DOI: 10.1590/1413-81232020255.33362019

Emotional problems and the use of psychotropic drugs: investigating racial inequality

Camila Stéfani Estancial Fernandes (https://orcid.org/0000-0002-6921-2429) [1]
Margareth Guimarães Lima (https://orcid.org/0000-0001-6996-0745) [1]
Marilisa Berti de Azevedo Barros (https://orcid.org/0000-0003-3974-195X) [1]

Abstract *The aim of the present study was to investigate the existence of racial inequalities in the prevalence of emotional problems, the search for healthcare services and the use of psychotropic drugs. A population-based, cross-sectional study was conducted with data from the 2014/15 Campinas Health Survey. Sample of 1953 individuals aged 20 years or older was analyzed. We estimated the prevalence of common mental disorders (CMDs), the reporting of emotional problems, insomnia, the search for and the use of healthcare services and the use of psychotropic drugs according to self-reported skin color (white and black/brown). Prevalence ratios were estimated using "Poisson" multiple regression. The prevalence of CMDs was higher among blacks/brown compared to whites but no difference was found regarding the reporting of emotional problems and insomnia. Whites sought healthcare services more due to emotional problems. The use of psychotropic drugs was also higher among whites. The results revealed racial inequalities in the presence of CMDs, the search for healthcare services and the use of psychotropics drugs, highlighting the need for actions to identify and overcome barriers that hinder access to mental health care by different racial segments of the population.*

Key words *Race and health, Mental disorders, Social inequality*

[1] Departamento de Saúde Coletiva, Faculdade de Ciências Médicas, Universidade Estadual de Campinas. R. Tessália Vieira de Camargo 126, Cidade Universitária Zeferino Vaz. 13083-887 Campinas SP Brasil. camilaestancial@yahoo.com.br

Introduction

Although related, the terms race and ethnicity express different concepts. Ethnicity encompasses the cultural and social traits of a human community, such as cultural heritage, language, social practices, traditions and geopolitical factors[1]. Race regards appearance and physical traits, such as skin color; it is a social construct and often charged with injustice, prejudice and discrimination[1,2]. In Brazil, the classification of self-reported race/skin color is used for the analysis of racial inequalities and categorized by the *Instituto Brasileiro de Geografia e Estatística* (IBGE [Brazilian Institute of Geography and Statistics]) into white, black, brown, yellow and indigenous[3]. This classification differs from that used in the United States, where the categories are based on ethnic characteristics and are regularly altered[4].

In 2005, the World Health Organization Commission on Social Determinants of Health presented ethnic/racial factors as one of the structural determinants of health. Interacting with intermediate factors, such as living and working conditions, behaviors, barriers to the adoption of a healthy lifestyle and access to the healthcare system, ethnic/racial factors can exert an influence on the occurrence of health problems and wellbeing[5,6]. Health disparities associated with race/skin color have been found with regards to child mortality[7] and deaths due to poorly defined or external causes[8,9], such as death due to physical aggression among young black men[10].

In Brazil, population-based studies on racial inequalities in health status and the prevalence of diseases have found that the segment of the population with self-reported black or brown skin has greater frequencies of mental disorders[11] and chronic diseases[12], lower survival due to chronic diseases[8,10], a poorer self-rated health status[12,13] and a poorer nutritional status[14].

Regarding mental health, studies conducted in the United States[15-18] have detected a lower association between reports of mental problems and the use of healthcare services to treat such problems in the black population[17] as well as a lower likelihood of taking psychotropic drugs[15] even when presenting greater psychological impairment compared to the white population[18]. A few studies have been conducted in Brazil on this issue and also report disadvantages for the black population[19-22]. One such study reported that that chance of depression was 77% higher among blacks compared to whites[19]. Another study found a discrete association between skin color and common mental disorders (CMDs) in women[21]. Bastos et al.[22] found that the chance of CMDs was nearly fourfold greater among individuals who reported experiencing discrimination due to their race/skin color in comparison to white individuals. To date, however, there are no population-based studies in the Brazilian literature investigating the existence racial differences in the search for healthcare services for emotional problems and the prevalence of the use of psychotropic drugs. It is therefore important to conduct this type of investigation in order to produce information that can contribute to the improvement of policies designed to reduce racial health disparities.

Considering the magnitude of racial inequalities in Brazil and the lack of national studies on racial disparities in issues related to mental health, the aim of the present study was to investigate the existence of racial inequality in the prevalence of emotional problems, common mental disorders, insomnia, the search for healthcare services and the use of psychotropic drugs in a large city in southeastern Brazil.

Methods

Study design and target population

A population-based, cross-sectional study was conducted with a sample of 1953 individuals 20 years of age or older residing in urban areas of the city of Campinas, state of São Paulo, Brazil. The data were from the Campinas Health Survey conducted in 2014/2015. Campinas is a large city located in southeastern Brazil with an estimated population of 1,164,098 in 2015, 98.3% of whom reside in urban areas. The Human Development Index was 0.805 in 2010[23].

