

INTERSECTIONALITY OF RACE, GENDER, AND COMMON MENTAL DISORDERS IN NORTHEASTERN BRAZIL

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This study applies the perspective of intersectionality, defined as social identities combining with one another and with structural societal factors to produce health inequities, to assess the interaction between race, gender, and common mental disorders (CMD) in northeastern Brazil. The Self-Reporting Questionnaire was used to assess CMD among a representative sample of adults in Feira de Santana, Bahia, Brazil (N=3273). Four groups (Black men, Black women, White women, White men) represented the intersection of race and gender. We used a Chi square test to compare the four groups and Poisson regressions to determine prevalence ratios (PR). White men had the lowest prevalence of CMD (11.1%) and Black women had the highest (37.2%). After adjusting for covariates, Black women had a statistically significantly higher prevalence of CMD than White men (PR=2.43; 95% CI: 1.39-4.25), though the prevalence among White women was not statistically significantly different from White men (PR=1.74; 95% CI: .93-3.30). Interaction tests were conducted on the multiplicative and additive scale, although the results were not statistically significant. These findings indicate that the experience of being both Black and a woman in Brazil is associated with elevated prevalence of CMD. Programs and interventions are needed to address this burden and research is needed to further explore its cause. *Ethn Dis.* 2018;28(3):207-214; doi:10.18865/ed.28.3.207.

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INTRODUCTION

Research on health disparities and health inequities recognizes the importance of individual social identities such as race and gender, but rarely considers more than one axis of disparity at a time.¹⁻⁴ Little has been explored about how the intersections of race and gender may jointly interact to influence health. The perspective of intersectionality acknowledges that the intersection of various identities must be examined rather than treating each identity as independent; for example, the impact of race, sex and socioeconomic status goes beyond the mere sum of the effects of being low-income, Black, and a woman.^{5,6}

This perspective argues that one does not have only either a race or a gender, and to examine these as if they are independent misses the complexity and nuances of the intersections of identities and how power and inequality are distributed in society.⁵ Intersectionality grew out

of the Black Feminism movement, and initially applied primarily qualitative methods.⁶ Health researchers have begun to capture intersectionality through quantitative analysis, often applying the methods of statistical interaction.⁷⁻⁹ These methods can capture intersectionality because they treat each intersection as its own category, and the presence of statistical interaction demonstrates the added value of assessing these intersections rather than analyzing the data as if the variables (eg race, gender) functioned separately and independently.^{10,11}

Intersectionality may be of particular value in Brazil where the myth of “racial democracy” has lingering impact.¹² Although Brazil has a robust body of research on health inequalities, gender and race/ethnicity still receive relatively little attention as contributors to inequality.¹³ What research exists has shown a higher prevalence of mental health disorders among the Black population as compared with Whites, and among women as compared with men.^{4,14} Intersectionality presents an opportunity to more deeply explore these health disparities by assessing how they may be amplified (or reduced) at

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the intersection of social identities.

Bahia is the largest state in northeastern Brazil, and Feira de Santana is the second largest city in Bahia. According to data from the 2010 Census, 19.9% of the population of Feira de Santana were White, 23.1% were Black (*preta*), 55.8% were Brown (*parda*), 1% were Asian, and .2% were Indigenous.¹⁵ Our study applies the framework of intersectionality to examine race, gender, and common mental disorders in Feira de Santana.

Our study aims to quantitatively examine the interaction between race, gender, and common mental disorders using the perspective of intersectionality.

The term, common mental disorders (CMD), refers to a constellation of anxiety, depressive, or psychosomatic symptoms that lead to distress and suffering, and can cause long-term consequences if untreated.¹⁶ Examining the intersection of race and gender with CMD could further illuminate the relationship between these social identities, societal factors, and mental health, as well as inform programs and policies to address or reduce the burden of CMD. Therefore,

our study aims to quantitatively examine the interaction between race, gender, and CMD using the perspective of intersectionality.

METHODS

Data were collected in 2007 in a cross-sectional study from a representative sample of the population aged ≥ 15 years in the urban area of Feira de Santana. All study instruments, strategies, and methodological procedures were tested in a pilot study. A multi-stage cluster sampling strategy was used: first, using Census data, we examined data on the city's sub-districts and randomly chose census tracts. Every home on the chosen streets was visited, and all individuals aged ≥ 15 years who lived in those homes were eligible to participate in the study. Trained interviewers carried out the data collection, and up to three visits were made to each home. All participants gave informed consent and the Ethics Committee of the State University of Feira de Santana approved this study.

