

ORIGINAL PAPER

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Influence of psychiatric morbidity and sociodemographic determinants on use of service in a catchment area in the city of São Paulo, Brazil*

Received: 3 April 2007 / Accepted: 10 September 2007 / Published online: 12 October 2007

Abstract *Background* Recent population-based studies in Latin American and the Caribbean (LAC) countries brought evidence of the growing burden of mental illness in this region. The objective of this study is to examine determinants of health service utilization by individuals with psychiatric disorders in a defined area in the city of São Paulo, Brazil. *Method* Data were derived from São Paulo Catchment Area Study (SP-ECA), a cross-sectional household prevalence survey, based on a representative adult sample ($N = 1,464$) living in two defined boroughs. The psychiatric diagnosis was assessed through the CIDI 1.1 interview, yielding ICD-10 diagnoses. The past-month use of health services—for general medical (GM) care and mental health (MH) care sectors—was investigated in their relationship with sociodemographic features, insurance coverage, GM conditions, and psychiatric morbidity. *Results* Nearly one-third (32.2%) of the total sample used health

services in the last month: 29.0% attended GM care and 7.8% used MH care. Logistic regression models showed that being female, older than 60 years, having private insurance coverage, and presence of psychiatric morbidity increased the level GM care seeking in the total sample. For those with 12-month psychiatric disorders, the determinants for GM sector use were female gender, age 45–59 years old, and private insurance coverage, whereas separated, divorced, or widowed women had the highest odds (OR 9.9; 95% CI: 2.7–36.5) for using MH service. Low-income people were less likely to seek MH services. *Conclusion* The major contribution of this article is to underscore the impact of MH on health care systems, in a LAC country where service use information is scarce. The main finding is that inequalities in the access to MH care occurred, with low-income people having less likelihood of receiving treatment for their mental disorder. Access to health service in this catchment area reflected the great degree of deregulation and lack of integration. Additional efforts should address the barriers to the utilization of MH services in Brazil, including social inequities in the access to care.

*Part of this article was presented at XVIII World Congress of World Association for Social Psychiatry, in Kobe, Japan, October 24–27, 2004.

Conflict of interest: None

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Key words epidemiology – utilization of services – mental health – determinants of health – Brazil

Introduction

Recent population-based studies completed in Latin American and the Caribbean (LAC) countries, like Mexico [13, 36], Chile [8, 51], and Brazil [3, 6], have furnished the literature with evidence of the growing burden of mental illness in this region [26]. Murray and Lopez [39] had anticipated in 1996 that, by the year 2020, the proportion of disability-adjusted life years (DALY) attributable to neuropsychiatric conditions was expected to be 20.6% in LAC. At present,

neuropsychiatry conditions are the most important causes of disability worldwide, accounting for more than 37% of years lived with disability (YLD) among adults aged 15 years and older in all regions [33]. In current estimates, mental illness accounts for 22% of DALY and 40% of YLD in LAC [59].

Mental disorders cause an impact on health care systems in many ways, both in their own right and to their relation to other health conditions, e.g., high degree of help seeking for somatic presentation of common mental disorders [41] or affecting the outcomes of physical conditions [43]. Although cost-effective interventions are available, the treatment gap for mental illnesses seems to remain wide in LAC region, with more than 50% of persons with depression and/or anxiety receiving no treatment for their conditions. A higher proportion of those presenting alcohol use disorders (around 80%) reported no treatment [26, 27].

The available community-based studies in Brazil that used standardized diagnostic instruments and included data on percentage of individuals receiving care, show high rates of psychiatric morbidity [3, 52]. In a population-based survey ($N = 6,470$) conducted in three Brazilian metropolitan areas [3], age-adjusted prevalence of cases potentially in need of care ranged from 19% to 34%, being anxiety disorders the most prevalent (up to 18%), and around 8% of alcoholism across all sites. Depression was found to be also common in small Brazilian communities [17, 52], with previous month rates varying from 8.2% (sample of 18 years or older) to 15.4% (for the very old: 75 years old or more). Several other studies used only a screening instrument for ascertaining caseness. Consistently, a female excess of non-psychotic disorders (anxiety and depression) and a male excess for alcohol use disorders were found [29, 37].

