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A descriptive epidemiological study of disability prevalence attributed to neurotic disorders in China

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ABSTRACT

This study estimated the prevalence, correlates, severity and functional impairment of disabilities attributed to neurotic disorders in the Chinese population. Data from a representative national sample of 2,526,145 non-institutionalized residents were obtained from the Second China National Sample Survey on Disabilities (CNSSD) in 2006. The data were analyzed to estimate prevalence, correlates, severity and functional impairment of disability attributable to neurotic disorders by gender, age, region, and other key socio-demographic and economic factors. The disability prevalence attributed to neurotic disorders was 0.032% (805/2,526,145) in China. Women, rural residents, unemployed job status, low education level and those who were divorced or widowed showed higher prevalence rates than their counterparts. Proportions of mild, moderate, severe and extremely severe of neurotic attributed disability only accounted for 78.48%, 9.14%, 6.5% and 5.9%, respectively. Finally, these findings provide evidence that, prevalence rates of disability attributable to neurotic disorders vary greatly among different population groups and regions. Multiple disabilities including disability attributable to neurotic disorders can bring much more impairment to individuals than disability attributable to neurotic disorder only.

1. Introduction

Neurotic disorders are a group of mild brain dysfunctions, which can be affected by psycho-social factors and personal qualities. The main symptoms of neurotic disorders are anxiety and successive depression with physical symptoms, such as autonomic dysfunction and sleep problems. Thus, neurotic disorders can be presented as mental or physical symptoms. Definitions of Neurotic disorders have gone through tremendous changes in the last four decades in the psychiatric academic community. From the second edition of its Diagnostic and Statistical Manual of Mental Disorders (DSM-II) to the fourth edition of its Diagnostic and Statistical Manual of Mental Disorders (DSM-IV) (American Psychiatric Association, 1968, 1980, 1994), which can also been seen in the development of the International Classification of Diseases the 8th revision of the International Statistical Classification of Diseases (ICD-8) to the 10th revision of the International Statistical Classification of Diseases (ICD-10) (World Health Organization, 1968, 1975, 1995). Although the concept of neurotic disorders has been challenged and abolished in many countries, it remains in ICD-10 which is widely accepted and utilized in China (World Health Organization, 1995).

Since 1998, The World Health Organization had established the World Mental Health (WMH) Survey Consortium to estimate prevalence, severity, and treatment of mental disorders. From this collaborative survey, the 12-month prevalence of any anxiety disorder, a subgroup of the larger category of neurotic disorders, varied widely across geographical locations (from 2.6% in China to 18.2% in the United States) (The WHO World Mental Health Survey Consortium, 2004). According to the National Comorbidity Survey-Replication (NCS-R) and the National Latino and Asian American Study (NLAAS), the adjusted lifetime and 12-month prevalence rates of neurasthenia, as defined by the ICD-10, is 2.22 and 1.19%, respectively (Molina et al., 2012). This study also indicated that individuals with neurasthenia had significantly greater levels of impairment in all five WHO-DAS-II domains.

In the 1993 China mental health epidemiological survey, the point prevalence of neurotic disorders was 1.51%, with a higher prevalence among women than men and among rural residents than urban residents (Shuran and Yucun, 1998). Regional surveys have also been carried out during those years among Chinese cities. The lifetime prevalence of the neurotic disorder in Shanghai was 2.87% (Tianxing and Shaoping, 2000) and 3.84% in Wuxi (Minglian et al., 2005), both of

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which are extremely high. In 2001 Phillips (Phillips et al., 2009) conducted a cross-sectional survey of mental disorders in four provinces of China using the Structured Clinical Interview for DSM- IV Axis I disorders (SCID) (First et al., 2002). The result showed that the one-month prevalence of anxiety disorders was 5.6% (5.0–6.3). This study also showed that among individuals with a diagnosed mental illness, 24% were moderately or severely disabled by their illness.

