

Mental health resources and awareness of anxiety and depressive disorders in general hospitals in China

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Abstract

Background: Mental health disorders are common in China. There is a lack of knowledge and resources of mental health in China. **Objectives:** To assess the levels of psychiatric resources and services in general hospitals in China. **Methods:** Data regarding psychiatric departments, wards and staff were collected from 57 general hospitals in four provinces of China (Hubei, Zhejiang, Heilongjiang and Yunnan) between April 2014 and June 2014. Questionnaires were distributed to 1,200 non-psychiatric clinicians. **Results:** Among the 57 hospitals, 50 provided mental health services, 36 had mental health wards, and seven had neither mental health clinics nor wards. The median number of mental health clinicians was six per hospital. The median number of specialized nurses was 42 per hospital. A total of 1,152 non-psychiatric clinicians with a career duration of 9.4 ± 8.9 years returned completed questionnaires. Only 6.9% reported a good understanding of the manifestation of anxiety and depressive disorders, 4.5% reported a good understanding of the diagnostic criteria, and 3.8% reported a good understanding of the treatment protocols. **Discussion:** There is inadequate awareness of anxiety and depressive disorders among non-psychiatric clinicians in general hospitals in China. This awareness/understanding increased with increasing hospital level.

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Keywords: Anxiety and depressive disorders, China, general hospitals, mental health resources.

Introduction

The World Health Organization has estimated that the prevalence of mental health disorders is 2.4%-18.2%, based on data from 14 countries¹. Mental health disorders are also common in China, with a reported prevalence of up to 17.5%². The aim of modern mental health care is the restoration of mental health and social functions³. In addition to primary mental health disorders, secondary anxiety and depressive disorders can develop in patients with primary physiological diseases during the course of the disease and its treatment. A survey of patients with severe cardiovascular diseases in the USA revealed that 20.5% screened positive for depression and 18.5% screened positive for generalized anxiety disorder⁴. Comparable results have been obtained for patients with other diseases in various countries, including China⁵.

Many patients with mental health disorders first consult at general hospitals⁶. Since the signs and symptoms of mental health disorders may be very subtle³, the diagnosis and management of these disorders by clinicians in general hospitals might be suboptimal⁷. In Western countries, the incidence of anxiety and depressive disorders in patients in general hospitals is 8%-53.6%, and it has been estimated that only 10% of cases are diagnosed and treated reasonably⁸. A large-scale clinical study conducted in Shenyang (China) in 2008 reported that the incidences of anxiety and depressive disorders in general hospital were 11% and 9.8%, respectively, and that the rate

of therapy was approximately 4%⁹. Another survey in Wuhan in 2010 revealed that the incidence of all forms of depression in general hospitals was 16% and that most patients were not diagnosed and treated efficiently¹⁰. A survey conducted in Shanghai in 2011 found that 13.4% of patients in general hospitals were diagnosed with mild depression and 18.5% were diagnosed with severe depression; of these, only 3.9% and 8.7%, respectively, were treated appropriately¹¹.

However, evidence from previous studies has indicated that mental health knowledge may be inadequate among healthcare workers in general hospitals. For example, a survey in India concluded that nurses in general hospitals had inadequate psychiatric knowledge and skills¹². Moreover, when provided with vignettes describing a patient with depression, generalized anxiety disorder or schizophrenia, the disorder was misdiagnosed by more than 40% of non-mental health professionals working in general hospitals in China¹³. Similarly, the accuracy of the initial psychiatric diagnosis of inpatients in a hospital in Saudi Arabia was only 50% for depression and 46% for anxiety disorders¹⁴. Studies such as these highlight the need for in-service training of clinicians and nurses in general hospitals to improve their knowledge of mental health care. Furthermore, it is generally considered that the number of psychiatric physicians in China is inadequate¹⁵, with some general hospitals having no psychiatry department. Such a lack of resources would also be expected to impact negatively on the diagnosis and treatment of psychiatric diseases¹⁶.



Nevertheless, no large-scale survey has been conducted to examine the status of mental health care in non-psychiatric hospital departments in China. Therefore, the present study aimed to assess the level of psychiatric resources and services in general hospitals in China as well as the mental health-related training and knowledge base of non-psychiatric clinicians working in these hospitals. It was anticipated that this novel information would raise awareness of any deficiencies in mental health care provision in general hospitals in China and thereby facilitate the development and widespread implementation of new healthcare strategies to improve the diagnosis and treatment of patients with anxiety or depressive disorders.