Disregarding the high rates of mental disorders in Brazil, only recently a mental health (MH) policy was formulated [18]. For decades, large mental hospitals providing custodial care have been the main setting for treating severe cases, while common mental disorders remained underdetected in community. In 1991 a federal MH policy was formulated, with a specific budget for its implementation. The strategy of this “Psychiatric Reform” was to integrate MH services with the national health care system, known as Unified Health Care System (Sistema Único de Saúde—SUS, 1988 Brazilian Constitution), and to implement specialized community services for tertiary prevention of severe mental patients, with few psychiatric hospitals and most psychiatric beds in general hospitals. The SUS is a national government-funded health system designed as a decentralized community-based program (e.g., primary health care and Family Doctor Program). Although the official statement of SUS is to make health a right for all, and a responsibility of the state, providing universal access to health care services, the system still lack

equipment and funding [56], with insufficient primary care units and well-trained personnel in most deprived areas, obstructing equitable access by the poor population to any health facility. On the other hand, in wealthy areas, there is high use of specialist services for medical care among high-income groups provided by private health insurance plans or direct payment to the professional [50]. Paradoxically, few years after the implementation of SUS in the late 90s, it was observed a deterioration of public health services and expressive expansion of private insurance coverage, which involvement in health care sectors is steadily increasing [24].

In the case of provision of MH care, the panorama was even worse. Only a decade ago the government had started to pressure insurance companies to provide coverage for psychiatric services [16], arguing that all disorders listed in ICD-10 should be covered. As the coverage is limited to crises interventions, one month of acute inpatient care, following by 8 weeks in community care, most of the expenditure of those with less severe disorders is still out-of-pocket.

In a previous article [6] we described the prevalence and risk factors of mental disorders in the catchment area of the University of São Paulo medical center, the largest hospital complex in South America, and detected an increased rate of health service utilization by individuals with psychiatric morbidities, particularly 12-month mood, anxiety, and somatoform disorders. Considerable access inequities appeared for health service utilization, with disadvantaged people (low education, low income, unskilled manual workers) less likely to receive treatment in the MH sector. Here, we further examined factors that might determine differential utilization of health care services, in accordance with Andersen’s classic model, i.e., predisposing, enabling, and need factors for health service use, including in the analysis private insurance coverage and presence of general medical (GM) condition [5]. Among predisposing factors we considered sociodemographic variables as gender, age, and marital status. Private insurance coverage, educational level, income, and employment status were considered enabling variables. Presences of psychiatric and GM condition were considered as need factors. Accordingly, we examined if the presence of mental disorders were stronger predictors of last month GM care use, even after controlling for the occurrence of GM condition. In addition, we identify the determinants of seeking GM services and MH services among those with 12-month mental disorders.

Subjects and methods

The data are from the São Paulo Catchment Area Study (SP-ECA), a cross-sectional household survey conducted in two boroughs in the city of São Paulo, the largest city in South America, with 12 million inhabitants [19], located in the Southeastern region of Brazil.

Sampling procedures included an area probability design, with stratification on age, and multiple respondents per household. Eligible respondents included non-institutionalized adults aged 18 years or older. 1,906 people were selected to participate, of those, 442 individuals refused, resulting in a final sample of 1,464 subjects, with an individual response rate of 76.8% [6]. Face-to-face interviews were conducted between 1994 and 1995.

Data were weighted to adjust for differential probabilities of selection and non-response, from a complex stratified sample design. Post-stratification to known population gender and age range was also made to compensate for discrepancies of the sample with the original population data.

■ Assessment procedures

The instrument used was the Brazilian version of the Composite International Diagnostic Interview (CIDI 1.1) [32, 45], a structured instrument designed to be used by lay interviewers. The CIDI 1.1 provides lifetime, 12-month, and past-month prevalence estimates for ICD-10 psychiatric diagnoses [55]. Considering psychiatric morbidity, subjects were classified into three groups: (1) presence of any 12-month psychiatric disorder (mood disorders: depressive episode, dysthymia, bipolar disorder; anxiety disorders: panic disorder, agoraphobia, social phobia, simple phobia, obsessive-compulsive disorder, generalized anxiety disorder; substance use disorders: alcohol, other drugs; somatoform disorders, dissociative disorders, nonaffective psychosis, and eating disorders: bulimia and anorexia nervosa); (2) lifetime psychiatric disorder other than 12-month; (3) no psychiatric disorder ever.

