Trends
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Original Article

Cross-sectional study of readmissions to the psychiatric ward of Hospital Estadual Mário Covas in Santo André, state of São Paulo, between 2008 and 2015

Estudo transversal das reinternações na enfermaria psiquiátrica do Hospital Estadual Mário Covas em Santo André, Estado de São Paulo, entre 2008 e 2015

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Abstract

Objectives: To assess the sociodemographic and diagnostic profile of data related to psychiatric readmissions to the psychiatric ward at Hospital Estadual Mário Covas between January 2008 and September 2015, in order to investigate the possible correlation between the rate of admission and readmission and the presence or absence of a discharged patient unit or other outpatient treatment unit.
Methods: This was a cross-sectional, descriptive study. Data on patients readmitted during the study period were sourced from a statistical analysis of the Hospital Estadual Mário Covas database using STATA 11.0.
Results: During the study period, hospitalization rates decreased, while the readmission rates increased over the years, at a total of 662 readmissions. This rise in readmissions had no correlation with the presence of a discharged patient unit or other outpatient unit. Women comprised the majority of the sample, with a mean age of 42; the most prevalent disorder among women was bipolar affective disorder, while among men it was schizophrenia. The length of hospitalization increased over time, with a maximum mean time of 23 days in 2015. Most of the patients were referred from Santo André as well as from hospitals in São Paulo.
Conclusion: The increase in the rate of readmissions over the years suggests that the mental healthcare model may have shortcomings along the chain. It is important to understand the epidemiological profile and chain of events that led to repeated hospitalizations in order to design new strategies and approaches to care so as to keep the patients stabilized.
Keywords: Hospitalization, psychiatric reform, psychiatry.

Resumo

Objetivos: Obter o perfil sociodemográfico e diagnóstico dos pacientes reinternados no Hospital Estadual Mário Covas entre janeiro de 2008 e setembro de 2015, com o intuito de investigar a possível relação entre as taxas de admissão e readmissão e a existência ou ausência do serviço para pacientes de alta clinica do hospital ou de outros serviços.
Métodos: Este foi um estudo descritivo transversal. Os dados foram obtidos do Hospital Estadual Mário Covas e analisados pelo programa STATA 11.0
Resultados: Durante o período do estudo, as taxas de hospitalização diminuíram, enquanto as taxas de readmissão aumentaram progressivamente, com um total de 662 reinternações. O aumento dessas reinternações não teve relação com a presença da unidade pós-alta hospitalar do próprio hospital ou de outros serviços. A maioria dos pacientes era composta de mulheres, com idade média de 42 anos; o principal diagnóstico entre mulheres foi o transtorno afetivo bipolar, enquanto que para homens foi a esquizofrenia. O tempo de hospitalização aumentou com os anos, com uma média máxima em 2015 de 23 dias. A maior parte dos pacientes era referenciado de Santo André e outros hospitais de São Paulo.
Conclusão: O aumento das taxas de reinternação ao longo dos anos sugere que o sistema de cuidado mental tem deficiências em sua prática. É importante entender o perfil epidemiológico e a cascata de eventos que levam a rehospitalizações e, assim, traçar novas estratégias e abordagens de cuidado, mantendo os pacientes estabilizados.
Descritores: Hospitalização, reforma psiquiátrica, psiquiatria.

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Introduction

The Brazilian Psychiatric Reform became the fundamental milestone in this country's mental health policy. Its main characteristics are the replacement of a model centered on hospitals and mental institutions that were excluding, oppressive and reductionist, with a care system guided by the fundamental principles of the Brazilian Unified Health System (SUS), namely, universal, equal and comprehensive care, and a proposal to de-institutionalize these patients.[1] In the 1950s, the first psychiatric wards were added to general hospitals, and in 1954 the first psychiatric unit was opened in a general hospital in the state of Bahia.[2] In the greater ABC region, the first general psychiatric ward was opened only in 2007; at present it handles patients with mental substance use disorders.

