

Original Research Article

Acculturative status, age, and hypertension among African American women

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ABSTRACT

Background: Understanding culture's impact on hypertension (HTN) is important since its prevalence in African American women (AAW) in the United States is among the highest. It is therefore important to know if younger AAW have similar acculturation status as older AAW when developing culturally relevant interventions. The objective of this study was to examine the association between acculturation status and age, determining whether acculturation status and age are significantly associated with hypertension among AAW.

Methods: Acculturation status, age, and HTN were analyzed using data from the listening to our voices study (LOVS), a population-based observational study of 294 AAW conducted throughout Florida. LOVS was promoted via African American women research assistants trained to inform and recruit AAW living in Ft. Lauderdale, Jacksonville, Miami, and Tampa.

Results: Findings demonstrate that AAW held traditional values regardless of age. Moreover, AAW of younger ages had higher average acculturation scores compared with older AAW indicating stronger agreement with traditional values, practices and beliefs. Acculturation subscale scores were not associated with HTN. AAW with HTN scored higher on the traditional food subscale compared to AAW without HTN.

Conclusions: These findings indicate the significance of considering the beliefs, values, and practices of AAW when developing health interventions. Health interventions developed should be tailored toward AAW of varying ages to incorporate activities relevant to their cultural beliefs, values and practices.

Keywords: Acculturation, Age, Hypertension, African American women

INTRODUCTION

The prevalence of hypertension (HTN, high blood pressure) in African American women (AAW) is among the highest in the United States compared to other racial and ethnic groups.^{1,2} Research shows that culture, consisting of one's values, traditions, and practices, may significantly impact HTN prevalence and incidence.^{3,4} However, the influence of African American culture on

health behaviors and outcomes is not well explored, particularly as AAW born and raised in the United States interact and possibly adopt the values, practices, and beliefs of non-African American centered cultures.³⁻⁵

Acculturation is the extent to which racial and ethnic minorities adapt to a dominant culture's traditions, values, beliefs, assumptions, and practices.⁶ Retaining traditional cultural values, beliefs, assumptions, and practices and/or rejecting the dominant cultural ideologies would indicate

a low level of acculturation. The spectrum of acculturation status is a continuum that ranges from fully believing in the values, beliefs, and practices of traditional culture to not adhering at all to traditional culture (acculturated). Thus, scholars argue that, to some degree, the more traditional one is, the less acculturated a person is, and vice versa. The nature and extent of acculturation in turn would influence health behaviors and subsequently, disease occurrence.⁶⁻⁸

Studies provide initial evidence that among African Americans, acculturation status is associated with health behaviors and mental health conditions.⁷⁻⁹ To develop and implement culturally relevant interventions to reduce HTN and HTN-related illnesses, it is critical to examine whether cultural factors remain consistent, especially in younger generations of AAW. Specifically, do AAW across all ages have similar values, beliefs, and practices? This question remains unanswered given a lack of information examining the association between acculturation status and age among AAW. There is an even greater gap in knowledge about the association between acculturation status and HTN, accounting for age, among AAW. This study examines the association of acculturation status and age to determine whether acculturation status, controlling for age and sociodemographic characteristics, is associated with HTN in AAW.

The objective of this study was to examine the association between acculturation status and age, determining whether acculturation status and age are significantly associated with hypertension among AAW.

METHODS

The listening to our voices study (LOVS) was a cross-sectional population-based study designed to engage African American women living in Ft. Lauderdale, Jacksonville, Miami and Tampa, four major cities in Florida.^{10,11} LOVS was approved by the university of Florida institutional review board-03 (UF IRB# 2004-0081).

Participants and procedures

Any woman, aged 18 years or older who self-identified as 'African American', 'African-American', and/or 'Black' living in Florida was eligible to participate. We assessed current and past health behaviors, conditions, and experiences as well as sociodemographic and acculturation status. Eligible women agreeing to participate completed a self-administered survey.

