Socio-demographic characteristics, treatment coverage, and self-rated health of individuals who reported six chronic diseases in Brazil, 2003

Características sócio-demográficas, cobertura de tratamento e auto-avaliação da saúde dos indivíduos que referiram seis doenças crônicas no Brasil, 2003

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Abstract

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The Brazilian World Health Survey, *carried out in 2003, included questions about diagnosis of six chronic diseases: arthritis, angina, asthma, depression, schizophrenia and diabetes mellitus. The probabilistic sample of 5,000 adults was selected in 250 census tracts. We analyzed the socio-demographic profile, the coverage of treatment, and self-rated health of the individuals that reported diagnosis of one of these diseases. To control for age and sex, logistic regression models were used. Among the 5,000 participants, 39.1% reported medical diagnosis of at least one of the six diseases. Depression was the most prevalent (19.2%), followed by asthma (12.0%), arthritis (10.5%), angina (6.7%), diabetes (6.2%) and schizophrenia (1.7%). Significant differences by age were found for all diseases, except for asthma. All diseases were more prevalent among women, except angina. Analysis by educational level showed that the diabetes prevalence rate was significantly larger among those with incomplete schooling. Although the six diseases presented different treatment coverage rates, for individuals with diagnosis of any one of the six diseases, the self-rated health was always worst, even after controlling for age and sex.*

Health Status; Chronic Disease; Health Services Coverage

Introduction

The theory of epidemiologic transition revolves around the complex transformation of health and disease standards and its interaction with demographic, economic, and social determinants. Although this theory is subject to criticism by some authors [1], a historic vision of the epidemiologic transition allows the identification of certain peculiar variations in this process, that can be represented by three different models, which differ by the speed which the transformations occur in the population dynamics and in the health of various countries: the classic model – characterized by the slow and progressive transition which accompanied the modernization process in most European countries; the accelerated transition – principally represented by Japan, in which, after recovering from great pandemics, demonstrated a rapid drop in mortality; and the contemporary or prolonged model, relatively new and yet to be completed, in which a substantial drop in mortality was only registered after World War II, as observed in developing countries, including Brazil. Basically, the process of epidemiologic transition, independent of the model framing it, accounts for three basic changes: the drop in mortality, the change from communicable diseases to non-communicable diseases, and the displacement of the morbi-mortality to a more elderly age group [2].

The epidemiologic transition in Brazil has been characterized by an overlapping of stages in which non-communicable diseases still predominate but a significant growth in the chronic-degenerative ailments occur. Allied to this profile is the population's progressive aging, in function of mortality's and fecundity's reduction. A study of burden of disease done in Brazil in 1998 revealed that 66.3% of the DALY indicator (disability adjusted life years) were due to non-communicable diseases, 23.5% to infectious, parasitic, perinatal, maternal, and nutritional diseases, and 10.2% to external causes. In the non-communicable disease group, neuropsychiatric disorders occupied first place (18.6%), followed by cardiovascular diseases (13.3%), chronic respiratory diseases (8.1%), musculo-skeletal diseases (5.5%), and diabetes mellitus (5.1%), creating a similar epidemiologic model to developed countries [3]. These are diseases that cause a considerable degree of suffering, pain, and disability, besides causing much burden on health services. In addition, by assaulting an economically active population, they impact performance in work and productivity [4,5,6].

In view of the chronic non-communicable diseases' magnitude in the Brazilian population's morbi-mortality profile and the need for greater understanding over such ailments and their risk factors, the Ministry of Health (Ministério da Saúde) instituted the National Subsystem for Surveillance of Non-communicable Diseases and Ailments (SIDANT; Subsistema Nacional de Vigilância das Doenças e Agravos não Transmissíveis). SIDANT is part of the National System for Epidemiologic and Environmental Surveillance in Health (Sistema Nacional de Vigilância Epidemiológica e Ambiental em Saúde), and, as one of its various functions, recommends and adopts prevention measures that contribute to minimizing damages in risk factors of health for the following disease groups: cardio and cerebrovascular diseases, diabetes mellitus, cancer, mental illnesses, and ailments derived by external causes (Fundação Nacional de Saúde, Ministério da Saúde. Instrução Normativa n. 1 de 5 de setembro de 2002). Research has clearly shown a strong association between the main non-communicable chronic diseases and a few well-recognized risk factors, in particular, tobacco use, alcohol consumption, obesity, arterial hypertension, high cholesterol levels, low fruit and vegetable consumption, and sedentariness. Monitoring these risk factors and the prevalence of diseases related to them is essential in defining health policies regarding the prevention of such ailments [7,8].