The Self-Reporting Questionnaire (SRQ-20) was used to assess the outcome of CMD. The SRQ-20 asks dichotomous questions about depressive/anxious mood, somatic symptoms, and decrease in energy. This questionnaire has been validated for use in Brazil.¹⁷ Santos et al validated this instrument for use in the northeast region of Brazil with a score of 6 for men and 7 for women indicating presence of CMD.¹⁸⁻¹⁹ The independent variable in this study is the intersection of self-re-

ported race and gender, with four categories: White men (reference group), Black men, White women, and Black women. Respondents self-identified race using the National Census Bureau categories. Race was analyzed as a social-historical construct; that is, race is not biologically determined but remains a relevant factor because of the social stratification that results from the systems of discrimination and institutional racism, interpersonal racism, and racial stigma.²⁰ Due to small sample size, respondents who selected Asian, Indigenous, or "I don't know" were not included in the sample analyzed. Brown (*parda*), a term, which in Brazil includes those of mixed racial ancestry, and Black (*preta*) were grouped together. Brazilian research often combines these two groups due to the similarity of socioeconomic characteristics between these two groups and due to the fact that both Black and Brown Brazilians face discrimination in Brazil.²¹ Furthermore, a study that compared open-ended self-classification of race with the census categorization found that combining the categories of Black and Brown captured the large majority of the self-identified Afro-Brazilian population.²² Brazilian activists in the Black Movement ("Movimento Negro") have argued that dichotomizing race is necessary in Brazil to effectively advocate for Afro-Brazilian people within a racist society.²⁰

A literature review informed the covariates for CMD, including age, marital status, highest level of education completed, employment status, average monthly income, participation in leisure activities,

Table 1. Characteristics of the population aged ≥ 15 years by race and gender, Feira de Santana, Bahia, Brazil, N=3273

	Total, N=3273	White men, n=172, 5.3%	Black men, n=782, 23.9%	White women, n=360, 11.0%	Black women, n=1959, 59.9%	P
	%	%	%	%	%	
Age, N=3273						.006
15-49 years	72.3	70.9	74.0	64.2	73.2	
>50 years	27.7	29.1	26.0	35.8	26.8	
Marital status, n=3258						.168
With a partner	48.9	40.6	51.4	48.6	48.6	
Without a partner	51.1	59.4	48.6	51.4	51.4	
Employment status, n=3270						<.001
Employed	36.3	42.4	52.0	25.8	31.4	
Unemployed	63.7	57.6	48.0	74.2	68.6	
Average monthly income, n=1854						<.001
Minimum wage or higher	40.9	57.8	59.3	30.9	30.8	
Below minimum wage	59.1	42.2	40.7	69.1	69.3	
Education, n=3265						<.001
Greater than nine years	33.5	40.7	27.1	37.6	34.7	
Eight years or fewer	66.5	59.3	73.0	62.4	65.3	
Participation in leisure activities, n=3272						<.001
Yes	84.8	95.9	89.9	87.2	81.3	
No	15.2	4.1	10.1	12.8	18.7	
Housework overload, n=3273						<.001
Low	58.9	95.9	91.4	51.1	44.2	
High	41.1	4.1	8.6	48.9	55.8	
Experience of racial discrimination, n=3262						.31
No	98.3	100.0	98.2	98.6	98.1	
Yes	1.7	0.0	1.8	1.4	1.9	

and housework overload. Housework overload captures the number of household chores the respondent performs multiplied by household size.²³ This was dichotomized into high (above average) and low (below average) housework overload. A question adapted from the United States Behavioral Risk Factor Surveillance Study, “Within the past

30 days, have you felt emotionally upset, for example angry, sad, or frustrated, as a result of how you were treated based on your race?”, served as a rough measure of experience of racial discrimination.²⁴

Statistics

We used a Chi-square test to compare the distribution of covari-

ates between the four race/gender groups. All $P \leq .05$ were considered significant. We then used a Poisson regression to determine the prevalence ratios (PR), adjusted for the multi-stage clustered survey design (according to Stata’s default method, which estimates variance using linearization), and adjusted for all covariates. Using the method

Table 2. Analysis of effect modification of race and gender with CMD among population aged ≥ 15 years, Feira de Santana, Bahia, Brazil