Sampling and data collection

Two-stage probabilistic, stratified, cluster sampling was performed to obtain the sample. In the first stage, 70 census sectors were selected with probability proportional to the number of homes in the sector. In the second stage, homes were selected from each census sector using an updated list of addresses.

As the aim of the 2014/15 Campinas Health Survey was to analyze aspects related to three subpopulations of the city (adolescents, adults and older people), the following age groups constituted the study domains: 10 to 19 years, 20 to 59

years and 60 years or older. The number of individuals to compose the sample was determined considering an estimated proportion of 50% (situation corresponding to maximum variability), 95% confidence interval, 4 to 5% sampling error and a design effect of 2, resulting in 1000 adolescents, 1400 adults and 1000 older people. To obtain these sample sizes, 3119, 1029 and 3157 homes were independently selected for interviews with adolescents, adults and older people, considering non-response rates of 27%, 22% and 20%, respectively, for the three age domains. All residents in each home in a particular age group were interviewed. The decision to interview all residents in a given age group in the home was based on the fact that this type of design is similar in terms of accuracy and is less costly than selecting only one individual per home[24]. Further details on the sampling process are available on the webpage *(https://www.fcm.unicamp.br/fcm/ccas-centro-colaborador-em-analise-de-situcao-de-saude/ isacamp/2014)*.

The data were collected using a pre-coded questionnaire with predominantly closed-ended questions organized into 11 thematic sections. Data collection was performed by trained interviewers in a direct interview with the selected individual aided by the use of an electronic device (tablet).

Variables analyzed

Sociodemographic variables: Self-reported race/skin color, using the categories adopted in the demographic census. In the present study, race/skin color was categorized into white and black/brown; the yellow and indigenous categories were excluded from the analysis due to the small number of individuals in these categories in the sample (corresponding to only 2% of the population); sex; age (20 to 39, 40 to 59 and 60 years or older); schooling (0 to 4, 5 to 11 and 12 years or more); family income *per capita* using the Brazilian monthly minimum wage (BMMW) as reference (≤ 1.5 and > 1.5 times the BMMW); and private health insurance (yes or no).

Variables related to emotional/mental health: Report of an emotional/mental problem; type of emotional problem (anxiety, depression and others); limitation caused by the problem (with or without limitation); common mental disorder (CMD) evaluated using the Self-Reporting Questionnaire (SRQ 20), with individuals receiving 7 points or more classified as positive[25]; report of insomnia; limitation caused by insomnia (with or without limitation).

Variables related to the use of healthcare services: Applicable to individuals who reported an emotional/mental problem: search for a healthcare service/professional due to the emotional/mental problem (yes or no); reason for not seeking healthcare service/professional (did not find it necessary or other reasons); place where care was sought and obtained (primary care unit/psychosocial care center, office of a physician or other health professional or other location, such as emergency care/hospital; who paid for care (public healthcare system, private insurance/business health plan, direct payment or others).

Use of psychotropic drugs (yes, no) and type of psychotropic drug: Information on the use of psychotropic drugs was obtained through the following questions: *(1) Have you taken any medications in the past 15 days?* If the answer was affirmative: *(2) How many and which medications did you take?*

Whenever possible, the name of the medication cited during the interview was confirmed with the presentation of the package or the medical prescription. The active ingredient of the medications was identified using the Dictionary of Pharmaceutical Specialties[26] and coding of the medications was performed with the use of the Anatomical Therapeutic Chemical (ATC) Classification System[27].

Psychotropic medications in the following ATC classifications were considered: antidepressants (N06A), benzodiazepines (N03AE, N05BA, N05CD and N05CF), antiepileptics (N03A) and other classes composed of opioid analgesics (N02A), anti-Parkinson's drugs (N04A and N04B), antipsychotics, including mood stabilizers (N05A), psychostimulants (N06B) and antidementia drugs (N06D).

Data analysis

All analyses developed in the study considered the weights resulting from the complex sampling design and the non-response weights. For such, the *survey (svy)* module of Stata 14.0 (Stata Corp., College Station, USA) was used.

The prevalence rates of the variables related to mental/emotional health, the search for and use of healthcare services and the use of psychotropic drugs were estimated according to race/skin color. These proportions were compared using Pearson's chi-square test (χ^2) with the Rao-Scott adjustment, considering variables with a p-value < 0.05 statistically significant, as well as by prevalence ratios (PR) (adjusted by age and sex; and

by age, sex and family income *per capita*) and respective 95% confidence intervals (CI) calculated using Poisson multiple regression analysis.

Ethical aspects

The 2014/15 Campinas Health Survey received approval from the Human Research Ethics Committee of the *Universidade Estadual de Campinas* (UNICAMP [State University of Campinas]). The present study received approval from the ethics committee of the UNICAMP School of Medical Sciences through Platform Brazil. All interviewees signed a statement of informed consent.

Results

Among the homes selected for interviews with adults and older people, the refusal rate was 7.4% and losses accounted for another 4.4%, resulting in an interviewed sample of 1953 individuals. The population studied (20 years of age or older) had a mean age of 54.4 (± 0.4) years and women accounted for the majority of the sample (52.8%). A total of 68.2% declared themselves to be white, whereas 8.3% and 23.5% declared themselves to be black and brown, respectively.

