

THE MULTIPLE CAUSES OF DEATH AND THE PSYCHIATRIC ADMISSIONS RESULTING FROM THE USE AND ABUSE OF PSYCHOACTIVE SUBSTANCES IN A MINAS GERAIS MUNICIPALITY

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The aim of this study was to describe the Unified Health System Psychiatric Hospitalizations for the Use and Abuse of Psychoactive Substances in a municipality of Minas Gerais State from 1998 to 2009. The information was obtained through secondary data collected from the Hospital Information System of the Brazilian Unified Health System. We observed an increase in admissions for the other drugs. Among the 751 admissions recorded no deaths occurred, but an analysis of the deaths occurring among the local residents that were not hospitalized resulted in 143 deaths. These results demonstrate the need for epidemiological monitoring, by the scientific community, of the use of these substances as well as analysis of the causes of deaths recorded in the population using Psychoactive Substances.

Descriptors: Mental Health; Public Health; Epidemiology; Substance-Related Disorders.

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CAUSAS MÚLTIPLAS DE ÓBITO E AS INTERNAÇÕES PSIQUIÁTRICAS POR USO E ABUSO DE SUBSTÂNCIAS PSICOATIVAS EM UM MUNICÍPIO DE MINAS GERAIS

Neste estudo o objetivo foi descrever as internações psiquiátricas do Sistema Único de Saúde por uso e abuso de substâncias psicoativas, em um município de Minas Gerais, entre os anos 1998 e 2009. As informações foram obtidas por meio de dados secundários coletados no Sistema de Informações Hospitalares do Sistema Único de Saúde brasileiro. Observou-se aumento no número de internações por outras drogas. Entre as 751 internações registradas, não houve nenhum óbito, mas, ao se analisar os óbitos ocorridos na população residente e não internada, registraram-se 143 óbitos. Esses resultados demonstram a necessidade de acompanhamento epidemiológico por parte da comunidade científica sobre o uso dessas substâncias, como também a análise das causas de óbitos registrados na população usuária de substâncias psicoativas.

Descritores: Saúde Mental; Saúde Pública; Epidemiologia; Transtornos Relacionados ao Uso de Substâncias.

CAUSAS MÚLTIPLES DE MUERTE Y LAS HOSPITALIZACIONES PSIQUIÁTRICAS POR EL USO Y ABUSO DE SUSTANCIAS PSICOACTIVAS EN UNA CIUDAD DE MINAS GERAIS

El objetivo del estudio fue describir las Internaciones Psiquiátricas del Sistema Único de Salud por Uso y Abuso de Sustancias Psicoactivas en un municipio de Minas Gerais entre los años de 1998 y 2009. Las informaciones fueron logradas por medio de datos secundarios colectados en el Sistema de Informaciones Hospitalarias del SUS brasileño. Se observó un aumento en el número de internaciones por Otras Drogas. Entre las 751 internaciones registradas no hubo ningún óbito, pero al analizar los óbitos ocurridos en la población residente y no internada se registraron 143 óbitos. Estos resultados demuestran la necesidad de un acompañamiento epidemiológico por parte de la comunidad científica del uso de estas sustancias como también el análisis de las causas de óbitos registrados en la población usuaria de Sustancias Psicoactivas.

Descriptorios: Salud Mental; Salud Pública; Epidemiología; Trastornos Relacionados con Sustâncias.

Introduction

In Brazil, the Use and Abuse of Alcohol is reaching alarming proportions in relation to other recreational drugs, especially the marijuana, cocaine, and crack cocaine; which demonstrates the need for epidemiological monitoring, by the scientific community, regarding the use of these substances by the population in general.

Considering the magnitude of the Mental and Behavioral Disorders resulting from the Use and Abuse of Psychoactive Substances, the conduction of an epidemiological investigation to determine the situation

of those affected by mental disorders becomes relevant, as well as instilling an interest in the research among the mental health professionals, in addition to improved record keeping of the collected data, which are used to characterize the health status of the population.

The study aimed to describe the Psychiatric Hospitalizations for the Use and Abuse of Psychoactive Substances in the municipality of Divinópolis/Minas Gerais (MG), in the hospital morbidity time series of the Brazilian SUS, from 1998 to 2009.

