area and Eastern Area.

The severity of disability attributed to personality disorders and impairment of daily activities and social function

The severity of disability attributed to personality disorders

In the ninety disabled people with personality disorders (excluding those with multiple disabilities), 24 people (26.7%) had severe or extremely severe disability. However, 54 people had mild disability, accounting for 60.0%. In the 22 people who had multiple disabilities, 36.4% had severe or extremely severe disability. Figure 1 shows the severity of disability.

Impairment of daily activities and social function

The disability attributed to personality disorders had little impairment with regard to physical movement; in

Table 1: Disability prevalence attributed to ICD-10 personality disorders and its distribution by demographic factors in Chinese adults ($N = 112$)

Risk factors	Number of disabled people	Prevalence rate (1/100,000)	Prevalence ratio	χ^2	P
Gender				6.292	0.012
Male	69	7.2	1.6		
Female	43	4.5	1.0		
Age				5.220	0.156
18–34 years	30	5.1	1.4		
35–49 years	47	7.4	2.1		
50–65 years	26	5.9	1.6		
>65 years	9	3.6	1.0		
Marital status				79.658	<0.001
Married	52	3.4	1.0		
Unmarried	39	17.2	5.1		
Divorced or widowed	21	13.2	3.9		
Employment status				74.722	<0.001
Yes	39	2.9	1.0		
No	73	13.5	4.7		
Education level				43.996	<0.001
Illiterate	42	13.9	5.6		
Primary school	32	5.9	2.4		
Junior high school	28	4.3	1.7		
Senior high school or higher	10	2.5	1.0		
Economic area				1.191	0.551
Eastern	44	5.3	1.0		
Central	41	6.7	1.3		
Western	27	5.7	1.1		

ICD: International Statistical Classification of Diseases.

contrast, it always caused severe or extremely severe impairment in the daily activities, getting along with people, and social participation, accounting for 41.1%, 33.3%, and 28.8%, respectively [Table 2]. Compared to disabled people with other mental disorders, disabled people with personality disorders revealed less severe or extremely severe function impairment in understanding and communication ($P = 0.011$) [Table 3].

Risk factors for disability attributed to personality disorders

In total, 112 cases were successfully matched to 336 controls. Table 4 shows the association between the disability attributed to personality disorders and some sociodemographic characteristics according to multivariate conditional logistic regression. Unmarried people were more likely to suffer from disability

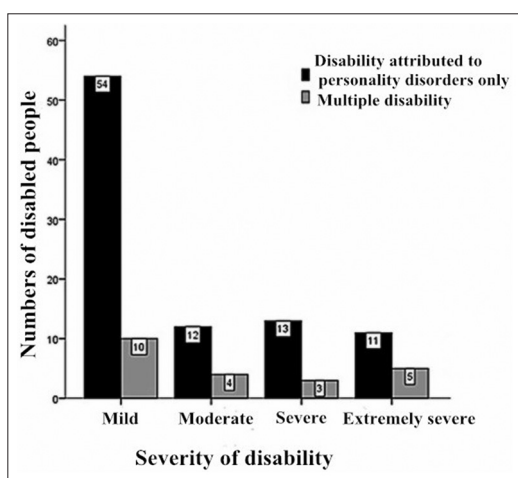


Figure 1: Severity of disability attributed to personality disorders.

attributed to personality disorders compared to married people ($OR = 2.31, P = 0.001$). Compared to the employed population, the unemployed had greatly increased odds of disability ($OR = 2.89, P < 0.001$). Disability was also strongly associated with education level.

DISCUSSION

In this study, we described the disability prevalence rate attributed to personality disorders in Chinese adults, its distribution in different populations and regions, the impairment of daily activities and social function, and related risk factors. We found that nearly 4/100,000 people suffer from disability attributed to personality disorders.

To the best of our knowledge, few studies have reported the disability prevalence attributed to personality disorders. Most of the current epidemiological studies on personality disorders have just described the prevalence of personality disorders.^[3,4] According to the data of the World Mental Health Survey (WMHS), the prevalence of personality disorders in China was 4.1%.^[4] Obviously, the disability prevalence attributed to personality disorders in this study was much lower than any of the reports above. Because the survey population of the Second China National Sample Survey on Disability included people with any disability, the disability prevalence rate is definitely lower than the prevalence rate of mental disorders. Compared with the prevalence rate of disability attributed to mood disorders (36.6/100,000), the disability rate attributed to personality disorders was obviously lower. However, the gap of disability prevalence between the two diseases was larger than that of the disease prevalence.^[4,23] According to this, we can surmise that personality disorders lead to less disability than mood disorders.

Table 2: Severity of disability attributed to personality disorder disabilities in daily activities and social function ($N = 90$), n (%)

Daily activity and social function	No difficulty	Mild difficulty	Moderate difficulty	Severe difficulty	Extremely severe difficulty
Understanding and communicating	11 (12.2)	39 (43.3)	27 (30.0)	9 (10.0)	4 (4.4)
Physical movement	68 (75.6)	17 (18.9)	3 (3.3)	2 (2.2)	0 (0)
Self-care	45 (50.0)	30 (33.3)	10 (11.1)	5 (5.6)	0 (0)
Getting along with people	2 (2.2)	25 (27.8)	33 (36.7)	22 (24.4)	8 (8.9)
Life activities	2 (2.2)	28 (31.1)	23 (25.6)	29 (32.2)	8 (8.9)
Social participation	2 (2.2)	28 (31.1)	34 (37.8)	22 (24.4)	4 (4.4)

Table 3: Comparison of severe function impairment in disabled people with personality disorders and other mental disorders, n (%)