Methods

Study design and subjects

A cross-sectional survey was conducted between April 2014 and June 2014 in 57 general hospitals located in four provinces: Hubei (central China), Zhejiang (eastern China), Heilongjiang (northern China) and Yunnan (southern China). It was anticipated that the selection of four provinces in different geographical regions would increase the likelihood that the findings would be generalizable to China as a whole. These general hospitals were selected by the cluster stratified random sampling method. Clinicians in each general hospital were selected by simple random sampling method at a rate of about 20%. Primary, secondary and tertiary hospitals were included (in China, primary hospitals are typically affiliated with towns and contain less than 100 beds; secondary hospitals are typically affiliated with medium-sized cities/districts and contain 100-500 beds; and tertiary hospitals provide comprehensive services at a city/provincial/national level and typically have more than 500 beds). Data about the distribution of patients in wards and outpatient clinics and allocation of human resources for mental health were extracted from hospital records. The survey was administered to a total of 5,987 clinicians working in 16 department types: cardiology, neurology, neurosurgery, emergency medicine, hematology, gastroenterology, oncology, obstetrics and gynecology, respiratory, endocrinology, nephrology, pediatrics, internal medicine, genitourinary surgery, digestive medicine and otolaryngology. Using strict confidentiality principles and voluntary participation, 1,200 of 5,987 non-psychiatric/non-psychological physicians were invited to participate in the study.

This study was approved by the ethics committee of our hospital (No. 2012-031). All the respondents provided informed written consent for inclusion in the study and completed the survey.

Data collection

The following data were collected: characteristics of the psychiatry department (wards, outpatient clinic only or neither); number of nurses and number of clinicians in the psychiatry department; the professional grades of the clinicians and nurses in the psychiatry department (senior, intermediate or junior); education level of the clinicians and nurses (doctor degree or above, master degree, bachelor degree, or junior college degree or below); number of patients in the psychiatry department; and number of consultations in the psychiatry department.

Questionnaire

A questionnaire designed in-house was administered to 1,200 non-psychiatric/non-psychological clinicians in order to collect general information as well as self-reported data regarding mental health-related learning and training, knowledge about anxiety and depressive disorders, attitude with mental health provision in general hospitals and recommendations to improve mental health provision in general hospitals.

For information regarding mental health-related learning and training, the participant was asked whether or not they had learnt psychiatry, clinical psychology or health psychology before graduation, whether or not they had received training in psychotherapy after graduation, and whether or not they had attended relevant academic lectures. The respondents were asked to provide yes/no answers to these items in the questionnaire.

The self-evaluation of knowledge of anxiety and depressive disorders was divided into three dimensions (manifestation, diagnostic criteria and treatment) and evaluated using a 5-point scale, as follows: 5 = good understanding with relevant professional diagnostic and treatment skills; 4 = reasonable understanding with relevant professional knowledge but limited ability to diagnose and treat the disorders; 3 = basic theoretical understanding of psychiatry/psychology with some formal professional training but no relevant clinical practice; 2 = little understanding of psychiatry/psychology and no relevant professional training but had obtained some relevant knowledge by attending seminars or through other means; 1 = no understanding of psychiatry/psychology and no relevant training.

Statistical analysis

SPSS 19.0 (IBM Corp., Armonk, NY, USA) was used for the analysis. Continuous variables are presented as the mean \pm standard deviation (SD) or median (range). Categorical variables are presented as frequency (percentage), and compared using chi-square test. $P < 0.05$ was considered statistically significant.

Results

Psychiatric care resources in general hospitals

A total of 57 hospitals were surveyed in this study, including 42 (73.7%) tertiary hospitals, 13 (22.8%) secondary hospitals, and two (3.5%) primary hospitals. Among the 57 hospitals, 50 (87.7%) provided mental health services and 36 (63.2%) had mental health wards, while seven (12.3%) had neither mental health clinics nor wards. Each hospital had 0-40 mental health clinicians, with a median of six per hospital and a total number of 381. The number of psychiatric nurses ranged 0-147, with a median of 42 per hospital and a total number of 673. At these 57 hospitals, mental health clinicians accounted for 2.2% of the total number of clinicians, and psychiatric nurses accounted for 4.6% of the total number of nurses. Information regarding the psychiatric medical staff is shown in Table 1.

During each of 2010, 2011 and 2012, the number of patients seen in these mental health clinics and wards was 10,468, 16,298 and 23,008, respectively, and the total number of consultations at the psychiatric departments was 2,684, 4,841 and 5,973, respectively (Table 1).