Table 1 displays the demographic and socioeconomic characteristics of the population according to race/skin color. The black/brown population differed significantly from the white population in the following aspects: greater percentages of young adults (52.7% versus 43.4%), individuals with a low income (70.6% versus 47.3%) and individuals with no private health insurance (68.2% versus 46.5%) and a lower percentage of individuals with a university/college education (12.8% versus 33.8%).

The prevalence of CMDs (identified using the SRQ-20) was significantly higher among individuals self-declared as black/brown (20.1% versus 15.2%; p = 0.0233), whereas no significant differences between racial segments were found regarding reports of emotional/mental problems or insomnia. The association between CMDs and race/skin color lost its significance when the income variable was incorporated into the regression model along with age and sex (Table 2).

White individuals sought healthcare services more due to emotional/mental problems in comparison to black/brown individuals (PR = 1.3). Among the individuals who did not seek healthcare services, most whites reported not finding it to be necessary; reasons related to barriers to the healthcare system, such as a very long waiting time, office hours incompatible with work activities and other reasons were mentioned more by black/brown individuals (21.8% versus 8.3%; PR = 0.4). Regarding the location of care, most black/brown individuals were seen at a primary care unit or psychosocial care center of the public healthcare system (41.5% versus 26.9%, p = 0.0183) and whites were seen more at the offices of physicians or other health professionals (PR = 1.7). The payment of these appointments was covered mainly by the public healthcare system among black/brown individuals (63.3% versus 34.0%, p = 0.0005) and by private health insurance or a work-related health plan among white individuals (47.7% versus 24.2%, p = 0.0056). These differences remained practically unaltered when the income variable was incorporated into the regression model (Table 3).

Table 4 displays prevalence and prevalence ratios of the use of psychotropic drugs according to skin color and characteristics of the emotional/mental problems, CMDs and insomnia for the adult population of the city independently of reports of emotional problems. The overall prevalence of the use of psychotropic drugs was higher among whites (PR = 1.8). The prevalence was also higher in this segment for nearly all categories/conditions listed in the table. The use of psychotropic drugs was only not higher among whites in cases for which there was the report of limitations stemming from the emotional/mental problem or insomnia, in cases of depression and among individuals who reported having no emotional problem (Table 4).

Regarding the classes of psychotropic drugs used by the overall population independently of the report of an emotional problem, antidepressants were the most used (6.5%) and the prevalence was significantly higher among white individuals (7.7%) in comparison to black/brown individuals (4.0%; PR = 1.8). No significant difference between the racial segments was found regarding the use of the most frequent antidepressants (fluoxetine and sertraline), but the use of other antidepressants was higher among white individuals (PR = 2.2). The prevalence of benzodiazepines and antiepileptics was 3.8% and 2.4%, respectively, with no difference in the frequency of use between the racial segments. The prevalence of the use of other psychotropic drugs, such as opioid analgesics, anti-Parkinson's medications, antipsychotics, psychostimulants and antidementia drugs, was significantly higher among whites (PR = 3.4) (Table 5).

Table 1. Demographic and socioeconomic characteristics of the population studied according to race/skin color. Campinas, SP, Brazil, 2014-2015.

Variables	Study population	Skin color		p-value χ^2
		Black/Brown	White	
	n	n (%)[a]	n (%)[a]	
Total	1953	612 (31.8)	1341 (68.2)	
Sex				0.9600
Male	833	265 (47.3)	568 (47.1)	
Female	1120	347 (52.7)	773 (52.9)	
Age group (years)				0.0023
20 to 39	537	213 (52.7)	324 (43.4)	
40 to 59	459	145 (31.8)	314 (37.0)	
60 or older	957	254 (15.5)	703 (19.6)	
Schooling (years)				0.0000
0 to 4	715	231 (23.0)	484 (17.8)	
5 to 11	896	323 (64.2)	573 (48.4)	
12 or more	341	58 (12.8)	283 (33.8)	
Family income per capita				0.0000
≤ 1.5 x BMMW	1099	416 (70.6)	683 (47.3)	
> 1.5 X BMMW	854	196 (29.4)	658 (52.7)	
Private health insurance				0.0000
No	1093	433 (68.2)	660 (46.5)	
Yes	859	179 (31.8)	680 (53.5)	

BMMW: Brazilian monthly minimum wage. n: number of individuals in unweighted sample. [a] percentages weighted for sampling design. χ^2 p-value of chi-square test.

Table 2. Prevalence and prevalence ratios of report of emotional/mental problem, common mental disorders and insomnia according to race/skin color. Campinas, SP, Brazil, 2014-2015.

