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# Screening for Perceived Stress and Racism in Hypertensive African American Men in a Community Health Setting

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#### **Abstract**

**Objective:** To explore the feasibility of screening for perceived stress, perceived racism, and provision of transcendental meditation education in hypertensive African American men receiving care at a community health clinic.

**Design and sample**: An exploratory-descriptive pilot project was conducted with 21 African American men. Measures: Surveys were used to measure levels of perceived stress and perceived racism. Educational materials on transcendental meditation were offered. A study evaluation survey was completed.

**Results:** Participants ranged in age from 37 to 58 years old. Perceived stress scores were high (M=21,  $\pm$  9.5) and perceived lifetime exposure to racism scores were low (M=20.3,  $\pm$  19.2). The majority (81%) felt that it was important to screen for stress and 57% would use evidence-based coping if education was offered.

**Conclusion:** Screening for perceived stress in hypertensive African American men and educating them about the relationships between perceived racism, stress and hypertension, may be a feasible option to potentially help them to manage their blood pressure. Further exploration to determine if and how transcendental meditation can be implemented through community health clinics is needed.

**Keywords:** Coping; Stress; Hypertension; Racism; Meditation

# Screening for Perceived Stress and Racism in Hypertensive African American Men in a Community Health Setting

African American men disproportionately bear the burden of hypertension. Hypertension is defined as a systolic blood pressure reading  $\geq 140$  mm Hg, or a diastolic blood pressure reading  $\geq 90$  mm Hg, or taking medication for the treatment of hypertension [1]. Uncontrolled hypertension is an average systolic blood pressure  $\geq 140$  mm Hg or a diastolic blood pressure  $\geq 90$  mm Hg, among those with hypertension [2]. African Americans are at higher risk of developing hypertension, having uncontrolled hypertension, and experiencing hypertension-related complications, compared to other racial/ethnic groups [3,4]. The overall blood pressure control rate (BP<140/90 mm Hg) for Black men is 29.9%, compared to the combined rate of 52.5% for other groups [5,6].

Uncontrolled hypertension contributes to a disparity in hospitalizations for African American men. Between 2007 and 2010, preventable hospitalization rates for hypertension were three times higher for Black men than White men [7]. Complications of hypertension include heart disease, stroke and kidney disease. These comorbidities are prevalent among African Americans [8]. Moreover, African Americans are twice as likely to experience a stroke [9] and six times more likely to suffer from renal failure than White Americans [10]. A 2009 comparison of hypertension associated mortality rates between Black men and White men revealed a disparity at 51.6/100,000 compared to 17.0/100,000 respectively [6]. Lastly, annual mean cost to treat hypertension in Blacks is higher, \$887 compared to \$679 for Whites [11].

Despite recent improvements in the awareness and treatment of hypertension, uncontrolled hypertension, especially among African Americans, remains a challenge for the health care community [12]. Researchers suggest that this indicates a failure of the outpatient/community health systems to control hypertension [7]. Management of hypertension typically includes education on diet and weight control,

regular exercise, abstinence from tobacco use, and moderation in alcohol consumption. In an executive summary on high blood pressure in African American men, the CDC [13] reported psychosocial stress, in the form of perceived racism, as a risk factor that contributes to hypertension as well. The CDC [13] recommends educating individuals and providers about psychosocial aspects of blood pressure control. However, screening for perceived racism is not typically done in outpatient clinics.

Racism has been defined as the "beliefs, attitudes, institutional arrangements and acts that tend to denigrate individuals or groups because of phenotypic characteristics or ethnic group affiliation [14]." According to Forsyth et al. [15], racism is a "unique stressor that has untoward outcomes on mental and physical health, including blood pressure in African Americans (p. 277)."

The theoretical underpinnings for this project were aligned with the General Adaptation Syndrome Model [16]. The guiding principle of the GAS model states that stress is the primary force that drives all adaptive bodily functions. If stressors exceed internal adaptive resources, permanent damage (i.e., hypertension) occur secondary to high levels of circulating cortisol [16].

