

Vital Surveillances

Community-Based Management and Treatment Services for Psychosis — China, 2019

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ABSTRACT

Introduction: Community-based services for psychosis are an important part of mental health services in China. We analyzed community-based follow-up and treatment services for psychosis in China in 2019 to provide evidence for policymaking and services delivering.

Methods: Data from the National Information System for Psychosis were used to analyze usage of the information system and the registration, management, and treatment situation of patients with psychosis in China in 2019 and compared the results of 2019 with that of 2018.

Results: In 2019, 100% of cities and counties used the information system and 6,230,157 patients were registered. In 2019, there were 5,944,724 registered patients (94.05%) in China under community-based follow-up services and 5,375,252 patients (85.04%) had regular follow-ups; 5,295,657 patients (83.78%) were treated by taking antipsychotics and 3,354,251 (53.07%) patients took medication regularly; 4,974,314 patients at home (87.81%) were in stable condition; and there was a significant difference in patients' stable condition and medication-taking rates among eastern, central, and western regions ($p < 0.05$). Compared with 2018, the nationwide regular management rate, medication-taking rate, regular medication-taking rate, and patients' stable rate increased by 2.35%, 2.48%, 11.29%, and 7.21% respectively.

Conclusions and Implications for Public Health Practice: Compared with 2018, the level of management and treatment improved significantly but still needs to be further strengthened, especially in western China.

INTRODUCTION

Psychosis is early onset, long course, easily recurrent,

highly disabling, and has a heavy disease burden (1). Most patients with psychosis need to take long-term medication to control the disease. Over the past decade, the Chinese government committed to developing community-based follow-up and treatment services for psychosis, which is an important part of mental health services in China. In 2009, the community-based follow-up services of patients with 6 kinds of psychoses* were included in the national basic public health services (2). In this study, we analyzed community-based follow-up and treatment of patients with psychosis in China in 2019 and compared the results with indicators from 2018 to explore progress, discussed key issues in community-based service delivery, and provided references for the government on policymaking and service delivery in mental health.

METHODS

Data from the National Information System for Psychosis of China was used, which contained information on demographic characteristics, mental state, and follow-up and treatment records in community with six confirmed types of psychoses. Psychiatrists were responsible for clarifying diagnoses, inputting the data, and transferring patients' information to local communities through the system. Community mental health workers were responsible for the screening and follow-up of patients with psychosis in the community and inputting relevant data promptly into the information system. Workers in health administrative departments and mental illness prevention and control technology management institutions were responsible for auditing and quality control of data. The number of permanent residents was derived from data of China CDC as of December

* Psychoses as defined by National Basic Public Health Services include schizophrenia, delusional disorders, schizoaffective disorder, bipolar disorder, psychotic disorder due to epilepsy, and mental retardation with psychotic symptoms. Psychosis in this study referred to the six kinds of psychoses.

31, 2019).

SPSS 16.0 (SPSS Inc.) was used for data cleaning and analysis. Descriptive analysis and Kruskal-Wallis Test were used to analyze usage of the information system and the quality of the data on registration and community-based follow-up and treatment of patients with psychosis in China and its regions (the duration of service provision was from January 1, 2019 to December 31, 2019) and to compare the results of 2019 with 2018. The analytical unit of correlation analysis and regional differences in the analysis were at the provincial level. The statistical significance level (α) was set at 0.05.

According to the routine work requirements in community-based follow-up and treatment services for psychosis, 6 indicators were selected as the main statistical indicators in the study: 1) registration rate (%) = the number of registered patients/the total number of permanent residents in the jurisdiction \times 100%; registered patients refer to patients who were alive by December 31, 2019; 2) management rate (%) = the number of patients under follow-up services/the number of registered patients \times 100%; patients under follow-up services referred to patients with at least one complete follow-up on record in 2019; 3) regular management rate (%) = the number of patients under regular follow-up services/the number of registered patients \times 100%; patients under regular follow-up services referred to patients who were followed up at least once every three months in 2019; 4) medication-taking rate (%) = the number of patients taking antipsychotics/the number of registered patients \times 100%; patients taking antipsychotics referred to patients who had at least one follow-up record of taking antipsychotics in 2019; 5) regular medication-taking rate (%) = the number of patients taking antipsychotics regularly/the number of registered patients \times 100%; patients taking antipsychotics regularly referred to patients taking medication according to the doctor's prescription in 2019; 6) patients' stable rate (%) = the number of patients with stable condition of disease/the number of patients at home under follow-up services \times 100%; patients with stable condition of disease referred to patients who were in stable condition in each follow-up record in 2019.