Measures

LOVS was designed to capture the health behaviors, conditions, and experiences of women living throughout Florida. Information on several health behaviors, diseases/illnesses, and experiences, along with

acculturation status, age, and sociodemographic factors were collected. Sociodemographic characteristics (covariates) were age, education, employment, geographic region, income, and marital status. Age was self-reported and was described as a continuous variable, using the response to "What is your age?" Age was also dichotomized into AAW ≥ 65 (older) and AAW <65 years old. Education was measured using two questions: one asked "How many years of regular school have you completed?" and the other question asked, "What is the highest degree you have earned?" Options included 'none', 'GED', 'HS diploma', 'Bachelor's', 'Master's', 'Doctorate', or 'Other: specify'. Responses were then grouped into H/GED; some college to Bachelor's degree; Graduate degree \geq Masters. Employment was measured by asking "Do you work for pay now?" with a 'Yes' or 'No' response. Geographic region was measured by asking "Where do you live?" with responses being 'Ft. Lauderdale, Florida', 'Jacksonville, Florida', 'Miami, Florida', 'Tampa, Florida', or 'Other'. Florida was then grouped into four regions: Northeast; Southeast; Central; Northwest; and Southwest. Income was measured by asking "Are you willing to share your approximate household income?" with categories ranging from <\$10,000 to \$150,000 and more. Income was then dichotomized into <\$49,999 vs. $>$ \$50,000. Marital status was measured by asking "What is your marital status?" with responses being 'single (never married)', 'married', 'divorced', 'widowed', or 'separated', divorced, or widowed'. Marital status was then grouped into three categories: married; single; divorced, widowed, separated. Age was self-reported and was described as a continuous variable, using the response to "What is your age?" Age was also dichotomized into AAW ≥ 65 (older) and AAW <65 years old.

Acculturation status was measured using the African American acculturation scale-short form 33 (AAAS-33).^{6,8,12,13} The AAAS-33 measures ten interrelated dimensions/factors within traditional African American cultures. AAW with higher scores on the AAAS-33 are considered more traditional, indicating increased concordance with beliefs, practices, and values inherent in African American culture. Conversely, AAW with lower scores on the AAAS-33 are considered more acculturated, indicating decreased concordance with beliefs, practices, and values considered inherent in African American culture. The AAAS-33 has high reliabilities and correlation coefficients when compared to the original 74-item African American acculturation scale. The 10-interrelated scales of the AAAS-33 are: 1) "preference for African American things" subscale that measures preferences to view/listen to media traditionally designed for African Americans, 2) "Traditional African American religious beliefs and practices" subscale that measures spirituality that permeates African American life, 3) "Preparation and consumption of traditional foods" subscale that measures foods theoretically prepared and eaten more by African Americans, 4) "Traditional childhood" subscale that measures

socialization, 5) “Superstitions” subscale that measures superstitious beliefs, 6) “Cultural mistrust” subscale that measures attitudes about the majority society and Whites, 7) “Falling out” subscale to measure knowledge and experience with fallen out, 8) “Traditional games” subscale to measure games played, 9) “Family values” subscale to measure overall views and 10) “Family practices” subscale that measures practices theoretically experienced more by traditional African Americans. Table 1 shows each scale and the accompanying item as listed on the AAAS-33. Responses range from strongly disagree to strongly agree where strongly disagree is scored a ‘1’, disagree is scored a ‘2’, slightly disagree is scored a ‘3’, neither agree nor disagree is scored as ‘4’, slightly agree is scored as ‘5’, agree is scored as ‘6’, and

strongly agree is scored as a ‘7’. Thus, the range of scores is from 33 (low traditional) to 231 (high traditional). The overall acculturation level was determined by summing scores on each of 33 items while subscale scores were determined by summing items specific to each subscale.^{12,13}

Hypertension was measured by asking “Has a doctor ever told you that you have high blood pressure (140/90 or higher)?” Responses were either: ‘No’ or ‘Yes but not taking medication’; or ‘Yes and taking medication’. Responses were then grouped into ‘Yes’ and ‘No’ categories for logistic regression analysis where all ‘Yes’ responses were grouped.