Research has indicated that perceived racism contributes to stress, which can negatively affect blood pressure [14,15,17]. The link between perceived racism and hypertension is not clear. However, various

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theories, including the general adaptation syndrome model [16] and the allostatic load [18,19], attempt to explain how stress may contribute to hypertension. Chronic psychosocial stress can lead to negative coping behaviors such as non-adherence to prescribed medications and less participation in self-health related matters [15]. Therefore, community health clinics should incorporate chronic stress management, including coping with perceived racism for the treatment of hypertension in African American men [8,13].

Transcendental meditation (TM) is a coping method that has been associated with the reduction of stress and improved blood pressure outcomes [20]. In a meta-analysis on blood pressure response to TM, researchers found that the use of TM compared to a control was associated with a systolic blood pressure reduction of -4.7mm Hg and diastolic blood pressure of -3.2 mm Hg at the 95% CI [21]. Transcendental meditation uses a repeated word or sound (mantra) to improve focus and achieve calmness when done twice a day for 20 min [22]. In a study on TM use in African Americans (N=201) with heart disease, researchers found that participants who practiced in TM regularly were 48% less likely to have a heart attack, stroke or die from all causes [23]. As with screening for perceived racism in outpatient clinics, it is unclear whether provision of stress reduction interventions, like TM, can and should be implemented adjunctively for management of hypertension in African American men.

## **Clinical Questions**

The clinical question posed for this project was: Is it feasible to screen for perceived stress and perceived racism and, provide information on transcendental meditation as an adjunct treatment for hypertension in African American men receiving care at a community health clinic? Feasibility of this pilot project was determined by examining the recruitment and attrition rates, time taken to complete questionnaires, amount of missing data, levels of perceived stress and perceived racism, and project satisfaction.

### Methods

## Design and sample

A quantitative exploratory design was used. A convenience sample of 21 men was recruited for this pilot project from three community health centers that provide free routine services for patients who live at or below 125% of the federal poverty level. The sample size was determined based on the goals of this pilot feasibility project, cost and time constraints. Eligible participants self-identified as African American/Black, age 18-64 years, able to read, write, and speak English, a medical history of hypertension as documented in the clinic record, and not receiving renal replacement therapy.

Institutional review board (IRB) approval was obtained from the investigator's university and from the clinic's research authority and associated university's IRB. Eligible patients were given a project information brochure, and then referred to the investigator if interested in participating in the project. The project was then explained and written informed consent was obtained prior to data collection. The investigator, a master's prepared nurse, was solely responsible for the distribution and collection of forms, providing informational materials, and answering all project related questions.

#### Measures

Data were collected using medical records and self-administered questionnaires. The questionnaires were completed in the privacy of the clinic's examination room. A project demographic form was used to collect and document participants' age, income, education level, marital status, and clinical information (e.g. blood pressure, number of antihypertensive prescribed, BMI). The blood pressure obtained from the medical record was the blood pressure obtained the same day the patient was enrolled in the project. A stopwatch was used to track time taken to complete the questionnaires.

The Perceived Stress Scale (PSS) is a 10-item scale that was used to measure participants' perceived levels of stress over the past month [24]. Questions are designed to quantify how unpredictable, uncontrollable and overloaded the respondent's self-assessment of their current living situation [24]. For each item, respondents are asked to indicate how often they felt or thought a certain way with responses ranging from 0=never to 4=very often. A score of 13 is considered average, whereas scores 20 or higher are considered high stress [24]. Validity of the instrument has been previously supported [25]. The internal consistency reliability of the PSS in a previous study was 0.85 [26]. Using SPSS version 20 [27] to compute Cronbach Alpha, the PSS internal consistency reliability for this project was 0.91.

