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Depressive Symptoms and Psychological Distress Among Rural African Americans: The Role of Material Hardship and Self-Rated Health

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Abstract

Background: Despite experiencing conditions associated with higher risk for depression and psychological distress, the mental health of rural African Americans remains understudied. This brief report examines the association between sociodemographic characteristics, self-rated health, and material hardship, and depressive symptoms and psychological distress among rural African Americans.

Method: Data are from the rural African American subsample (N=250) of the National Survey of American Life (NSAL; 2001–2003). The Center for Epidemiological Studies-Depression Scale (CES-D) was used to assess depressive symptoms. Psychological distress was measured using the Kessler 6 (K6). Negative binominal regression analyses were performed.

Results: Rural African Americans reporting more material hardship and poorer self-rated physical health had higher levels of depressive symptoms and psychological distress compared to counterparts with less hardship and better self-rated health. Findings also suggest rural African American women had more depressive symptoms compared to male peers. Older rural African Americans and African Americans with fewer years of education had more symptoms of psychological distress than their respective counterparts.

Limitations: Though the NSAL represents the only national probability survey on African Americans' mental health; the timeliness of the data, collected between 2001 and 2003 is a limitation.

Conclusions: Material hardship and worse self-rated health emerged as risk factors for depression and psychological distress among this population. This suggests the need for systems

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of care and integrated healthcare models across service providers within rural African American communities to promote adequate screening, intervention, and referrals related to economic, physical, and mental health needs.

Keywords

depression; psychological distress; African Americans; rural mental health; material hardship

Introduction

Depression and psychological distress are highly prevalent among Americans (Kessler et al., 2005) and present a significant public health concern (Walker et al., 2015). These common mental health problems are associated with impairment across multiple domains, including economic, social, and family life (Wang et al., 2003). However, the mental health of rural African Americans has been understudied, leading to limited understanding of factors associated with mental health needs among this group. This is concerning, as African Americans and rural residents are more likely to experience circumstances associated with depression and psychological distress, including higher poverty rates, lower educational attainment, and poorer health, compared to non-Hispanic White and urban peers (Kusmin, 2015; McCartney et al., 2013; Rastogi et al., 2011).

Though research demonstrates an inverse relationship between income and mental illness (McMillan et al., 2010), literature increasingly suggests the importance of examining more nuanced indicators of economic well-being, such as material hardship (Heflin & Iceland, 2009; Mouzon et al., 2016b). Material hardship, defined as “inadequate consumption of goods or services the public deems minimally necessary for decent human functioning” (Nelson, 2011), may be an important potential predictor of poor mental health among rural African Americans given the persistent poverty in rural communities (Proctor et al., 2016) and consistently high poverty rates experienced by African Americans (McCartney et al., 2013).

Additionally, African Americans and rural residents experience high rates of chronic illness (Moy et al., 2017; Witters & Wood, 2014). Recent studies document increasing mortality among rural Americans, particularly in the South where nine out of ten rural African Americans reside (Ezzati et al., 2008; Snyder, 2016). The increased mortality rate in rural areas has been attributed to chronic illness, suicide, and substance use (Ezzati et al., 2008; Snyder, 2016). These findings suggest the need to better understand the relationship between physical and mental health among rural African Americans.

Although rural African Americans are at risk for experiencing material hardship and physical health problems, the ways in which these potential risk factors may relate to mental health needs among this population has not been explored. This study examines the association between demographic characteristics, self-rated health, and material hardship, and depression and psychological distress among the rural subsample of the National Survey of American Life (NSAL), extending our extremely limited knowledge of rural African Americans' mental health.

Methods

Sample

NSAL data were collected by the Program for Research on Black Americans at the University of Michigan's Institute for Social Research between 2001 and 2003 (ISR; Jackson et al. 2004). Interviews were conducted with 6,082 adults, including 3,570 African Americans. The NSAL's overall response rate was 72.3%. The response rate for African Americans was 70.7%. This paper utilizes the rural African American subsample of the NSAL (n=250). There were 28 missing cases resulting in an analytic sample of 222.