Although there were many methodological differences among those study, they all showed that neurotic disorder and the subgroups had a high prevalence and associated with functional impairment. There have been regional cross-sectional surveys focused on the prevalence and risk factors of neurotic disorder, but little research has been published focusing on the negative outcomes of neurotic disorders. Disability as one of the negative outcomes of mental disorder has gained the attention of the government and researchers. Then the Second China National Sample Survey on Disabilities was carried out under the guidance of the State Council and the China Disabled Persons' Federation in 2006 to evaluate the prevalence of six kinds of disability, including visual disability, hearing and speech disability, physical disability, intellectual disability and mental disability. Some previous studies based on this survey have been published. Shang's study aimed to describe the disability prevalence rates attributed to mental disorders, and they reported that the disability prevalence rate attributed to mental disorders in China was 0.63% (Shang et al., 2017). The study of disability attributed to schizophrenia (Liu et al., 2013), mood disorder (Li et al., 2015), and personality disorder (Zhang et al., 2016) were also reported. As an important area of mental disorders, neurotic disorder prompted disability is worthy of further in-depth research.

Hence, the main aim in this article is to analyze the Second China National Sample Survey on Disabilities and investigate the prevalence, correlates, and severity of neurotic disorder attributable disabilities, and to provide evidence for making strategy and measurement related to disability rehabilitation attributed to neurotic disorders.

2. Methods

2.1. Study population

This study used data from the Second China National Sample Survey on Disabilities. The survey aimed to investigate the prevalence, causes, and severity status of disabilities, as well as the living conditions and health service needs of the person with disabilities. A multiple-stage stratified clustered probability sampling methodology was adopted to obtain a representative sample of non-institutionalized Chinese people across mainland China. Details of the survey have been presented elsewhere (Office of China National Sample Survey on Disability, 2006a). In total, 2,526,145 persons from 734 counties and 5,964 communities were selected for the survey.

2.2. Measures

Diagnoses of neurotic disorders, as well as disabilities attributed to neurotic disorders, were assessed in three steps. In the first step, a disability screening questionnaire (Office of China National Sample Survey on Disability, 2007) administered by trained interviewers through face-to-face household interviews, was used to screen out individuals who were likely to have a psychiatric disability. The questionnaire was shown in three pilot studies to have a very good validity (Liu et al., 2014a). Respondents were asked to report by themselves and other household members. If a positive response was given in any of the screening questions, the suspected person was designated as "likely to be psychiatrically disabled."

In the second step, trained psychiatrists with more than five years' clinical experience assessed whether the respondent was disabled, and whether his/her disability degree using the World Health Organization Disability Assessment Schedule Version II (WHO-DAS-II). Thirty-six-item WHO-DAS-II contains six domains including understanding and communicating, physical movement, self-care, getting along with people, life activities, and social involvement. The subjects were given on a 5-point Likert-type scale from 1 (none) to 5 (extreme/cannot do) for each question. The severity of mental disability was classified as mild, moderate, severe, and extremely severe disability by the total score of WHO-DAS-II (Ustun et al., 2010). In our study, single disability refers to disability attributed to neurotic disorder only. Multiple disabilities refer to the disability attributed to comorbid neurotic disorder and any other kinds of disability.

In the third step, for those who were screened out as psychiatrically disabled, psychiatrists then utilized the ICD-10 Symptom Checklist for assessing whether the respondent's disability was attributable to mental disorders, and from which mental disorder they suffered. In this survey, mental disorders included organic mental disorders, mental disorders due to psychoactive substance use, schizophrenia, schizotypal and delusional disorders, mood disorders, neurotic stress-related and somatoform disorders, behavior syndromes, disorders of adult personality and behavior, autism, and epilepsy. Neurotic disorders include agoraphobia, social phobias, specific phobias, panic disorder, generalized anxiety disorder, mixed anxiety and depressive disorder, other mixed disorders, obsessive-compulsive disorder, post-traumatic stress disorder, adjustment disorder, dissociative[conversion] disorder, somatoform disorders, and neurasthenia (Zheng et al., 2011).

The questionnaire also contained demographic information; such as age, gender, economic region, and so on. In particular, the economic region was delineated by the Development Research Center Under the State Council in 2002. The survey was dividing based on geographical location, natural conditions, resource endowment and the level of economic development of mainland China. Besides, service use and treatment requirements information were also collected.

2.3. Data analysis

The data were analyzed by SPSS 20.0 and STATA 8.3, estimating the prevalence and distribution of disability attributed to neurotic disorder in the non-institutionalized populations. Chi-square test and Logistic regression analysis were used to explore the risk factors of disability attributed to neurotic disorder. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated. Statistical significance was based on 2-sided tests evaluated at the 0.05 level of significance.