The Adapted Perceived Racism Scale (PRS) was used to assess perceived racism. In their study, Moody-Ayers et al. [28] used the PRS to examine the prevalence of perceived racism in African American patients referred to a community-based clinic. Barksdale et al. [29] supported the validity of the PRS in their study that examined racial discrimination and blood pressure in Black Americans. The adapted PRS, developed and made available for use by Dr. Sandra Moody-Ayers [28,30], is a 51-item survey that covers three domains - exposure to racism, emotional appraisal of each event, and related coping strategies. Responses for each domain are on a Likert scale: exposure to racism ranges from 0=never to 4=very often; degree of emotional feelings (i.e., anger) to a perceived racism encounter are 1=not at all to 3=extremely; and frequency of a response (i.e., speaking up) to cope with racism are 1=never to 5=very often. Items are averaged with higher scores indicating greater frequency of exposure to racism or response to racism. The internal consistency of the original PRS for subscales "frequency of exposure" and "emotional behavioral coping responses" were 0.96 and 0.94 respectively [31]. For this project, Cronbach Alpha for lifetime frequency of exposure to racism was 0.94 and emotional and behavioral response to racism was 0.74.

A 13-item Project Evaluation Survey was developed by the investigator based on survey design tips from the National Center for Chronic Disease Prevention and Health Promotion [32,33]. The survey was used to evaluate participant satisfaction with the project. Items on the survey included participants' thoughts about screening for perceived stress and perceived racism and about learning and use of TM. Survey responses ranged from 1=strongly disagree to 4=strongly agree. The internal consistency reliability of the survey was 0.88.

To provide information on hypertension and meditation, participants were given an investigator developed single-page handout to read. The handout was developed from evidence-based information [4,8,13,22].

Participants were educated on the relationships between perceived racism, chronic stress, and hypertension. Afterwards, participants watched a six-minute video on a laptop computer. The 6-minute video provided general information on TM and how it is used to help cope with stress [34,35]. The video included a discussion on TM by a renowned African American celebrity whom participants could identify with as being among their peer group (cultural, gender, age).

After reading the hand-out and watching the video, participants were able to ask questions of the investigator as needed.

#### Analytic strategy

Data were analyzed using SPSS Version 20 [27]. Descriptive statistics (mean, standard deviation, percentage, number, and frequency) were used to depict participants' demographic characteristics, levels of perceived stress and perceived racism, and project satisfaction. Missing values were re-coded, after which, SPSS Version 20 [28] missing data analysis commands were used as appropriate.

### **Results**

The project was conducted over three months. During that time, 21 (91%) of 23 hypertensive African American men receiving care at a metropolitan community health clinic were enrolled and completed the project. Two patients declined to participate due to time constraints. All forms were completed except one participant failed to complete 8 items on the PRS and five other participants missed 1 to 5 items on the PRS. None of the participants reported having difficulty with reading and comprehending any of the forms. The average time for completion of the PSS and PRS was 15 min (SD=5.3).

The demographic characteristics of the sample are presented in Table 1. On average, participants were 47 years old, single, had at least a high school education, and reported an annual income below \$15,000 (90%). Systolic blood pressure readings ranged from 107 to 252, with a mean of 137 mm Hg and diastolic blood pressures ranged from 68 to 155, with a mean of 89 mm Hg. Of the 21 participants, 18 (86%) had blood pressure readings greater than 120/80 and participants were prescribed 2 antihypertensive medications, on average. The mean scores on the PSS were 21 (SD=9.50), indicating high levels of perceived

| Variable                                | Value     |
|-----------------------------------------|-----------|
| Socio-demographic                       |           |
| Age, mean ± SD                          | 47 ± 7.3  |
| Education, years, n (%)                 |           |
| ≤ 12                                    | 13 (62)   |
| >12                                     | 8 (38)    |
| Marital Status, n (%)                   |           |
| Single                                  | 19 (90)   |
| Married                                 | 2 (10)    |
| Annual Income, \$, n (%)                |           |
| <\$15,000                               | 19 (90)   |
| ≥ \$15,000                              | 2 (10)    |
| Clinical Biometrics                     |           |
| Body mass index, mean ± SD              | 32 ± 10.7 |
| Blood pressure, mean ± SD               |           |
| Systolic                                | 137 ± 29  |
| Diastolic                               | 89 ± 17   |
| Mean                                    | 105 ± 21  |
| Antihypertensive medications, mean ± SD |           |
| Prescribed medications                  | 2 ± 1.6   |
| Time to completion, mean ± SD           |           |
| Minutes                                 | 15 ± 5    |
| *Employed in past year, n (%)           |           |
| Yes                                     | 5 (24)    |
| No                                      | 12 (57)   |