RESULTS

In 2019, 333 cities and 2,854 districts/counties across the country all used the National Information

System for Psychosis. This was the first year to achieve full coverage of all cities and counties in the information system (332 cities and 2,832 counties were covered in 2018).

There were 6,230,157 patients with psychosis registered in the information system on December 31, 2019 (236,103 more cases, a 3.94% increase, compared with that on December 31, 2018). Among registered patients, schizophrenic patients accounted for 72.09%; males accounted for 50.86%; working-age patients (18–59 years old) accounted for 74.57%; married patients accounted for 54.08%; 67.45% of patients lived in rural areas; 59.49% of patients were farmers and only 2.60% were employed; 80.97% of patients' education level were with junior high school or below. (Table 1)

In 2019, the national registration rate of psychosis was 0.449%, with 3.46% increase compared with 2018 (0.434%). Among all 31 provincial-level administrative divisions (PLADs) and Xinjiang Production and Construction Corps, the registration rate in Hubei Province was the highest (0.501%). (Table 2)

By the end of 2019, 5,944,724 patients in China were under community-based follow-up services with an annual management rate of 94.05%, which was slightly lower than that of 2018 (94.90%). A total of 5,375,252 patients were under regular follow-up services with an annual regular management rate of 85.04%, which was 2.35% higher than that of 2018 (82.69%). Among all 31 PLADs and Xinjiang Production and Construction Corps, Hunan Province had the highest management rate (97.81%), and Shanghai Municipality had the highest regular management rate (92.68%). (Table 2)

Moreover, 5,295,657 patients were treated by taking antipsychotics in 2019 with an annual medication-taking rate of 83.78%, which was 2.48% higher than that of 2018 (81.30%). A total of 3,354,251 patients took antipsychotics regularly with an annual regular medication-taking rate of 53.07%, which was 11.29% higher than that of 2018 (41.78%). In 2019, there were 4,974,314 patients in stable condition, with an annual patients' stable rate of 87.81%, which was 7.21% higher than that of 2018 (80.60%). Among all 31 PLADs and Xinjiang Production and Construction Corps, Hunan Province had the highest medication-taking rate (94.66%), Beijing Municipality had the highest regular medication-taking rate (75.21%), and Shanghai Municipality had the highest patients' stable rate (98.03%). (Table 2)

In 2019, significant differences existed among

TABLE 1. Demographic characteristics and diagnosis of real-time registered patients with psychosis — China, 2019.

Characteristics	Number of patients	Constituent ratio (%)
Gender		
Male	3,168,381	50.86
Female	3,061,776	49.14
Age, years		
<18	111,552	1.79
18–44	2,399,698	38.52
45–59	2,246,142	36.05
≥60	1,472,765	23.64
Residential area type		
Urban	1,882,938	30.22
Rural	4,202,474	67.45
Unknown	144,745	2.32
Educational level		
Illiterate or semi-illiterate	1,641,161	26.34
Primary school or junior high school	3,403,397	54.63
Senior high school or technical secondary school	591,346	9.49
College and above	323,332	5.19
Unknown	270,921	4.35
Ethnicity		
Han	5,858,214	94.03
Minority	371,943	5.97
Marriage		
Unmarried	2,236,031	35.89
Married	3,369,046	54.08
Widowed	201,051	3.23
Divorced	296,366	4.76
Unknown	127,663	2.05
Occupation		
Employed	162,246	2.60
Farmers	3,706,379	59.49
Laid off or unemployed	740,243	11.88
Students	218,851	3.51
Retired	172,534	2.77
Other	1,229,904	19.74
Diagnosis		
Schizophrenia	4,491,447	72.09
Delusional disorders	28,306	0.45
Schizoaffective disorder	91,543	1.47
Bipolar disorder	423,654	6.80
Psychotic disorder due to epilepsy	344,630	5.53
Mental retardation with psychotic symptoms	850,577	13.65
In total	6,230,157	100.00

TABLE 2. Registration*, community-based management and treatment of patients with psychosis — China, 2019.