3. Results

3.1. Disability prevalence attributed to ICD-10 neurotic disorders

A total of 2,526,145 residents were interviewed in this survey. The average age was 44.36 years old. Among them, 1,218,125 respondents (50.2%) were women; 1,717,779 respondents (68.0%) lived in rural areas; 2,015,864 respondents (79.8%) were married, and 1,258,020 respondents (49.8%) had middle school or higher education. There were 161,479 respondents (6.39%) identified as disabled, and 15,928 respondents (0.63%) diagnosed as disabled attributed to mental disorders. Among mentally disabled people, 805 respondents (0.032%) were diagnosed with a disability attributed to neurotic disorders, and 94 of them had multiple disabilities.

Table 1 presents characteristics of respondents with disabilities attributed to neurotic disorders. The prevalence of disabilities attributed to neurotic disorders in female respondents was higher (0.048%) than that of male respondents (0.016%) ($P < 0.001$). With regard to household registrations, the prevalence was higher in rural areas (0.034%) than that in urban areas (0.028%) ($P = 0.019$). The prevalence rate of the 50 to 64 age group was the highest (0.07%), followed by the 35 to 49 age group (0.047%) and the 65 age group and over (0.045%). Regarding education level, the prevalence rate of illiterate disabled people was the highest (0.086%), followed by those of

Table 1
Prevalence of disabilities attributed to neurotic disorders and its distribution.

Demographic factor	No. of disable people with neurotic disorder	Prevalence (%)	χ^2	*P*
Total	805	0.032		
Gender			212.810	< 0.001
Male	201	0.016		
Female	604	0.048		
Household Registration			5.577	0.019
Rural	611	0.034		
Urban	194	0.028		
Age group			514.625	< 0.001
0–17	5	0.001		
18–34	77	0.013		
35–49	302	0.047		
50–64	307	0.070		
65 ~	114	0.045		
Education			337.664	< 0.001
Illiteracy	275	0.086		
Elementary below	287	0.037		
Junior school	163	0.020		
High school and above	80	0.018		
Employment			17.000	< 0.001
Employed	375	0.027		
Unemployed	431	0.067		
Marital status			87.887	< 0.001
Unmarried	60	0.015		
Married	638	0.042		
Divorced or windowed	107	0.067		
Economic region			41.846	< 0.001
Northeast	65	0.028		
North	123	0.032		
East	102	0.037		
South	50	0.021		
Yellow River	162	0.047		
Yangtze river	108	0.027		
Southwest	126	0.028		
Northwest	69	0.032		

Table 3
Functional impairments of disability attributed to neurotic disorders.

Activity and social function	Impairment severity	Multiple disabilities		Single disability	
		Number	Rate (%)	Number	Rate (%)
Understanding and communication	Extremely severe	5	5.43	9	1.27
	Severe	10	10.87	43	6.07
	Moderate	27	29.35	199	28.11
	Mild	41	44.57	368	51.98
	None	9	9.78	89	12.57
Physical movement	Extremely severe	3	3.26	3	0.42
	Severe	1	1.09	5	0.71
	Moderate	11	11.96	35	4.94
	Mild	26	28.26	193	27.26
	None	45	48.91	472	66.67
Self-care ability	Extremely severe	2	2.17	0	0.00
	Severe	7	7.61	11	1.55
	Moderate	12	13.04	39	5.51
	Mild	33	35.87	258	36.44
	None	38	41.30	400	56.50
Personal communication	Extremely severe	4	4.35	11	1.55
	Severe	13	14.13	53	7.49
	Moderate	30	32.61	214	30.23
	Mild	38	41.30	330	46.61
	None	7	7.61	100	14.12
Daily activity	Extremely severe	7	7.61	32	4.52
	Severe	24	26.09	103	14.55
	Moderate	27	29.35	270	38.14
	Mild	25	27.17	267	37.71
	None	3	3.26	36	5.08
Social involvement	Extremely severe	4	4.35	15	2.12
	Severe	28	30.43	128	18.08
	Moderate	40	43.48	337	47.60
	Mild	19	20.65	220	31.07
	None	1	1.09	8	1.13
Total		92	100.00	708	100.00

disabled people with elementary school level of education (0.037%) and junior middle school (0.020%) ($P < 0.001$). Regarding marital status, the prevalence rate of the divorced or widowed disabled people was the highest (0.067%) ($P < 0.001$). In the eight economic regions, the prevalence was lowest in the south region (0.021%) and highest in the Yellow River region (0.047%) ($P < 0.001$).