However, the insufficiency in obtainable information from the national database presently available, regarding the monitoring and evaluation of health conditions and the performance of health systems, which many times are focused on resource allocation and expenditure control, does not allow for necessary analysis of the health outcomes in a population. In this sense, the population health surveys have been used more and more as a means of obtaining, not only information about the diseases, but also about the risk factors and the social determinants of the health/disease process. It is possible to cover a diverse repertoire of health measures through the health surveys, such as health perception, disease and disability occurrences, behavior, lifestyle, access and use of health services, besides a variety of demographic and socioeconomic characteristics, allowing us to explore the relation among different variables. Particularly in relation to chronic diseases, the information obtained through the health surveys complement the insufficient knowledge about its prevalence [9].

In this context, facing the columns of available information about the reported morbidity, presently, in Brazil, the *World Health Survey* (WHS), conducted in this country in 2003 as an integrating part of a project by the World Health Organization (WHO), brought relevant data on the population's health state. This populational survey with national representation covers various aspects of the population's health through personal interviews. Among the various researched modules, one was specifically directed to chronic diseases, where the interviewees were questioned about the medically diagnosed presence of six diseases: arthritis, angina, asthma, depression, schizophrenia, and diabetes mellitus. The purpose of this article is to present the profile for the interviewees diagnosed with one of the named diseases according to the following variables: socioeconomic, demographic, treatment and use of medication, and how these individuals evaluated their health condition. These results will then be contrasted with those that have none of these diseases.

Methodology

Sample

The sample involved 5,000 individuals 18 years old at least. The sampling was accomplished in two stages. In the first stage, 250 census tracts were selected with a probability proportional to their size. An explicit stratification was done

according to rural and urban situation and the municipality's size (< 50,000; 50,000-399,999; 400,000 + population) and an implicit stratification was done according to homeowners' average income, with the purpose of securing socioeconomic differences existent between selected primary units. A random selection of twenty residences was done in each sector. One resident was chosen per domicile to answer questions regarding the residence's characteristics and only one individual, randomly selected, to answer the individual questionnaire.

Fieldwork

The WHS was done in Brazil from January to September of 2003, subdivided in ten micro-surveys under the supervision of local coordinators. For each micro-survey a team was set up composed of four interviewers and one supervisor. Each micro-survey covered 300 to 500 residential interviews distributed through 15 to 25 census tracts.

Questionnaire

The WHO's original questionnaire was translated and adapted for its application in our environment by the research coordinators and local coordinators. The questionnaire was built with a modular structure covering various domains, as follows: socioeconomic conditions; health condition description; risk factors; individuals health condition (chronic and acute problems); coverage of some health programs; evaluation of health system's response according to the individual; and health expenses by residence, including private health programs.

The questionnaire included a module directed specifically to chronic diseases, once the interviewees were questioned about the presence of a diagnosis for six chronic diseases: arthritis, angina, asthma, depression, schizophrenia, and diabetes mellitus. The WHS's original version was followed for this module's particular case, not including other diseases.

The research was approved by the Ethics in Research Committee of Fundação Oswaldo Cruz.

Data analysis

Since this constitutes a complex sample, the necessary considerations were used for this type of study, using the SUDAAN application.

To evaluate chronic health situations, six questions were made about the specific problems – arthritis, angina, asthma, depression, schizophrenia, and diabetes, questioning for

each one of them: (i) the presence of a diagnosis (*"Have you ever been diagnosed with …?"*); (ii) treatment (*"Have you ever been treated for …?"*); (iii) and the use of medications in the last two weeks (*"Have you taken any medication or other treatment in the last two weeks for …?"*). Those who answered positively to at least one of the diseases were considered carrier of chronic diseases. The criteria for disease selection was not exculpatory, that is, a person could be diagnosed with more than one chronic disease. However, for the purpose of analysis in this article, situations of co-morbidity were not analyzed.