Moreover, information was obtained on the lifetime presence of GM conditions, reported by respondents to whom were asked several questions ('Have you ever been diagnosed by the physician or received treatment for...') about their lifetime experience of six selected GM conditions: high blood pressure, asthma, heart disease, stroke, diabetes, and/or cancer.

■ Sociodemographic measures

Age was coded categorically in the ranges of 18–29, 30–44, 45–59, and 60 plus years old. Gender was coded dichotomously (male, female). Marital status was coded categorically as married, widowed/divorced/separated, or never married. Employment status was coded categorically as employed, unemployed, and out of the labor force (includes students, homemakers, and retired/others). Years of education were coded categorically in the ranges 0–4, 5–11, and 11 plus. Income was calculated as the average annual net income per family, divided in three income categories: the 25% with the highest income (>70,000 US dollars), a 50% middle bracket (13,800–69,000 US dollars), and the 25% with the lowest income (less than 13,500 US dollars). Self-reported insurance status was represented by a dichotomous variable meaning private insurance coverage versus no private insurance.

■ Past-month service use

At the time of our survey, the available CIDI version did not include a service use section. We adopted the Brazilian Census Bureau (IBGE) household surveys' past 30 days pattern for our data collection, allowing comparison with previous local surveys. The rate of past-month public or private service use was assessed in all respondents, regardless of the presence of psychopathology. Respondents' answers were grouped into two service categories: (1) GM care contact for any purpose, i. e., seeing a physician other than a psychiatrist, regardless of place, specialty, and type of facility attended ('On the last 30 days, have you sought any GM consultation?'); and (2) specialty MH care contact for psychological problems, with psychiatrist, psychologist, social worker, or counselor ('On the last 30 days, have you sought any psychological consultation [psychotherapy, advice, etc.]?'). A third broader category of "any service" was created combining the use of GM care and/or specialty MH care, as the same individual may have contacted both GM and MH in the past month.

■ Data analysis

The following variables were considered as determinants of use of services, classified into three groups, in accordance with following model: (1) Predisposing factors: gender, age groups, and marital status; (2) Enabling factors: educational level, income, employment status, and private insurance coverage; (3) Need factors: presence of any 12-month psychiatric disorder, lifetime psychiatric disorder other than 12-month, and lifetime presence of GM conditions.

First, proportions of subjects using GM, MH, and "any service" were examined for the total sample, and each of the predisposing, enabling and need factors. The significance of sets of variables was evaluated with Wald's χ^2 statistics. Standard errors (SE) were computed through Jackknife repeated replications to adjust for the design effects introduced by clustering and weighting of observations [25].

Aiming to test the determinants of GM service use in the total sample, multivariate logistic regression analysis was used. All set of variables were entered into the model and were eliminated by stepwise backward method. We also tested the interaction effect of gender with each predictor variable. Adjusted odds ratio (OR) and 95% confidence interval (95% CI) were calculated for each significant variable kept in the final model.

Additionally, two separate multivariate logistic models were created for the sub-sample of 12-month psychiatric disorders ($N = 279$) to determine the predictors of past-month GM and MH care service utilization. All evaluations were based on two-sided tests, with a 0.05 significance level. Statistical analysis was performed using SAS system [46].

Results

Demographic characteristics of this sample are detailed elsewhere [6]. Briefly, men represented 32.9% of the total sample of 1,464 subjects. Around 60% of the subjects had less than 45 years old, 40% of the subjects were married. Compared to city patterns, the socio-economic status of this sample is skewed toward higher educational level [19], with around 56% with 11 or more years of education. Almost 50% of people living in this area are from middle and upper socioeconomic levels. Conversely, about 50% of the sample belongs to low income stratum, but only 47 individuals (3.2%) was unemployed at the time of interview. Around 70% of the sample had private health insurance coverage.

Approximately one person in each five (19.1%) presented any psychiatric disorder in the 12-months previous the interview, 14.4% reported a lifetime psychiatric disorder that remitted before the previous year, and 66.5% of the total sample had no lifetime psychiatric disorder ever. Around 50% of participants have reported one or more GM conditions in lifetime.

