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Common mental disorders and the use of psychoactive drugs: the impact of socioeconomic conditions

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ABSTRACT

OBJECTIVE: To evaluate the influence of socioeconomic conditions on the association between common mental disorders and the use of health services and psychoactive drugs.

METHODS: This was a population-based cross-sectional study conducted in the city of Botucatu, Southeastern Brazil. The sample was probabilistic, stratified and cluster-based. Interviews with 1,023 subjects aged 15 years or over were held in their homes between 2001 and 2002. Common mental disorders were evaluated using the Self-Reporting Questionnaire (SRQ-20). The use of services was investigated in relation to the fortnight preceding the interview and the use of psychotropic drugs, over the preceding three days. Logistic regression was used for multivariable analysis, and the design effect was taken into consideration.

RESULTS: Out of the whole sample, 13.4% (95% CI: 10.7;16.0) had sought health services over the fortnight preceding the interview. Seeking health services was associated with female gender (OR=2.0) and the presence of common mental disorders (OR=2.2). 13.3% of the sample (95% CI: 9.2;17.5) said they had used at least one psychotropic drug, especially antidepressives (5.0%) and benzodiazepines (3.1%). In the multivariable analysis, female gender and the presence of common mental disorders remained associated with the use of benzodiazepines. Per capita income presented a direct and independent association with the use of psychoactive drugs: the greater the income, the greater the use of these drugs was.

CONCLUSIONS: Lower income was associated with the presence of common mental disorders, but not with the use of psychotropic drugs. The association of common mental disorders and the use of psychotropic drugs in relation to higher income strengthens the hypothesis that inequality of access to medical services exists among this population.

DESCRIPTORS: Mental Disorders, epidemiology. Psychotropic Drugs, therapeutic use. Socioeconomic Factors. Health Inequalities. Cross-Sectional Studies.

INTRODUCTION

Common mental disorders (CMDs) are highly prevalent and has been consistently associated with worse socioeconomic conditions in different countries,[16] including Brazil.[9,10,13] Individuals with CMDs have a greater likelihood of seeking assistance from health services, which is a fundamentally important characteristic with regard to planning and implementing public healthcare policies.[14] However, the individuals with the greatest needs are not always

among those most frequently seeking health services and access to therapeutic interventions. Mendoza-Sassi et al,[14] in the city of Rio Grande Southern Brazil), showed that although low income was a risk factor for CMDs, the group with the highest income level was the one that was observed to make the greatest use of health services. A similar result was obtained by Lima et al[9] in a survey conducted in Pelotas (Southern Brazil). The authors[9] observed that although lower per capita income was associated with greater prevalence of CMDs, it was not in this group that the highest proportion of subjects using psychotropic drugs was found. According to these authors, there was no direct relationship between being a group at risk of CMDs and receiving benzodiazepines, which constituted what Hart[5] had called an "inverse care law". According to Hart, the provision of good quality healthcare would tend to vary inversely with the needs of the population under consideration.

The present study had the aim of evaluating the influence of socioeconomic conditions on the relationship between CMDs and the use of health services and psychoactive drugs. The hypothesis tested was that the use of services and psychoactive drugs would be independently associated with the presence of CMDs, but not with the socioeconomic characteristics of the participants. This hypothesis was based on the fact that Botucatu (Southeastern Brazil) has a large network of public health services, distributed according to demographic density. Thus, income ought not to be a predictive factor for the use of health services and psychoactive drugs.

METHODS

This study formed part of a broader survey that had the aim of estimating the population's self-reported health, with analysis of risk factors for different health conditions and their relationship with the use of health services. This was the Multicenter Health Survey,[a] which was conducted in the cities of São Paulo (administrative district of Butantã), Campinas, Botucatu and an area in the southwestern part of the Greater São Paulo region, composed of the municipalities of Taboão da Serra, Embu and Itapecerica da Serra.

