

Postprint: An Empirical Study on the Influence of Policy Factors on Healthcare-Seeking Behavior among Patients with Schizophrenia

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Abstract

Background: The basic healthcare-seeking needs of patients with schizophrenia in China are substantial; however, unreasonable healthcare-seeking behaviors may lead to waste of health resources. Relevant policies have been introduced to enhance healthcare security and rationally guide patients' healthcare-seeking behavior. Current academic research on policy factors and healthcare-seeking behavior rarely addresses the association between mental health policies and the healthcare-seeking behavior of patients with schizophrenia.

Objective: To analyze the impact of policy factors on the healthcare-seeking behavior of patients with schizophrenia, understand the utilization and effectiveness of health services for this population under the guidance of basic medical insurance policies and mental health policies, and provide empirical evidence for policy improvement.

Methods: Using healthcare-seeking data of patients with schizophrenia from a district in Chongqing in 2018, a Logistic regression model was constructed based on the healthcare-seeking behavior logic of "healthcare-seeking decision-making—healthcare-seeking modality—healthcare institution selection" to analyze the influence of policy factors on the healthcare-seeking behavior of patients with schizophrenia.

Results: Within basic medical insurance policies, insurance type and special disease registration exert significant effects on the healthcare-seeking behavior of patients with schizophrenia; within mental health policies, enrollment in the "686" project, access to free second-generation antipsychotics, and community rehabilitation services also significantly influence patients' healthcare-seeking behavior.

Conclusion: Policy factors have played a positive role in guiding healthcare-seeking among patients with schizophrenia, yet issues such as relatively narrow scope of impact and insufficiently comprehensive coverage pathways remain.

Full Text

Preamble

An Empirical Study on the Influence of Policy Factors on Healthcare-Seeking Behavior of Patients with Schizophrenia

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Abstract Background: The demand for basic medical care among schizophrenia patients in China is substantial, yet unreasonable healthcare-seeking behaviors may lead to waste of health resources. Relevant policies have been introduced to enhance medical security and rationally guide patients to seek care. Current research on policy factors and healthcare-seeking behavior has rarely examined the association between mental health policies and healthcare-seeking behavior of schizophrenia patients. **Objective:** To analyze the influence of policy factors on the healthcare-seeking behavior of schizophrenia patients, understand the utilization and effectiveness of health services for this population under the guidance of basic medical insurance and mental health policies, and provide empirical evidence for policy improvement. **Methods:** Using 2018 medical care data of schizophrenia patients from a district in Chongqing, logistic regression models were constructed following the healthcare-seeking logic of “medical decision-making → care modality → institution selection” to analyze the impact of policy factors. **Results:** In basic medical insurance policies, insurance type and special disease registration significantly influenced patients’ healthcare-seeking behavior. In mental health policies, participation in the “686” Project, free second-generation antipsychotics, and community rehabilitation services also significantly affected patients’ care-seeking behavior. **Conclusion:** Policy factors have played a positive role in guiding schizophrenia patients to seek medical care, but issues remain such as relatively narrow coverage and incomplete pathways.

[**Keywords**] schizophrenia patients; healthcare-seeking behavior; mental health policy; basic medical insurance; policy factors

Introduction

Mental health is a critical component of overall health, exerting key influences on individual, societal, national, and global health development [1]. As a common severe mental illness, schizophrenia imposes a substantial and persistent disease burden. The current point prevalence of schizophrenia in China has reached 0.42%, the highest globally [2][3], indicating high fundamental healthcare needs among Chinese schizophrenia patients. However, unreasonable healthcare-seeking behaviors may cause waste of health resources [4], lead to unsustainable growth in medical expenses, and negatively impact patients' access to comprehensive and sustainable health services. To achieve balanced allocation of mental health resources, in 2004 China's Ministry of Health and Ministry of Finance established the Central Government Subsidy for Local Severe Mental Illness Management and Treatment Project, taking the first step toward incorporating severe mental disorder patient service management into national public health reforms [5]. Subsequently, a series of specialized national policies were introduced to address the supply-demand contradiction in mental health services, increase economic protection for patients, and guide rational healthcare-seeking. This evolved into a dual protection framework where basic medical insurance policies provide foundational coverage while mental health policies serve as supplementary support for people with mental disorders. Since implementation, have these mental health policies achieved their intended protective effects? Is there an association between these policies and healthcare-seeking behavior among patients with severe mental disorders? Have they enhanced healthcare resource utilization for schizophrenia patients? These questions urgently require investigation.