The Psychiatric Reform started in the 1970s and focused on changing the dynamics of the centers opened in the 1950s. The de-institutionalization process aimed to restructure psychiatric care within different local healthcare systems – wards in general hospitals, treatments in day-hospitals, and mental health outpatient units.[1,3] The main advantages of this new model were a greater proximity and easier access to the services, better care of patient physical health in general hospital wards, improved interdisciplinary exchange with other medical specialties, and a reduction in the stigma associated with mental illness.[2]

However, de-institutionalization is a controversial topic, and some view it as social abandonment of a large number of patients, with a negative effect.[2] Current legislation calls for fewer beds in psychiatric hospitals and greater care outside the hospital environment.[4] However, what we find is a reality where the number of hospital admissions among those with mental disorders is increasing, saturating a system unable to absorb this increase in demand.[4] This suggests that the proposed reform and social inclusion were not properly carried out, and mental health patients were left at the mercy of society. As a result, there has been a large number of readmissions to psychiatric hospitals and psychiatric wards of general hospitals, which goes against the underlying premises of the Psychiatric Reform.[5]

Although about 50% of patients are readmitted at some point, we know that those hospitalized for longer periods with planned discharge and continued outpatient treatment are less likely to return to hospital.[6] A study performed at the Hospital Psiquiátrico Santa Teresa de Ribeirão Preto, state of São Paulo, found a readmission rate of 34% in two years.[7] De Francisco et al. showed that an increase of 9 to 26 days of hospitalization would make the rate of readmission drop to 55%.[8]

This scenario is further complicated by the fact that 40 to 60% of psychiatric patients receive no follow-up after they are discharged from the hospital.[9] Readmission rates are highest among men in their 40s; 30% of all readmitted patients of both genders are aged 40 to 49; and most readmitted patients do not have a university degree.[7] Regarding diagnosis, according to Castro et al., there was a higher prevalence of schizophrenia (27%) among readmitted patients, followed by bipolar affective disorder (23%) and drug and alcohol abuse (12%). Regarding hospitalization length, women spent more time in the hospital than men.[7]

These data raise questions about what happens to patients after they are discharged from the hospital – whether or not they adhere to the proposed treatment – and if they have access to quality services. Is the admission-readmission process based on the assumption that something happened after discharge that made it impossible for the patient and his/her family to provide continuity of treatment? Is the family prepared to be the main caregiver, given a saturated mental healthcare system? Are healthcare policies following hospital discharge broadly embedded with an aim to reduce the number of readmissions? Does the chronic nature of mental disorders mean people must live with a process of admission and readmission, with their daily lives organized around the availability treatment for their mental illness?[10]

In the present study we aimed to explore the profile of patients readmitted to the psychiatric ward of Hospital Estadual Mário Covas, as well as the rate of admission and readmission over the years. The aims were to look for any correlation with the availability of an outpatient unit, and to identify the variables that contribute to rehospitalization. This will also enable gathering data and suggesting pathways that may help reduce psychiatric readmission rates and improve the operation of the mental healthcare network in metropolitan areas.

Methods

This was a cross-sectional, descriptive study of patients readmitted between January 2008 and September 2015, based on secondary data taken from the Hospital Estadual Mário Covas social services database.

Hospital Estadual Mário Covas is a 300+ bed general hospital; 21 beds are set aside for psychiatric patients. The psychiatric ward at this hospital is mixed and is meant for short hospital stays (under two weeks). Patients are cared for by a team of three nurse aides per

shift, one nurse, one on-call physician, four psychiatry residents, one occupational therapist, one social worker and one psychologist. Patients come from the emergency services of the surrounding cities (known as the greater ABC).

In addition to the ward, the hospital offers outpatient services created as a result of a perceived need, as patients were unable to get care in the mental healthcare system in their city/town after being discharged from the hospital. This outpatient unit follows patients discharged from the ward after improvement until they are able to find a place in the mental healthcare services in their city of origin and continue their treatment there. The discharged patient unit was created on July 1 2008, closed on November 14 2012, and then reopened on October 20 2014. It was closed for almost two years because the hospital was facing financial problems. Once a patient is admitted to the ward, a social worker adds the patient's data to a database. The data collected include age, gender, city of residence, originating emergency service, diagnosis on admission, existence of a discharged patient unit when readmitted, days in the hospital and number of readmissions.

