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PARENTAL STRESS AMONG AFRICAN AMERICAN PARENTS AND GRANDPARENTS

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Abstract

The purpose of this study was to examine the relationships among parental stress, health (defined as level of systolic and diastolic blood pressure and body mass index), childcare characteristics, and social support. The study used a correlational research design and the setting was the metropolitan Detroit area. The sample consisted of 120 hypertensive African American parents and grandparents who reported caring for 1 to 9 children living in the household. Several variables (average diastolic blood pressure, number of children/grandchildren in home, child/grandchild is physically/mentally disabled, ability to decrease stress) were statistically significant predictors of parental stress. These results indicate that the multiple demands of parenting may become a barrier to making life-style changes for parents and grandparents diagnosed with hypertension. Nursing implications of the findings are discussed.

African American parents and grandparents are especially vulnerable to the psychological stress associated with daily events that affect their lives (e.g., diminished ascribed status, higher costs of living in their neighborhoods, lower incomes, and racial inequities; Brown, 2004). Accumulation of stress accompanied by a number of daily hassles could place some people at risk for harmful effects on the heart and vascular system. High and chronic levels of stress can lead to adverse health outcomes (i.e., hypertension, coronary artery disease [CAD], and depression; Brown, 2004; Ryff & Singer, 2000).

Allostatic load is a biopsychosocial framework that places health outcomes within a social cultural context and helps to understand the complex relationship between stress and disease (Fava & Sonino, 2000). This model connects behavioral, environmental, and psychosocial factors to health. At a biological level, the capacity of organisms to adapt to oncoming challenges can prevent development of pathophysiological processes. Major body systems

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(e.g., cardiovascular, autonomic nervous system, hypothalamic-pituitary-adrenal axis, and metabolic systems) can protect the body by responding to internal and external stress through allostasis (Ryff & Singer, 2000). Long-term over-activity of these systems is referred to as allostatic load, or cumulative wear and tear from chronic stress. Singer and Ryff (1999) connected allostatic load and socioeconomic histories. Their findings indicated that people with persistent economic disadvantages from childhood through midlife are more likely to exhibit high allostatic load (possibly resulting in cardiovascular disease, declines in physical and cognitive functioning, and early death; Seeman, Singer, Rowe, Hortwitz & McEwen, 1997; Williams, Kales & Heroux, 2006) than those with persistent economic advantages or upward mobility profiles (Singer & Ryff, 1999).

Stress can accelerate atherosclerosis and enhance development of adverse cardiac events (Rozanski, Blumenthal, Davidson, Saab, & Kubzansky, 2005; Whooley & Browner, 1998). According to Kneisl (2004), the cardiovascular system is a good indicator of emotional arousal (i.e., stress, anger, fear, anxiety, and depression). Some psychological factors that have been associated with sudden death, CAD, and ventricular arrhythmias include: stress, anxiety, depression, behavior patterns involving feelings of anger and hostility, absence of social support, and work overload (Kneisl, 2004).

Studies also have suggested that African Americans are at greater odds of being grandchild caregivers than other races, with women comprising the majority of grandparent caregivers (77%; Fuller-Thompson, Minkler & Driver, 1997). According to Pruchno (1999), African American grandmother households (9.2%) are more likely than White grandmother households (2.3%) to provide extensive care to their grandchildren. Extensive care is defined as more than 30 hours of care per week or more than 90 nights per year (Minkler & Fuller-Thompson, 2001). Minkler and Fuller-Thompson (1999) noted that grandparent caregivers are more prevalent in inner cities, with up to half of all urban children being cared for by their grandparent (s).

For these reasons, exploring African American parent/grandparent stress in addition to biological parental stress is important. Adults living in lower income inner city neighborhoods tend to assume the role of extensive caregivers for their children/grandchildren and may experience increased stress levels due to lack of adequate financial resources and support networks (i.e., babysitters). An extensive search of research literature found no published studies describing or relating caregiver burden to hypertension control in grandparent and biological parent caregivers caring for children.