3.2. Disability attributed to neurotic disorders and functional impairment of disabled people

Table 2 shows the severity of disabilities attributed to neurotic disorders. Considering multiple disabilities, the proportions of the first, second, third and fourth degree of impairment were 17.02%, 10.64%, 10.64%, and 61.70%, respectively. Regarding the single disability, the proportions were 5.91%, 6.47%, 9.14%, and 78.48%, respectively. Table 3 shows the functional impairments of disability attributed to neurotic disorders among adults aged 18 years and over. It shows that the impairment of physical movement was the generally low, while impairment on social involvement and daily activity were relatively more severe than the others. Table 2 and Table 3 also demonstrate that persons with multiple disabilities were more severe in functional impairments compared with those whose disability was caused by neurotic disorder only.

3.3. Risk factors of disability attributed to neurotic disorders

Table 4 presents the association between the disability attributed to neurotic disorders and some social-demographic characteristics through multivariate logistic regression. Age, gender, education, marital status, employment status, household registrations, and economic region were statistically significant ($P < 0.05$). Compared to males, females were more likely to suffer from disability attributed to neurotic disorders (OR = 0.463). The population from rural areas was 1.325 times more likely to have the disability attributed to neurotic disorders

Table 2
The severity of disability attributed to neurotic disorders.

Disability	Severity of disability									
	Extremely severe		Severe		Moderate		Mild		Total	
	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)
Multiple disabilities	16	17.02	10	10.64	10	10.64	58	61.70	94	100
Single disability	42	5.91	46	6.47	65	9.14	558	78.48	711	100

Table 4
Multivariate logistic regression of risk factors of disability with neurotic disorders.

Risk factor	OR	OR 95%CI	*P*
Gender			<0.001
Male	0.463	(0.390,0.550)	
Female	1		
Household Registration			0.005
Rural	1.325	(1.089,1.611)	
Urban	1		
Age group			<0.001
0-17	0.022	(0.003,0.165)	
18-34	0.880	(0.605,1.280)	
35-49	3.547	(2.700,4.661)	
50-64	3.047	(2.396,3.876)	
65~	1		
Education			<0.001
Illiteracy	3.044	(2.239,4.139)	
Elementary below	2.312	(1.742,3.069)	
Junior school	1.256	(0.950,1.661)	
High school and above	1		
Employment			<0.001
Employed	0.312	(0.390,0.550)	
Unemployed	1		
Marital status			0.018
Unmarried	1.590	(1.075,2.350)	
Married	0.991	(0.786,1.248)	
Divorced or windowed	1		
Economic region			<0.001
Northeast	0.808	(0.573,1.139)	
North	0.950	(0.705,1.281)	
East	0.958	(0.704,1.303)	
South	0.615	(0.427,0.888)	
Yellow River	1.450	(1.091,1.926)	
Yangtze River	0.790	(0.582,1.071)	
Southwest	0.821	(0.610,1.105)	
Northwest	1		

than the urban area population. Regarding the employment status, being employed was a protective factor. Disability was also strongly associated with the economic region. Furthermore, being middle aged, having low education level and being married were the risk factors of disability attributed to neurotic disorders.

4. Discussion

The Second National Sampling Survey on Disability in 2006 made great progress, following the first national sampling survey in 1987(Chen et al., 2011). The research design and implementation of this survey were scientifically rigorous, and the quality control process was stringent, which helped to strengthen the accuracy and reliability of the data. The survey was a very large population-based study, providing a unique opportunity to assess many kinds of disabilities; including visual disability, hearing disability, physical disability, intellectual disability, and mental disability. Mental disability in this study refers to mental disorders lasting more than one year that manifested as cognitive, affective, and behavior disorders affecting the daily life and social involvement (Zheng et al., 2011). The definition is the same as Law of the People's Republic of China on the Protection of the Disabled persons. Although this survey was conducted almost 12 years ago, due to the lack of new national survey data, the government has still needed to rely on the results of the present survey to evaluate the number of people with any kinds of disabilities and to make relevant policies. This situation also demonstrates the importance of this nationwide disability survey and the urgency of conducting a new one to obtain the latest data.