SD: Standard Deviation

Table 1: Demographic characteristics.

| Item                                                                           | Confirmed experience* n (%) |
|--------------------------------------------------------------------------------|-----------------------------|
| Been upset because of something that happened unexpectedly                     | 15 (71)                     |
| Felt unable to control the important things in your life                       | 15 (71)                     |
| Felt nervous or stressed                                                       | 15 (71)                     |
| Felt confident about your ability to handle personal problems                  | 11 (52)                     |
| Things were going your way                                                     | 16 (76)                     |
| Found that you could not cope with all the things you had to do                | 13 (62)                     |
| Been able to control irritations in your life                                  | 11 (52)                     |
| Felt you were on top of things                                                 | 11 (52)                     |
| Been angry because of things that happened that were outside of your control   | 16 (76)                     |
| Felt that difficulties were piling up so high that you could not overcome them | 14 (67)                     |

Note: Respondents were asked, during the past month "How often have you..?" Response categories were never, almost never, sometimes, fairly often, and very often

Table 2: PSS frequency.

stress (Table 2). Thirteen (62%) participants had scores of 20 or greater. The items with the highest scores were "felt nervous or stressed", "been angry because of things that happened that were outside of one's control" and "been upset because of something that happened unexpectedly." Despite the scores, a small majority (52%) felt confident about their ability to handle personal problems.

All participants acknowledged some degree of exposure to perceived racism in their lifetime (Table 3). The lifetime exposure to perceived racism summary score was 20.3 (SD=19.2) on a scale of 0 to 84, indicating low perceived exposure to racism. Participants perceived more racism in the public realm (M=15.0, SD=12.8) than on their jobs (M=5.3, SD=6.8). The most common exposure was being "called insulting names" related to race or skin color (95%). The most frequently reported emotional responses to perceived racism were "angry" (75%) and "frustrated" (75%). The most frequent coping responses were "praying" (76%) and "speaking up" (76%). Participants were least likely to "get violent" (14%).

The project evaluation survey revealed that participants agreed (M=4.05, SD=0.97) that it is important to screen for perceived stress. However, they neither agreed nor disagreed (M=3.14, SD=1.15) that screening for perceived racism was needed. More than half (57%) acknowledged that they learned something new about the relationships between perceived racism, stress, and hypertension. The majority (75%) had not heard about TM prior to participation, and 55% were interested in learning more about TM for possible use. Lastly, 76% of the participants agreed that the time it took to learn about stress and TM was appropriate.

#### Discussion

In this pilot project's sample of 21 low-income, hypertensive African American men, screening for perceived stress in a community clinic, not perceived racism, may be feasible. We found low levels of perceived racism and high levels of perceived stress. One explanation for our findings is that the African Americans targeted in this project were restricted to less-diverse communities, low-income housing, and limited educational and job opportunities. Due to the insidious nature of structural racism, participants did not perceive these influences when responding to the survey.