Table 1: AAAS-33 subscale with listed items/questions.^{12,13}

AAAS-33 subscale	No. of items	Items
Preference for things African American	6	1. Most of the music I listen to is by Black artists 2. I like Black music more than White music. 3. The person I admire the most is Black. 4. I listen to Black radio stations. 5. I try to watch all the Black shows on TV. 6. Most of my friends are Black.
Religious beliefs and practices	6	7. I believe in the Holy Ghost 8. I believe in heaven and hell. 9. I like gospel music. 10. I am currently a member of a Black church. 11. Prayer can cure disease. 12. The church is the heart of the Black community.
Traditional foods	4	13. I know how to cook chit’lins. 14. I eat chit’lins once in a while. 15. Sometimes, I cook ham hocks. 16. I know how long you’re supposed to cook collard greens.
Traditional childhood	3	17. I went to a mostly Black elementary school. 18. I grew up in a mostly Black neighborhood. 19. I went to (or got to) a mostly Black High school.
Superstitions	3	20. I avoid splitting a pole. 21. When the palm of your hand itches, you’ll receive some money. 22. There’s some truth to many old superstitions.
Cultural mistrust	3	23. IQ tests were set up purposefully to discriminate against Black people. 24. Most tests (like the SATs and tests to get a job) are set up to make sure that Blacks don’t get high scores on them. 25. Deep in their hearts, most White people are racists.
Falling out	2	26. I have seen people “fall out”. 27. I know what “falling out” means.
Traditional games	2	28. When I was a child, I used to play tonk. 29. I know how to play bid whist.
Family values	2	30. It’s better to try to move your whole family ahead in this world than it is to be out for only yourself. 31. Old people are wise.
Family practices	2	32. When I was young, my parent(s) sent me to stay with a relative (aunt, uncle, grandmother) for a few days/weeks, and then I went back home again. 33. When I was young, I took bath with my sister, brother, or some other relative.

Data analysis

Data were analyzed using SAS version 9.4. The dependent (outcome) measure throughout this analysis was hypertension (HTN) while acculturation status and age were treated as independent measures. Sociodemographic characteristics (covariates) included education, employment, geographic region, income, geographic residence/region, income, and marital status. HTN, overall and subscale acculturation scores, age, along with covariates were descriptively analyzed. Using the median, acculturation scores were grouped as 'High' or as 'Low'. Bivariate analyses were conducted to examine the association between acculturation status (high traditional vs. low traditional) with age and sociodemographic characteristics. Spearman correlational analyses examined the association between acculturation scores and age where p values ≤ 0.05 represent a statistically significant association.

Logistic regression analysis, modeling HTN as the outcome, was conducted to examine the association

between acculturation and age while controlling for sociodemographic characteristics. Odds ratios (ORs) and 95% confidence intervals (CIs) were determined. Sociodemographic variables associated with overall acculturation scores at the $p \leq 0.20$ level during bivariate analysis were included in logistic regression analyses.

RESULTS

A total of 359 women completed a survey in response to LOVS. Information for 294 (84% of the original sample) AAW were analyzed (41 women reported a race other than 'African American' or 'Black', 1 woman reported living in another state, and 13 women were either younger than 18 ($n=1$) or failed to report age ($n=12$). The majority of respondents (66%) had at least some college experience. Ninety percent of participants worked, and 40% had incomes $\geq 50,000$. Most participants were single/never married (46%) or married (40%). Forty-four percent of participants were from the Southwest region of Florida, followed by 38% of participants being from Southeast region of Florida.

Table 2: Acculturation status, age and sociodemographic characteristics.

Variables	Overall acculturation scores			P value
	Total Mean (STE), N	High Mean (STE), N	Low Mean (STE), N	
Age (years)	36.3 (.71), 294	39.3 (0.99), 151	33.2 (0.95), 143	0.0001
	N (%)	N (%)	N (%)	
Age category (years)				
≥65	5 (1.7)	2 (1.3)	3 (2.1)	0.001
<65	289 (98.3)	149 (98.7)	140 (97.9)	
Education, (n=277)				
≤High school, Diploma/GED	92 (33.2)	41 (28.5)	51 (38.4)	0.1274
Some college-Bachelors	128 (46.2)	68 (47.2)	60 (45.1)	
≥Master's degree	57 (20.6)	35 (24.3)	22 (16.5)	
Employed, (n=285)				
Yes	258 (90.5)	139 (95.2)	119 (85.6)	0.005
No	27 (9.5)	7 (4.8)	20 (14.4)	
Income, (n=240), (\$)				
≤49,999	145 (60.4)	70 (55.1)	75 (63.4)	0.0752
≥50,000	95 (39.6)	57 (44.9)	38 (33.6)	
Marital status, (n=289)				
Single (never married)	132 (45.7)	61 (40.7)	71 (51.1)	0.0170
Divorced/Separated/Widow	42 (14.5)	30 (20.0)	12 (8.6)	
Married	115 (39.8)	59 (39.3)	56 (40.3)	
Region, (n=287)				
Northeast	43 (14.9)	29 (19.7)	14 (10.0)	0.005
Southeast	107 (37.3)	42 (28.6)	65 (46.4)	
Central	7 (2.4)	5 (3.4)	2 (1.4)	
Southwest	127 (44.2)	68 (46.3)	59 (42.1)	
Northwest	3 (0)	3 (2.0)	0 (0)	

Acculturation

For the total population, the mean acculturation score was 146.6 (SD=±22.6) and the mean age was 36.6 years (SD=±12.2). Acculturation status was the significantly

associated with age, employment, marital status, and region (Table 2). Specifically, AAW who were more traditional (high acculturation scores) were significantly more likely to be older ($p < 0.0001$), employed ($p = 0.005$), had different marital status ($p = 0.017$), and lived in

Northeast and Southwest regions in Florida ($p=0.005$). Although not statistically significant, AAW who were traditional had more education ($p=0.1274$) and income $> \$50,000$, ($p=0.0752$) than AAW who were less traditional.