These data were then transcribed and stored as numerical codes before being inputted into STATA version 11.0. Absolute and relative frequencies were used to describe percent readmissions. Shapiro-Wilk's test was used to analyze data normality. Linear regression was used to analyze how the annual number of admissions and readmissions changed over time. Significance was set at 5%. For the association between gender, year, and the presence of a discharged patient unit we used the chi-square test. The relationship between gender and the International Classification of Diseases, 10th revision (ICD-10) was also analyzed using the chi-square test. Mean time of hospitalization by year and mean age for disorder were assessed using the Kruskal-Wallis equality of populations rank test. Fisher's exact, chi-square and *t* tests for means were applied.

This study was approved by the research ethics committee of Faculdade de Medicina, Fundação do ABC (grant 57375116.8.0000.0082).

Results

Between January 2008 and October 2015, 2,739 psychiatric patients were admitted to Hospital Estadual Mário Covas. Of these, 662 were readmissions (24.16%). Considering only the readmitted patients, 399 (60.27%) were women and 263 (39.72%) were men. The total numbers of rehospitalizations of men and women by year are shown in Table 1. The mean age of readmitted patients was 30 (standard deviation [SD] = 29-31) for men and 42 (SD = 39-44) for women. The most frequent diagnosis for readmissions was bipolar affective disorder (F31). Between 2008 and September 2015, the number of admissions decreased. However, the proportion of readmissions increased between 2008 and 2014.

The psychiatric disorder leading to the largest number of admissions was also bipolar affective disorder (F31). The second most prevalent was non-organic, unspecified psychosis (F29), followed by schizophrenia (F20), mental and behavioral disorders due to the use of psychoactive substances (F19), and severe depression with no psychotic symptoms (F32). The remaining 19% cover a range of other psychiatric disorders (Table 2).

Gender/age

Among the readmitted men, the most prevalent disorders were schizophrenia, non-organic, unspecified psychosis, mental and behavioral disorders due to the use of psychoactive substances, and bipolar affective disorder, in decreasing order of importance. Among women, the most prevalent disorders were bipolar affective disorder, non-organic, unspecified psychosis, schizophrenia, and mental and behavioral disorders

Table 1 - Number of male and female readmissions per year

Year	Men, n (%)	Women, n (%)
2008	18 (38.3)	29 (61.7)
2009	45 (52.33)	41 (47.67)
2010	32 (32.00)	68 (68.00)
2011	34 (36.56)	59 (63.44)
2012	36 (36.73)	62 (63.27)
2013	37 (36.27)	65 (63.73)
2014	40 (44.44)	50 (55.56)
2015	21 (46.67)	24 (53.33)
Total	263 (39.79)	398 (60.21)

Pearson chi-square: p = 0.129.

Table 2 - Most prevalent disorders among readmitted patients

Disorder	Readmissions, n (%)
Bipolar affective disorder	184 (27.79)
Non-organic, unspecified psychosis	162 (24.47)
Schizophrenia	110 (16.61)
Mental and behavioral disorders due to use of psychoactive substances	47 (7.09)
Severe depression with no psychotic symptoms	25 (4.01)

due to the use of psychoactive substances (Table 3). The mean age of patients with the four most prevalent diagnoses varied: for non-organic, unspecified psychosis, the mean age was 35 years (95% confidence interval [95%CI] 33-39); for bipolar affective disorder, 44 years (95%CI 41-48); for mental and behavioral disorders due to the use of psychoactive drugs, the mean age was 26 years (95%CI 22-28); and for schizophrenia, the mean age was 32 years (95%CI 30-34).