Table [1] displays the proportion of respondents receiving GM care, MH care, or any of those services in the month prior to the interview for total sample and by predisposing factors (gender, age, marital status), enabling factors (educational level, employment status, family income, private insurance coverage), and need factors (psychiatric and medical morbidity). Nearly one-third (32.2%) of the total sample used health services in the last month: 29.0% attended GM care and 7.8% used MH care. Among the predisposing factors, being female, older than 60 years, widowed/divorced/separated increased the level

Table 1 Proportion using general medical (GM) care, mental health (MH) care, and any service care in the month prior the interview, in the total sample and by demographic, socioeconomic variables, insurance status, and presence of psychiatric, and/or GM condition

	N	General medical care (GM)			Mental health care (MH)			Any service		
		%	SE ^a	Wald χ^2 <i>p</i>	%	SE ^a	Wald χ^2 <i>p</i>	%	SE ^a	Wald χ^2 <i>p</i>
Total	1,464	29.0	1.3		7.8	0.7		32.2	1.3	
Gender										
Male	482	20.0	2.0	26.2	6.5	1.2	1.6	23.5	1.7	28.9
Female	982	35.6	1.6	< 0.0001	8.6	0.8	<i>ns</i>	38.6	1.8	< 0.0001
Age										
18–29 yo	444	25.1	2.1		8.2	1.4		28.8	2.2	
30–44 yo	392	27.3	2.4	15.8	9.7	1.7	12.4	32.8	2.5	5.8
45–59 yo	253	29.7	2.6	0.001	7.8	1.8	0.006	30.9	3.0	<i>ns</i>
60 yo +	375	36.9	2.3		3.2	0.7		37.1	2.3	
Marital status										
Married	575	28.0	2.1	8.2	5.1	1.1	9.3	29.9	2.0	9.5
Widowed/divorced/separated	294	38.1	3.2	0.02	13.5	2.2	0.01	43.2	3.5	0.008
Never married	595	26.1	1.9		8.5	1.1		30.0	1.9	
Educational Level (years)										
0–4	224	27.0	3.4	2.7	0.8	0.05	16.9	26.9	3.4	2.6
5–11	414	31.6	1.9	<i>ns</i>	5.2	1.2	0.0002	33.9	2.2	<i>ns</i>
11 +	826	28.2	1.8		10.4	1.0		32.5	1.7	
Employment status										
Employed	917	26.5	1.5	12.4	8.0	0.9	0.7	30.2	1.4	7.5
Unemployed	47	27.5	5.1	0.002	9.7	4.3	<i>ns</i>	30.7	5.4	0.02
Out of the labor force	500	35.1	2.1		6.8	1.4		37.1	2.2	
Income										
Top 25%	249	28.1	3.2		10.3	2.3	13.9	32.8	3.4	
Next 50%	490	30.9	1.9	1.3	10.1	1.1	0.001	34.4	1.8	2.3
Low 25%	725	27.8	1.8	<i>ns</i>	4.8	0.8		30.1	1.8	<i>ns</i>
Private insurance										
Yes	1017	31.7	1.7	7.5	9.5	0.01	11.6	35.5	1.6	10.7
No	447	22.4	2.5	0.006	3.6	0.9	0.0006	24.3	2.5	0.001
Psychiatric disorders *										
No psychiatric disorder ever	973	24.4	1.4	28.4	4.9	0.8	23.4	27.0	1.4	34.9
12-months psychiatric disorder	279	41.0	3.0	<0.0001	15.8	2.4	<0.0001	45.3	3.0	<0.0001
Lifetime disorder other than last 12-months†	212	34.4	3.2		10.6	2.1		39.2	4.0	
Any general medical condition										
Yes	722	30.0	2.0	0.5	8.1	1.0	0.3	33.1	1.9	0.3
No	742	28.0	1.9	<i>ns</i>	7.4	0.9	<i>ns</i>	31.3	1.9	<i>ns</i>

Weighted percentages, Wald χ^2 São Paulo Epidemiological Catchment Area Study (SP-ECA)

^aSE: Standard error is calculated by the Jackknife method

of GM care seeking. Considering the enabling variables, having private insurance coverage and being out of labor force, a mixed category that included retired and homemakers appeared as determinants of an increased use of GM care. Considering need, those with psychiatric disorder in the year previous the interview appeared as the group with highest proportion of use of GM care (41%). Educational level, family income, and the presence of GM morbidities did not reflect the rate of GM care use indeed.

