Rates and Correlates of Involuntary Hospitalization in a Large Psychiatric Hospital 2014-2017 under China's Mental Health Law introduced in 2013

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Abstract

Background: Involuntary hospitalization (IH) is a controversial issue in psychiatry as it risks violation of the human right to autonomy. This study aimed to examine the rates and correlates of IH in a large psychiatric hospital from 2014-2017 after China's Mental Health Law (MHL) was implemented in 2013 specifying criteria for IH and a structured assessment was required for IH.

Methods: Unduplicated electronic medical records concerning all inpatients admitted to the Guangzhou Psychiatric Hospital with primary psychiatric diagnoses were examined and trends in annual IH rates were examined. We extracted medical, sociodemographic and socioeconomic data from these records to identify correlates of IH using bivariate chi square tests followed by logistic regression analysis.

Results: Of 11,086 hospitalized patients, there was a significant but small increase from 71.6% to 74.9% in rates of IH in the years after the structured assessment was implemented. Logistic regression analysis showed IH was positively associated with being younger, having a local residence, and a diagnosis of bipolar disorder, schizophrenia spectrum disorders or a substance abuse disorder as compared to those diagnosed with major depressive disorder.

Conclusions: Adjusting for these factors those with IH had a longer length of stays. Under China's Mental Health Law in 2013, and a locally implemented checklist, the adjusted risk of IH increased significantly, but by only 3.3% from 2014 to 2017. IH was greatest younger patients with severe mental illnesses, and those with local access to psychiatric hospital services.

1. Introduction

Involuntary hospitalization (IH) seeks to protect patient rights while assuring that those who are need treatment due to being a danger to themselves or others receive necessary care [1–3]. IH is legally regulated in most countries [1, 4], but in China only recently became subject to national regulations through a national Mental Health Law (MHL) that went into effect on May 1, 2013 [1]. While the goal of the law was to regulate the involuntary placement process according to the key principles of the WHO and provide necessary treatment to psychiatry patients the specifications were vague [5]. Article 30 of the law required that IH would be imposed only for patients who either faced "self-harm in the immediate past or current risk of self-harm" or demonstrated "behavior that had harmed others or endangered the safety of others in the immediate past or currently exposed a risk to the safety of others" [6]. After the introduction of the new law, significant changes were expected with increased awareness of the rights of people with mental illness and a likely reduction in the rate of IHs [3, 7].

Prior to the law, IH was believed to be common in China and widely thought to be unjustified in many cases, especially in large psychiatric hospitals. A 2002 study found 81.5% of 2,333 psychiatric inpatient hospitalizations in 17 Chinese cities were involuntary [8]. In contrast after implementation of the MHL in 2013, one study (n = 797) conducted at 16 psychiatric hospitals across China, found 42% IHs, 28% voluntary, but 30% not clearly determined [7]. A more recent publication that reported 79.8% IH rate from

the Shanghai area and that rates had increased after an initial decline [9]. This study, aimed the implementation of systematic evaluation using a structured checklist in 2013 at a large psychiatric hospital in Guangzhou, China in 2013. It further sought to investigate the changing rates of IH following implementation of the checklist and to identify clinical and sociodemographic characteristics associated with IH during the first four years after the law was implemented.

2. Methods

2.1 Implementation of administrative procedures

To assure compliance with the new law, all patients who were assessed for admission were invited to be voluntarily hospitalized. Those who refused were evaluated with a 12-item checklist of specific suicidal behaviors, other self-harmful activities, as well as recent violent behavior or threats towards other people or behaviors that may violently destroy property (e.g. arson or detonating bomb) (Table 1). Specific items were not documented but after the evaluating clinician had determined that hospitalization was necessary familial agreement was sought and was necessary to proceed with involuntary hospitalization. Informed consent signed by the patients' legal guardian in the cases of involuntary hospitalization.

2.2 Study design and participants

The sample for this retrospective observational study was drawn from the electronic medical records of the Guangzhou Huiai Hospital, which operates 1,920 beds and constitutes the largest psychiatric provider in southern China, providing mental health services for a catchment area of over a hundred million of inhabitants. Annually, about 7,000 inpatients are hospitalized for psychiatric treatment. Discharge abstracts covering hospitalizations from April 1, 2014, to June 30, 2017, from the hospital's electronic medical record system documented, demographic information, health insurance coverage, diagnoses, length of stay, numbers of previous hospitalizations, and whether hospitalization was voluntary or involuntary.