Readmission period

In 2008, 31% of the readmissions occurred before the discharged patient unit opened its doors. In 2009, 2010 and 2011, the discharged patient unit remained in operation uninterruptedly. In 2012, 81% of the readmissions occurred before the unit shut down. The unit remained closed in 2013, so all patients were readmitted without the program. The unit reopened in October 2014, and 24% of the readmissions took place after that. The discharged patient unit remained in operation throughout the months of 2015 during which the study was performed (Figure 1).

The mean time of hospitalization by year was as follows: 2008, 15 days; 2009, 21 days; 2010, 17 days; 2011, 18 days; 2012, 18 days; 2013, 21 days, 2014, 22 days; 2015, 23 days (Table 4).

Table 3 - Relationship between the International Classification of Diseases, 10th revision (ICD-10) and gender

Disorder	Men, n (%)	Women, n (%)
Bipolar affective disorder	28 (10)	155 (49)
Non-organic, unspecified psychosis	63 (24)	99 (25)
Schizophrenia	75 (29)	35 (9)
Mental and behavioral disorders due to use of psychoactive substances	30 (11)	17 (4)

Pearson chi-square: p = 0.001.

Table 4 - Mean time of hospitalization by year

Year	Days of hospitalization, mean (SD)
2008	15 (13-16)
2009	21 (15-24)
2010	17 (15-19)
2011	18 (16-21)
2012	18 (16-22)
2013	21 (18-24)
2014	22 (20-26)
2015	23 (15-29)

SD = standard deviation.
Kruskal-Wallis equality-of-populations rank test: p = 0.002.

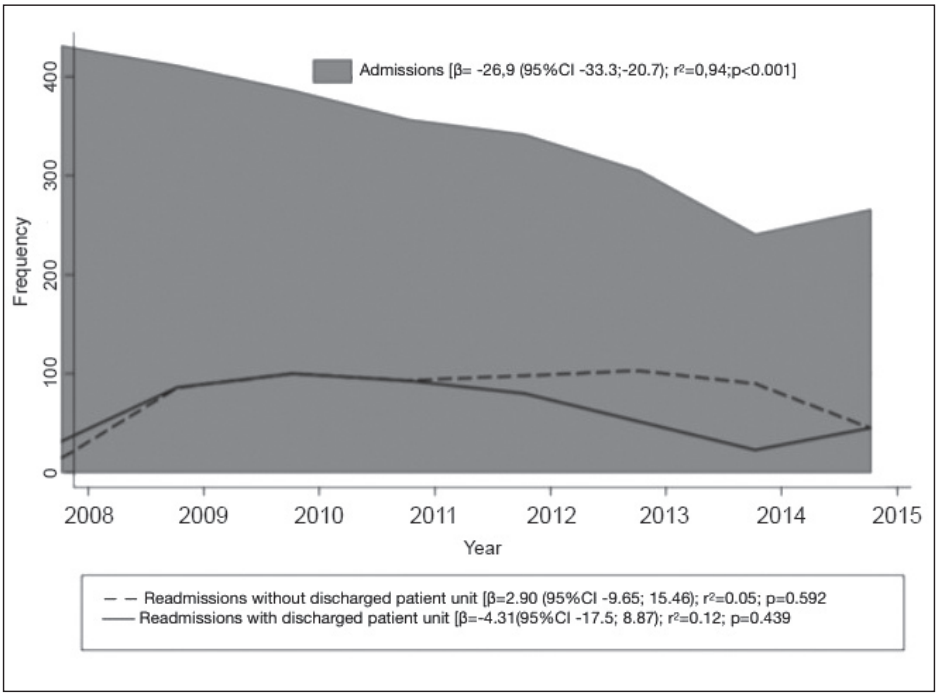

Figure 1 - Hospital Estadual Mário Covas: number of admitted and readmitted patients between 2008 and 2015

City of origin

Regarding the city of origin, most patients came from Santo André (60.57%). The second largest group of patients came from São Caetano do Sul (25.23%). A few patients came from São Bernardo do Campo, São Paulo, and Maua (10.73%). There were also patients from Diadema, Ribeirão Pires, Rio Grande da Serra, Itanhaém, and Riacho Grande.