For the evaluation of the health state, individuals were asked how they perceived their own health (*"In general, how do you evaluate your present health?"*), answering with one of five options: very good, good, moderate, bad, very bad.

The individuals diagnosed with one of the six chronic diseases were analyzed according to age group, gender, education level (incomplete primary schooling, completed primary schooling or more), bad or very bad self-rated health, as well as in accordance with receiving treatment or use of medication in the last fifteen days.

Having in mind that the age variable is strongly associated with the prevalence of chronic diseases, to test the differences according to education level of the diseases' prevalence rate, a model of multiple logistic regression was used, where the presence of a disease remained as a dependent variable while age and education level were independent variables, and where the lowest education level was the reference (fundamental schooling incomplete). The same process was used to compare the proportion of bad or very bad self-evaluation among carriers of chronic diseases. In this case, the logistic regression procedure had poor or very poor self-evaluations as the dependent variable and age and the presence of one of the reported diseases as independent variables.

Results

Among the 5,000 interviewees, 39.1% reported a medical diagnosis for at least one of the six analyzed chronic diseases. In relation to the specific problems that were researched, depression was the most prevalent, having been reported by 19.2% of the interviewees, followed by asthma (12.0%), arthritis (10.5%), chest angina (6.7%), diabetes (6.2%), and psychosis or schizophrenia (1.7%). In what refers to the age distribution, a significant difference was con-

firmed in the prevalence rate of all diseases by age, except in relation to bronchial asthma. Depression was the most frequent disease in every age group, affecting 14.5% of individuals between 18 and 34 years and 23.3% among those with 50 years or more. However the greatest range of variation was verified in relation to diabetes, varying from 1.4% to 15.3% between the more extreme age groups (Table 1).

All chronic diseases were most prevalent among women, with the exception of chest angina. In relation to the differences in prevalence rates by gender, angina and asthma showed no significance, while arthritis and depression pre-

sented the greatest variations. Again, depression calls for attention, being the most frequent disease in both genders, affecting 25.1% of women and 12.3 % of men (Table 2).

As we proceed to the evaluation of treatment coverage (anytime in life) and the use of medication (in the last two weeks) for each of the six chronic diseases (Table 3), it is observed that the greatest treatment coverage corresponded to asthma (90.0%), followed by diabetes (68.0%), while the least coverage was for depression (68.0%). More than 70.0% of the interviewees reported a treatment for the other diseases, while for the use of medication in the re-

Table 1

Proportion of individuals who reported a medical diagnosis of a chronic disease, by disease considered in the *World Health Survey* and age group. Brazil, 2003.

Disease	Age group (years)	N	Proportion (%) with diagnosis	CI95%	p-value
Arthritis	18-29	76	3.7	2.8-4.6	0.0000
	30-49	124	8.4	7.0-9.8	
	50+	326	22.3	20.1-24.7	
	Total	526	10.5	9.6-11.5	
Angina	18-29	52	2.5	1.6-3.4	0.0000
	30-49	94	6.4	5.0-7.7	
	50+	190	13.0	10.9-15.1	
	Total	336	6.7	5.8-7.6	
Asthma	18-29	255	12.4	10.6-14.2	0.3108
	30-49	161	10.9	9.2-12.6	
	50+	185	12.7	10.8-14.5	
	Total	601	12.0	11.0-13.1	
Depression	18-29	298	14.5	12.5-16.4	0.0000
	30-49	323	21.8	19.2-24.4	
	50+	340	23.3	20.7-25.9	
	Total	961	19.2	17.7-20.7	
Schizophrenia	18-29	19	0.9	0.5-1.3	0.0038
	30-49	26	1.8	1.0-2.5	
	50+	38	2.6	1.7-3.5	
	Total	83	1.7	1.2-2.1	
Diabetes	18-29	28	1.4	0.9-1.8	0.0000
	30-49	57	3.9	2.8-4.9	
	50+	224	15.3	13.0-17.7	
	Total	309	6.2	5.4-7.0	
At least one of the 6 diseases	18-29	599	29.1	26.6-31.5	0.0000
	30-49	563	38.0	35.2-40.8	
	50+	794	54.4	51.6-57.1	
	Total	1,956	39.1	37.3-40.9	

Table 2

Proportion of individuals who reported a medical diagnosis of a chronic disease,
by disease considered in the *World Health Survey* and gender. Brazil, 2003.