Characteristics of the non-psychiatric clinicians surveyed by questionnaire

A total of 1,200 distributed questionnaires were completed and returned by the non-psychiatric clinicians. Of these, 1,152 questionnaires were included in the final analysis (96.0% participation rate), and the remaining 48 (4.0%) were excluded due to missing information or non-standard answers. Among the 1,152 non-psychiatric clinicians, 468 (40.6%), 435 (37.8%) and 249 (21.6%) were from tertiary, secondary and primary hospitals, respectively. The age, gender, education level, professional grade and professional experience of the respondents are shown in Table 2. These 1,152 clinicians originated from 16 different departments, including cardiology, neurology, neurosurgery, emergency medicine, hematology, gastroenterology, oncology, obstetrics and gynecology, respiratory, endocrinology, nephrology, pediatrics, internal medicine, genitourinary surgery, digestive medicine and otolaryngology.

Table 1. Psychiatry department resources in 57 general hospitals in four provinces of China

Characteristic	General hospitals (n = 57)
Hospital level, n (%)	
Primary	2 (3.5)
Secondary	13 (22.8)
Tertiary	42 (73.7)
Psychiatry department, n (%)	
Wards	36 (63.2)
Outpatient clinics only	14 (24.5)
No outpatient clinics or wards	7 (12.3)
Medical staff in psychiatry departments, median (range)	
Clinicians	6 (0-40)
Nurses	42 (0-147)
Professional grade of the 381 clinicians working in psychiatry departments, n (%)	
Senior	96 (25.2)
Intermediate	159 (41.7)
Junior	126 (33.1)
Education level of the clinicians working in psychiatry departments, n (%)	
Doctor degree or above	30 (7.9)
Master degree	98 (25.7)
Bachelor degree	238 (62.5)
Junior college degree or below	15 (3.9)
Professional grade of the 673 nurses working in psychiatry departments, n (%)	
Senior	21 (3.1)
Intermediate	161 (23.9)
Junior	491 (73.0)
Education level of the nurses working in psychiatry departments, n (%)	
Doctor degree or above	0 (0)
Master degree	3 (0.4)
Bachelor degree or below	670 (99.6)
Number of patients seen in the psychiatry departments, n (%)	
2010	10,468 (21.0)
2011	16,298 (32.8)
2012	23,008 (46.2)
Number of psychiatric consultations, n (%)	
2010	2,684 (19.9)
2011	4,841 (35.9)
2012	5,973 (44.2)

Mental health-related learning and training of the 1152 non-psychiatric clinicians (self-reported)

Among the respondents, 596 clinicians (51.7%) had learnt psychiatry before graduation, 562 (48.8%) had learnt clinical psychology before graduation, 230 (20.0%) had learnt health psychology before graduation, 59 (5.1%) had attended psychotherapy training after graduation, and 255 (22.1%) had attended relevant academic lectures beyond working hours (Table 3).

Knowledge of anxiety and depressive disorders of the 1,152 non-psychiatric clinicians (self-reported)

Only 80 (6.9%) clinicians considered that they possessed a good understanding of the manifestations of anxiety and depressive

Table 2. Characteristics of 1,152 non-psychiatry clinicians working in general hospitals in four provinces of China

Characteristic	Non-psychiatry clinicians (n = 1,152)
Gender, n (%)	
Male	665 (57.7)
Female	487 (42.3)
Age (years), mean \pm SD	32.2 \pm 8.4
Professional experience (years), mean \pm SD	9.4 \pm 8.8
Hospital level, n (%)	
Tertiary	468 (40.6)
Secondary	435 (37.8)
Primary	249 (21.6)
Professional grade, n (%)	
Senior	273 (23.7)
Intermediate	600 (52.1)
Junior	279 (24.2)
Education level, n (%)	
Doctor degree or above	85 (7.4)
Master degree	252 (21.9)
Bachelor degree	484 (42.0)
Junior college degree or below	331 (28.7)

disorders, 52 (4.5%) clinicians reported that they had a good understanding of the diagnostic criteria, and 44 (3.8%) clinicians believed that they had a good appreciation of the treatment protocols (Table 4). Notably, around 30% considered that they had little or no understanding of the manifestations of anxiety and depressive disorders, while around 50% reported that they had little or no understanding of the diagnostic criteria or treatment protocols for these mental health disorders (Table 4). Non-psychiatry clinicians in tertiary hospitals had better understanding of the manifestations, diagnostic criteria, and treatment than those in primary and secondary hospitals (all $P < 0.001$).