Current academic research on policy factors and healthcare-seeking behavior has primarily focused on basic medical insurance systems, hierarchical diagnosis and treatment systems, and poverty alleviation policies, with study populations concentrated among rural residents, migrant populations, and chronic disease patients. Policy factors influence patients' care-seeking patterns through compensation standards, differential reimbursement rates, and subsidies, thereby affecting healthcare-seeking behavior [6-9]. Comprehensive evaluations of mental health policies and healthcare service utilization among schizophrenia patients remain scarce in the literature. Examining the influence of policy factors on schizophrenia patients' healthcare-seeking behavior can both assess policy implementation effectiveness and inform more targeted reforms in the mental health sector.

In 2018, the reported prevalence of severe mental disorders in Chongqing was 0.44% [18], roughly equivalent to the national rate of 0.43%. The selected dis-

district for this study has comprehensive mental health policy support, similar urban-rural distribution and demographic characteristics, and basic medical insurance enrollment that meets policy requirements, making it suitable for this analysis. Therefore, this study analyzes medical care data from schizophrenia patients in this district to provide empirical evidence on health service utilization and policy implementation effectiveness under mental health policy guidance, offering a decision-making basis for government policy improvement.

1. Materials and Methods

1.1 Data Sources

Considering that the COVID-19 pandemic may have altered schizophrenia patients' healthcare-seeking behavior compared to normal periods, and to ensure greater generalizability and representativeness, we deliberately selected data from 2018 as more representative of typical conditions. Demographic and clinical characteristic data of schizophrenia patients were obtained from the district's three-tier mental health prevention and treatment network system, covering 2,487 individuals across 21 streets and 5 towns throughout the year. This dataset was matched with healthcare utilization data from the Chongqing Human Resources and Social Security Bureau's medical insurance information platform to create a comprehensive database on schizophrenia patients' healthcare-seeking behavior, covering community health centers and other healthcare units involved in community management of schizophrenia patients county-wide. After excluding samples with invalid information or missing key data, and performing bilateral winsorization at the 2.5% level for numerical data, a total of 2,314 registered schizophrenia patients were included in the final analysis.

1.2 Research Methods

This study analyzed patients' healthcare-seeking behavior following the logical sequence of "medical decision-making → care modality → institution selection." Given the non-linear relationship between dependent and independent variables in this study, logistic models were selected based on data characteristics to analyze the influence of policy factors on schizophrenia patients' healthcare-seeking behavior. The research examined healthcare service utilization in two stages. First, binary logistic regression models were used to analyze the impact of basic medical insurance policies and mental health policies on whether patients sought medical care. Second, multinomial logistic regression models were employed to analyze whether policy factors influenced patients' choice of medical institutions during outpatient and inpatient care. The model specification is as follows:

$$P_{k|c} = \frac{e^{\beta_k}}{1 + \sum_{c=1}^{c-1} e^{\beta_c}} \quad (1)$$

Where $k = 0, 1, 2, \dots, c-1$. The exponent of regression coefficient β represents the odds ratio (OR), reflecting the strength of association between dependent and independent variables. A 95% confidence interval not containing 1 indicates

statistical significance. Statistical analysis was performed using Stata 15.0, with $P < 0.05$ considered statistically significant.