In the present study, data from the city of Botucatu alone were analyzed. Botucatu is located in the western region of the State of São Paulo, at a distance of 230 km from the state capital, with a population of 108,000 inhabitants. The city has an extensive network of healthcare services, with primary healthcare units distributed according to the demographic density. It has medication dispensing programs that include benzodiazepines and antidepressives.

A cross-sectional study was conducted, with cluster-based stratified sampling that was representative of the urban population of Botucatu. The aim was to investigate living conditions, CMDs, health service use and medication use, among others. Subjects aged 15 years or older who agreed to participate in the study were included.

The probabilistic sampling was carried out in two stages: firstly by drawing census tracts and then by drawing households. The census tracts were stratified according to the schooling level of the head of the family. In all, 30 census tracts were drawn. The number of households varied between the tracts, and greater numbers of households were drawn in the larger tracts. To calculate the sample size, an estimated prevalence of 50% was taken, with a confidence level of 95%, maximum error of 0.10 and design effect of 2. Interviewers were trained and all data collection was done in the households. Since one of the aims of the multicenter study was to identify morbidity associated with seasonal variations, the data collection lasted one year: from the end of April 2001 until May 2002.

The presence of CMDs was evaluated using the Self-Reporting Questionnaire (SRQ-20),[4] which was developed by the World Health Organization for primary care screening. The SRQ-20 has been widely used in population-based surveys since it can be applied by lay interviewers after rapid training. Its psychometric properties are considered adequate: sensitivity between 63% and 90% and specificity between 44% and 95%. It has been validated in Brazil[11] and has been used in national studies.[9,10,13] The SRQ-20 is composed of 20 questions on physical and psychological symptoms, with dichotomous responses (yes/no). Men with scores greater than or equal to 6 and women with scores greater than or equal to 8 were considered to be possible cases of CMDs.

Information on the subjects' use of health services over the fortnight preceding the interview was obtained. To investigate the use of medications over the preceding three days, the respondent was asked to show the boxes of the medications used. The drugs were classified in accordance with the Anatomical Therapeutic Chemical system.[18]

The use of health services and psychotropic medication (benzodiazepines and antidepressives) was considered to be a dependent variable. Their associations with the explanatory variables were investigated by means of estimates of simple and adjusted prevalence ratios and odds ratios (ORs). The Stata 8.0 software was used, which allowed weightings to be incorporated, along with the cluster and stratification effects. The statistical

significance was assessed by means of the chi-squared test,[6] and the results were considered significant when p≤0.05. The multivariable analysis consisted of logistic regression models with calculations of adjusted ORs. Variables that showed associations with outcomes presenting p ≤ 0.25 in univariate analysis were included in the models.[7] To identify negative confounders, variables taken to be important according to the literature were included, independent of the p value obtained. The models were analyzed by means of the likelihood ratio test.

The study was approved by the Research Ethics Committee of the Faculdade de Medicina de Botucatu of Universidade Estadual Paulista "Júlio de Mesquita Filho".

RESULTS

The whole sample consisted of 1,086 individuals, of whom 38 refused to participate in the interview and 25 were excluded because they did not answer the SRQ-20. Thus, 1,023 subjects (94.2%) were analyzed. No significant differences were found between the sample and the population of the municipality, and the general characteristics of the sample can be seen in Table 1. The distribution of men and women in the sample was similar, and there was predominance of younger subjects: more than 50% were less than 40 years of age. More than 50% had had between five and eleven years of schooling, and the predominant per capita income range was from one to three minimum monthly salaries. The overall range of per capita monthly income was from R$ 8.00 to R$ 8,500.00, with a median of R$ 340.00.

Among all the participants, 13.4% (95% CI: 10.7;16.0) has sought health services over the preceding fortnight, among whom 25% used private services and the remainder used public services. In the multivariable analysis, only female sex and presence of CMDs remained independently associated with seeking health services (Table 2). For these two, the odds ratios were practically twice what was found for men and for subjects without CMDs.