The majority of men felt that it was important to screen for perceived

<sup>\*</sup>Results obtained from Perceived Racism Scale

<sup>\*</sup>Confirmed experience=sometimes, fairly often, or very often

| ltem E                                                                                                                                                 |                   | Frequent‡ |
|--------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------|-----------|
| Racism in the Public Realm                                                                                                                             |                   |           |
| You been called insulting names related to your race or skin color                                                                                     | 20 (95)           | 3 (14)    |
| When you go shopping, followed by white security guards or watched by white clerks                                                                     | 19 (90)           | 6 (28)    |
| Heard comments from whites expressing surprise at your or other minority intelligence or industriousness                                               | 16 (76) 6<br>(28) |           |
| People talked down to you because you are Black                                                                                                        | 18 (86)           | 5 (24)    |
| Experienced being followed, stopped or arrested by White police more often than others because of your race                                            | 15 (71)           | 8 (38)    |
| Waiters and waitresses ignored you and served whites first                                                                                             | 12 (57)           | 2 (10)    |
| You been refused rental housing which was later rented to Whites with similar standing (e.g. comparable income), because of your race                  | 7 (33)            | 2 (10)    |
| You know of people who have gotten into trouble (gotten hurt, beat up, shot) by Whites (individuals, gangs, police, hate groups) because of their race | 9 (43)            | 3 (14)    |
| You had difficulty getting a loan because you are black                                                                                                | 7 (33)            | 3 (14)    |
| You heard White males talk about not desiring Black women for "serious" relationships versus those with White women                                    | 6 (28)            | 3 (14)    |
| Your house has been vandalized because of your race                                                                                                    | 3 (14)            | 1 (5)     |
| You had to allow Whites to obtain the best seats in public places because of your race                                                                 | 2 (9)             | 1 (5)     |
| You been denied hospitalization or medical care because of your race                                                                                   | 2 (9)             | 1 (5)     |
| You encountered legal restriction against Blacks, such as housing, marriage, jobs use of public facilities                                             | 6 (28)            | 2 (10)    |
| Racism on the Job                                                                                                                                      |                   |           |
| Because you are Black, you're assigned the jobs no one else wants to do                                                                                | 9 (43)            | 2 (10)    |
| At work, when different opinions would be helpful, your opinion were not asked because of your race                                                    | 6 (28)            | 3 (14)    |
| Are you watched more closely than other workers because of your race                                                                                   | 11 (52)           | 3 (14)    |
| Were racial jokes or harassment directed at you                                                                                                        | 6 (28)            | 2 (10)    |
| Are you ignored or not taken seriously by your boss because of your race                                                                               | 7 (33)            | 2 (10)    |
| Has a White co-worker with less experience and qualifications got promoted over you                                                                    | 9 (43)            | 2 (10)    |
| Treated with less dignity and respect than you would if you were White                                                                                 | 7 (33)            | 2 (10)    |

Note: Respondents were asked "In your lifetime, how often have...?" Categorical responses were never, rarely, sometimes, fairly often, very often, refused (REF), don't know (DK), and not applicable (NA)

Table 3: PRS lifetime exposure.

stress and less important to screen for perceived racism. When comparing our results to a similar study [28] of 42 African American men and women, summary scores for lifetime perceived racism were lower for this sample, but the prevalence and frequency of exposure for some individual items were higher. Emotional and coping responses were similar in our sample to those in the Mood-Ayers [28] study.

Low income and low education may be factors contributing to the participants' high stress. Researchers suggest that individuals with less education and finances are more likely to experience high stress levels [15,35]. Individual items on the PSS indicated that participants may need help with handling personal problems. While lifetime perceived racism scores were low, about one-third of the sample indicated to some degree, racism had significantly affected their lives (Tables 4 and 5).

The majority of participants felt the time allotted for the project was appropriate; however, the additional time allocated for screening and education may be problematic for health care providers. Future projects should examine providers' perceptions of screening for perceived stress and provision of coping strategies.

Overall, participants felt they gained new knowledge about the associations between perceived racism, stress, and hypertension and more than half (57%) indicated that if they had more education on TM they would use it. However, 43% indicated that they did not have the time for 20 minute sessions of TM, which may give credence to 43% would not use TM even if they had more information. At the time of this project, course fees for TM were \$960 [22]. Comparatively, TM course fees are a fraction of the annual cost of \$887 [17] for treating hypertension in African Americans over a lifetime and therefore should be considered. Further exploration to determine if and how

| Responses                          | n (%)   |
|------------------------------------|---------|
| Emotional responses*               |         |
| Angry                              | 15 (71) |
| Frustrated                         | 15 (71) |
| Sad                                | 9 (43)  |
| Powerless                          | 6 (28)  |
| Ashamed                            | 6 (28)  |
| Strengthened                       | 10 (48) |
| Stressed                           | 11 (52) |
| Behavioral reponses‡               |         |
| Active responses                   |         |
| Speaking up                        | 16 (76) |
| Trying to change things            | 12 (57) |
| Passive responses                  |         |
| Accepting it                       | 6 (28)  |
| Ignoring it                        | 12 (57) |
| Keeping it to yourself             | 10 (48) |
| Working harder to prove them wrong | 12 (57) |
| Praying                            | 15 (71) |
| Avoiding it                        | 12 (57) |
| Getting violent                    | 3 (14)  |
| Forgetting it                      | 8 (38)  |