1.3.1 Variable Selection

This study selected whether patients sought medical care and their choice of medical institution as dependent variables. Participation in basic medical insurance policies and mental health policies served as key independent variables. Basic medical insurance policies included urban-rural resident medical insurance and urban employee medical insurance enrollment status, as well as special disease registration status. Mental health policies, distinct from basic medical insurance, are specialized support policies for patients with mental illness. Five such policies were included: mental disability certificate, community rehabilitation services, guardian subsidies, the “686” Project, and free second-generation antipsychotics. Specific explanations are provided in Table 1 .

1.3.2 Variable Description

Regarding healthcare-seeking behavior, 82.76% of patients sought medical care during the year, with the highest proportion (69.40%) choosing secondary-level medical institutions. This is because patients with schizophrenia need to visit mental health centers, which in this district are classified as secondary institutions that served 44.23% of patients that year. Patients averaged 6.14 outpatient visits annually, with a hospitalization rate of 34.4%, significantly higher than the 15.2% hospitalization rate among Chongqing residents in the same year [10]. These statistics indicate that schizophrenia patients in this district have high healthcare demands and distinct care-seeking patterns compared to the general population.

In terms of personal characteristics, patients had a relatively high average age; overall educational attainment was low, with most having only high school education or less; the majority were unemployed or laid off, with the smallest proportion being active employees; urban household registration was significantly more common than rural; 27.7% of patients lived below the local poverty line; and patients who sought care had on average 0.5 more previous medical visits than those who did not.

Regarding basic medical insurance policies, enrollment in resident medical insurance and employee medical insurance was roughly equivalent at 52.94% and 47.06%, respectively; 17.82% of patients had completed special disease registration.

For mental health policies, 53.20% of patients held mental disability certificates, and nearly half (48.66%) participated in at least one policy, though individual policy participation rates were low. The lowest was the “686” Project, with only 55 participants. Details are provided in Table 2 .

2. Results

2.1 Analysis of Policy Factors Influencing Whether Patients Seek Medical Care

We first examined the impact of basic medical insurance policies on whether patients sought care (Model 1), then the impact of mental health policies (Model 2), and finally combined both in Model 3. Results showed all three models were statistically significant in explaining care-seeking behavior, with Model 1 and Model 2 having similar explanatory power. Specifically:

In basic medical insurance policies, both insurance type and special disease registration were significantly associated with care-seeking behavior, remaining statistically significant after controlling for mental health policies. Patients with employee medical insurance and those who completed special disease registration were more likely to seek care (OR = 2.116, OR = 1.726). In mental health policies, community rehabilitation services, guardian subsidies, disability federation subsidies, the “686” Project, and free second-generation antipsychotics were associated with care-seeking behavior. However, after including basic medical insurance policies in Model 3, guardian subsidies and disability federation subsidies were no longer significant. Patients participating in the “686” Project and free second-generation antipsychotics program had higher probabilities of seeking care—10.08 times and 1.05 times higher than non-participants, respectively. Community rehabilitation services showed significant negative correlation with care-seeking (OR = 0.564). Details are shown in Table 3 .

2.2 Factors Influencing Patients’ Choice of Medical Institution

We further examined the association between basic medical insurance policies, mental health policies, and choice of medical institution using multinomial logistic models while controlling for other variables. Regression results are presented in Table 4 , with primary-level and below institutions as the reference group. In basic medical insurance policies, insurance type positively influenced patients’ choice of institution for both outpatient and inpatient care, indicating patients preferred institutions with relatively better medical service quality. Special disease registration was significantly negatively associated with institution choice for outpatient care. In mental health policies, mental disability certificate level was associated with both outpatient and inpatient institution choice. For outpatient care, patients participating in community rehabilitation services preferred primary-level institutions, while those receiving free second-generation antipsychotics 倾向于 higher-level institutions.

3. Discussion

3.1 Significant Differences in Healthcare Resource Utilization by Insurance Type

The study found roughly equivalent proportions of schizophrenia patients enrolled in urban employee medical insurance and urban-rural resident medical insurance. Results suggest differences between these insurance types in both care-seeking probability and institution selection. This aligns with existing research showing different insurance systems affect medical institution choice differently [5]. However, it contrasts with some studies on Chongqing residents that found no relationship between insurance system and care-seeking behavior [11]. The discrepancy likely stems from substantial differences in medical needs between schizophrenia patients and the general population, as the chronic, long-term nature of schizophrenia influences care modality choices.