Since anxiety disorders are highly comorbid with each other and with other mental disorders and they are often the temporally primary disorders in comorbid profiles, early interventions to treat anxiety disorders might have a positive effect on the onset, persistence, or severity of secondary disorders such as mood and substance use disorder (Kessler et al., 2010). This paper concentrated on the prevalence and distribution of disability attributable to neurotic disorder in China. Although the concept of neurotic disorders was abolished in the new DSM-V diagnostic system, a large cross-sectional survey like China's Second National Sampling Survey on Disability can show some indications of disabilities attributed to the common mental disorders.

While a large number of studies concerning the prevalence of neurotic disorder exist, few studies have reported on disabilities attributed to neurotic disorders. The aim of the Second China National Sample Survey on Disabilities was to investigate people with disability and their attribution of disabilities. Therefore, people with disability were screened out first. Doctors made diagnosis of neurotic disorder afterward. The prevalence of disability reported in this paper is disability attributed to neurotic disorder, and differs from prevalence of disability studies reported in most of the literature. Thus, prevalence of disability attributed to neurotic disorder cannot compare to the prevalence of neurotic disorder in former studies. In common sense, the prevalence of disability attributed to neurotic disorder must be lower than the prevalence of neurotic disorder because the numerator of the former prevalence is the number of people who are disabled with neurotic disorder from the general population and the numerator of the later is the number of people with neurotic disorder.

The prevalence rate of disability prevalence attributed to neurotic disorders was lower than that from the previous study in 4 provinces, which reported the prevalence of anxiety disorder associated disability (Phillips et al., 2009). There are several explanations. Firstly, it is mainly due to the differences of study design. In our study, the first stage was to screen for people with disabilities. Afterwards, for those who were identified as disabled persons, psychiatrists made diagnosis of any mental disorder. As for Phillip's research in the first stage, the people with anxiety disorder were identified, and assessed their disabilities afterwards in the second stage. The former design may lead to a missed diagnosis of disabilities. Secondly, the diagnostic and assessment instruments were different. The Second China National Sample Survey on Disabilities used the WHO International Classification of Functioning to identify whether people suffered from disability, and use ICD-10 to diagnose neurotic disorders. While Phillip's research used DSM-IV to diagnose anxiety disorder and Global Assessment of Functioning (GAF) to assess the impairment of people with anxiety disorders. Although anxiety disorder was a subgroup of the larger category of neurotic disorders, different diagnose criteria and disability might lead to different prevalence rates. Hence, compared with the previous study, the present findings might be conservative, which should be interpreted with caution. Regarding the severity of disability, both studies have shown that neurotic disorder or anxiety disorder was more likely to cause mild disability.

It is meaningful to compare the prevalence of disability attributed to neurotic disorder to those attributed to other mental disorders in the current survey. The prevalence rate of disability attributed to schizophrenia was 0.041%, and mood disorder was 0.037%. The prevalence of disability attributed to neurotic disorder was 0.032%, being obviously lower than schizophrenia and similar to mood disorder (Li et al., 2015; Liu et al., 2013). Regarding the severity of disability attributed to mental disorder, the severity degree of disability attributed to neurotic disorder was lower than that of schizophrenia and mood disorder, being less impactful on daily life and social involvement (Liu et al., 2014c).

As for distribution of prevalence of disability attributed to neurotic disorder, it was found that women were at higher risk to suffer from disability attributed neurotic disorder, in accordance with higher prevalence of anxiety disorders in women (Kessler et al., 2007; Kessler et al., 2005; Liu et al., 2014b). Meanwhile, women with disability attributed to mental disorders were more than men with mental disability as a whole (Shang et al., 2017). Mackenzie reported female with anxiety disorder had more positive attitude towards help-seeking (Mackenzie et al., 2012). It implied that women would have a lower

prevalence of disability attributed neurotic disorder. Nevertheless, higher prevalence of neurotic disorder in women was dominant so that higher prevalence of disability attributed to neurotic disorder was still prevailing, in spite of more help-seeking in women. It suggests that public policies should seek to promote gender equality, and empowering women will play a fundamental role in improving the mental health of women as a whole.

As for the residential area, the prevalence of disability attributed neurotic disorder in rural areas was higher than that in urban areas. The logistic regression also strongly indicated that rural area was a risk factor of disability attributed neurotic disorder. Furthermore, according to the official report of this survey (Office of China National Sample Survey on Disability, 2006b), there were some rural registered residents living in urban areas (21 people in total) who were disabled as a result of having a neurotic disorder. Based on the area of their household registration, subsidies are assessed and granted through the local government. This process may be prohibitive for people with complicated household registration issues and subsidy standards in rural areas may not be high enough to match costs associated with residents living in urban areas. The difference and imbalance in health resource allocation between rural and urban areas demonstrate that rural residents might need more health care resources input from the government.