Regarding the use of medications, 13.3% (95% CI: 14.2;18.8) had used at least one psychoactive drug over the three days preceding the interview. Also in relation to the total number of subjects, it was observed that 3.1% (2.2% of the men and 5.7% of the women) had used benzodiazepines and 5.0% (4.6% of the men and 12.0% of the women) had used antidepressives. The other psychotropic drugs used included anticonvulsants, mood stabilizers, antiparkinson agents, cholinesterasic agents and amphetamines, among others. The frequency with which these drugs were mentioned ranged from 1.1% for anticonvulsants to 0.4% for amphetamines.

Table 1. Subjects' sociodemographic characteristics. Botucatu, Southeastern Brazil, 2001-2002. (N = 1,023)

Variable	n	%*
Sex		
Male	498	49.1
Female	525	50.9
Age group (years)		
16-20	180	11.1
21-30	121	22.3
31-40	106	18.1
41-50	96	18.8
51-60	79	12.1
61 or over	439	17.6
Schooling (years)		
Less than 1 year	94	5.4
1 to 4	327	24.9
5 to 8	183	21.7
9 to 11	283	29.6
≥ 12	135	18.4
Per capita income (minimum monthly wages)		
Less than 1	327	29.6
1 to 3	486	49.2
4 or more	210	21.2
Occupation		
Employed	435	58.9
Retired	279	13.1
Housewife	178	16.5
Others	106	8.5
Unemployed	25	3.0
Marital status		
Single	275	26.9
Stable relationship	565	55.2
Separated/widowed	183	17.9

* Percentages weighted for sample design

In the sample, 18.5% of the women and 8.0% of the men made use of at least one psychoactive drug (Table 3). An association with age group was also observed: the greater the age, the greater the risk that the subject had made use of psychotropic drugs. Housewives and retired people also stood out from the rest through reporting the use of at least one psychotropic drug (26.6% and 20.6%, respectively). In univariate analyses, without adjusting for age and sex, separated and widowed individuals presented twice as much chance of using a psychotropic drug as did single individuals. Finally, the percentage of subjects with CMDs who were using psychoactive drugs was 27.1%, while among the subjects without CMDs, it was 9.7%. No association with income and the use of psychoactive drugs in general was observed.

Table 2. Logistic regression model for use of services according to the subjects' sociodemographic characteristics and the presence of common mental disorders. Botucatu, Southeastern Brazil, 2001-2002. (N = 1,023)

Variable	Services sought*	Crude OR	Adjusted OR (95% CI)	p**
Sex				
Male	9.7	1	1	<0.001
Female	16.9	2.0 (1.4;2.9)	1.9 (1.3;2.7)	
Presence of CMDs				
Absent	11.2	1	1	<0.001
Present	22.2	2.2 (1.5;3.2)	2.0 (1.4;3.0)	

CMD: common mental disorder
* Percentages weighted for sample design
** Likelihood ratio test

For the multivariable analysis (Table 4), it was decided to construct three different models: for any psychoactive drug, for benzodiazepines and for antidepressives. The analyses for benzodiazepines and antidepressives were justified by the fact that these were the drugs most commonly used by patients with CMDs. As was found with use of services, female sex and presence of CMDs continued to be independently associated with the use of these drugs. In relation to the use of "any psychoactive drug", only these two variables remained associated. In the models for the use of benzodiazepines and antidepressives, per capita income was shown to be significantly associated, independent of sex and presence of CMDs. Table 4 also shows that the subjects with per capita income of less than one minimum monthly salary presented OR=0.2 (95% CI: 0.1;0.6) for the use of benzodiazepines and OR=0.2 (95% CI: 0.1;0.5) for the use of antidepressives, after adjusting for the other variables included in the model.