Table 3: Acculturation overall and subscale scores with age, (n=294).

Acculturation	Age (years)	
	Correlation coefficient	P value
Overall score	0.30284	<0.001
Preference for things African American	-0.12319	0.0347
Religious beliefs and practices	0.12228	0.361
Traditional foods	0.44367	<0.0001
Traditional childhood	0.38830	<0.0001
Superstitions	0.12458	0.03
Cultural mistrust	0.15312	0.0085
Falling out	0.05944	0.3097
Traditional games	0.18267	0.0017
Family values	0.05428	0.3537
Family practices	-0.13917	0.0169

Table 3 shows Spearman correlations between overall acculturation, acculturation subscales, and age. Overall acculturation was significantly correlated with age

($r=0.30$, $p<0.0001$). Eight out of 10 subscale scores were statistically significantly correlated with age. Regarding subscale scores, traditional foods ($r=0.44367$) and traditional childhood ($r=0.38830$) were strongly correlated with age ($p<0.0001$). Traditional games ($r=0.18267$; $p=0.0017$), cultural mistrust ($r=0.15312$; $p=0.00085$) and superstitions ($r=0.12458$; $p=0.03$) were correlated with age. Family practices ($r=-0.13917$; $p=0.0169$) and preference for things African American ($r=-0.12319$; $p=0.0347$) were inversely associated with age.

Hypertension

Among the 294 African American women, 65 (22.1%) report having hypertension, of which 77% were currently taking medication. African American women with hypertension were significantly correlated with likely to be older than 65 ($p<0.0001$) and married marital status ($p=0.002$). Shown in Table 4, the overall mean acculturation score was 146.6. AAW who have hypertension, although not statistically significant, were more traditional than AAW without hypertension ($p=0.34$). African American women with hypertension were significantly more likely to be older than African American women without hypertension ($p<0.0001$). African American women with hypertension were significantly more likely to be married compared with African American women without hypertension.

Table 4: Acculturation, age and sociodemographic characteristics stratified by HTN.

Variables	Hypertension			P value
	Total	Yes	No	
	N, Mean (SD*)	N, Mean (SD*)	N, Mean (SD*)	
Acculturation, (overall scores)	294, 146.6 (22.6)	65, 149 (23.6)	229, 145.9 (22.3)	0.34
Age (years)	294, 36.1 (12.2)	65, 44.0 (11.5)	229, 34.1 (11.3)	<0.0001
Variables	N (%)	N (%)	N (%)	P value
Education, (n=277)				
≤High school diploma/GED	92 (33.2)	15 (24.6)	77 (35.6)	0.25
Some college-bachelors	128 (46.2)	31 (50.8)	97 (44.9)	
≥Master's degree	57 (20.6)	15 (24.6)	42 (19.4)	
Employed, (n=285)				
Yes	258 (90.5)	58 (90.6)	200 (90.5)	0.98
No	27 (9.5)	6 (9.4)	21 (9.5)	
Income, (n=240), (\$)				
≤49,999	145 (60.4)	24 (50.0)	121 (63.0)	0.09
≥50,000	95 (39.6)	24 (50.0)	71 (37.0)	
Marital status, (n=289)				
Single (never married)	132 (45.7)	17 (26.6)	115 (51.1)	0.002
Divorced/separated/widow	42 (14.5)	13 (20.3)	29 (12.9)	
Married	115 (39.8)	34 (53.1)	81 (36.0)	
Region, (n=287)				
Northeast	43 (15.0)	11 (17.5)	32 (14.3)	0.59
Southeast	107 (37.3)	25 (39.7)	82 (36.6)	
Central	7 (2.4)	0 (0)	7 (3.1)	
Southwest	127 (44.2)	26 (41.3)	101 (45.1)	
Northwest	3 (1.0)	1 (1.6)	2 (0.90)	

*SD=standard deviation

Hypertension, acculturation, and age

Multiple logistic regression was conducted where HTN was entered as the dependent variable and significant subscales of scores, age, education, employment, income, marital status, and region. All sociodemographic covariates were included in the multivariate analysis since they were each significantly associated with acculturation status at the $p < 0.20$ in bivariate analysis (Table 2). The Hosmer and Lemeshow goodness-of-fit test statistics were used to determine the model fit for predicting HTN status. The first multivariate logistic regression modeling HTN status as the outcome, acculturation subscale scores, age, and covariates produced an acceptable model fit: Hosmer and Lemeshow Goodness-of-fit test chi-square [X^2]=9.33, degrees of freedom [DF]=8, $p=0.32$.