Note: Participants were asked "to what degree each emotion best describes how you feel when you experience racism?" Categories were not at all, moderately and extremely

Participants were asked to "tell the behavior or behaviors that describe how you deal with racism?" Categories were never, rarely, sometimes fairly often, and very often ‡Response=sometimes, fairly often, or very often

Table 4: PRS emotional and coping responses.

<sup>\*</sup>Any reported exposure to racism

<sup>#</sup>Frequent exposure to racism=fairly often or very often

<sup>\*</sup>Response=moderately or extremely

| Item                                                                                                     | *n (%)  |
|----------------------------------------------------------------------------------------------------------|---------|
| I think that it is important to include screening for perceived stress for the                           |         |
| treatment of hypertension                                                                                |         |
| In the past, I have thought about perceived racism and how it may be related to my hypertension          | 5 (24)  |
| I think that it is important to include screening for perceived racism for the treatment of hypertension | 10 (48) |
| In the past, I have thought about the stress I experience and how it could be related to my hypertension | 13 (62) |
| I learned something new about perceived racism and how it relates to stress and hypertension             | 14 (66) |
| The time it took to learn about stress and meditation was appropriate                                    | 16 (76) |
| I heard about transcendental meditation (TM) for the treatment of<br>hypertension prior to this project  | 5 (24)  |
| I use or have used TM to cope with stress                                                                | 1 (5)   |
| The video on TM was helpful                                                                              | 16 (76) |
| I am interested in learning more about TM                                                                | 12 (57) |
| If I learned more about TM, I would likely use it                                                        | 12 (57) |
| I can include 20 minute sessions of TM into my daily routines                                            | 12 (57) |
| I would refer my family and friends to learn more about TM                                               | 14 (66) |

Note: Each item asked participants their thoughts on the project. Categories were strongly- disagree, disagree, neither agree/disagree, agree and strongly agree

Table 5: Project evaluation responses.

transcendental meditation can be implemented through community health clinics is needed [36].

#### Limitations

Generalizability of the pilot project findings are limited based on the small sample size and homogenous aggregate of low-income, hypertensive African American men. Self- reporting and recall of information were subjected to the interpretation and memory of the participants. The time to educate participants about TM was not measured, thereby leaving a small gap of information associated with feasibility.

## **Implications**

Going forward, determining feasibility of the clinic's staff to screen African American men for perceived stress and educate them on relationships between perceived racism, perceived stress, and hypertension, should be considered. African American men with uncontrolled hypertension and chronic stress should be evaluated for coping resources and informed of adjunctive therapies, like TM. Consequently, funding to implement training on TM should be explored.

Despite limitations, this project is important because there is sparse information on this topic, especially in low-income African American men. In this sample of 21 hypertensive African American men, levels of perceived stress were high, while levels of perceived racism were low. However, screening for stress, which contributes to an increased risk for hypertension, is often overlooked. Moreover, low-income African American men are vulnerable and at risk for health disparities, considering their rates of hospital readmission, morbidity and mortality related to uncontrolled hypertension. The community health system is accountable for treatment of hypertension; more can be done to address the management of this condition in African American men. Lastly, given their extensive knowledge and training related to health promotion and illness prevention, public health nurses are well positioned to translate research into practice and develop policies to mitigate the burden of uncontrolled hypertension in African American

men seeking care in community health settings. Public health nurses can use simple screening tools like the Perceived Stress Scale to identify hypertensive clients who may be dealing with stress and provide them with educational information and resources.

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