Patients were included in the sample if they had a principal International Classification of Diseases, tenth edition (ICD-10) diagnosis of a psychiatric disorder defined further in the section on measures. We excluded the diagnosis of mental disorders due to known physiological conditions (F01-F09) (n = 1555), as these patients usually received medical services in the neurology department. Patients with mental retardation (n = 320), childhood mental illnesses (n = 290) or other psychiatric symptoms undiagnosed (n = 267), were excluded as well, considering that the involuntary placement process was not typically recommended for these patients in the MHL. The study protocol involving analysis of hospital administrative data was approved by the Guangzhou Huiai Hospital Ethics Committee.

2.3 Measures

Demographic and clinical characteristics included age, sex, marital status, current employment, local residence (i.e. within the city of Guangzhou), health insurance, length of stay (LOS), number of previous hospitalizations, and the ICD-10 diagnosis at discharge. Diagnoses were classified into five subgroups: 1) schizophrenia spectrum disorders (ICD-10 codes F200-259); 2) affective disorders (F300-339) sub-classified as major depressive disorder and bipolar disorders; 3) mental and behavioral disorders due to psychoactive substance use (F10-F19), and 4) anxiety, dissociative, stress-related, somatoform and other nonpsychotic mental disorders (F40-F48). The hospitalization circumstances (voluntary vs. involuntary) was a binary variable assessed during the admission process as described above.

2.4 Statistical analysis

The analysis proceeded in 2 stages. First, the comparison between voluntary and involuntary groups including an indicator of the year of admission was performed using chi-square tests, the continuous variables categorized by quartiles. Given the exploratory nature of our study, the significant differences for each test were established at $p < .05$, 2-tailed.

Secondly, binary logistic regression analysis with forwarding stepwise selection was used to identify demographic and clinical correlates independently associated with IH. Variables that were significant at $p < = 0.05$ were entered into a regression model in order to calculate adjusted odds ratios (OR) and the sensitivity and specificity of a high-risk categorization. The length of stays (LOS) was after being hospitalized, thus we examined the association between LOS and IH in model 2 separately and not included in the model 1. Statistical analyses were performed with IBM SPSS Statistics for Windows (Version 25.0. Armonk, NY: IBM Corp.)

3. Results

A total of 11,086 patients were included, of whom 72.8 percent (n = 7872) was involuntarily hospitalized. From the year 2014 to 2017, the IH rate was slightly increased (2066 of 2944, 71.6%; 2596 of 3702, 71.7%; 2283 of 3174, 74.3%; 927 of 1266, 74.9%; chi square = 10.568, p = .014).The comparison of patients who were voluntarily (VH group) and involuntarily (IH group) hospitalized showed that there was no significant difference between the groups in either employment or numbers of previous hospitalizations (p > 0.05). Patients in IH group were more likely to be female (chi square = 6.626, p = 0.010), younger (chi square = 108.649, p < 0.001), living as unmarried (single, divorced, or widowed) (chi square = 41.181, p < 0.001), having a local residence (chi square = 4.575, p = 0.032), more insurance covered (chi square = 11.698, p = 0.001), longer current lengths of stays (chi square = 499.092, p < 0.001). (Table 2.)

Patients with bipolar disorder were most likely involuntarily hospitalized (2920 of 3768, 79.6%), followed by those with schizophrenia spectrum disorders (2868 of 4518, 76.6%), major depressive disorder (778 of 1418, 56.6%), and substance-related disorder (620 of 908, 68.3%) (chi square = 624.091, p < .001). (Table 2.)

Forward stepwise logistic regression analysis of IH showed that having a local residence (Odds Ratio, OR = 1.138, 95%CI (confidence interval) [1.008, 1.285], p = .002), medical insurance covered (OR = 1.136, 95%CI [1.001, 1.289]) and being younger significantly predicted an IH. Compared with the patients with major depressive disorder, adjusted risk of IH significantly increased for those with schizophrenia spectrum disorders (OR = 2.396, 95%CI [2.106, 2.725], p < .001), bipolar disorders (OR = 2.784, 95%CI [2.430, 3.190], p < .001), or substance-related disorder (OR = 1.597, 95%CI [1.334, 1.911], p < .001). And the IH was significantly associated with a longer length of stays. (Table 3.)