	Men		Women		Comparison of women with men within the strata of race
	Prevalence %	PR (95% CI) ^a	Prevalence %	PR (95% CI) ^a	PR (95% CI) ^a
White	11.11	1.00 (ref)	27.35	1.74 (.93-3.30)	1.74 (.88-3.43)
Black	15.61	1.07 (.57-1.99)	37.23	2.43 (1.39-4.25)	2.26 (1.83-2.78)
Comparison of Blacks with Whites within the strata of gender		.91 (.51-1.65)		1.41 (1.00-2.00)	

a. Adjusted for all covariates.

recommended by Knol & VanderWeele,^{11,25} we assessed statistical interaction, including analyzing effect modification and then statistical interaction. Confidence intervals were calculated using the multivariate Delta method. Statistical interaction was assessed in the multiplicative scale ($PR_{11} / (PR_{10} * PR_{01})$) and the additive scale using the relative excess risk due to interaction, or RERI ($PR_{11} - PR_{10} - PR_{01} + 1$). We also used the ratio of observed vs expected joint effects on the relative scale, or RJE ($PR_{11} / (PR_{10} + PR_{01} - PR_{00})$), to compare the observed prevalence in the multiply marginalized group to the expected prevalence if race alone and/or gender alone were sufficient to explain the outcome.⁷ In these formulas, 11=Black women, 01=Black men, 10=White women and 00=White men.

RESULTS

The final study group in this analysis consisted of 3,273 adults (Table 1), 5.3% of which were White men,

23.9% Black men, 11.0% White women, and 59.9% Black women. Most of the participants were aged <50 years, although White women had the greatest proportion (35.8%) who were aged ≥ 50 years. Nearly half of the study group had a partner. The majority of White men (57.8%) made more than or equal to the minimum wage, and 42.4% were employed; a majority of Black men (59.3%) made more than the minimum wage and 52% were employed. For women the opposite pattern was seen: the majority of both White and Black women were unemployed and earned less than the minimum wage per month. Among all groups, a larger proportion had eight or fewer years of school. White men had the highest proportion to attend >9 years of school (40.7%), and Black men had the lowest proportion (27.1%). The majority of all groups participated in leisure activities. More than 90% of men did not experience high housework overload, compared with approximately half of women. Although there were no statistically

significant differences in discrimination, no White men reported experience of discrimination. All bivariate associations between the covariates and CMD were statistically significant (results not shown).

When assessing unadjusted prevalence (Table 2) White men had the lowest prevalence of CMD (11.1%), and Black women had the highest prevalence (37.2%). The adjusted prevalence ratios show that Black and White men had a similar prevalence of CMD. White women had a higher prevalence than White men, though not statistically significantly different. Black women had 2.43 times higher prevalence of CMD—the only group that was statistically significantly different from White men. In the analysis of effect modification, the gender difference was assessed within the strata for race. Among Whites, prevalence did not differ by gender. Among Blacks, women had a statistically significantly higher prevalence of CMD than men. When assessing the race difference within the strata of gender, we found that among

Table 3. Analysis of interaction on multiplicative and additive scale among population aged ≥ 15 years, Feira de Santana, Bahia, Brazil

	Formula ^a	Measure (95% CI) ^b
Multiplicative Interaction	$PR_{11} / (PR_{10} * PR_{01})$	1.31 (.66-2.62)
Additive Interaction: Relative Excess Risk due to Interaction (RERI _{PR})	$PR_{11} - PR_{10} - PR_{01} + 1$.63 (-.05-1.31)
Ratio of observed vs expected joint effects on the relative scale (RJE _{PR})	$PR_{11} / (PR_{10} + PR_{01} - PR_{00})$	1.35 (.72-1.98)

a. 11=Black women; 01=Black men; 10=White women; 00=White men.
b. Adjusted for all covariates.

men, prevalence did not differ by race. Among women, Blacks had a significantly higher prevalence of CMD as compared with Whites.

Assessing interaction resulted in the following findings: a ratio of 1.31 on the multiplicative scale, RERI=.63 on the additive scale, and RJE=1.35 (Table 3). A ratio on the multiplicative scale >1 and an RERI >0 indicate positive interaction, in this case that race alone and gender alone cannot explain the excess prevalence seen among Black women. The RJE indicates magnitude and shows that the prevalence of CMD in Black women was 35% higher than would be expected if race or gender alone were sufficient to explain it. However, the results of all three measures of statistical interaction were not statistically significant.