Variables	Skin color		p-value χ^2	Adjusted PR[a] (95% CI)	Adjusted PR[b] (95% CI)
	Black/ Brown (1)	White (2)			
	%	%		(2/1)	(2/1)
Emotional/mental problem	31.0	34.5	0.2804	1.1 (0.92-1.35)	1.1 (0.93-1.33)
Type of emotional/mental problem					
Anxiety	24.1	25.8	0.5539	1.1 (0.88-1.37)	1.1 (0.86-1.33)
Depression	6.1	7.6	0.3370	1.2 (0.73-1.82)	1.3 (0.80-1.97)
Other problem	0.7	1.1	0.4991	1.5 (0.40-5.52)	1.6 (0.43-6.18)
Common mental disorder	20.1	15.2	0.0233	0.7 (0.58-0.94)	0.9 (0.67-1.13)
Insomnia	18.8	23.3	0.0771	1.2 (0.92-1.52)	1.2 (0.93-1.53)

χ^2 p-value of chi-square test. [a] Prevalence ratio adjusted by age and sex. [b] Prevalence ratio adjusted by age, sex and family income per capita.

Discussion

In 2014/2015, the city of Campinas was composed mainly of individuals who declared themselves to be white (68.2%). This figure is somewhat higher than that reported for the state of São Paulo in 2010 (63.9%)[28]. In Campinas, 23.5% and 8.3% of the population declared the color of their skin to be black and brown, respectively. The composition of the population by race/skin color differs considerably among the regions of Brazil[28]. Contexts with a greater predominance of either whites or blacks can exert different influences on disparities in terms of living conditions and health status among racial groups in different regions of the country[4,12].

Table 3. Prevalence and prevalence ratios of information related to search for health services due to emotional/mental problem according to race/skin color. Campinas, SP, Brazil, 2014-2015.

Variables	Skin color		p-value χ^2	PR (95% CI)[a]	PR (95% CI)[b]
	Black/Brown (1)	White (2)			
	%	%		(2/1)	(2/1)
Sought health service due to problem	43.4	55.7	0.0135	1.3 (1.06-1.57)	1.3 (1.05-1.56)
Reasons for not seeking					
Did not find it necessary	78.2	91.7	0.0075	1.2 (1.01-1.38)	1.2 (1.01-1.37)
Other reasons	21.8	8.3	0.0075	0.4 (0.18-0.77)	0.4 (0.19-0.82)
Place of last appointment					
Primary care unit /psychosocial care center	41.5	26.9	0.0183	0.6 (0.46-0.90)	0.8 (0.60-1.18)
Office of physician or other professional	37.1	64.0	0.0012	1.7 (1.17-2.56)	1.5 (1.04-2.26)
Other location	21.5	9.1	0.0148	0.4 (0.22-0.82)	0.5 (0.26-0.97)
Who paid for care					
Public health system	63.3	34.0	0.0005	0.5 (0.39-0.72)	0.7 (0.50-0.91)
Private insurance/business accord	24.2	47.7	0.0056	2.0 (1.13-3.52)	1.7 (0.99-3.04)
Others	12.5	18.3	0.2868	1.5 (0.70-3.03)	1.4 (0.66-3.06)

χ^2 p-value of chi-square test. [a] Prevalence ratio adjusted by age and sex. [b] Prevalence ratio adjusted by age, sex and family income per capita.

Table 4. Prevalence and prevalence ratios of use of psychotropic drugs according to skin color and characteristics of emotional/mental problem, common mental disorders and insomnia. Campinas, SP, Brazil, 2014-2015.

Variables	Prevalence (in %)		Adjusted PR [a] (95% CI)	Adjusted PR [b] (95% CI)
	Black/Brown (1)	White (2)		
	%	%	(2/1)	(2/1)
Total	7.2	13.9	1.8 (1.27-2.46)	1.8 (1.29-2.43)
Emotional/mental problem				
No	3.0	6.1	1.8 (0.88-3.51)	1.8 (0.88-3.60)
Yes	16.7	28.6	1.6 (1.07-2.53)	1.6 (1.08-2.49)
Limitation due to problem				
Without limitation	9.9	25.1	2.5 (1.26-5.10)	2.4 (1.23-4.79)
With limitation	24.2	31.9	1.2 (0.76-1.82)	1.2 (0.79-1.89)
Type of emotional/mental problem				
Anxiety	11.0	23.3	2.0 (1.07-3.83)	2.0 (1.05-3.63)
Depression	33.7	42.6	1.3 (0.67-2.48)	1.3 (0.71-2.51)
Common mental disorder				
No	4.7	10.0	1.9 (1.16-3.05)	1.8 (1.10-2.95)
Yes	17.3	35.8	2.0 (1.22-3.31)	2.0 (1.19-3.28)
Insomnia				
No	5.1	9.7	1.7 (0.99-3.03)	1.7 (1.01-2.95)
Yes	16.6	27.5	1.6 (1.03-2.59)	1.6 (1.04-2.55)
Limitation due to insomnia				
Without limitation	4.4	18.2	3.9 (1.57-9.63)	3.8 (1.54-9.21)
With limitation	23.1	34.3	1.5 (0.91-2.42)	1.5 (0.91-2.39)

[a] Prevalence ratio adjusted by age and sex. [b] Prevalence ratio adjusted by age, sex and family income per capita.