4. Discussion

In the current study, the overall rates of IH was high at 72.8 percent overall four years and, unexpectedly, increased slightly from 71.6% in 2014 to 74.9% in 2017. Diagnoses of bipolar (OR = 2.57) and schizophrenic disorder (OR = 2.08) were the strongest risk factors for IH. In addition, IH was associated living near the hospital, having medical insurance, and younger age. After admission, IH patients had a significantly longer current length of stays than other patients.

Data presented here was consistent with a national study in which 81.5% of 2,333 inpatients were IHs in 17 psychiatric hospitals in 2002 [8]. Similarly, a recent publication reported 79.8% IH rate in the Shanghai Mental Health Center, where IHs monthly increased from 69.7% in May, 2013 to 87.8% May, 2015 [9]. Taken altogether, the IH in China were constantly high before and after MHL, and far more common than that in western countries, for example, 26% in Ontario [10], 30.1% in Switzerland [4], 22.4% across five European countries[11]. Nevertheless, rates increased after implementation of the national law, by available evidence, and more specifically, increased at the hospital studied here at which as systematic checklist was implemented.

A key feature of the present report is that the hospital being studies implemented a structured procedure of evaluating the need for IH after the law was implemented. It is thus of special note that the rate of IH is slightly increased annually, perhaps reflecting the use of this tool and suggesting that IH may have been under-utilized prior to the implementation of the law. In addition, China has far fewer psychiatric hospital beds per capita than other countries and thus patients who present for evaluation may be more likely to have an urgent need for hospitalization [12], and to be so severely impaired that their insight into their need for hospitalization is significantly compromised [10, 13, 14]. Furthermore, in China, the psychiatric service were strengthened in general hospitals [12, 15], where were prior choices to the patients with better insight for much less stigma[16, 17]. As reported in a general hospital in Guangzhou, the most common psychiatric diagnoses were depressive episodes (20.5%), bipolar disorders (15.6%), and general anxiety disorder (14.7%) [18] while those were schizophrenia (40.8%) and bipolar disorders (34.0%) in our current study.

Previous research on hospitalized patients in China has shown that they differ from those in the US in having less insight into their condition. For example, in a sample of patients with schizophrenia (n = 384) living in the community in Guangzhou, 74% showed with partial or no insight into their illness, and insight

was significantly and negatively correlated with medication compliance (r = − 0.356, p < 0.01) [14]. Mohamed and colleges compared inpatients in the US and in China on measures of insight and acceptance of medication, using a sample from the hospital involved in the present study, and found that patients in the Chinese sample had far lower scores than the US sample on measures of insight (PANSS item-G12-Judgement and Insight: 5.2 ± 1.4 vs. 3.2 ± 1.2, p < 0.001) (insight and treatment attitudes questionnaire, ITAQ: 6.93 ± 0.51 vs. 17.55 ± 0.35, p < 0.001) and acceptance of their need for benefits of medication (drug attitude inventory, DAI: 5.66 ± 0.20 vs. 7.14 ± 0.13, p < 0.001) [19]. They concluded that greater stigma in China led to poorer insight (reluctance to acknowledge illness). This difference might be on explanation for the greater need for IH in China and the slight increase after systematic evaluation was implemented.

A major limitation of this and other studies from China is that involuntary hospitalization was not systematically documented before the reform law took effect in 2013 and as a result baseline rate from before the law went into effect is not available. In addition the use of the check list was not documented and this study thus had to assume both that it was used to evaluate potentially involuntary patients and that they actually met the designated criteria for IH Furthermore, the sample was based on data from a single medical center, and its generalizability to the rest of China is uncertain, although it clearly fits into a pattern of greater rate of IH in specialized psychiatric hospitals in China. Finally, detailed data on the risk of violence to self or others, symptom severity or lack of insight from the checklist or and other sources were not available.

5. Conclusions

Even with above limitations, our study found that, the proportion of IH at a Chinese tertiary psychiatric hospital is substantial and unexpectedly increased, specifically at a hospital that implemented a structured checklist to determine the appropriateness of IH thus suggesting an unexpected underuse of IH. The need for IH in China may be higher than in other countries because of the limited number of available inpatient beds. These findings need more detailed documentation and further systematic study.

Declarations

List of abbreviations
IH, involuntary hospitalization
VH, voluntary hospitalization
MHL, mental health law
ICD-10, International Classification of Diseases, tenth edition
LOS, length of stay
OR, odds ratio
CI, confidence interval
Ethics approval and consent to participate
The study protocol involving analysis of hospital administrative data was approved by the Guangzhou

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Tables

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