Referrals

Most of the patients (415) were referred from the Centro Hospitalar Municipal de Santo André. Ninety-eight came from emergency services in São Caetano do Sul, 35 from centers for psychosocial care (Centros de Atenção Psicossocial [CAPS]) in São Bernardo do Campo, 18 from Hospital Municipal de Emergências Albert Sabin (HMEAS), 16 from Hospital de Clínicas Dr. Radamés Nardini in Mauá, and the others from a variety of services.

Discussion

This was a descriptive, cross-sectional study designed to analyze readmission rates of psychiatric patients in Hospital Estadual Mário Covas. We found that readmissions increased between 2008 and 2014, and dropped in 2015. Readmissions were at 12% when the study started in 2008, increasing gradually and constantly over time, reaching levels similar to those found in other hospitals and surveys.[7] Conversely, hospitalization rates dropped over time, with fewer and fewer people being admitted to the hospital's psychiatric ward. The largest number of admissions was observed in 2008, when 431 patients were admitted to the unit. This number dropped as the study progressed, reaching the lowest number of 241 patients in 2014, and increasing again in 2015.

The vast majority of readmitted patients came from the greater ABC region, with Santo André contributing the largest number of patients. These data show that Hospital Estadual Mário Covas plays an important role as a tertiary provider of psychiatric services, respecting the SUS hierarchical and regionalization ideals,[11] operating as a referral and counter-referral facility for emergency and urgent care units in these cities. Over the years, the outpatient care and follow-up systems were expanded in the greater ABC region. Thus, one would expect that the readmission rates would decrease over time, reflecting a system that is able to care for patients after they are discharged from psychiatric wards. However, at Hospital Estadual Mário Covas, we found that readmissions actually increased over the years. This may be the result of several factors, e.g., the system being inefficient and unable to cope with the regional care demand due to shortage of trained professionals, long wait for visits, shortage of outpatient care, abandonment of treatment, incorrect treatment, shortage of drugs and flaws of social-psychological treatments due to possible insufficient stimuli or individual negative attitudes about mental healthcare.[7,12,13]

One may also question if overburdened families are able to handle and care for patients with chronic mental disorders.[14] The psychiatric reform encourages family support, but many families do not receive any sort of care or attention that would enable them to develop the necessary structure.[7] Many families are biased against the mentally ill member, neglecting and excluding the patient; without close attention, the latter is more likely to abandon treatment and clinical worsening is more likely to go unnoticed.

In recent years, Brazil has implemented healthcare policies that seek to reduce factors associated with higher numbers of admissions and readmissions, as stipulated in the psychiatric reform. These new policies are related to the opening of the CAPS, whose goal is to create a space to welcome patients with psychiatric disorders in a comprehensive and humane way, particularly in lower income areas.[15,16] The idea is that the CAPS would provide medical care before hospital admission is required, which is in line with the ideals of the psychiatric reform, i.e., to de-institutionalize patients and their psychosocial rehabilitation.[17] However, the CAPS system has its own set of problems. According to the Brazilian Ministry of Health, in 2017, there were no appointments available at 16% of the CAPS.[18] To overcome this and other problems, in late 2017, a resolution was approved to strengthen the program by opening CAPS that operate twenty-four seven.[18] The aim was to help those in need of urgent help, especially drug users, and thus potentially reduce hospitalizations.

Regarding the existence of a discharged patient unit, its mere presence did not correlate with any improvement in readmission rates. In this study we were unable to gather information on which or how many patients participated in the hospital's program, so it is impossible to know whether readmission rates were lower among patients who actually used the discharged patient unit, even though all patients should have been referred to some form of outpatient after-care if he/she was not using the one available at Hospital Estadual Mário Covas. Despite the poor association found between hospitalization/rehospitalization and the presence of the outpatient unit ($p=0.592$), one may consider that the

mere existence of a service does not necessarily mean better treatment for patients. To allow a more detailed analysis, it would be necessary to know how many patients used the service, the quality of the service provided, data on patient adherence, the dynamics of operation, and the strategies used to follow patients in their transition from the psychiatric ward to the outpatient services. The same thought could be extrapolated to state that the mere existence and operation of medical services for people with mental disorders does not mean better service or an improved prognosis for this population. One must understand the type and quality of the service provided, the number of people that the service can handle, how family and community reinsertion programs are structured, the medication used and its availability, among other factors.