Age, education, marital status, economic regions and occupation all showed some indications about risk factors. Those who were middle aged had lower education levels, and those with unemployed status showed a higher prevalence of disability attributed to neurotic disorders. Furthermore, individuals from Yellow River region and Northwest region were more likely to suffer from disability attributed to neurotic disorders. Although the etiology of neurotic disorder remains unclear, in general, the current evidence suggested that social economic and environmental factors play an important role in the occurrence of the disease (Sarsembaev, 2003). Mainland China was divided into eight economic regions. Both Yellow River Region and Northwest Region were less developed area in China. Yellow River region was located in the middle of China, including Shaanxi Province, Henan Province, Shanxi Province, and Inner Mongolia Autonomous Region. Northwest region contains Gansu province, Qinghai province, the Ningxia Hui Autonomous Region, Xinjiang Uygur Autonomous region and Xizang (Tibet) Autonomous Region. As for the level of economic development, Gross Domestic Product of these regions was lower than the average level of China in 2006 (China National Bureau of Statistics, 2007). According to a study of basic resource allocation in Midwest region (Wen, 2008), the researcher found that the preventive health equipment was insufficient and the occupation rate of public health departments in community health service institution was lower. Antunes's study showed that any mood or anxiety disorder patients with lower socioeconomic position, like being unemployed, having less education and being financially deprived, are more likely to report suffering from disabilities (Antunes et al., 2018). Therefore, our findings also indicate that social inequalities may have resulted in a higher prevalence of neurotic-related disability among undeveloped region people, such as the yellow river region, the northwestern and northeastern regions.

The study also indicated that the majority of individuals with disability attributed to neurotic disorders suffered from mild and moderate disabilities. The abilities of social involvement and daily activity were relatively more severely injured than the other four categories of functional impairments, demonstrating that the major influence of neurotic disorders was to impair patients' social activities and communications.

From such a large-scale epidemiological survey on disabled people, an important point is that the research can inform the policy. Many effective measures to promote the protection of the rights of disabled persons have been implemented after the survey. The China Disabled Persons' Federation reported the situation of mentally disabled persons (China Disabled Persons' Federation, 2016). By December 31, 2015, the National Basic Databases of disabled persons recorded 31.46 million persons with disabilities holding disability identification cards, of whom 2.45 million were mentally disabled. A "socialized, comprehensive and open" model was promoted for prevention and rehabilitation of mentally disabled persons. The campaign of prevention and rehabilitation of mentally was carried out in 2,705 counties (county-level cities and district), covering 5.806 million disabled people with the severe mental disorders. Among these mentally disabled persons, 79.2% of them lived with supports from communities, 66.6% of them showed obvious signs of recovery, and 51.6% of patients returned to society. Totally 546,000 mentally disabled people at lower economical level received medical assistance. The China Disabled Persons' Federation also made some other policies for people with disability to improve the employment rate, education opportunity, service facilities and so on. However, these data just reflected the situation of registered mentally disabled people. More attention should be paid for those unregistered person and research in this field.

Several limitations of the study should be noted here. First, this study based on cross-sectional studies. There was no information about the causal relationship between socio-demographic factors and disability prevalence, and the results could only show some correlates on several demographical and social-economic factors. Etiology and risk factor cannot be explored, but should be considered in later studies. Second, though neurotic disorders consist of several subtypes, the present study did not clarify the specific subtypes, which may confine further exploration to reveal the results of the subtypes. Moreover, due to the study design, the present study lacks comparable data from other previous study, which is a significant weakness. Third, the date was collected in 2006. In the past decade, not only has diagnosis criteria of mental disorders changed, but rapid economic development in China and slow adaptive cultural changes to this may lead to several new issues or exacerbate existing ones.

In summary, this study first reported the prevalence of disability attributed to neurotic disorders based on a national cross-sectional survey in China. The results of the present study concluded that the prevalence and correlates of disability attributed to neurotic disorders in China, along with their functional impairment. Strategies to improve access to health services for socially disadvantaged individuals, such as women, low-educated people, rural residents, and the elderly are urgently needed. And one important step for recovering their activities and functions, it believes, is to recover and rebuild their social activities capabilities.

Conflict of interest

None.

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Supplementary materials

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