A different pattern appeared for the MH care sector. There was no influence of gender. Older people had the lowest rate (only 3.2%). Considering marital status, widowed/divorced/separated had the highest level (13.5%). People with low educational level had the lowest rate of MH service use, with only 0.8% receiving MH care in the previous month. Those from the low quartile of income had half of the rate of MH care that people from the other levels received. Not having private insurance coverage decreases almost

three times the rate of MH care utilization comparing with those with insurance. Regarding need factors, people with recent psychiatric disorders had the highest rate of MH service use (15.8%), followed by 10.6% of those with a lifetime disorder remitted at the time of interview. Around 5% of the subjects without any ICD-10 psychiatric diagnosis ever still received MH care in the previous month.

Examining the last column of Table [1] (“Any service”), we verified that the use of either GM or MH services was not mutually exclusive. Overlapping use is more evident among those with 12-month psychiatric disorders (10.5%), whereas the lowest rate (0.9%) was found among people with four or less years of education.

Table [2] presents the results of the multivariate logistic regression analysis run to identify variables associated with last month GM service use for the total sample. The adjusted final model showed that being female (OR = 2.2; 95% CI: 1.6–3.0), aged 60

Table 2 Determinants correlates of last month use of general medical care

	General medical care (GM)	
	OR	95% CI
Gender		
Male	1.0	–
Female	2.2	1.6–3.0
Age		
18–29 yo	1.0	–
30–44 yo	1.0	–
45–59 yo	1.0	–
60 +	1.7	1.3–2.3
Private insurance		
Yes	1.6	1.1–2.3
No	1.0	–
Psychiatric disorders		
No lifetime psychiatric disorder	1.0	–
12-month psychiatric disorder	2.2	1.6–3.0
Lifetime disorder other than last year	1.5	1.0–2.3

Adjusted odds ratio and 95%CI, by stepwise backward method. Weighted data, SP-ECA ($N = 1,464$)

years or older (OR = 1.7; 95% CI: 1.3–2.3), having an insurance plan (OR = 1.6; 95% CI: 1.1–2.3) were determinants of GM care utilization. Among the need factors only the presence of psychiatric diagnosis remained in the model, with the strongest association appearing with 12-month disorder (OR = 2.2; 95% CI: 1.6–3.0), following by lifetime disorder other than last year (OR = 1.5; 95% CI: 1.0–2.3).

Taking only those respondents with 12-month psychiatric diagnosis ($N = 279$), we examined on

Table 3 Sociodemographic multivariate correlates of last month use of general medical (GM) care and mental health (MH) care

	General medical (GM)		Mental health (MH)	
	OR	95% CI	OR	95% CI
Gender				
Male	1.0	–		
Female	2.7	1.3–5.4		
Age				
18–29 yo	1.0	–		
30–44 yo	1.0	–		
45–59 yo	2.4	1.3–4.5		
60 +	1.0	–		
Marital status				
Married			1.0	–
Widowed/Divorced/ Separated			1.0 (M)	–
Never married			9.9 (F)	2.7–36.5
Never married			3.4	1.2–10.0
Family income				
Top 25%			1.0	–
Middle 50%			1.0	–
Low 25%			0.2	0.1–0.4
Private insurance				
Yes	2.4	1.2–4.7		
No	1.0	–		

Adjusted odds ratio and 95% CI by stepwise backward method. Weighted data, SP-ECA ($N = 279$)

M: male; F: female

Table [3] the pattern of their service utilization for both GM and MH care. For the GM services, being female (OR = 2.7; 95% CI: 1.3–5.4), at age stratum of 45–59 years old (OR = 2.4; 95% CI: 1.3–4.5), and having insurance (OR = 2.4; 95% CI: 1.2–4.7) were the final multivariate determinants of service use. On the other hand, the effect of gender, age, and insurance was not observed for MH services. For these services, we observed a low likelihood of access of MH service by the low-income people (OR = 0.2; 95% CI: 0.1–0.4) and an interaction effect between gender and marital status. Never married individuals (OR = 3.4; 95% 1.2–10.0) and widowed/divorced/separated females (OR = 9.9; 95% CI: 2.7–36.5) presented significant association with MH service utilization.

Considering that, at the time of data collection, there were virtually no insurance coverage for MH services, we further verify the source of payment referred by those individuals with 12-month psychiatric disorder who utilized this type of services. Around 92% of the consultations were obtained from the private sector (data not shown), having the subjects paid out-of-pocket a private doctor for their mental disorder treatment, disregarding insurance status.