The African American sample is the core sample of the NSAL and consists of 64 primary sampling units (PSUs). Fifty-six PSUs overlap substantially with existing Survey Research Center's National Sample primary areas. The remaining eight PSUs were chosen from the South to ensure the sample represented African Americans in proportion to their distribution nationally. Given the regional concentration of rural African Americans, all rural respondents were recruited from the South.

Measures

Dependent Variables

Depressive Symptoms.: Depressive symptoms were assessed using a nine-item Center for Epidemiological Studies-Depression scale (CES-D). The 12-item CES-D, which was initially used, did not have acceptable reliability for this rural African American sample ($\alpha = 0.54$). The 12 items measure the extent to which respondents: had trouble keeping their mind on tasks, enjoyed life, had crying spells, could not get going, felt depressed, hopeful, restless, happy, as good as other people, that everything was an effort, that people were unfriendly, and that people dislike them in the past 30 days. After conducting an item analysis, we deleted three items (enjoyed life, felt happy, felt as good as other people) and reliability substantially improved ($\alpha = 0.74$). Each item was measured on a 4-point Likert scale ranging from 0 (rarely or none of the time) to 3 (most or all of the time). Positive valence items were reverse coded and summed resulting in a continuous measure; higher scores indicate more depressive symptoms ($M = 7.18$, $SD = 4.84$).

Psychological Distress.: Serious psychological distress (SPD) was measured by the Kessler 6 (K6), a six-item scale designed to assess non-specific psychological distress, including symptoms of depression and anxiety, in the past 30 days (Kessler et al. 2002; Kessler et al. 2003). The K6 was designed to identify individuals with a high likelihood of having diagnosable serious mental illness; severe mental health problems causing moderate to serious impairment in social and occupational functioning; and symptoms and impairments requiring treatment. Each item was measured on a 5-point Likert scale ranging from 0 (none of the time) to 4 (all of the time). The summed scores result in a composite measure ranging from 0 to 24, with higher scores reflecting higher levels of psychological distress ($M = 4.66$, $SE = 4.70$). The K6 had good reliability among this sample ($\alpha = 0.83$).

Independent Variables

Demographic Characteristics.: Age was measured in years. Gender was coded as female or male. Family income was measured using total household income. Educational attainment was measured in number of years. Missing data for family income and education were imputed for 57 and seven cases, respectively. Marital status was coded into four categories: currently married/cohabiting, separated/divorced, widowed, and never married.

Self-rated Health.: There were three, single-item subjective health variables: self-rated physical health, self-rated oral health, and self-rated health from childhood through age 16. These variables included five categories ranging from poor (1) to excellent (5) health.

Material Hardship.: Material hardship was measured using a summary score of seven items assessing whether or not respondents could meet basic expenses, pay full rent or mortgage, pay full utilities, had utilities disconnected, had telephone disconnected, were evicted for non-payment, and were unable to afford leisure activities in the past 12 months. Scores were summed into a composite measure; higher scores indicated greater material hardship ($\alpha = .76$).

Analysis Strategy

Due to patterns of non-normality within distributions of the dependent variables, we used negative binomial regression instead of standard ordinary least squares regression. Incident rate ratios (IRRs) and 95% confidence intervals (CIs) are presented along with the design-corrected *F* statistic for the negative binomial regression analysis. Negative binomial regression analyses used a two-step hierarchical approach. Model 1 (Step 1) was restricted to a standard set of sociodemographic variables (i.e., age, gender, income, education, and marital status). The full model (Step 2) added material hardship and self-rated health variables.

Results

The distribution of this sample's sociodemographic characteristics is presented in Table 1. Roughly two-thirds (67.6%) of the sample were women and respondents' mean age was 45.9. Mean family annual income was \$24,411 and mean educational attainment was 10.83 years. Two-fifths of respondents (40%) were married or cohabiting.