Disease	Gender	N	Proportion (%) with diagnosis	CI95%	p-value
Arthritis	Female	347	12.8	11.5-14.1	0.0000
	Male	179	7.8	6.7-9.0	
	Total	526	10.5	9.6-11.5	
Angina	Male	177	6.5	5.5-7.6	0.5712
	Female	159	6.9	5.7-8.2	
	Total	336	6.7	5.8-7.6	
Asthma	Male	341	12.6	11.3-13.9	0.2683
	Female	260	11.4	9.7-13.1	
	Total	601	12.0	11.0-13.1	
Depression	Male	679	25.1	23.0-27.1	0.0000
	Female	282	12.3	10.5-14.1	
	Total	961	19.2	17.7-20.7	
Schizophrenia	Male	56	2.1	1.5-2.7	0.0146
	Female	27	1.1	0.6-1.7	
	Total	83	1.7	1.2-2.1	
Diabetes	Male	191	7.0	5.9-8.2	0.0133
	Female	118	5.2	4,.1-6.2	
	Total	309	6.2	5.4-7.0	
At least one of the 6 diseases	Male	1210	44.6	42.6-46.8	0.0000
	Female	746	32.5	30.0-35.0	
	Total	1,956	39.1	37.3-40.9	

ported period (two weeks before the interview), the standards were quite different: the greatest percentages corresponded to schizophrenia (54.0%), angina (47.0%), diabetes (45.0%), and the smallest, asthma (27.0%). It is observed that, in general, women use medication more frequently than men, with exceptions such as in the case of diabetes.

A clear trend is verified in Table 4 for a poorer health evaluation among individuals carriers of at least one of the six chronic diseases (15.9%) when compared to those with no diseases (5.6%). This difference is still statistically significant after adjusting results for age and gender. The poorest evaluations were reported by individuals diagnosed with psychosis or schizophrenia (28.0%), chest angina (27.5%), and arthritis (24.0%).

Table 5 compares the rates of disease prevalence by education level. A trend for greater prevalence of the analyzed diseases is observed in the group with an incomplete prima-ry schooling compared to those with a complete primary schooling or higher. However, after computing age and gender, these difference only showed themselves statistically significant for schizophrenia and diabetes.

Discussion

The chronic diseases analyzed in this study represent serious problems in the morbi-mortality profile for Brazil as in many other countries, contributing to the disease burden with high percentages, measured through the DALY indicator. A populational survey taken in eight European countries revealed that 55.1% of the adult population is a carrier for at least one chronic disease and 30.2% for more than one disease [10]. Similar results were found in the National Population Health Survey in Canada [11]. Both studies found a larger proportion for the

Table 3

Treatment coverage and medication use in the last two weeks prior to the survey, by chronic disease considered in the *World Health Survey* according to gender. Brazil, 2003.

Disease	Gender	Proportions (%)	
		Has been treated for this disease	Used medication in the last two weeks
Arthritis	Female	75.2	42.9
	Male	72.8	32.4
	Total	74.4	39.4
Angina	Female	71.8	48.9
	Male	73.6	43.4
	Total	72.8	46.6
Asthma	Female	88.8	27.9
	Male	92.3	24.6
	Total	90.3	26.5
Depression	Female	70.6	36.2
	Male	61.3	24.9
	Total	67.8	32.9
Schizophrenia	Female	75.0	57.1
	Male	80.8	46.2
	Total	77.1	53.7
Diabetes	Female	85.2	44.7
	Male	87.1	45.2
	Total	86.2	44.9

presence of at least one chronic disease when compared to our data (39.8%). With regard to what weighs the demographic profile of these countries, these differences may also have been influenced by the list of evaluated diseases, which differs from country to country.

The validity of self-evaluated morbidity taken in the context of these residential surveys has been questioned by some authors. Sen [12] warns of equivocation resulting from using information based exclusively on the individuals' perception when evaluating needs in medical care, since this information is strongly influenced by each person's social experience. However, health surveys done in various countries have shown that the information obtained on the prevalence of chronic diseases present an acceptable concordance when compared to medical registries and clinical examinations, specially for some selected pathologies, particularly cardiovascular diseases and diabetes mellitus [13,14,15,16,17].