Table 5: Logistic regression modeling HTN, acculturation and age, (n=220).

Variables	Hypertension	
	Odds ratio	95% CI
Acculturation subscales		
Preference for things African American	0.98	0.93-1.03
Traditional foods	1.06	0.99-1.13
Traditional childhood	0.95	0.88-1.03
Superstitions	0.98	0.89-1.07
Cultural mistrust	0.98	0.88-1.09
Traditional games	0.96	0.87-1.05
Family practices	0.96	0.86-1.06
Age (years)	1.07	1.02-1.12
Education		
≤High school diploma/GED	0.38	0.12-1.23
Some college-bachelors	0.89	0.36-2.19
≥Master's degree	1.00 (Ref)	
Employed		
Yes	2.07	0.38-11.2
No	1.00 (Ref)	
Income (\$)		
≤49,999	0.94	0.41-2.16
≥50,000	1.00 (Ref)	
Marital status		
Single (never married)	0.92	0.35-2.43
Divorced/Separated/ Widow	1.13	0.40-3.14
Married	1.00 (Ref)	
Region		
Northeast	1.33	0.46-3.89
Southeast	1.32	0.55-3.19
Northwest	4.54	0.21-98.1
Southwest	1.00 (Ref)	

Acculturation subscales were not significantly statistically associated with HTN status among AAW (Table 5). However, trends showed that AAW with HTN were more likely to score higher on the traditional food acculturation subscale, have higher incomes, be divorced/separated or widowed compared to being married, and lived in regions other than Southwest Florida. Regarding age, AAW with

HTN were significantly more likely to be older (OR=1.07, 95% CI: 1.02-1.12) compared with AAW without HTN. HTN was not statistically significantly associated with covariates.

DISCUSSION

AAW, regardless of age are very traditional to African-American values, beliefs, and practices as measured by the AAAS-33. The median acculturation score was 148, indicating that the majority of AAW responded 'agree' to 'strongly agree' to the AAAS, which provides a scale range from 33-231. We observed a statistically significant association between acculturation status and age- AAW women who are traditional are, on average, six years older than AAW who are not as traditional. However, being traditional may not follow the same trajectory into late adulthood. For example, the mean acculturation scores for AAW women younger than 65 years was 146.6 compared to the mean acculturation scores for AAW women at least 65 years of age. AAW who were traditional were significantly more likely to work, be divorced/separated or widowed, and live in the Northeast or Southwest regions of Florida.

Examining subscale scores provides greater insights regarding the association between acculturation status and age among AAW. All acculturation subscales, except falling out, family values, and religious beliefs and practices were correlated with age.^{6,8,14} This indicates that AAW have similar beliefs regarding family values, falling out, and religious practices. However, AAW become more traditional regarding certain values, beliefs, and practices regarding: traditional foods; traditional childhood; cultural mistrust; traditional games; and superstition. An interesting inverse association indicates that younger AAW have a higher preference for African American things.

Regarding hypertension, 22% of AAW had HTN which is substantially low compared to national reports that 75% of all AAW will develop HTN by age 55. However, consistent with national reports, AAW with HTN were significantly more likely to be older compared with AAW without HTN. Although not statistically significant, AAW with HTN had higher scores on the traditional food subscale compared to AAW without HTN.^{1,6,8}

This study is among the first to examine the association between HTN, acculturation, and age. One strength is that 294 AAW were recruited from various regions throughout Florida, resulting in a sample of educated and employed women. This serves as a strength to have information on a sample of AAW who are of varying ages, from various regions, and of varying socioeconomic statuses. Regarding data collection, all AAW completed the same survey, and acculturation was measured using the AAAS-33, a validated instrument. However, there are several potential limitations, one being that the prevalence of HTN and the representation of AAW at least 65 years old were low, which could decrease power

to detect differences between HTN, acculturation, and age.