Materials and Methods

This is an epidemiological time series study, of an ecological descriptive character, exploratory and temporary of the psychiatric hospitalizations due to the Use and Abuse of Psychoactive Substances in the Divinópolis municipality located in the state of Minas Gerais. The study employed secondary data compiled from the psychiatric morbidity data bank available at the DATASUS site. During the first stage, the file saved in the Tab format was converted to make it more accessible and compatible with the requirements of the programs used in the data analysis. The Microsoft Excel was employed to convert the files extracted from the DATASUS database into the .xls format to facilitate the data processing, organization, and analysis. The second stage entailed the descriptive

statistical analysis of the data, which allowed for the description of the demographic and clinical profile of the patients admitted for the Use and Abuse of Psychoactive Substances in the municipality of Divinópolis-MG.

Results

The number of psychiatric hospitalizations due to the Use and Abuse of Psychoactive Substances demonstrated a gradual increase. According to Table 1 the number of admissions for Alcohol use had a decline compared to the admissions for Other Drugs; however, it maintained a higher rate of admissions up to 2003, in contrast, from 2004 the Other Drugs hospitalizations became the majority; thus, surpassing the admissions for Alcohol Use and Abuse.

Table 1 - Number of Psychiatric Hospitalizations due to the Use and Abuse of Alcohol and Other Psychoactive Substances among the residents in the municipality of Divinópolis-MG according to gender and year in the time series ranging from 1998 to 2009.

Psychoactive Substances	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	Total
Alcohol	5	9	23	43	36	25	39	46	68	46	22	1	363
Other Drugs	4	3	23	27	35	21	41	47	52	80	43	12	388
Total	9	12	46	70	71	46	80	93	120	126	65	13	751

Source: Ministry of Health/DATASUS - SIH/SUS.

Table 2 shows an increase in the number of deaths due to the Use and Abuse of Psychoactive Substances in the residents of the municipality of Divinópolis-Minas Gerais from the 1998 and 2009. The municipality recorded 129 male and 14 female deaths. It is noteworthy that no

deaths were recorded among patients hospitalized for Use and Abuse of Psychoactive Substances. However, in the municipality, occurred several deaths whose underlying causes were these diagnoses.

Table 2 - Number of Psychiatric Hospitalizations due to the Use and Abuse of Alcohol and Other Psychoactive Substances among the residents in the municipality of Divinópolis-MG according to gender and year in the time series ranging from 1998 to 2009.

Gender	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009*	Total
Male	9	4	7	10	12	7	10	13	12	11	22	12	129
Female	1	2	1	0	1	2	0	1	2	0	2	2	14
Total	10	6	8	10	13	9	10	14	14	11	24	14	143

Source: Ministry of Health/DATASUS - SIH/SUS. *2009: Preliminary data

The Mortality Rate calculations demonstrated a similarity of values in the results; since the Mortality Rate calculations are based on the number of deaths by the number of inhabitants. Thus, there is a noticeable rate discrepancy in 2008, compared to the other years. No

major changes were observed, in the population of the municipality, during those years, as shown in Table 2; 24 deaths occurred in 2008, the year in which the most deaths were recorded.

Table 3 - Mortality Rate among the residents of the municipality of Divinópolis-MG due to the Use and Abuse of Alcohol and Other Psychoactive Substances in the time series ranging from 1998 to 2009.

	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Mortality Rate	5.53	3.24	4.35	5.33	6.81	4.64	5.07	6.85	6.73	5.24	11.25	6.48

Source: Raw Data - Population: Brazilian Institute of Geography and Statistics (IBGE). Number of deaths: DATASUS - Mortality Information System (SIM).

Discussion

This study shows that, from 1998 to 2003, the rates of hospitalizations for Alcohol were higher than the ones for the Other Drugs. The analysis of the years 2008 and 2009, revealed a sharp decline in the hospitalization for alcohol use; thus, keeping the prevalence of hospitalizations for other recreational drugs.

According to the Brazilian Center for Drug Information (OBID), over the past twenty years, Brazil has seen a steady increase in the alcohol, marijuana, cocaine, and crack cocaine use. In comparison with other countries such as the US, Canada, and the European Community, the use of recreational drugs in Brazil is fairly low⁽¹⁾. Even with a smaller use of alcohol and other drugs compared to other countries, it still results in increased violence, crime, traffic accidents, many diseases, unemployment, truancy, among others.

It is noticeable the increase in psychiatric hospitalizations for Other Drugs than for the Alcohol use in the city of Divinópolis-MG from 1998-2009, with 363 (48%) hospitalizations due to the Use and Abuse of Alcohol and 388 (52%) hospitalizations due the Use and Abuse of Other Drugs.

It is noteworthy that starting in 2006; the Use and Abuse of Other Drugs became the leading cause of hospitalizations. There was a shift toward the Use and Abuse of Other Drugs in the municipality of Divinópolis-MG, whereas previously the Use and Abuse of Alcohol was the main cause of hospitalizations.