In Brazil, the prevalence for five chronic diseases researched by the health supplement of the *National Survey by Residential Sample* (PNAD – *Pesquisa Nacional por Amostra de Domicílios*) conducted in 1998, when compared to estimates taken by the *Study of Burden of Disease in Brazil* (*Carga de Doença no Brasil*), showed there were some discrepancies between both estimates [18]. However, the strategies for collecting information were distinct from each other. In relation to the results given by PNAD, the authors themselves call attention to some of its limitations, specially in relation to the use of the *respondent proxy*. In the WHS's case, the information collected by the individual questionnaires were furnished by the interviewees themselves, and, to minimize bias caused by memory, the existence of a medical diagnosis for the specific health problems was asked for [19].

The gradient that was detected in the prevalence of diseases, increasing with age, and varying according to gender, with greater prevalence among women for most of the analyzed diseases, and poorer health evaluations among chronic disease carriers, agrees with the aforementioned literature [20].

Our data regarding to the diagnosis of arthritis were very similar to the data described by other researchers. 25.0% of the adult population in the United States in 2001 (about 49 million people) recorded a diagnosis for arthritis. Greater prevalence and a gradient related to age (19.0% among adults up to 44 years and 58.8% among those older than 65) is verified among women. Besides being highly prevalent, arthritis is associated with elevated rates of disability (17.5% of American adults), specially in the population with less education. The disability arising from arthritis impacts the economically active North American population since it is one of the main factors associated with work incapacity related to physical activities. These aspects reveal arthritis as one of the main health issues for many countries [4,6,21, 22,23,24]. The Brazilian WHS reveals, similarly, an elevated proportion of poor health self evaluations in this disease group.

Data from the Centers for Disease Control and Prevention (CDC) [25] reveal that 7.5% of the adult population residing in the United States suffers from asthma, with a reduction in prevalence with age. When considering the diagnosis of chronic bronchitis, the prevalence in the Australian adult population was 12.0% [26], which is very close to the results found by our survey, suggesting a possible influence from the various classifications the population may use to identify the disease. Studies on the disease's perception, the degree in limitation of daily ac-

Table 4

Comparison of proportions (%) of individuals with bad or very bad self-rated health,
according to the presence of a chronic disease. Brazil, 2003.

Disease	Presence	Proportion (%) of bad self-rated health	OR			
			Brute	p-value	Adjusted by age and gender	p-value
Arthritis	Yes	24.00	3.90	0.0000	2.42	0.0000
	No	7.50	1.00		1.00	
Angina	Yes	27.50	4.37	0.0000	3.04	0.0000
	No	7.90	1.00		1.00	
Asthma	Yes	13.50	1.65	0.0003	1.59	0.0011
	No	8.60	1.00		1.00	
Depression	Yes	16.40	2.41	0.0000	2.13	0.0000
	No	7.50	1.00		1.00	
Schizophrenia	Yes	28.00	3.96	0.0000	3.28	0.0001
	No	8.90	1.00		1.00	
Diabetes	Yes	23.40	3.39	0.0000	1.91	0.0001
	No	8.30	1.00		1.00	
At one of the 6 diseases	Yes	15.90	3.61	0.0000	2.74	0.0000
	No	5.00	1.00		1.00	

Table 5

Comparison of proportions (%) of individuals diagnosed with one of the six chronic diseases,
considered by the *World Health Survey* according to education level. Brazil, 2003.