DISCUSSION

The high percentage of responses obtained (94%) minimized the possibility of selection bias. Likewise, since the time periods used for reporting the use of services and medications were a fortnight and three days, respectively, it is unlikely that memory bias could have occurred in relation to this item. The use of medications was evaluated from direct observation of the medications used over the preceding three days. Thus, memory bias was avoided, but underestimation of the use of these medications could have occurred. According to Zandstra et al,[19] although short periods of time minimize memory bias, they end up including subjects who started using the medications recently, thereby becoming equivalent to recent use and chronic use. The time period used may explain the differences in the estimates for the use of benzodiazepines that were found between the present study (3.1% over the "preceding three days") and previous surveys. Lima

Table 3. Use of psychoactive drugs according to sociodemographic variables and the presence of common mental disorders. Botucatu, Southeastern Brazil, 2001-2002. (N = 1,023)

Variable	Total	Use of psychoactive drugs* %	Crude OR
Sex			
Male	498	8.0	1
Female	525	18.5	2.6 (1.3;5.2)
Age group (years)			
16-20	180	1.9	1
21-30	121	9.1	5.3 (1.2;22.9)
31-40	106	12.9	2.8 (1.5;5.1)
41-50	96	12.5	1.9 (1.2;3.1)
51-60	79	14.7	1.7 (1.2;2.4)
61 or more	439	26.3	1.8 (1.4;2.2)
Occupation			
Employed	435	7.0	1
Retired	279	20.6	3.4 (1.9;6.2)
Housewife	178	26.6	2.2(1.7;2.8)
Others	106	17.7	1.4 (1.1;1.9)
Unemployed	25	20.1	1.3 (0.9;2.0)
Marital status			
Single	275	8.0	1
Stable relationship	565	12.2	1.6 (0.8;3.2)
Separated/ widowed	183	28.5	2.1 (1.5;3.1)
Schooling (years)			
< 1	94	13.5	0.9 (0.8;1.1)
1 to 4	327	20.5	1.1 (0.8;1.3)
5 to 8	183	11.4	0.8 (0.5;1.2)
9 to 11	283	6.1	0.3 (0.1;0.8)
≥ 12	135	17.4	1
Income (minimum monthly wages)			
Less than 1	327	11.1	0.8 (0.6;1.1)
1 to 3	486	13.4	0.8 (0.4;1.6)
4 or more	210	16.2	1
Presence of CMDs			
Absent	806	9.7	1
Present	217	27.1	3.5 (2.0;6.1)

CMD: common mental disorder
* Percentages weighted for sample design

et al[9] estimated that the use of benzodiazepines over the fortnight preceding the interview was 8%, while Mari et al[12] and Galduroz et al[3] estimated the use over the subjects' lifetimes as, respectively, 8.0% and 0.9%. Rodrigues et al[17] repeated the cross-sectional study of Lima et al[9] in the city of Pelotas, and found that the use

Table 4. Logistic regression models for the use of psychoactive drugs according to the subjects' sociodemographic characteristics and the presence of common mental disorders. Botucatu, Southeastern Brazil, 2001-2002. (N = 1,023)

Variable	Use of psychoactive drugs %*	Crude OR	Adjusted OR	p**
Model 1: Use of any psychotropic drug				
Sex				
Male	8.0	1	1	<0.0001
Female	18.5	2.7 (1.9;3.9)	2.1 (1.4;3.2)	
CMDs				
No	9.7	1	1	<0.0001
Yes	27.1	2.8(2.0;4.0)	3.0 (2.0;4.6)	
Model 2: Use of benzodiazepines				
Sex				
Male	2.2	1	1	0.02
Female	5.7	2.6 (1.3;5.4)	2.2 (1.1;4.5)	
Per capita income (minimum monthly salaries)				
> 4	5.4	1	1	0.009
1-3	4.5	0.8 (0.4;1.8)	0.6 (0.3;1.3)	
<1	2.4	0.4 (0.2;1.1)	0.2 (0.1;0.6)	
CMDs				
No	2.1	1	1	<0.001
Yes	11.1	5.7 (3.0;11.0)	7.0 (3.5;13.0)	
Model 3: Use of antidepressives				
Sex				
Male	4.6	1	1	<0.001
Female	12.0	3.9 (2.1;7.3)	3.5 (1.9;6.6)	
Per capita income (minimum monthly salaries)				
> 4	8.6	1	1	0.01
1-3	7.2	0.8 (0.4;1.5)	0.6 (0.3;1.2)	
<1	3.1	0.3 (0.1;0.7)	0.2 (0.1;0.5)	
CMDs				
No	4.6	1	1	<0.001
Yes	12.0	2.8 (0.4;1.5)	3.3 (1.8;5.8)	

