



Differential relations of neighborhood disorder to pain interference in urban-dwelling African Americans and Whites

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Introduction

African Americans are at greater risk than Whites for pain conditions such as chronic pain, acute pain and heightened pain sensitivity (1). Higher rates of chronic pain have also been found in individuals with lower socioeconomic status (SES) (2). Stress has also been implicated in the development and maintenance of pain symptoms (3). Neighborhood conditions are an indicator of SES and a source of chronic stress to community members. Environmental stressors (physical/social neighborhood conditions) were examined for association with racial pain disparities. The application of examining conditions in the environment has been widely accepted and successful in cardiovascular medicine, but is novel to pain medicine (4). The present work addresses the relation of stressful neighborhood conditions to pain perception in African Americans and Whites. Stressful neighborhood conditions were hypothesized to predict greater pain interference in African American participants.

Methods

The present analyses included 147 urban dwelling adults participating in the Healthy Aging in Neighborhoods of Diversity across the Life Span (HANDLS) SCAN study (56% women; 61.2% White, 38.8% African American; mean age 46.9; 30% living in poverty). Participants rated pain interference with daily activities using the Short-Form Health Survey (SF-12) in which greater pain is represented as lower scores. Neighborhood conditions (e.g., crime, access to resources) within communities were rated by participants using the Neighborhood Assessment Scale. Multiple regression analyses were conducted with neighborhood conditions as a predictor, with pain interference as the outcome, adjusting for sex, age, depression, poverty, education. This model was computed separately with the White and African American samples.



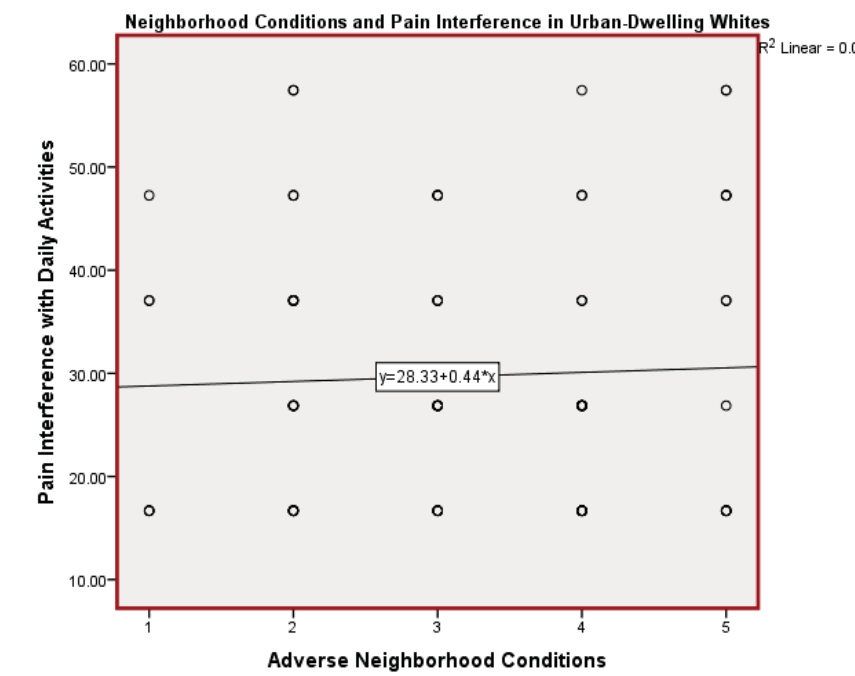
Results

Results indicated that adverse neighborhood conditions were associated significantly with *less* pain interference among African Americans ($b = .52, t = 3.20, p < .05$), but not Whites. Whites and African Americans appraised the conditions in their neighborhoods similarly ($M=3.30, SD=1.15, p<.05$). As indicated in the table below, pain interference was explained by symptoms of depression in Whites ($b=.411, t = 3.068, p<.05$). However, there was no significant relation of pain and depression in African Americans.

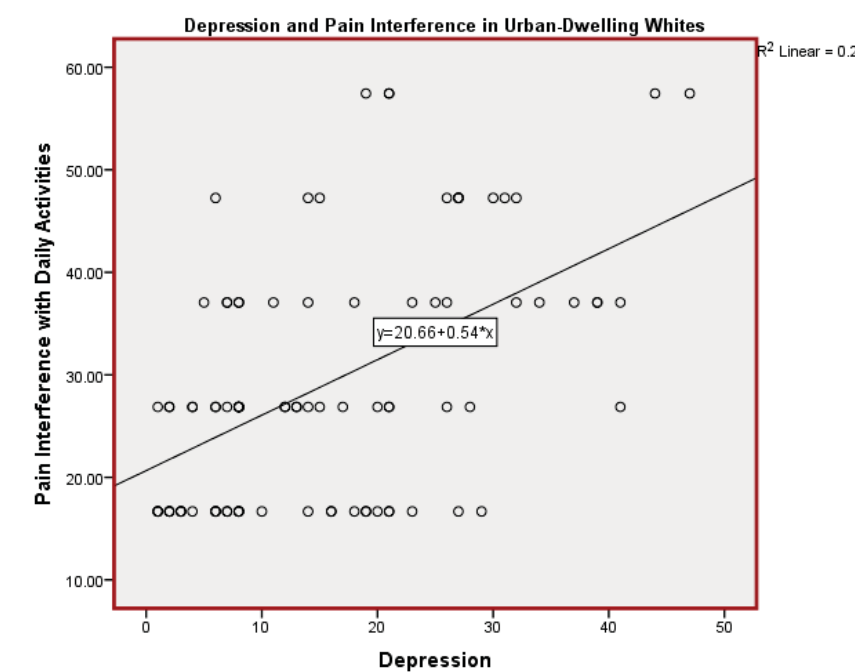
	African American	White
Neighborhood Conditions		
Unstandardized coefficient	5.165	-1.560
Beta		
Standardized regression coefficients (Beta)	.517	-.146
Test statistic (t)	3.166	-1.178
Significance (p-value)	.004	.244
Depression		
Unstandardized coefficient	.475	.411
Beta		
Standardized regression coefficients (Beta)	.431	.370
Test statistic (t)	1.163	3.068
Significance (p-value)	.257	.003