Attitude with the mental health care system reported by the 1,152 non-psychiatric clinicians

Assessment of the training programs needed indicated that all hospitals considered it necessary to provide relevant training to enhance knowledge and understanding of mental health care issues among medical staff, improve the consultation rates of psychiatric departments in general hospitals, and promote relevant research activities. Assessment of the desire of medical staff for mental health knowledge revealed strong interests and demands. The approaches used most commonly to obtain relevant mental health knowledge were ordered as: professional seminars, written and digital training materials, and academic conferences.

Assessment of attitude with the mental health system showed that 13.5% (156 respondents) of the clinicians were satisfied whereas 23.6% (272 respondents) were not. The vast majority of respondents considered it necessary to set up specialty clinics (86.4%), set up specialized wards (99.0%), conduct specialized training (96.4%), improve scientific research (97.5%), provide health-related education (97.2%) and improve the rate of psychiatric consultations (98.3%).

Discussion

The present study investigated 1,152 physicians in 57 general hospitals, and the results showed a lack of mental health resources in general hospitals in China. Among the 57 hospitals, there were mental health clinics in 50 hospitals (87.7%), and mental health wards were provided by only 36 hospitals (63.2%). The total numbers of patients seen in hospitals with mental health clinics and/or wards in

Table 3. Mental health-related training of 1,152 non-psychiatry clinicians working in general hospitals in four provinces in China

Type of training undertaken, n (%)	Total (n = 1,152)	Primary hospital (n = 249)	Secondary hospital (n = 435)	Tertiary hospital (n=468)	P
Learning before graduation					
Psychiatry	596 (51.7)	28 (11.2)	107 (24.6)	461 (98.5)	<0.001
Clinical psychology	562 (48.8)	14 (5.6)	87 (20.0)	461 (98.5)	<0.001
Health psychology	230 (20.0)	4 (1.6)	39 (9.0)	187 (40.0)	<0.001
Training in psychotherapy after graduation	59 (5.1)	0	6 (1.4)	53 (11.3)	<0.001
Attending relevant academic lectures	255 (22.1)	17 (6.8)	63 (14.5)	175 (37.4)	<0.001

Table 4. Knowledge of anxiety and depressive disorders of 1152 non-psychiatry clinicians working in general hospitals in four provinces in China

Score, n (%)	Total (n = 1,152)	Primary hospital (n = 249)	Secondary hospital (n = 435)	Tertiary hospital (n = 468)	P
Manifestation ^{abc}					
1	32 (2.8)	14 (5.6)	11 (2.5)	7 (15.0)	< 0.001
2	312 (27.1)	74 (29.7)	193 (44.4)	45 (10.3)	
3	257 (22.3)	79 (31.7)	93 (21.4)	85 (18.2)	
4	471 (40.91)	67 (26.9)	110 (25.3)	294 (62.8)	
5	80 (6.9)	15 (6.0)	28 (6.4)	37 (7.9)	
Diagnostic criteria ^{abc}					
1	174 (15.1)	76 (30.5)	62 (14.3)	36 (7.7)	< 0.001
2	401 (34.8)	59 (23.7)	156 (35.9)	186 (39.7)	
3	233 (20.2)	57 (22.9)	92 (21.1)	84 (17.9)	
4	292 (25.3)	51 (20.5)	107 (24.6)	134 (28.6)	
5	52 (4.5)	6 (2.4)	18 (4.1)	28 (6.0)	
Treatment ^{abc}					
1	186 (16.1)	79 (31.7)	66 (15.2)	41 (8.8)	< 0.001
2	436 (37.8)	46 (18.5)	203 (46.7)	187 (40.0)	
3	219 (19.0)	73 (29.3)	83 (19.1)	63 (13.5)	
4	267 (23.2)	49 (19.7)	65 (14.9)	153 (32.7)	
5	44 (3.8)	2 (0.8)	18 (4.1)	24 (5.1)	

^a $P < 0.001$, secondary hospital vs. primary hospital.

^b $P < 0.001$, tertiary hospital vs. primary hospital.

^c $P < 0.001$, tertiary hospital vs. secondary hospital.