Provincial-level administrative divisions (PLADs)	Number of permanent residents	Registered patients		Patients under follow-up services		Patients under regular follow-up services		Patients taking antipsychotics regularly		Patients taking antipsychotics home under follow-up services		Patients with stable condition	
		Number	Registration rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)	Number	Rate (%)
Beijing	21,707,000	81,073	0.365	77,417	95.49	75,077	92.60	73,640	90.83	60,973	75.21	68,320	97.51
Tianjin	15,568,693	58,609	0.370	53,358	91.04	49,654	84.72	51,610	88.06	40,173	68.54	45,614	91.41
Hebei	75,195,198	327,356	0.427	307,441	93.92	273,874	83.66	280,127	85.57	159,251	48.65	258,030	85.25
Shanxi	37,023,500	160,487	0.427	146,223	91.11	131,682	82.05	126,696	78.94	79,657	49.63	131,165	91.44
Inner Mongolia	25,286,999	115,963	0.458	110,358	95.17	104,546	90.15	105,069	90.61	78,678	67.85	94,316	88.02
Liaoning	43,688,987	189,091	0.425	171,474	90.68	161,231	85.27	143,576	75.93	90,098	47.65	147,443	92.64
Jilin	27,174,297	121,960	0.441	113,914	93.40	104,676	85.83	97,875	80.25	54,788	44.92	106,697	97.94
Heilongjiang	37,887,012	165,919	0.431	140,905	84.92	119,139	71.81	115,025	69.33	53,689	32.36	119,754	88.29
Shanghai	24,183,297	101,704	0.414	97,236	95.61	94,256	92.68	83,026	81.63	61,424	60.39	84,660	98.03
Jiangsu	80,293,076	343,242	0.421	329,390	95.96	315,967	92.05	279,006	81.29	200,155	58.31	299,928	94.14
Zhejiang	56,569,979	277,397	0.488	255,669	92.17	220,282	79.41	241,670	87.12	195,728	70.56	204,423	84.22
Anhui	62,548,000	302,224	0.476	287,774	95.22	257,866	85.32	265,341	87.80	186,358	61.66	255,436	90.88
Fujian	39,109,988	176,306	0.444	163,217	92.58	152,893	86.72	147,015	83.39	100,072	56.76	136,721	91.04
Jiangxi	46,220,986	211,397	0.453	203,648	96.33	176,653	83.56	195,741	92.59	131,720	62.31	176,159	90.02
Shandong	100,058,292	453,958	0.444	440,340	97.00	409,649	90.24	422,528	93.08	300,579	66.21	429,562	95.01
Henan	95,591,264	447,269	0.460	417,561	93.36	344,442	77.01	391,130	87.45	215,739	48.23	331,258	80.36
Hubei	59,020,004	299,682	0.501	281,984	94.09	241,281	80.51	256,396	85.56	151,723	50.63	223,946	82.72
Hunan	68,600,694	313,549	0.448	306,686	97.81	285,568	91.08	296,801	94.66	204,829	65.33	268,186	92.32
Guangdong	111,689,993	535,499	0.473	512,970	95.79	489,952	91.49	466,805	87.17	332,065	62.01	482,728	84.35
Guangxi	48,849,998	232,655	0.476	207,535	89.20	191,434	82.28	171,945	73.91	107,791	46.33	183,578	92.58
Hainan	10,021,802	44,286	0.436	40,363	91.14	34,190	77.20	32,974	74.46	19,893	44.92	31,669	84.76
Chongqing	30,751,601	141,330	0.451	133,022	94.12	126,965	89.84	114,663	81.13	67,609	47.84	104,031	86.49
Sichuan	83,019,999	387,059	0.457	370,864	95.82	347,239	89.71	299,710	77.43	169,227	43.72	283,103	85.69
Guizhou	35,800,002	165,802	0.454	154,847	93.39	138,933	83.79	138,382	83.46	54,099	32.63	116,615	83.43
Yunnan	48,004,978	230,482	0.480	215,879	93.66	171,499	74.41	172,658	74.91	79,772	34.61	153,353	73.32
Xizang(Tibet)	3,371,490	4,547	0.133	4,428	97.38	2,374	52.21	2,654	58.37	516	11.35	1,295	29.27
Shaanxi	38,354,419	182,320	0.468	165,721	90.90	147,480	80.89	142,264	78.03	73,655	40.40	150,803	93.54
Gansu	26,257,100	112,593	0.429	105,267	93.49	96,346	85.57	73,462	65.25	33,121	29.42	88,268	84.58
Qinghai	5,983,797	19,776	0.326	16,841	85.16	11,342	57.35	10,964	55.44	4,786	24.20	14,024	83.41
Ningxia	6,817,795	28,032	0.406	26,356	94.02	24,145	86.13	20,778	74.12	13,266	47.32	21,702	84.74
Xinjiang	21,441,404	76,517	0.351	73,845	96.51	63,978	83.61	66,346	86.71	27,473	35.90	48,895	71.60
Construction Corps	3,005,309	12,571	0.411	12,191	96.98	10,639	84.63	9,780	77.80	5,344	42.51	9,641	84.96
In total	1,389,096,953	6,320,655	0.449	5,944,724	94.05	5,375,252	85.04	5,295,657	83.78	3,354,251	53.07	5,664,637	87.81