Neighborhood Conditions	N	Mean	Standard Deviation	Significance
White	88	3.17	1.186	.093
African American	61	3.49	1.074	
Total	149	3.30	1.149	

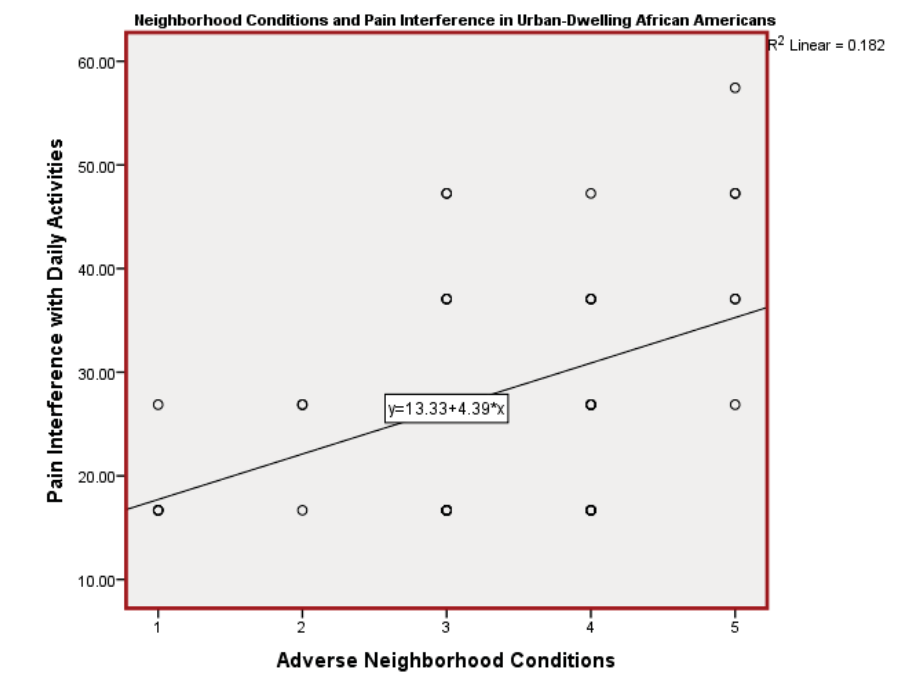
Pain and Neighborhood Conditions in Whites



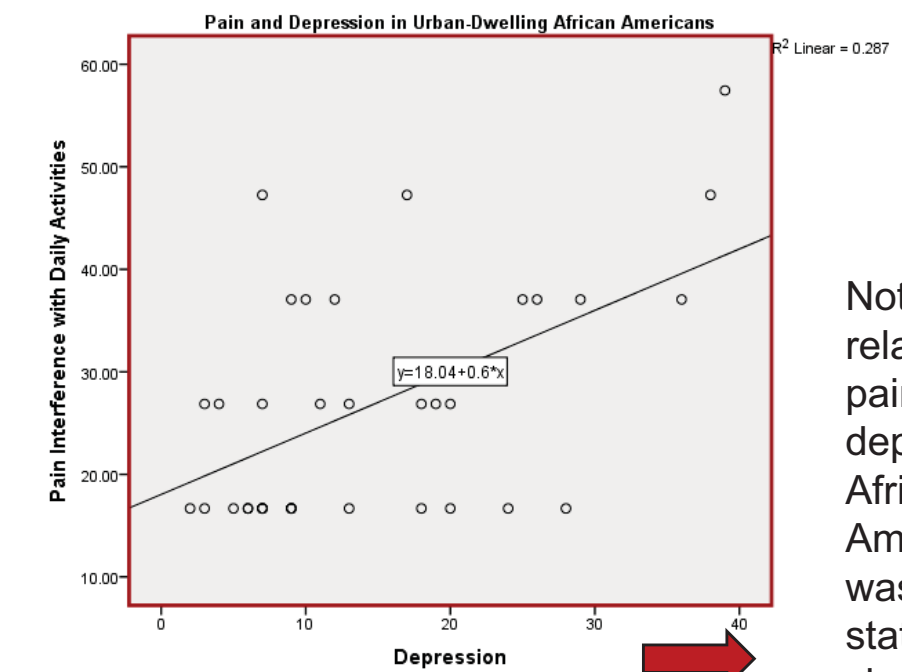
Pain and Depression in Whites



Pain and Neighborhood Conditions in African Americans



Pain and Depression in African Americans



Note that the relation of pain and depression in African Americans was NOT statistically significant

Discussion

Contrary to the study hypothesis, results indicated that more adverse neighborhood conditions were associated significantly with *lesser* pain interference in African Americans. Nonetheless, the findings show a novel relation of pain and neighborhood conditions. There are several potential explanations for the present findings related to resilience among African Americans in the face of adversity. These include racial identity, spirituality, and community coping. The role of concentrated poverty, as a legacy of segregation and the differing ways it affects African Americans, should be further examined in assessments of pain and neighborhood conditions (5).

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