Discussion

As previously reported [6], there is a strong association between psychiatric morbidity and use of service in this catchment area. The proportion of GM care use in our sample was inflated and determined by psychiatric morbidity with the highest use by those with last 12-month psychiatric disorders, whereas people with no psychiatric disorder had the lowest rates of use of GM services in this sample. Surprisingly, the presence of GM condition was not a determinant of use of GM care.

In despite of the high use of MH service in this catchment area, there was a socioeconomic disparity. Disadvantaged people are less likely to have consultations for their MH problem. The present study adds information on the influence of some predisposing, enabling, and need variables in the access of health care system in a middle income LAC country, where the shortage of health services does not account for equitable access by disadvantaged people.

The rate of GM care utilization in our study (29% for the total sample) is high, comparing with data from a city of South Brazil (15.3%) from the Survey on Standard of Living (PPV), carried out at the same period, within the same time frame [50]. Surveys all over the world showed that GM sector is a common pathway of help-seeking among people with mental disorder, but our survey has a limitation in this aspect, as we did not ask the reason for use of GM care, what could be for any reason. For instance, in Chile it was reported that 12.4% of people with mental disorder used GM services in the previous 6 months [9]. For

developed European countries, a percentage of 33.5% of people with 12-month disorder used GM care sector in the previous year [58]. In Nigeria, where the specialty MH care facilities are scarce, the rate increased to 94% [20].

Taking into consideration total sample, our rate of 7.8% using MH care in the previous month also is relatively high in comparison with South region of Brazil [29] and other countries [58], even developed ones. Comparisons again are hampered, now due to different time frames. In Ontario, Canada, 7.8% of respondents received formal treatment [30], but this figure was for a 12-month period. Similarly, in the European Study of the Epidemiology of Mental Disorders Project (ESEMeD), an average of 6.4% of the total sample had consulted formal health services in the previous 12 months [4].

When we restrict our analysis to those with psychiatric diagnosis, even with different methodology and time frame, the proportion of respondents with 12-month disorders who received MH treatment in our sample (15.8% in one-month period) is high in comparison with data from other LAC countries: 38.5%, in a 6-month period in Chile [47]; 5.1% of those with 12-month disorder had any care in the previous 12 months in Mexico, increasing to 23.8% for severe cases [36]. In Netherlands, 34% of those with a psychiatric disorder in the past year sought some form of professional MH care [12]. The recent surveys, carried out in Europe (ESEMeD) and US (NCS-R) showed rates varying from 25.7% [4] to 48.3% [54] of those with a 12-month disorders having any kind of MH care in the previous year. The rate of 4.9% people without any lifetime psychiatric disorder visiting a MH service in the previous month in our sample might be related to people with subthreshold diagnosis or presenting a diagnostic out of the spectrum evaluated (like impulse control disorder) [2].

In our sample, female gender, being 60 years or older, private insurance coverage, and having psychiatric disorders in any period in life are predisposing and enabling factors associated with GM care. Several studies across the world confirmed that, compared to men, women live longer, but reported greater morbidity and use more medications [34]. Thus, they are more likely to seek medical attention than men, with increased number of medical visits for preventive or diagnostic services, and to contact a general practitioner [11]. One of the reasons is that women tend to have worse self-perceived health [15] and higher level of neuroticism, which is associated with help-seeking behavior [40, 44]. The differential use of service may be accounted also to the increased rates of depressive disorders among women [22]. It has been recently demonstrated that depression produces a greater decrement in health compared with the chronic diseases [38].

Confirming previous studies, people aged 60 years or more were more likely to use GM services in our

sampling [21]. Older people are the main users of health and social care services, mainly for worse physical functioning, worse emotional health, problems with cognition, with increased consumption of medical services (hospitalization and visits to a doctor) and use of medications among those older adults holding a private health plan [28]. While using more GM care, old age people, in our sample, had the lowest rate of MH care. Cohort effects and geriatric services placing a greater emphasis on mental disorders could partially explain age group differences in service use.

The health insurance plan might be best viewed as a proxy indicator of socioeconomic position, with customer paying for a package of health service, regardless of its utilization. The proportion of persons with private health insurance in our sample (70%) is twice higher than that reported for the Southern region detected in a survey (34.4%). Travassos et al. [50] found that having a private health insurance increases the use of GM services in 50% (13% no insurance vs. 19% with insurance). The same 50% increment was found in our survey (22.4% of non-insured vs. 31.7% of insured). Whether this is indicative of supplier-induced demand should be clarified in future studies [31]. These results reveal social inequality in the access to health services, favoring the more privileged income groups, which can afford private insurance coverage.