Disease	Fundamental schooling	Proportion with diagnosis (%)	OR			
			Brute	p-value	Adjusted by age and gender	p-value
Arthritis	Incomplete	13.50	2.13	0.0000	1.22	0.0856
	Complete	6.80	1.00		1.00	
Angina	Incomplete	8.50	2.01	0.0000	1.26	0.1424
	Complete	4.40	1.00		1.00	
Asthma	Incomplete	12.10	1.02	0.8087	1.00	0.9809
	Complete	11.90	1.00		1.00	
Depression	Incomplete	19.40	1.03	0.7645	0.86	0.1111
	Complete	19.00	1.00		1.00	
Schizophrenia	Incomplete	2.30	2.69	0.0005	2.23	0.0089
	Complete	0.90	1.00		1.00	
Diabetes	Incomplete	8.50	2.78	0.0000	1.44	0.0329
	Complete	3.20	1.00		1.00	

tivities, and the use of medication reveal that, even though most asthmatics report more symptoms than expected by doctors, they classify their disease as mild or very mild. The use of medical services also relates directly to this medical situation's severity [27,28]. The low rate in medication use found in this study for the reported period may be, in part, due to clinical evolution of this disease.

It was estimated, in Brazil, at the end of the 80's, about an 8.0% prevalence of diabetes mellitus among adults (30-69 years) residing in nine Brazilian capitals. Similar results were found more recently in a residential survey on risk behavior and morbidity caused by non-transmittable diseases and problems, done by the National Cancer Institute (INCA – Instituto Nacional de Câncer), taken in fifteen Brazilian capitals and the Federal District between 2002 and 2003, with a rate for the prevalence of diabetes mellitus varying from 5.2 to 9.4%, and significant gains with age while not verifying important differences between gender [29]. The WHS's results – 6.9% rate of prevalence, and the pattern found by age and gender – showed themselves to be coherent with results taken from INCA's recent survey.

European studies have shown that diabetic patients evaluate a poorer state of health and report greater limitations in their activities, due to the disease, when compared to non-diabetics. Also, the existence of socioeconomic inequalities in diabetes mortality has been verified. Patients with lower income and less education present more severe and frequent complications. One explanation for this behavior could be related to medical service accessibility, perception of severity, and adherence to treatment [30,31]. In the present study, important differences were found by education level, with a greater rate in diabetes prevalence among those with an incomplete primary schooling, even after controlling for age and sex.

The low prevalence of angina found in our study may be explained by the high mortality associated with cardiovascular diseases. These constitute the main cause in mortality and disability in developed and developing countries, especially coronary diseases and cerebrovascular diseases. In Brazil, data from 1998 reveal that 24.0% of the potential years lost by premature death are caused solely by cardiovascular diseases, a close percentage to the 26.0% found for the set of infectious, maternal, nutritional, and perinatal diseases [3]. Cardiovasular diseases also present a large impact on demand for health services, being responsible for 19.0% of total hospitalizations registered by the Unified

National Health System (SUS – Sistema Único de Saúde) in 2004, among individuals 20 years or older. 11.4% of these hospitalizations were due to ischaemic heart diseases (Departamento de Informática do SUS. *Morbidade Hospitalar do SUS por Local de Residência – Brasil, 2004*. http://tabnet.datasus.gov.br, accessed on 02/Mar/2005). In the United States, 40.0% of deaths are caused by cardiac diseases. Although they are most prevalent in a population over 65 years, attention has been called in this country to the rise in sudden deaths among a younger population (15-34 years) due to these diseases [32].

One of the most interesting epidemiologic aspects of the coronary cardiac disease is the difference between genders, that is, a greater prevalence among men. Studies have shown that these differences are found as much in the epidemiologic characterization clinical aspects. Among females, symptoms show up later and, in general, are less typical even though the risk factors are the same for both women and men [33,34]. An association is also found between the presence of physical limitation due to angina and elevated mortality rates. Data from the WHS revealed that 28.0% of angina carriers self-evaluated their health poorly. Self-reports of angina have consistently proven a factor in mortality prediction, independent of differences in age, race, education level, or presence of medical co-morbidities [35].

The importance of neuropsychiatric disorders, particularly depression, which showed a high prevalence for both genders in this study, had already been emphasized in previous investigations, showing that these problems are at least as much prevalent, or more, than other chronic diseases like arthritis, diabetes, and hypertension [3,36,37]. Ten per cent of the American adult population presents some kind of recent disability due to a mental disease (schizophrenia, phobias, depression, and anxiety), and about 24.0% show some mental disorder in the last 12 months [38]. A study done among 417 psychiatrists, covering demographic characteristics, clinics and treatment for 1,228 patients, revealed that depression was the most common diagnosis (53.7%) followed by schizophrenia (14.6%) [39]. It is estimated, in Brazil, that 3.0% of the general population suffers severe and persistent mental disorders and 12.0% of the population needs some kind of mental health care, be it continual or casual. In 2004, 3.4% of the total hospitalizations in the SUS services, among individuals older than 20 years, was caused by mental disorders, while schizophrenia was the main cause for these intern-

ments (43.0%) (Departamento de Informática do SUS. *Morbidade Hospitalar do SUS por Local de Residência – Brasil, 2004*. http://tabnet.datasus.gov.br, accessed on 02/Mar/2005).