Regardless of age, remain traditional. As such, health interventions being developed to improve health behaviors and health outcomes should account for cultural factors that are important to AAW.^{7,15} Engaging AAW in the development of health interventions provides opportunities to integrate cultural factors that are important and relevant to all AAW, regardless of age. Another major implication is to increase awareness of HTN, since 22% of AAW self-reported HTN. Health interventions designed to increase awareness of HTN are warranted. If AAW are aware of their HTN status and accurately report their HTN status, then understanding associative factors could provide important insight to health intervention development. Using these same data, future analyses will explore the reasons for the low observed HTN among AAW in this sample. AAW of all ages remain traditional. AAW score high on eight of the 10 African American subscales which suggest that traditional cultural values, beliefs, and practices are being transferred from older to younger generations. What also is consistent is that HTN increases as one ages, so identifying opportunities to implement health interventions that account for culture and age are warranted.

CONCLUSION

In conclusion, African American adult women have similar values, practices and beliefs across all ages and geographical regions throughout Florida with younger African American women reporting a stronger connection to African American values, practices and beliefs. Our study indicates that older and younger African American women have different traditional patterns. Thus, health interventions designed to prevent or reduce HTN should be tailored to meet the cultural preferences of African American women as they age are warranted. For example, these interventions should be tailored to incorporate activities that African American women of each particular age group find most relevant. Having an age-matched, cultural relevant health intervention might prove effective in preventing or delaying the development of HTN among African American adult women.

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REFERENCES

- Ostchega Y, Fryar CD, Nwankwo T, Nguyen DT. Hypertension prevalence among adults aged 18 and Over: United States, 2017-2018. *NCHS Data Brief*. 2020;1(364):1-8.
- Geronimus AT, Bound J, Keene D, Hicken M. Black-White differences in age trajectories of hypertension prevalence among adult women and men, 1999-2002. *Ethn Dis*. 2007;17(1):40-48.
- Teppala S, Shankar A, Ducatman A. The association between acculturation and hypertension in a multiethnic sample of US adults. *J Am Soc Hypertens*. 2010;4:236-43.
- Peters RM, Aroian KJ, Flack JM. African American culture and hypertension prevention. *Western J Nurs Res*. 2006;28(7):831-54.
- Yi S, Elfassy T, Gupta L, Myers C, Kerker B. Nativity, language spoken at home, length of time in the United States, and race/ethnicity: associations with self-reported hypertension. *Am J Hypertens*. 2014;27(2):237-44.
- Landrine H, Klonoff EA. *African American acculturation: Deconstructing race and reviving culture*. Thousand Oaks, CA: Sage; 1996.
- Commodore-Mensah Y, Sampah M, Berko C. The Afro-cardiac study: Cardiovascular disease risk and acculturation in West African immigrants in the United States: Rationale and study design. *J Immigr Minor Health*. 2016;18(6):1301-8.
- Balls Organista P, Organista KC, Kurasaki K. Relationship between acculturation and ethnic minority mental health, in Acculturation: Advances in Theory, Measurement, and Applied Research, Edited by Chun KM, Organista PB, Marin G. Washington, DC, American Psychological Association. 2003;1.
- Obasi EM, Leong FTL. Psychological distress, acculturation, and mental health-seeking attitudes among people of African descent in the United States: a preliminary investigation. *J Couns Psychol*. 2009;56(2):227-38.
- Webb FJ, Khubchandani J, Hannah L, Doldren M, Stanford J. The perceived and actual physical activity behaviors of African-American women. *J Community Health*. 2016;41:368-75.
- Webb F, Khubchandani J, Doldren M, Balls-Berry J, Blanchard S, Hannah L et al. African-American women's eating habits and intention to change: A pilot study. *J Racial Ethn Health Disparities*. 2014;1(4):199-206.
- Landrine H, Klonoff EA. The African-American Acculturation Scale: development, reliability, and validity. *J Black Psychol*. 1994;20(2):104-27.
- Klonoff EA, Landrine H. Revising and improving the African American acculturation scale. *J Black Psychol*. 2000;26:235-261.
- Manly JJ, Byrd DA, Touradji P, Stern Y. Acculturation, reading level, and neuropsychological test performance among African American elders. *Appl Neuropsychol*. 2004;11:37-46.
- Commodore-Mensah Y, Matthie N, Wells J, Dunbar SB, Himmelfarb CD, Cooper LA et al. African Americans, African immigrants, and Afro-Caribbeans differ in social determinants of hypertension and diabetes: evidence from the National Health Interview Survey. *J Racial Ethn Health Disparities* 2017;12:1-8.

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