DISCUSSION

The perspective of intersectionality adds dimension to our understanding by showing that the crude prevalence of CMD among Black women was more than three times the prevalence among White

men. Even after adjusting for relevant covariates, the prevalence ratio among Black women remained nearly two and a half times that of White men. The unique experience of Black women is associated with a higher burden of CMD and may be driving racial differences found in non-intersectional analyses.

Intersectionality reflects that a person's various identities determine the lived experience due to societal structural factors and power dynamics.⁵ Both race and gender determine "opportunity structure" by paving or barring the way to educational, financial, and social opportunities as well as exposure to health risks or health resources.²⁶ The distribution of socioeconomic characteristics in this sample reflected this; women were less likely to have paid employment, and earned less money on average. Black men had a lower level of education than White men. The most privileged socioeconomically, White men, had the lowest prevalence of CMD. Black men had an increased prevalence, followed by White women, then Black women. One other study in Brazil examined mental health and the intersection of race and gen-

der and found the same pattern.²⁷

However, socioeconomic position is not wholly responsible for the race and gender differences seen in our study. Black women and White

The perspective of intersectionality adds dimension to our understanding by showing that the crude prevalence of CMD among Black women was more than three times the prevalence among White men.

women were similar socioeconomically yet had differing burdens of CMD. Race may influence exposure to stress through experiences of racism and discrimination,^{28,29} and these stressors also apply to gender discrimination. After adjusting for

the socioeconomic factors and stress due to social roles (eg, housework overload), a higher prevalence of CMD remained—this may be due to the stress of factors such as institutional discrimination which were not accounted for in this study's crude proxy for discrimination.

A Brazilian study found Blacks were 1.91 times more likely to report any discrimination than Whites, and that women were 1.21 times more likely than men to report discrimination.³⁰ A study assessing the interaction of race and gender discrimination in Brazil found that women with darker skin were more likely to report gender discrimination than those with lighter skin.³¹ One recent qualitative study found that racial, gender, and class backgrounds of Brazilian women resulted in different intersectional experiences that altered women's social context, life course opportunities, stressors, and protective factors. For Black women, gender defined a caretaking role for women, and racism caused a significant physical and emotional power drain, as well as an intellectual and time drain.³²

More detailed studies are needed that can assess intersectional gender and race discrimination in the context of mental health. Future qualitative studies are needed to explore the lived experience of being Black and a woman in Brazil to explore how and why it is associated with increased prevalence of CMD.

Limitations

This is a cross-sectional study, and therefore cannot address the question of causality. Although the

overall sample size is large, stratifying by both race and gender results in some small cell sizes (in this study, White men), which may have affected the statistical significance of the results, particularly the assessment of statistical interaction. Due to sample size limitations, we were unable to explore other relevant social identities, such as class. Studies where the sample size is calculated to power interaction analyses are needed to further examine the added value of intersectional analyses.

The variables used in this study were self-reported and may be subject to recall bias. The use of a structured survey instrument to identify CMD instead of a clinical interview may affect this study's ability to correctly determine the presence of CMD; however, by using an instrument that has been tested and validated in Brazil within a racially diverse population, we minimized the effect of this limitation. Moreover, the same measurement criteria were used in all groups, so any possible classification bias would be equally distributed among all groups.

CONCLUSION

Using the perspective of intersectionality to examine the associations between race, gender and CMD, this study showed that the prevalence of CMD in Black women was significantly higher than among White men. These findings suggest that this excess burden among Black women may be related to the lived experience of being both Black and a woman in northeastern Brazil.

Programs and interventions specific to Black women should be developed. Brazil's Family Health Strategy includes treating mental health within primary care, and multiple primary care clinics share a floating "support nucleus" that includes a psychologist and social worker. These resources should be leveraged to address CMD among Black women in Brazil. In addition, more research is needed on the unique life experiences of Black women, including intersectional discrimination, to explore causality so that programs can be developed to prevent the development of CMD and eliminate this stark disparity.

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CONFLICT OF INTEREST

No conflicts of interest to report.

AUTHOR CONTRIBUTIONS

Research concept and design: Smolen, EM de Araújo; Acquisition of data: de Oliveira, TM de Araújo; Data analysis and interpretation: Smolen, de Oliveira; Manuscript draft: Smolen, EM de Araújo, TM de Araújo; Statistical expertise: Smolen, de Oliveira; Administrative: Smolen; Supervision: EM de Araújo, TM de Araújo.

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