The findings of the present study reveal racial inequalities that prevail in the city: the percentage of white individuals with 12 or more years of schooling was nearly threefold higher and family income *per capita* above 1.5 times the BMMW was nearly twofold higher than the percentages found in the black population. This inequality is similar to that found in Brazil as a whole. According to the Brazilian Institute of Geography and Statistics[3], the total number of black/brown individuals with a higher education was only 12.8% in 2015, whereas this figure was 26.5% among white individuals. Among the total illiterate population in the country, 10.6% were black/brown individuals and 4.9% were white[29]. In 2015, black/brown individuals earned only 54% of the income earned by whites[29]. Racial inequality with regards to having private health insurance can also be seen in this study, as the majority of black/brown individuals (68.2%) had no private health insurance and were therefore dependent on the public healthcare system.

The prevalence of CMDs, identified using the SRQ-20, was higher among individuals who declared themselves to be black/brown, but no differences between racial segments were found regarding reports of emotional/mental problems or insomnia, indicating a possible difference between racial groups with regards to the perception and recognition of emotional problems. Different conceptions about emotional and mental problems and differences in the recognition and perception of symptoms between racial segments may have led to this finding. A previous study also found lower frequencies of the perception of mental health problems among individuals of the black population[17].

A higher frequency of CMDs has been detected in the black population in some studies[21,22] and some authors have attributed this finding to the greater exposure to stress among black/brown individuals[2]. According to Williams et al.[30], race can exert an influence on exposure to stress through two pathways: one related to the social structure, such as one's socioeconomic position, and one linked to experiences of discrimination and racism[11,30]. A study conducted in Brazil found that individuals who reported having suffered racial discrimination had an approximately 80% greater chance of having depression after controlling for socioeconomic variables[19].

In the multivariate analysis, the association between CMDs and black/brown race/skin color lost its significance after controlling for family

Table 5. Prevalence of use of psychotropic drugs according to drug class and skin color. Campinas, SP, Brazil, 2014-2015.

Class of psychotropic	Prevalence of use (%)			Adjusted PR [a] (95% CI)	Adjusted PR [b] (95% CI)
	Study population	Skin color			
		Black/Brown (1)	White (2)		
	n (%)[a]	%[a]	%[a]	(2/1)	(2/1)
Antidepressants	148 (6.5)	4.0	7.7	1.8 (1.12-3.03)	1.8 (1.10-2.85)
Fluoxetine	42 (2.2)	1.4	2.5	1.8 (0.79-3.92)	1.6 (0.77-3.32)
Sertraline	31 (1.1)	0.8	1.1	1.2 (0.47-2.87)	1.3 (0.53-3.04)
Other antidepressants [1]	75 (3.2)	1.8	4.1	2.2 (1.06-4.54)	2.2 (1.01-4.70)
Benzodiazepines	111 (3.8)	3.2	4.0	1.1 (0.72-1.67)	1.2 (0.78-1.80)
Clonazepam	59 (2.0)	1.3	2.3	1.5 (0.78-2.93)	1.6 (0.84-3.18)
Diazepam	29 (1.1)	1.5	0.8	0.5 (0.18-1.31)	0.6 (0.23-1.64)
Other benzodiazepines[2]	23 (0.7)	0.4	0.9	2.2 (0.55-8.39)	2.1 (0.55-7.89)
Antiepileptics [3]	51 (2.4)	1.6	2.8	1.7 (0.82-3.65)	2.0 (0.85-4.51)
Other psychotropics 4	86 (2.9)	1.0	3.8	3.4 (1.49-7.68)	3.2 (1.42-7.38)

[a] Prevalence ratio adjusted by age and sex. [b] Prevalence ratio adjusted by age, sex and family income per capita. [1] Selective serotonin reuptake inhibitors (citalopram, paroxetine, escitalopram); Tricyclics (imipramine, clomipramine, amitriptyline, nortriptyline); Others (trazodone, mirtazapine, bupropion, venlafaxine, duloxetine, desvenlafaxine). [2] lorazepam, bromazepam, clobazam, alprazolam, cloxazolam, flunitrazepam, zolpidem. [3] carbamazepine, phenytoin, phenobarbital, primidone, oxcarbazepine, valproic acid, lamotrigine, topiramate, gabapentin, pregabalin. [4] Opioid analgesics (morphine, codeine, tramadol); Anti-Parkinson's (biperiden, levodopa, amantadine, pramipexol, selegiline, rasagiline, entacapone); Antipsychotics (levomepromazine, haloperidol, olanzapine, quetiapine, lithium, risperidone, aripiprazole); Anxiolytics (buspirone); Psychostimulants: (methylphenidate, piracetam); Antidementia (rivastigmine, galantamine, memantine).

income *per capita*, indicating that socioeconomic differences may explain the greater prevalence of CMDs in the black population of the city. However, one must consider the complexity of phenomena that involve racial inequalities, as socioeconomic characteristics and discrimination may interact and exert an influence on access to information, the perception of emotional/mental problems[11] as well as access to healthcare services and treatment[14].