Among patients with basic medical insurance, only 17.18% had completed special disease registration, despite the vast majority meeting eligibility criteria, leaving over 80% unregistered. Special disease registrants enjoy single-disease payment for psychiatric conditions with higher reimbursement rates and annual limits. Results show registered patients were more willing to seek care, demonstrating that this policy improved healthcare service utilization. These patients more frequently visited institutions below tertiary level due to varying reimbursement rates and deductibles across institution levels. Previous research indicates patients have high expectations for both medical quality and reasonable costs, partially explaining this behavioral logic [12].

3.2 Mental Health Policies Show Additive Effects but Narrow Coverage

Results indicate that guardian subsidies, disability federation subsidies, the “686” Project, and free second-generation antipsychotics all positively influenced care-seeking behavior. However, participation rates were concerning. Only 53.20% of patients held mental disability certificates, despite research showing schizophrenia disability rates exceed 80% [13-15], suggesting many eligible patients remain unidentified. As the mental disability certificate is a prerequisite for other mental health policies, this limits access for unregistered patients. For example, disability federation subsidies for mental disorder patients require this certificate, providing up to ¥1,200 for outpatient and ¥5,000 for inpatient care, yet only 30.42% of patients received these subsidies—substantially lower than the certificate holding rate. This indicates many eligible patients who could benefit from economic relief did not receive assistance.

Additionally, the “686” Project participation rate was only 2.52%, possibly related to its early implementation and being in a policy transition period, though its effects were notable and should inform future policy design. The free second-generation antipsychotics program had a 12.14% participation rate, likely due to relatively strict eligibility criteria. Given its clear positive effect on service

utilization, restrictions should be relaxed to benefit more patients. Community rehabilitation service participation was 10.4%, possibly limited by Chongqing's 40 community rehabilitation stations at that time.

Low policy participation may stem from insufficient policy promotion, inadequate awareness among patients and families, or unclear application procedures that hinder help-seeking. Another factor is disease-related stigma; numerous studies have demonstrated strong links between self-stigma and care-seeking behavior, as negative self-perception after mental illness diagnosis negatively impacts help-seeking and causes delays [16].

3.3 Outpatient Medication Assistance Policies Are Effective, but Inpatient Assistance Is Lacking

Both the “686” Project and free second-generation antipsychotics program are outpatient medication assistance policies. Previous research shows that every ¥1 invested in free medication can reduce ¥3-5 in direct economic burden for families with mental disorders. Such policies not only alleviate economic burden and improve treatment rates but also reduce impulsive and violent behaviors and promote mental health prevention work [17]. Our findings confirm these effects: “686” Project participants were 11.08 times more likely to seek care than non-participants, demonstrating its significant role in promoting health-care resource utilization. Other studies on the “686” Project also show its effectiveness in improving medication adherence and disease stability [18]. Free second-generation antipsychotics recipients had higher care-seeking probability and more frequently chose secondary-level institutions (including designated facilities) for outpatient care, further demonstrating how outpatient assistance policies guide scientific care-seeking.

The district's only inpatient-related mental health policy is the disability federation subsidy providing up to ¥5,000, yet only one of 795 hospitalized patients received this subsidy. Schizophrenia has high relapse rates, and direct treatment costs primarily come from hospitalization expenses [19]. While basic medical insurance policies designed for general populations provide reimbursement, the special disease registration rate is below 20%, limiting improvements in health-care resource utilization for mental disorder patients. Therefore, enhancing and expanding inpatient assistance policies in mental health programs is essential.