CMD: common mental disorder
* Percentages weighted for sample design
** Likelihood ratio test

of psychoactive drugs among the urban population of that city was 9.9%, a percentage close to what had been obtained in the previous study. Beck et al[2] described data from a cross-sectional study carried out in Canada and observed that the use of psychotropic medications was very common. Around 7% of the population had made use of some psychoactive drug over the preceding year, and there was a direct relationship with aging, similar to what was found in the present study.

The use of health services was associated with the presence of CMDs, but not with income, as also found in other studies.[14] This may have occurred because of the extensive provision of healthcare installations in the municipality. Likewise, the distribution of the primary care services in Botucatu follows the logic of demographic density, which may have made access easier. Regardless of this, the association between CMDs and seeking of services, which had already been systematically observed, ought to be of concern for managers with regard to planning and organizing healthcare services.

Although the access to services may have been guaranteed, this has still not eliminated the inequalities, as could be seen from analyzing the psychotropic drugs used. The use of benzodiazepines was shown to be more prevalent among females and in the presence of CMDs and, as also observed in other Brazilian studies, among the social segments with higher income.[9,12] The

same analysis could be made in relation to the estimate for the use of antidepressives, which was influenced by per capita income. Although subjects with incomes less than one minimum monthly salary presented greater chances of presenting CMDs (OR=4.6), they showed the least likelihood of having made use of psychoactive drugs. The use of "any psychoactive drug" was not influenced in this way by income. This suggests that, for other disorders, there is not inequality of access to medications. Although it may be supposed that low income was a limiting factor in acquiring benzodiazepines and antidepressives, these medications are available within the municipal public network. To establish the therapeutic intervention, doctors need to adequately identify individuals with CMDs, which does not always occur.[1,8]

In Brazil, mental health training still takes place mostly in specialized services such as psychiatric hospitals, and not in community services. Thus, students come into contact with individuals with severe mental disorders and not CMDs. The latter are more prevalent and are associated with worse socioeconomic conditions. The challenge that is posed for teaching institutions is to train professionals who are capable of diagnosing and adequately treating mental disorders, especially those that are most prevalent. In a study[1] developed among generalist doctors working in primary care in two municipalities in Southern Brazil, these professionals reported difficulties in diagnosing and treating patients with mental health problems. Furthermore, according to these doctors, such care should be provided by specialists and not within the context of primary care.

In addition to improvements in the training of health professionals in Brazil, further studies are also needed, to assess the size of problems relating to psychiatric morbidity, access to health services and therapeutic interventions, with evaluation of the latter two regarding their effectiveness. Therapeutic interventions should not be restricted to prescribing medications. Moncrieff[15] recently highlighted increased prescription rates in several countries and explored the relationship between this and the characteristics of the neoliberal model. According to this author, although advances have taken place, such as improved access to health services and information, individuals today are experiencing worse living conditions and, especially, working conditions. This author emphasized that centralization on the biological paradigm may reduce the comprehension of psychological suffering to neurophysiological abnormalities alone, thereby impeding exploration of the possibly correlated social and even political aspects of the problem.[15]

In conclusion, in the present study it was observed that, at least with regard to access to the use of psychoactive drugs, the "inverse care law" described by Hart[5] is still a reality to be faced in Brazil. It is recommended that other studies should investigate the access to other therapeutic interventions, seeking to identify psychosocial factors that may be associated with such access. Like in other developing countries, the inequalities need to be mapped out and interventions need to be undertaken, especially in relation to health, so long as public policies for combating inequalities are not translated into effective social changes.

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