Regarding the search for healthcare services due to an emotional/mental problem, individuals who declared themselves to be white sought professional help 30% more than black/brown individuals, regardless of the degree of limitation imposed by the problem. Although the limitation or severity of psychological suffering significantly predicts the use of healthcare services[17], other factors also play an important role in the determination of who seeks and receives treatment, such as an individual's perception of the need to seek professional help, accessibility and sociocultural/economic aspects[31]. Studies conducted in other countries have documented racial differences in the use of healthcare services for mental health problems even after controlling for socioeconomic variables[17,32], as seen in the present study, in which the adjustment by family income *per capita* did not alter the significance of this difference. This disparity may be partially explained by the lower propensity of the black population to identify/recognize symptoms as indicative of a mental health problem, which results in seeking healthcare services less[17]. In Brazil, racial disparities in the search for healthcare services with a focus on mental health have been investigated little[33].

Among the black/brown individuals who sought healthcare services due to an emotional/mental problem, this most often occurred at primary care units/psychosocial care center of the public healthcare system, whereas whites more often sought the offices of physicians or other health professionals. This finding shows that black/brown individuals accessed public healthcare services for emotional problems more than whites. In general, both white and black individuals dependent on the Brazilian public healthcare system seek health services less for the treatment of emotional/mental problems in comparison to those who have private health insurance (data not shown in tables). One hypothesis for the lower utilization of health services by individuals dependent on the public healthcare system may be linked to the barriers related to access to appointments at primary care units, such as the very long waiting time, office hours incompatible with work activities (result displayed in Table 3) and the fact that primary care units have well-established care protocols, hindering referrals to specialists and a subsequent diagnosis[34], which may, at least partially, explain the disparity found. However, one cannot discard the potential and effectiveness of the Brazilian public healthcare system in reducing inequalities in health[35].

The use of psychotropic drugs by the population of Campinas, independently of having or not having reported an emotional problem, was 80% higher among white individuals. Evidence of an association between race/skin color and the use of psychotropic drugs for the treatment of emotional problems has also been found in other studies conducted in Brazil[33,36] as well as other countries[15,37]. However, those conducted in Brazil[33,36] did not have the aim of analyzing racial inequality in the use of these medications and merely considered race/skin color as one among other demographic characteristics associated with the use of psychotropic drugs. In a previous survey conducted in the city of Campinas, Prado et al.[33] found 43% lower use of psychotropic drugs in the black population compared to the white population independently of reports of an emotional problem. A study analyzing data from the National Health Survey identified a 66% higher use of psychotropic drugs among whites compared to blacks in individuals with depression[36]. The lower prevalence of the use of psychotropics among black/brown individuals may be explained by the lower proportion of seeking healthcare services due to an emotional/mental problem, as mentioned earlier, since such medications are only accessible through a medical prescription[38]. As most black/brown individuals in the city of Campinas are dependent on the public healthcare system, one may infer the existence of other barriers to access to these medications, such as the availability of medications at healthcare services, the accessibility of dispensing services and acceptability, which involves the attitudes and expectations of the individuals who use the system[39].

Regarding the classes of psychotropic drugs used by the population of Campinas, SP, no significant difference was found between the racial segments in terms of the most prevalent antidepressants (fluoxetine and sertraline). This may be partially explained by the availability of these medications at primary care units in the city, favoring access[40]. The same occurred with

regards to the benzodiazepines clonazepam and diazepam, which are easily found at primary care pharmacies[40]. However, the use of "other antidepressants" was significantly higher among white individuals. One hypothesis for this finding is that a large part of these medications (except tricyclic antidepressants, which are available at primary care units) are not on the municipal list of essential medicines[40], which constitutes a barrier to access, as acquisition is dependent on the ability to afford the full cost of the drug in question. "Other psychotropic drugs" were also used by whites more. This finding indicates possible barriers to access to these medications by black/brown individuals, as most make up part of the specialized component of pharmaceutical care, meaning that their acquisition depends on following clinical protocols and barriers to acquisition are generally larger[41].

The present study has limitations that should be considered when analyzing the results. Bias may have occurred regarding information on the medications used. However, care was taken to check the packages of the medications and medical prescriptions, which enabled the identification of the pharmacological group of 98.8% of the psychotropics used. Recall bias is another possibility, but the 15-day recall period for the use of medications is considered adequate[33,42,43].

The findings from the analyses of racial inequality in the prevalence of CMDs, the search for healthcare services for the treatment of emotional/mental problems and the use of psychotropic drugs contribute to filling gaps in knowledge on this issue and can assist in the establishment of policies designed to reduce racial inequalities in health. Such inequalities underscore the importance of actions and public policies directed at overcoming barriers to access to mental health care, which particularly affect socioeconomically underprivileged segments of the population.

Collaborations

CSE Fernandes: analysis and interpretation of data, writing and critical review of the manuscript. MG Lima: interpretation of the data and critical review of the manuscript. MBA Barros: conception and guidance of the work, interpretation of the data and critical review of the manuscript.

Acknowledgments

The authors are grateful to *Fundação de Amparo à Pesquisa do Estado de São Paulo* (FAPESP [State of São Paulo Research Assistance Foundation]) for financial support to the 2014/15 Campinas Health Survey; the Campinas Municipal Secretary of Health and the Secretary of Health Surveillance of the Health Ministry for financial support to the survey; the *Conselho Nacional de Desenvolvimento Científico e Tecnológico* (CNPq [National Council of Scientific and Technological Development]) for the productivity grant awarded to MBA Barros; and to FAPESP for the doctoral grant awarded to CSE Fernandes.