Daily activity and social function	Disabled people with personality disorders ($N = 90$)	Disabled people with other mental disorders ($N = 11,418$)	χ^2	P
Understanding and communicating	13 (14.4)	2994 (26.2)	6.417	0.011
Physical movement	2 (2.2)	310 (2.7)	0.082	0.774
Self-care	5 (5.6)	908 (8.0)	0.702	0.402
Getting along with people	30 (33.3)	3774 (33.1)	0.012	0.913
Life activities	37 (41.1)	5754 (50.4)	3.078	0.079
Social participation	26 (28.9)	4360 (38.2)	3.272	0.070

Table 4: Multivariate conditional logistic regression of risk factors for disability with personality disorders, *n* (%)

Risk factors	Disabled people with personality disorders (<i>N</i> = 112)	Healthy controls (<i>N</i> = 336)	OR (95% CI)	<i>P</i>
Marital status				
Married	52 (46.4)	268 (79.8)	1	0.001
Unmarried	39 (34.8)	48 (14.3)	2.31 (1.50–3.54)	
Divorced or widowed	21 (18.8)	20 (6.0)	1.76 (1.03–2.99)	
Employment status				
Yes	39 (34.8)	257 (76.5)	1	<0.001
No	73 (65.2)	79 (23.5)	2.89 (1.91–4.38)	
Education level				
Illiterate	42 (37.5)	45 (13.4)	1	<0.001
Primary school	32 (28.6)	96 (28.6)	0.74 (0.46–1.18)	
Junior high school	28 (25.0)	124 (36.9)	0.53 (0.33–0.88)	
Senior high school or higher	10 (8.9)	71 (21.1)	0.29 (0.14–0.58)	
Economic area				
Eastern	44 (39.3)	139 (41.4)	1	0.583
Central	41 (36.6)	117 (34.8)	1.19 (0.78–1.83)	
Western	27 (24.1)	80 (23.8)	1.24 (0.76–2.01)	

OR: Odds ratios; CI: Confidence interval.

Findings from this study showed that the disability prevalence rate of males was higher than that of females. The results of most epidemiological studies on personality disorders have indicated that the prevalence of personality disorders of males was higher than that of females. A study conducted by Hopkins in 2002 found that Cluster A and Cluster B disorders were more prevalent in men.^[3] The results of the WMHS also strongly indicated that male gender is a risk factor for personality disorders.^[4] It could be inferred that the high prevalence rate of males lead to a similarly high disability prevalence rate.

Our survey found that the distribution of prevalence was different based on different marital statuses. Marriage was a protective factor for disability attributed to personality disorders; one explanation may be that individuals with personality disorders are problematic for the people around them, especially their spouses. It is more likely that it is relatively difficult for people with personality disorders to maintain close relationships with others or stable marriages. Consistently, the findings from the WMHS suggested that previously married was a risk factor for patients with Cluster A personality disorders.^[4]

With regard to education level, the lower education group was more likely to suffer from disability attributed to personality disorders and a higher education level seemed to be a protective factor. The results of the WMHS also suggested that less educated people are more sensitive to personality disorders. It may be that people with personality disorders or personality dysfunction could probably not finish school or get along with those around them.^[4,5]

As for employment status, our data indicated that unemployed individuals were more likely to suffer from personality disorders, which was also consistent with most related surveys.^[3,24] A study on the association between personality

disorders and occupational functioning suggested that most of the personality disorders were found to be significantly related to occupational dysfunction, especially Cluster A and B disorders. Nevertheless, Cluster C disorders were less strongly related to occupational dysfunction compared to other personality disorders.^[24]

The study also indicated that the majority of individuals with disability attributed to personality disorders suffered from mild disability and less severe impairment in daily activities and social function, which was consistent with some of the previous studies.^[4] The impairment of understanding and communicating was even less severe than other mental disorders. Due to the nature of personality disorders, there was little decrease in physical movement and some other abilities. A study also found that personality disorders mainly impaired interpersonal relationships with regard to work, social, and leisure functions.^[4] The WMHS also found that impairment of physical movement and self-care was the weakest compared to other domains.^[4] However, it still went against the conclusion of some related studies, which indicated that personality disorders are a heavy burden to society, even higher than mood or anxiety disorders.^[18,25] In recent years, some have regarded personality disorders as mental disorders with great harm, and declared that personality disorders need more research.^[17,26] Nevertheless, according to our research, personality disorders led to less and milder disability compared to other mental disorders; we have also found that disability attributed to personality disorders was not as prevalent as some researchers had thought. Furthermore, we could also speculate that people with this less severe disability or disease were more likely to live in a community and would not seek help.^[27] Hence, researchers may shift their attention to disabled people in the community. Recovery of function would be promoted by means of health education and group activities in the

community. At this stage, that may be more effective than clinical treatment, considering the low rate of utilization of health service.

Several limitations of the study should be noted. First, the findings of the study represented only disabled people with personality disorders. The results may not be applicable to patients who have personality disorders but no disability or to other populations. Second, though personality disorders consist of several subtypes, the study did not clarify the specific subtypes, which may confine further exploration to reveal the results of the subtypes. This also made it difficult to compare the results to some other studies. Third, in the Second China National Sample Survey on Disability, mental disability could only be recorded based on two main causes. Personality disorders are a group of mental disorders that are not as serious compared to other mental disorders, such as schizophrenia and mood disorders. Therefore, the identification was not so exact for disabled comorbidities with more than two kinds of mental disorders, and the results could not be generalized to complicated comorbidities. Fourth, personality disorders have a strong link with parenting styles.^[28,29] We have no information about the parenting style of the disability attributed to personality disorders, which further studies could consider.

In summary, the results of the present study concluded that the prevalence of disability attributed to personality disorders is relatively lower than most of other mental disorders in China, and always leads to mild disability. The distribution of disability also varies in the Chinese population.

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Conflicts of interest

There are no conflicts of interest.

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