Besides the high prevalence in mental disorders, one characteristic that has been highlighted is the small fraction of patients that actually receive treatment. A revision of articles on population-based research in different countries showed that the percentage difference between the number of individuals that need treatment and the number of individuals that are effectively receiving some kind of therapy (gap treatment) is extremely high, varying from 32.0% for schizophrenia and other psychosis to 56.0% for depression, with large variations between countries [40].

The question of low adherence to treatment among carriers of different chronic diseases has become a worrisome matter for the WHO. This problem has been detected in every situation where the self-administration of medications is necessary, including asthma, hypertension, depression, diabetes, tuberculosis, and AIDS. Adherence to therapy in developed countries is, on average, 50.0%, and can be much less in developing countries when faced with the iniquitous access to health services. The low adherence to long term therapy compromises the treatment's effectiveness, becoming a critical problem in the population's health, be it in regards to the perspective in quality of life or in relation to economic aspects. Adherence to treatment for depression is estimated between 40.0 and 70.0% and for asthma, 43.0% for treating critical situations and, 28.0% for prevention treatment. Adherence to treatment by chronic disease patients reduces complications and disabilities, raising quality and expectancy in life [41].

Another aspect that must be highlighted is that effective treatment for chronic diseases also requires a change in the type of service offered, from the episodic care to a more active approach, emphasizing long term follow-ups. The barriers health care access must be carefully analyzed and new service models investigated, besides reviewing methods of remuneration that are not only based on the number of consultations but on educational and advisory activities.

Finally, limitations to this study must be pointed out. Because we are speaking of a survey conducted through residential interviews, patients in severe conditions (unable to provide information) and hospitalized patients were excluded. In the case of chronic diseases, which present various degrees of severity, this problem should be accounted for in the evaluation of the diseases' prevalence. However, despite these limitations, it is gradually more necessary to develop regular, periodic, and representative surveys that reflect the true health conditions in the country.

Resumo

A Pesquisa Mundial de Saúde *(PMS), realizada no Brasil em 2003, incluiu questionamento sobre diagnóstico de seis doenças: artrite, angina, asma, depressão, esquizofrenia e diabetes mellitus. Foram selecionados 5 mil indivíduos em 250 setores censitários, por amostragem probabilística. Analisou-se o perfil sócio-demográfico, a cobertura de tratamento e a auto-avaliação de saúde dos indivíduos com diagnóstico de uma dessas doenças, ajustando-se os efeitos de sexo e idade por modelos de regressão logística. A depressão foi a mais prevalente (19,2%), seguida pela asma (12,0%), artrite (10,5%), angina de peito (6,7%), diabetes (6,2%) e esquizofrenia (1,7%), sendo que 39,1% referiram diagnóstico médico de pelo menos uma. Fo-ram encontradas diferenças significativas por idade, exceto para asma. Todas as doenças foram mais prevalentes entre as mulheres, exceto angina. A taxa de diabetes foi significativamente maior entre os de menor grau de instrução. Conclui-se que as seis doenças apresentam comportamento diferenciado em relação à cobertura de tratamento. Porém, no que se refere à percepção da própria saúde, comparando-se os portadores de qualquer uma das seis doenças em relação aos demais, a avaliação foi bem pior, mesmo após ajuste por idade e sexo.*

Nível de Saúde; Doença Crônica; Cobertura de Serviços de Saúde

Contributors

M. M. Theme-Filha delineated the article's content, participated in the data's statistical analysis and was responsible for writing most of the text. C. L. Szwarcwald discussed the results, participated in the text's writing and coordinated the research. P. R. B. Souza-Júnior participated in the data's statistical analysis.

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