References

1. Mersha TB, Abebe T. Self-reported race/ethnicity in the age of genomic research: its potential impact on understanding health disparities. *Hum Genomics* 2015; 9(1):1.
2. Faro A, Pereira ME. Raça, racismo e saúde: a desigualdade social da distribuição do estresse. *Estud Psicol* 2011; 16(3):271-278.
3. Instituto Brasileiro de Geografia e Estatística (IBGE). *Síntese de indicadores sociais: Uma análise das condições de vida da população brasileira*. Rio de Janeiro: IBGE; 2016.
4. Travassos C, Williams DR. The concept and measurement of race and their relationship to public health: a review focused on Brazil and the United States. *Cad Saude Publica* 2004; 20(3):660-678.
5. Organização Mundial de Saúde (OMS). *Comissão de Determinantes Sociais de Saúde. Rumo a um Modelo Conceitual para Análise e Ação sobre os Determinantes Sociais de Saúde*. Genebra: OMS; 2005.
6. Buss PM, Filho AP. A Saúde e seus Determinantes Sociais. *Rev Saúde Coletiva* 2007; 17(1):77-93.
7. Victora CG, Aquino EML, Leal MC, Monteiro CA, Barros FC, Szwarcwald CL. Maternal and child health in Brazil: progress and challenges. *Lancet* 2011; 377(9780):1863-1876.
8. Araújo EM, Costa M CN, Hogan VK, Mota ELA, Araújo TM, Oliveira NF. Diferenciais de raça/cor da pele em anos potenciais de vida perdidos por causas externas. *Rev Saude Publica* 2009; 43(3):405-412.
9. Volochko A, Vidal NP. Desigualdades raciais na saúde: mortalidade nas regiões de saúde paulistas, 2005. *BIS Bol do Inst Saúde* 2010; 12(2):143-153.
10. Chor D, Lima CR de A. Aspectos epidemiológicos das desigualdades raciais em saúde no Brasil. *Cad Saude Publica* 2005; 21(5):1586-1594.
11. Smolen JR, Araújo EM. Raça/cor da pele e transtornos mentais no Brasil: uma revisão sistemática. *Cien Saude Colet* 2017; 22(12):4021-4030.
12. Oliveira B, Thomaz E, Silva R. Associação da cor/raça aos indicadores de saúde para idosos no Brasil: um estudo baseado na Pesquisa Nacional por Amostra de Domicílios (2008). *Cad Saude Publica* 2014; 30(7):1-15.
13. Pavão ALB, Werneck GL, Campos MR. Autoavaliação do estado de saúde e a associação com fatores sociodemográficos, hábitos de vida e morbidade na população: um inquérito nacional. *Cad Saude Publica* 2013; 29(4):723-734.
14. Malta DC, De Moura L, Tomie R, Bernal I. Diferenciais dos fatores de risco de Doenças Crônicas não Transmissíveis na perspectiva de raça/cor. *Cien Saude Colet* 2015; 20(3):713-725.
15. Simpson SM, Krishnan LL, Kunik ME, Ruiz P. Racial disparities in diagnosis and treatment of depression: A literature review. *Psychiatr Q* 2007; 78(1):3-14.
16. Han E, Liu GG. Racial Disparities in Prescription Drug Use for Mental Illness among Population in US. *J Ment Health Policy Econ* 2005; 8(3):131-143.
17. Zuvekas SH, Fleishman JA. Self-rated mental health and racial/ethnic disparities in mental health service use. *Med Care* 2008; 46(9):915-923.