Respondents' mean self-rated physical health was 3.32 (SD = 1.11), reflecting an average response between "good" and "very good." Mean self-rated oral health was slightly lower (M=2.94, SD = 1.19), with an average near "good." Mean self-rated childhood health was considerably higher at 4.05 (SD = 0.92), with average responses between "very good" and "excellent." Material hardship was relatively low with a mean of 0.73 (SD = 1.35) on a scale ranging from 0 to 7.

The distribution of scores on the CES-D and K6 suggest high levels of mental health symptoms among these rural African American respondents. Approximately one-third (33%) of respondents had somewhat elevated (27%) or very elevated (6%) depressive symptoms. Almost 12% of respondents reported elevated levels of psychological distress.

Table 2 presents negative binomial regression analyses of depressive symptoms. In Model 1 (Step 1) women had more depressive symptoms than men. In the Full Model (Step 2), gender maintains significance and education is significantly associated with depressive symptoms, with respondents reporting fewer years of education having more depressive symptoms. Both material hardship and self-rated physical health were significantly associated with depressive symptoms. Rural African Americans with more material hardship and those reporting poorer self-rated physical health had more depressive symptoms.¹ For example, for every one unit increase in material hardship, depressive symptoms increased by a factor of 1.1. Please note that material hardship and self-rated physical health were significantly related in the same manner to both the 9-item and 12-item CES-D.

Table 2 also presents negative binomial regression analyses of psychological distress. In Model 1 (Step 1), age, income, education and marital status were significantly associated with psychological distress. Rural African Americans who were younger, reported lower income, and fewer years of formal education had more psychological distress. Additionally, being separated or divorced was associated with higher rates of psychological distress relative to being married or cohabitating. When material hardship and self-rated health variables were added in the full model (Step 2), age and education remained significantly associated with psychological distress. Consistent with the analysis of depressive symptoms, material hardship and self-rated physical health were significantly associated with psychological distress. Rural African Americans who reported higher levels of material hardship and those who rated their physical health as poorer had more psychological distress.²

Discussion

Our findings indicate that higher levels of material hardship are associated with higher levels of depressive symptoms and psychological distress among rural African Americans in this sample. This builds on a growing body of work suggesting the importance of assessing the relationship between more nuanced indicators of economic well-being and mental health (Heflin & Iceland, 2009; Mouzon et al., 2016b). The relationship between economic well-being and mental health in the rural context requires further study for several reasons. Rural communities have been slower to recover from the 2008 recession and industries that once maintained rural life continue to decline (Kusmin, 2015). Further, the number of individuals receiving cash assistance continues to decline and receiving subsidized housing and/or assistance with utilities is increasingly restrictive (Hildebrandt & Stevens, 2009). Rural residents may be faced with an increased risk for material hardship as well as depression and psychological distress and fewer supportive resources. Other work on African Americans (Mouzon et al., 2016a) suggests that experiences of discrimination and systemic racism may further exacerbate these mental health risks for rural African Americans and requires attention in future research.

¹Supplemental Figure 1 illustrates these relationships by presenting adjusted means of depressive symptoms for low and high values of material hardship and self-rated physical health.

²Supplemental Figure 2 illustrates these relationships by presenting adjusted means of symptoms of psychological distress for low and high values of material hardship and self-rated physical health.

Our study also found a negative association between self-rated physical health and both depressive symptoms and psychological distress among rural African Americans, adding to a substantial body of work indicating an interrelationship between physical and mental health. In some rural areas, particularly in the rural south, researchers have documented a “reversal of fortune” reflected in rising mortality rates and declines in life expectancy for the first time in a Century (Ezzati et al., 2008; Snyder, 2016). Research suggests chronic illness exacerbated by high rates of obesity and smoking, contribute to this trend; however, suicide and substance use also play a role. It is of note that self-rated oral health and self-rated childhood health were not significantly associated with mental health outcomes in this study. This requires further study.

Given the negative association between current self-rated physical health and mental health outcomes, our findings also provide further support for the implementation of integrated healthcare models as a way to increase access to care and address mental health needs in underserved rural communities. Further, given the inter-connectedness between economic well-being, physical health, and mental health, our findings collectively suggest the importance of increasing federal resources in rural areas for health infrastructure that would support the development of systems of care in rural African American communities. It is also imperative for future work to explore the ways in which social isolation, stigma, and limited resources may impact rural African Americans’ mental health, as well as inform strategies to address intersecting needs that are accessible and acceptable for this population.