Furthermore, many patients are readmitted months or years after the first admission. In these cases, it is likely that the discharged patient unit has already referred the patient to some other outpatient service in the region, which may not have been able to provide suitable treatment and follow-up. Also, some diseases naturally have more acute periods, so readmissions may be a result of the course of mental illness.[19]

Regarding the epidemiological profile of the readmitted patients, the most prevalent disorder was bipolar affective disorder, which has a prevalence in the general population of around 1%.[20] Regarding patient gender, more women than men were readmitted. We found a greater prevalence of mood disorders among women, such as bipolar affective disorder, followed by non-organic, unspecified psychosis, schizophrenia, and substance abuse disorders. An epidemiological study of the most prevalent disorders among the female population showed a higher incidence of affective disorders, among which bipolar affective disorder was one of the most prevalent conditions.[21] These findings suggest that there is an expressive number of patients at high risk of being readmitted to a psychiatric ward. While Andrade found depression to be the disorder with the highest incidence among women,[21] it was not the one most present in readmissions, likely due to the fact that any acute phase of this disorder is less evident. The mean age of readmitted women was 42, with a SD of 39 to 44 years. This was also the mean age of patients with bipolar affective disorder, likely because this was the most prevalent disorder in this population.

In men, we found a higher prevalence of schizophrenia, non-organic, unspecified psychosis, and substance abuse disorders. These data also correlate with the findings of studies on the prevalence of mental disorders among the male population.[21,22] The mean age of readmitted men was 30 (95%CI 29-31), which is close to the mean age found for schizophrenia and non-organic, unspecified psychosis. Thus, there seem to be specific groups at higher risk of readmission who should be the focus of increased care and attention.

This study was unable to determine if there were patients with psychiatric comorbidities, as the data spreadsheet provided by the hospital listed only the primary diagnosis. This information would be extremely important, as about 30% of patients diagnosed with a psychiatric disorder have another associated disorder.[21] Knowledge about comorbidities would thus enable to identify whether patients with some comorbidity are more likely to be readmitted.

The mean number of days that readmitted patients remained in the hospital increased over time, from 13-16 days in 2008 to 15-29 days in 2015. In another study, an increase in number of days in the hospital from 9 to 26 was associated with a 55% reduction in readmission rates.[8] This may indicate a strategy to better serve patients while they are hospitalized in a psychiatric ward, resulting in more effective outpatient care, as these units receive patients who are healthier.

Higher readmission rates and limited knowledge of the profile of readmitted patients reproduces practices whose main intervention is centered on psychopharmacological treatment, with little or no emphasis on social work, which could change the relationship with people with mental disorders. This approach, centered primarily on medicating symptoms, is unable to promote user autonomy, or convince family members to get involved in the treatment. Facilities and services outside the hospital environment are disconnected from the hospital and from one another, making it harder to provide individual care and focus on patient and family needs, culture and integration.

It is important to remember that the goal of the psychiatric reform was not only to remove those with mental disorders from hospitals, but to encourage them to be active players in their treatment. The existence of outpatient psychiatric services does not necessarily mean a lower rate of readmission. One must understand how these services work, how many people actually have access to them, the quality of the service provided, how it is used by patients, and patient adherence to treatment.

In sum, more studies in this field should be conducted, especially considering the reality of our country. It is important to analyze each of the variables discussed in this article, as they are all connected and have their own importance in keeping psychiatric patients stable throughout their lives – an important goal of the psychiatric reform. The more stable the patient is, the more he/she can be a part of society, and the fewer hospitalizations will be required.

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