18. Cook BL, Carson NJ, Kafali EN, Valentine A, Rueda JD, Coe-Odess S, Busch S. Examining psychotropic medication use among youth in the U.S. by race/ethnicity and psychological impairment. *Gen Hosp Psychiatry* 2016; 45:32-39.
19. Pavão ALB, Ploubidis GB, Werneck G, Campos MR. Racial discrimination and health in Brazil: evidence from a population-based survey. *Ethn Dis* 2012; 22(3):353-359.
20. Almeida-Filho N, Lessa I, Magalhães L, Araújo MJ, Aquino E, James SA, Kawachi I. Social inequality and depressive disorders in Bahia, Brazil: interactions of gender, ethnicity, and social class. *Soc Sci Med* 2004; 59(7):1339-1353.
21. Anselmi L, Barros FC, Minten GC, Gigante DP, Horta BL, Victora CG. Prevalência e determinantes precoces dos transtornos mentais comuns na coorte de nascimentos de 1982, Pelotas, RS. *Rev Saude Publica* 2008; 42(Supl. 2):26-33.
22. Bastos JL, Barros AJD, Celeste RK, Paradies Y, Faerstein E. Age, class and race discrimination: their interactions and associations with mental health among Brazilian university students. *Cad Saude Publica* 2014; 30(1):175-186.
23. Instituto Brasileiro de Geografia e Estatística (IBGE). *Cidades IBGE: Panorama de Campinas*. Rio de Janeiro: IBGE; 2018.
24. Alves MCGP, Escuder MML, Claro RM, Silva NN. Sorteio intradomiciliar em inquéritos de saúde. *Rev Saude Publica* 2014; 48(1):86-93.
25. Gonçalves DM, Stein AT, Kapczinski F. Avaliação de desempenho do Self-Reporting Questionnaire como instrumento de rastreamento psiquiátrico: um estudo comparativo com o Structured Clinical Interview for DSM-IV-TR. *Cad Saude Publica* 2008; 24(2):380-390.
26. EPUC. *DEF - Dicionário de Especialidades Farmacêuticas 2015*. 43ª ed. Rio de Janeiro: EPUC; 2015.
27. World Health Organization (WHO). *ATC/DDD Index 2016* [Internet]. 2016 [acessado 2018 Jan 10]. Disponível em: https://www.whocc.no/atc_ddd_index/
28. Instituto Brasileiro de Geografia e Estatística (IBGE). *Censo demográfico: População residente, por cor ou raça, segundo a situação do domicílio, o sexo e a idade*. Rio de Janeiro: IBGE; 2010.
29. Instituto de Pesquisa Econômica Aplicada (IPEA). Retrato das Desigualdades de Gênero e Raça. Brasília: IPEA; 2016.
30. Williams DR, Yan Yu Y, Jackson JS, Anderson NB. Racial Differences in Physical and Mental Health. *J Health Psychol* 1997; 2(3):335-351.
31. Travassos C, Martins M. Uma revisão sobre os conceitos de acesso e utilização de serviços de saúde. *Cad Saude Publica* 2004; 20(Supl. 2):S190-S198.
32. Lê Cook B, McGuire TG, Lock K, Zaslavsky AM. Comparing methods of racial and ethnic disparities measurement across different settings of mental health care. *Health Serv Res* 2010; 45(3):825-847.
33. Prado MAMB, Francisco PMSB, Barros MBA. Uso de medicamentos psicotrópicos em adultos e idosos residentes em Campinas, São Paulo: um estudo transversal de base populacional. *Epidemiol e Serviços Saúde* 2017; 26(4):747-758.
34. Boccolini CS, Souza Junior PRB. Inequities in Healthcare utilization: results of the Brazilian National Health Survey, 2013. *Int J Equity Health* 2016; 15(1):150.
35. Brasil. Lei nº 8.080, de 19 de setembro de 1990. Lei Orgânica da Saúde. Dispõe sobre as condições para a promoção, proteção e recuperação da saúde, a organização e o funcionamento dos serviços correspondentes e dá outras providências. *Diário Oficial da União* 1990; 20 set.
36. Lopes CS, Hellwig N, Silva GAE, Menezes PR. Inequities in access to depression treatment: results of the Brazilian National Health Survey - PNS. *Int J Equity Health* 2016; 15(1):154.
37. Pierre G, Thorpe RJ, Dinwiddie GY, Gaskin DJ. Are there racial disparities in psychotropic drug use and expenditures in a nationally representative sample of men in the United States? Evidence from the Medical Expenditure Panel Survey. *Am J Mens Health* 2014; 8(1):82-90.
38. Brasil. Ministério da Saúde (MS). Portaria nº 344, de 12 de maio de 1998. *Diário Oficial da União* 1998; 12 maio.
39. Oliveira MA, Luiza VL, Tavares NUL, Mengue SS, Arrais PSD, Farias MR, Pizzol T da SD, Ramos LR, Bertoldi AD. Acesso a medicamentos para doenças crônicas no Brasil: uma abordagem multidimensional. *Rev Saude Publica* 2016; 50(Supl. 2):1-13.
40. Campinas. Secretaria Municipal de Saúde (SMS). Relação de medicamentos padronizados para dispensação nas unidades de saúde do município de Campinas, SP [Internet]. 2014. [acessado 2016 Maio 15]. Disponível em: http://www.saude.campinas.sp.gov.br/saude/assist_farmaceutica/lista_padronizados.htm
41. Campinas. Secretaria Municipal de Saúde (SMS). *Programa de medicamentos do componente especializado da assistência farmacêutica* [Internet]. 2016. [acessado 2016 Jun 1]. Disponível em: http://www.saude.campinas.sp.gov.br/saude/assist_farmaceutica/alto_custo/medicamentos_alto_custo.htm
42. Moraes CG, Mengue SS, Pizzol TSD, Moraes CG, Mengue SS, Pizzol TSD. Concordância entre diferentes períodos recordatórios em estudos de utilização de medicamentos. *Rev Bras Epidemiol* 2017; 20(2):324-334.
43. Quintana MI, Andreoli SB, Peluffo MP, Ribeiro WS, Feijo MM, Bressan RA, Coutinho ESF, De Jesus Mari J. Psychotropic drug use in São Paulo, Brazil - An epidemiological survey. *PLoS One* 2015; 10(8):1-14.

Article submitted 30/05/2019
Approved 07/08/2019
Final version submitted 14/11/2019