* The number of registered patients is equal the number of registered patients who were alive by December 31, 2019 add the number of registered patients who died during January 1, 2019 and December 31, 2019.

eastern, central, and western regions of China[†] in patients' medication-taking rate, regular medication-taking rate, and stable rate ($p < 0.05$). All the three rates were the lowest in the western region. (Table 3)

DISCUSSION

The Comprehensive Mental Health Action Plan 2013–2020 adopted in the 66th World Health Assembly made 2 of the 4 objectives focused on providing comprehensive, integrated, and responsive mental health and social care services in community-based settings and strengthening information systems, evidence, and research for mental health (3). In recent years, the Chinese government has put the two objectives as priority areas in enhancing the mental health service system and issued a series of policy projects, such as National Mental Health Work Plan (2015–2020) (4) and National Comprehensive Management Pilot Project for Mental Health Service (5), and built the National Information System for Psychosis in 2011. The coverage of community-based follow-up and treatment services for psychosis in China has been expanding year over year for both coverage areas and registered patients, and the registration rate has increased by 41.6% in 5 years (6–9).

The overall level of community-based follow-up and treatment services for psychosis has been improved in 2019. In past 5 years, the nationwide management rate, regular management rate, medication-taking rate, regular medication-taking rate and patients' stable rate increased by 27.56%, 137.74%, 139.10%, 196.15%, and 29.82% respectively (6). The National Mental Health Work Plan of China (2015–2020) (4) laid out 5-year work objectives on community-based management and treatment for psychosis and has

contributed greatly to the rapid improvement. Since the work plan launched in 2015, the National Health Commission (NHC) of China has actively issued relevant policies (10) and work regulations (11), carried out national pilot projects on comprehensive management for mental health jointly with multiple departments (5), conducted nationwide capacity-building training especially in the western region, and organized work experience exchange among PLADs and pilot cities. In the meanwhile, provincial and municipal governments issued a number of healthcare security and life assistance policies, raised funds on mental health through multiple channels and conducted technical guidance and personnel training especially for practitioners at the county level and below to enhance their ability to diagnose and treat mental illness. To a considerable extent, these measures promoted the improvement of the provision and quality of community-based services for psychosis in the last 5 years.

In addition, the rates of medication-taking have improved significantly between 2019 and 2018. The gap between patients' medication-taking rate and regular medication-taking rate was 30.71% in 2019. Although the gap is smaller than that of 2018 (39.52%), it is still needed to be further reduced through enhancing healthcare security policies and more health education to improve patients' medication compliance. Similarly, the regular management rate was 9.01% lower than the management rate in 2019, which revealed that quality control of follow-up services needed to be further strengthened.

Regional differences in patients' medication-taking and stable condition were also significant in 2019. PLADs with better comprehensive services performance were mainly concentrated in the eastern region and were interspersed in the central region.

TABLE 3. Regional comparison of community-based follow-up and treatment services for psychosis — China, 2019.

	Eastern Region (N=11)	Central Region (N=8)	Western Region (N=13)	H	p
Registration rate (%)	0.441	0.459	0.449	2.511	0.285
Management rate (%)	94.61	93.88	93.42	0.046	0.977
Regular management rate (%)	87.97	82.14	84.05	4.424	0.109
Medication-taking rate (%)	85.85	86.28	77.70	7.749	0.021
Regular medication-taking rate (%)	60.27	53.31	41.82	13.519	0.001
Patients' stable rate (%)	89.82	87.73	84.81	6.042	0.049

[†] Eastern region consists of 11 provincial-level administrative divisions (PLADs) (Beijing, Tianjin, Hebei, Liaoning, Shanghai, Jiangsu, Zhejiang, Shandong, Fujian, Guangdong, and Hainan); central region consists of 8 PLADs (Shanxi, Jilin, Heilongjiang, Anhui, Jiangxi, Henan, Hubei, and Hunan); western region consists of 12 PLADs (Inner Mongolia, Guangxi, Chongqing, Sichuan, Guizhou, Yunnan, Xizang (Tibet), Shaanxi, Gansu, Qinghai, Ningxia, and Xinjiang) and Xinjiang Production and Construction Corps.

Community-based services in the western region needed to be further improved, especially in patients' medication-taking. The government should investigate and analyze difficulties in community-based mental health services in the western region, further focus on priority areas, and take effective measures such as providing financial support, more practical capacity building training, and appropriate skills guidance to remove barriers in service delivery and improve patients' stable condition in the western region.

In conclusion, patients' stable condition and community-based services provision for psychosis in 2019 were better than those in 2018, and all work indicators have been significantly improved in the past 5 years. In the future, more attention should be paid on improving quality of services (e.g. medication-taking) and strengthening community-based services delivery in the western region.

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