There are several studies showing that people who are divorced, separated, or widowed have more depressive symptoms and endorse more persistent impairment [10]. Poor MH could precede marital disruption or occur afterwards, explaining the higher odds of seeking MH care of people in this marital status [53]. The differential effect of widowhood and divorce by gender should be viewed as propensities of female to depression after a stressful event and their help-seeking attitude. However, physical manifestations of anxiety and depression can also explain partially the higher use of GM sector by female [42].

Access to health service in a local level is related to characteristics of service supply, mainly its organization and their integration [49]. Integration of services is difficult to achieve when health systems has a great degree of deregulation. Our results reflected the lack of state-funded MH system at the time of data collection, when the main source of treatment consisted of clinicians offering one-to-one treatment in private practice. This explains the 91.8% of MH consultation being obtained in the private practice sector, with out-of-pocket expenditure, only accessible by higher income people. At the time of the survey, most of the Brazilian insurance plans did not cover MH services, with several demand side restrictions.

On the other hand, the low access of MH services for low-income people reflected the lack of state-funded services in the area. Moreover, low educational level is associated with some stigmas and

misconceptions, and lack of perceived need. Help-seeking behavior might still rely on traditional clinical doctors, folk healers, and herbal therapies.

Our results should be considered in the light of a number of several limitations in these data. First, the SP-ECA Study has a cross-sectional design to estimate prevalence of mental disorders. It was not possible to examine treatment seeking relative to disorder severity. Defining service need as the presence of 12-month psychiatric disorder has been shown to be inadequate [7, 48], as around half of the cases detected in community surveys would be mild and self-limited [58]. Due to lack of more formal assessment of need linked with resultant functional disability in this study [9], the level of unmet need is hard to gauge indeed. A more inclusive definition of need that could allow a service use comparison should be provided.

Another important limitation is the time frame used to assess service utilization, as for past-month against 12-month disorders. This criterion may have reduced the estimate of access to any care, since people in treatment could not have a consultation in the previous month, but still have adequate assistance. At the time of our survey, the available CIDI version did not include a service use section. We adopted the IBGE household surveys' past 30 days pattern for our data collection in use of services, allowing comparison with previous Brazilian surveys.

Additionally, use of GM care could not be studied for MH reason only. We could not have the information whether people with 12-month mental disorders sought GM sector for treatment of comorbid physical condition or somatic presentation of psychiatric disorder. Finally, the validity of the self-reported GM conditions was not assessed through a clinical confirmation.

Conclusions

The major contribution of this article is to underscore the impact of MH on health care systems, in a LAC country where service use information is scarce. The main finding is that inequalities in the access to MH care occurred, with low-income people having less likelihood of having treatment for their mental disorder in this catchment area. Although the availability of psychiatric services in this area is better than average, there was a high inequity in the use of specialty mental care in this community, favoring high-income groups, which could afford out-of-the-pocket expenses for private services. This is an example that geographic equity is not a sufficient condition for equitable health care access.

It is time to evaluate the consequences of Brazilian Health System Reform and MH Constitution, respectively set up in 1988 and 1991. Despite of Brazilian government effort to provide universal access, most patients with a mental disorder did not receive

treatment or medication [29, 35]. The low access of those with low income may reflect of the inadequacy of the formal public health sector at the time of the survey. These data could be an avenue to formulate a comprehensive improvement of services located in this area.

Since human resources for MH programs are scarce in low-income countries [1], and psychiatric morbidities are prevalent and frequently untreated, overloading GM care utilization and costs [14, 57], health policy in Brazil should emphasize professional training in primary care services and other levels of health care for the correct assessment and treatment of the most frequent MH problems.

Future epidemiological research should provide a comprehensive definition of need, including severity level and functional impairment for those who obtained a diagnosis, detecting factors involved in barriers to access. This will be obtained by the Brazilian World Mental Health Survey Initiative [23] that is underway, in the São Paulo Metropolitan area.

■ **Acknowledgments** We thank FAPESP for providing the grant for this study (Grant # 93/0501-4). We are also grateful to Mônica de Almeida Mogadouro, MD, for literature review.

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