2010, 2011 and 2012 were 10,468, 16,298 and 23,008, respectively, presenting an increasing trend. Among the 1,152 clinicians surveyed, only 51.7% had learnt psychiatry, 48.8% had learnt clinical psychology, 20.0% had learnt health psychology, 5.1% had undertaken psychotherapy training, and 22.1% had attended relevant academic lectures. Notably, only 6.9% of clinicians considered that they possessed a good understanding of the manifestations of anxiety and depressive disorders, only 4.5% thought they had a good appreciation of the relevant diagnostic criteria and only 3.8% believed they had a good understanding of how to treat these disorders. Understanding increased with increasing hospital level. From the perspective of allocation of human resources, the available evidence suggests that China is inferior to Western countries with regard to the provision of mental health care in general hospitals¹⁵. Indeed, the mental health workforce is 5.16/100,000 population in China, compared with 28.15/100,000 population in upper-middle-income countries, 62.28/100,000 population in high income countries, and 10.05/100,000 population in the world (including China)¹⁵.

The awareness of mental illness has been rapidly increasing in the Chinese population¹⁷. In the present study, 2012 accounted for 46.2% of the total number of outpatients in the 3 years covered (2010-2012), and the number of consultations for mental illness reached 44.3%, suggesting that the workload on psychiatric departments in China is increasing¹⁸. Nevertheless, a previous study in China showed that physicians in non-psychiatric departments only recognized about 27% of patients with depressive disorders¹⁹.

The present study showed that 12.3% of the general hospitals surveyed did not provide psychiatry clinics and wards. Therefore, there is a need to strengthen the provision of psychiatric services in general hospitals. Furthermore, the analysis revealed a lack of specialized medical staff in the general hospitals surveyed, with only a median of six psychiatric clinicians in each hospital. It is likely that such a small number of psychiatric clinicians per hospital would struggle to meet the workload, particularly as this appears to be increasing. Therefore, we believe it will be necessary to increase the number of psychiatric clinicians in general hospitals. Similarly, mental health nurses are also subjected to high work-related stress²⁰, including family-related stress and workplace violence^{20,21}. One of the most important risk factors for work-related stress is a shortage of staff allocation²¹.

Guidelines for training in consultation-liaison psychiatry and psychosomatics have been developed in Europe²², but such guidelines are not available in China. In the present study, it was found that only 19 hospitals had conducted psychiatry-related training over the 3-year period, highlighting an important deficiency. Additionally, the respondents considered it essential to set up psychiatry clinics and wards in general hospitals to enhance the rate of psychiatry consultations and promote scientific research, with the aim of improving the diagnosis and treatment of mental health disorders. A study from Belgium reported that the practice environment is directly impacted by staff job satisfaction, intention to stay, and the perception of the quality of care²³. Compared with Western countries,

these aspects are not sufficiently enforced in China, especially job satisfaction, which is generally low in China^{24,25}, as well as training²⁶.

The present study showed that only a small proportion (6.9%) of the non-psychiatric staff in general hospitals had sufficient knowledge of and training in the manifestations of mental health disorders. In addition, only a small proportion of the respondents understood the diagnostic criteria (4.5%) and treatment protocols (3.8%). This underlines the need for further training in order to detect the symptoms of mental health disorders in non-psychiatric departments. Similar trends were observed in Hunan (China)¹³, Taiwan²⁷, Australia²⁸, the United Kingdom²⁹, India³⁰, Sweden³¹ and Kenya³², among others. Since this important issue was first documented as early as the 1990s¹², it seems that not enough has been done to address this shortcoming and that additional efforts are needed.

This study's main strengths include its large number of respondents and high rates of response. Nevertheless, this study has some limitations. Firstly, although different levels of hospitals were included in the survey, the selection was not based on random sampling, which may have introduced bias. However, the selection of four provinces in different regions of China (central, eastern, northern and southern) increases the likelihood that the findings are generalizable to China as a whole. Secondly, the survey of the 1,152 clinicians was conducted using a questionnaire that was not validated, and this also may have introduced bias. Thirdly, factors that might be associated with mental healthcare resources (e.g. hospital grade) or clinician knowledge of anxiety and depressive disorders (e.g. age or clinical specialty) were not investigated.

In conclusion, assessment of the psychiatric care resources of 57 general hospitals in four provinces of China over a 3-year period showed that clinicians and nurses were severely lacking in psychiatry-related training. We conclude that there is an urgent need to set up psychiatry/psychology wards and/or clinics in general hospitals and strengthen psychiatric resources and training in order to improve the provision of mental health care in general hospitals in China.

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Conflict of interests

All authors declare that they have no any conflict of interests.

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