3.4 Community and Family Involvement Play Important Roles in Schizophrenia Recovery

Results show patients receiving community rehabilitation treatment sought care less frequently, suggesting their treatment and care needs were met at community centers, reflected in reduced hospital visits. This aligns with successful community rehabilitation models in developed countries [20]. Additionally, these patients less frequently visited secondary-level mental health centers, possibly because effective community intervention reduced schizophrenia-related medical

visits, corroborating research showing community mental rehabilitation significantly reduces relapse rates [21][22]. Closely linked to community rehabilitation is family caregiving. As guardians, family members serve not only as caregivers but also as managers and supervisors in patients' treatment and recovery. Research consensus indicates family guardianship effectively reduces risk behaviors [23], and our findings show subsidized guardians were more likely to seek care, suggesting family accompaniment facilitates regular medical treatment and improves healthcare resource utilization.

4. Policy Recommendations

4.1 Explore Supplementary Outpatient Pooling Policies for Mental Illness in Urban-Rural Resident Insurance

Building on Chongqing's urban-rural resident medical insurance outpatient pooling policy, supplementary provisions should be explored for mental illness outpatient care. Adjust compensation standards based on severity of mental disorders, appropriately increasing reimbursement rates for severe mental illnesses like schizophrenia to alleviate the relatively high treatment costs compared to other mental disorders. For deductibles, coinsurance rates, and caps, appropriately increase reimbursement rates for schizophrenia across different institution levels, eliminate deductibles, and further raise ceilings to improve compensation effectiveness and utilization levels for people with mental disorders, achieving precise identification, accurate compensation, and rational protection.

4.2 Expand Mental Health Policy Coverage and Consolidate Existing Achievements

While strengthening current mental health policies' positive effects on care-seeking, overall participation rates should be improved. First, enhance public understanding of mental illness among patients, families, and communities, change societal attitudes, and raise awareness of mental health's importance to overall national health. This can be achieved through community education, school health lectures, media programs, and new media platforms to destigmatize schizophrenia, reduce patient shame, and encourage active participation in the social security network. Second, improve policy awareness among patients and families, using communities as hubs to connect mental health centers and designated institutions, proactively disseminating policy information rather than passively waiting for applications, ensuring all eligible patients receive high-quality assistance.

4.3 Build Integrated Outpatient and Inpatient Assistance Networks to Strengthen Mental Health Protection

For existing inpatient assistance policies, eligibility criteria should be relaxed—for example, expanding from only 低保户 (minimum livelihood guarantee households) to 边缘户 (near-poor households) to prevent medical poverty. Reduce

restrictions on inpatient assistance frequency and duration to alleviate medical burden and promote resource utilization. For outpatient medication assistance, draw on the “686” Project design to reasonably adjust medication subsidies, update free drug catalogs promptly, and provide regular free physical examinations. Covering both outpatient and inpatient pathways comprehensively can relieve family economic pressure, promote medication adherence, and maximize mental health protection effectiveness.

4.4 Improve Community Rehabilitation for Mental Disorders and Promote Hospital-Community-Family Integration

Psychiatric treatment and rehabilitation for schizophrenia constitute a seamless integrated process. The next phase should expand community rehabilitation stations, establish two-way referral mechanisms between community rehabilitation stations and mental health institutions, and further develop a hospital-community-family integrated management service model. While providing higher-quality psychiatric treatment, shift rehabilitation services to the community level, build comprehensive community intervention platforms for social function recovery, and maintain active communication with patients’ families to further improve health outcomes and support patients through the “last mile” of community reintegration.

Author Contributions:

LIU Rui: Data cleaning and organization, statistical analysis, results presentation, drafting, writing, and revision; responsible for the manuscript.

DENG Jing: Research conceptualization, study design, manuscript revision, supervision and leadership of research activities.

CHEN Ai-ling: Data collection, cleaning, and organization.

CHENG Pei-hua: Data collection, cleaning, and organization.

LUO Xing-neng: Provided study subjects, implemented research and surveys, data collection.

HU Yong-jiao: Data collection and cleaning.

ZHANG Mu-nan: Data collection and cleaning.

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Note: Figure translations are in progress. See original paper for figures.

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