Limitations

The NSAL represents the only national probability survey on African Americans’ mental health; however, the timeliness of the data, collected between 2001 and 2003 is a limitation.

This limitation notwithstanding, our findings suggest important economic and health-related factors associated with rural African Americans’ depressive symptoms and psychological distress. This is the only known study to consider the association between material hardship and mental health among this population, adding to a small, developing literature on rural African Americans’ mental health. These findings offer an important first step toward better understanding the relationship between economic well-being, physical health, and mental health among rural African Americans who have limited access to resources and suggests the need for further research in this area.

Supplementary Material

Refer to Web version on PubMed Central for supplementary material.

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Table 1.

Sociodemographic and Health Characteristics of the Sample and Distribution of Study Variables

	%	N	Mean	S.D.	Median
Gender					
Men	32.4	81			
Women	67.6	169			
Age (18 – 92)			45.86	16.99	44
Family Income (0 – 125000)			24411.53	21274.39	17840
Education (In Years) (0 – 17)			10.83	2.94	12
Marital Status					
Married/Partner (Cohabitation)	40.16	100			
Separated/Divorced	18.07	45			
Widowed	14.86	37			
Never Married	26.91	67			
Self-Rated Physical Health (1 – 5)			3.32	1.11	3
Self-Rated Oral Health (1 – 5)			2.94	1.19	3
Childhood Health (1 – 5)			4.05	0.92	4
Material Hardship (0 – 6)			0.73	1.35	0
CESD Depressive Symptoms (0–24)			7.18	4.84	6
Minimal (Score 0–8)	66.67	148			
Somewhat Elevated (Score 9–15)	27.03	60			
Very Elevated (Score 16+)	6.31	14			
K-6 Serious Psychological Distress (0 – 23)			4.66	4.70	3
Score 0–11	88.29	196			
Score 12–19	11.26	25			
Score 20+	0.45	1			

Note: Percent and N are presented for categorical variables; Means and Standard Deviations are presented for continuous variables

Table 2.

Hierarchical Negative Binomial Regression Analysis of Depressive Symptoms (CESD) and Serious Psychological Distress (K6) on Sociodemographic and Health Variables among Rural African Americans

Independent Variables [/]	CES-D			K6		
	Model 1		Model 2		Model 2	
	IRR	95% CI	IRR	95% CI	IRR	95% CI
Age	0.99	0.99–1.00	0.99	0.99–1.00	0.98**	0.96–0.99
Gender -- Female	1.24*	1.02–1.52	1.24*	1.02–1.49	1.17	0.85–1.62
Family Income	0.98	0.95–1.01	0.99	0.96–1.01	0.95*	0.93–1.01
Years of Education	0.97	0.93–1.01	0.96*	0.92–0.99	0.94*	0.86–0.98
Marital Status						
Separated/Divorced	1.27	0.98–1.64	1.15	0.90–1.47	1.59*	1.05–2.39
Widowed	1.05	0.76–1.45	0.98	0.72–1.33	1.19	0.70–2.03
Never Married	0.94	0.72–1.22	0.93	0.73–1.20	0.89	0.58–1.36
Self Rated Health	--	--	0.87**	0.80–0.95	--	0.77***
Self Rated Oral Health	--	--	1.03	0.95–1.12	--	1.03
Self Rated Childhood Health	--	--	1.06	0.96–1.18	--	0.98
Material Hardship	--	--	1.10***	1.04–1.17	--	1.20***
Constant	12.51***		13.98***		22.9***	65.52***
F	21.84**		44.17***		30.22***	56.91***
N	222		220		222	220

[/] Several independent variables are represented by dummy variables. Gender: 0 = female, 1 = male; Marital Status: Married is the reference category.

IRR=Incident Rate Ratio CI=Confidence Interval

* Note: $p < .05$;

** $p < .01$;

*** $p < .001$