Studies have found that three in every one hundred Brazilians (2.9%) have used cocaine at least once in their lifetime. With regard to the crack cocaine, less than 1% of Brazilians had any contact with this substance. As for the marijuana, an average of 9 in every 100 Brazilians had used it at least once in their lifetime, i.e., 9%⁽²⁾ of them.

A Danish study found that 63% of deaths related to the Use and Abuse of Psychoactive Substances were recorded as non-natural deaths⁽³⁾. Medico-legal autopsy studies demonstrated that positive breath test results were found in 40% of the cases involving non-natural death results⁽⁴⁻⁵⁾.

Brazil lacks easy accessibility to pre-existing data regarding the use of recreational drugs; thus, it is impossible to determine if the use is increasing or decreasing among Brazilians⁽⁶⁾, which complicates the studies on mortality conducted among the users of Psychoactive Substances (PAS).

The male mortality rates are about 50% higher, and when considering the age-groups, the most affected is the 20-39 group with 3 male deaths for each female one⁽⁷⁾.

A study on the causes of death among women 10 to 49 years old, conducted in the Brazilian state capitals during the first half of 2002, found mental disorders to be the underlying cause of 1% (70) of the deaths. Of the deaths from a mental disorder, 64.3% were related to the use of psychoactive substances, predominantly the alcohol use, i.e., 37.1% (26) of the deaths were due to the use and abuse of PAS⁽⁸⁾.

In 2002, 7,011 deaths resulting from mental disorders were recorded in Brazil, from those 5,417 (77.2%) were

due to the use and abuse of PAS⁽⁹⁾. Another study with psychiatric patients found a higher risk of mortality in patients with Mental and Behavioral Disorders resulting from the Use and Abuse of Psychoactive Substances⁽¹⁰⁾.

From 2003 to 2007 the number of deaths among the mental disorder sufferers saw an increase of 41%, while 25% of psychiatric beds were eliminated without the necessary implementation of substitute services⁽¹¹⁾.

Table 2 shows that from 2005 to 2009 there was an increase in the number of deaths related to the Use and Abuse of Psychoactive Substances among the population of the municipality in the study. The Mortality Rate calculations demonstrate a higher level of deaths occurring in 2008, compared to the other years.

It is noteworthy that, for the local general population, the numbers remained stable during the same period.

Since these results were acquired from a small pool of participants, the variation of a few units can result in large deviations in the rates⁽¹²⁾. This may explain the 2008 results.

The goal is to use these results to help the understanding of the causes of mortality among the users of Psychoactive Substances, since the diagnostics for the Use and Abuse of Alcohol and Other Drugs, F10-F19 in the International Classification of Diseases, Tenth Revision (ICD- 10)⁽¹³⁾, are frequently considered as an associated rather than the underlying cause of death.

The promotion of information through research is a valuable action for new achievements in the mental health field, particularly when dealing with the use and abuse of PAS. The studies represent a necessary tool for the discussion regarding the future of mental health in Brazil⁽¹⁴⁾.

The high doses and the long-term Use and Abuse of Drugs put at risk⁽¹⁵⁾ the state of health of the individual with complications such as a persistent cough, chest pain, difficulty breathing, tachycardia, changes in arterial pressure, muscle necrosis, convulsions, depression, panic attacks, and even cardiac arrest.

Therefore, to study the multiple cause of mortality in this population becomes necessary for the understanding of the diagnostics for the Use and Abuse of Alcohol and Other Drugs, and the other contributing factors to the mortality rate because in itself, it is seldom the underlying cause of death.

Final Considerations

In Brazil, the Use and Abuse of Alcohol is reaching alarming proportions in relation to other recreational drugs, especially the marijuana, cocaine, and crack cocaine; which demonstrates the need for epidemiological monitoring, by the scientific community, regarding the use of these substances by the population in general.

The Mental and Behavioral Disorders due to Use and Abuse of Psychoactive Substances have been repeatedly found to be contributing factors to premature death, death related to the drug use i.e., caused by the disorder, fatal overdoses, or traumas, such as traffic accidents, suicides, aggressive behavior and homicides.

Despite the high number of psychiatric hospitalizations due to Use and Abuse of PAS in the municipality, there were no occurrences of deaths among these patients; thus, a situation requiring further investigations.

Since among the general population of the municipality there were instances of deaths related to Mental and Behavioral Disorders due to Use and Abuse of Psychoactive Substances, it shall be safe to assume that these people should have been hospitalized and for unknown reasons were not. Therefore, here is one more subject to be investigated.

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