HYPERTENSION HEALTH DISPARITIES AMONG AFRICAN AMERICAN PARENTS/GRANDPARENTS

African Americans are disproportionately affected by Stage I and Stage II hypertension (American Heart Association [AHA], 2004). For African Americans, the onset of hypertension is earlier, more severe, and can result in stroke, coronary heart disease, congestive heart failure, and end stage renal disease more frequently than for Whites (Flack, 2003). Hypertension is a major risk factor for cardiovascular disease that affects more African Americans than other ethnic groups (AHA, 2004). The American Heart Association (AHA, 2004) stated that cardiovascular disease is the primary cause of death among African Americans. African Americans have increased risk factors for hypertension, including physical inactivity, obesity, and noncompliance with hypertension regimen recommendations (Flack, 2003). Competing demands of parenting and working may be related to the inability of African American hypertensive parents and grandparents to follow through on their hypertension regimen. Failure to adhere to recommendations regarding hypertension management (i.e., medication, diet,

exercise, and stress management) could result in higher levels of systolic and diastolic blood pressure readings.

Social Support of Parents

Adults assume responsibility for caring for their children while also coping with their own health-related needs. African Americans, in some cases, are assuming these responsibilities in a household where only one parent is present. In such cases, being the head of the household can be stressful if there is a lack of financial and/or social support. According to a study conducted by Marshall, Noonan, McCartney, Marx, and Keefe (2001), "It takes an urban village to raise a child." The Marshall et al. study examined the effects of parents' social networks on urban families. The results indicated that Caucasian parents relied more heavily on nonfamilial social networks such as neighbors and friends to help with caring for children, while African Americans did not socialize as much with neighbors and relied more heavily on more homogenous social networks (e.g., immediate family members and grandparents) to help with caring for the children (Marshall et al., 2001). Overall, parents in the study who reported greater levels of social support (whether homogenous or heterogeneous) felt more effective as parents and the children experienced fewer behavioral problems (Marshall et al., 2001).

Social Support of Grandparents

A study by Landry-Meyer, Guzell, and Gerard (2002) focused on grandparent caregivers and examined the social support and life satisfaction of Caucasian female caregivers. The Landry-Meyer et al. study used a modified version of the Index of Parental Attitudes (IPA) to measure caregiver stress in a sample of 30 Caucasian participants (Hudson, 1992; Landry-Meyer et al., 2002). The investigators found that stressors associated with caregiving among grandparent caregivers influenced general quality of the caregivers' life. Perceived social support did not buffer the association between caregiving stressors and life satisfaction.

Parental Stress

Research from psychology, nursing, sociology, and medicine typically focuses on parenting as a negative stressor when the child has a chronic health condition. Chronic conditions in children (e.g., attention deficit-hyperactive disorder [ADHD], diabetes, and cleft lip and palate) have been discussed in research relative to the effects on parenting stressors. Pelham and Lang (1999) found a positive association between increased parental stressors and alcohol abuse among parents caring for children with ADHD. This finding suggested that stressful parent-child relationships could result in risky behaviors by parents. D'Asaro (1998) examined "burn-out" among parents caring for children with disabilities and found methods for decreasing parental stress included: getting help in the home, obtaining emotional assistance through therapy, joining support group networks, participating in physical fitness to keep the mind and body strong, taking breaks, and giving oneself little gifts.

Although suggestions for decreasing parental stress may be helpful, stressful environments and limitations on financial resources are barriers to managing parental stressors. Sidebotham and the Avon Longitudinal Study of Parents and Children (ALSPAC) study team (2001) described culture as a source of stress in the parent-child relationship. Using a longitudinal qualitative research design, Sidebotham and the ALSPAC team examined the contribution of culture (e.g., time pressures at work and home, expectations of children to be active and achieving, financial pressures, and consumerism) to stressors in parents and families. While many parents expressed positive views of their children, parenting was considered stressful due to societal and cultural demands. A study by Landry-Meyer et al. (2002) and the statistical update from the American Heart Association (2004) indicated that lower income, education levels, and less social support contributed to increased stress. As many African American grandparents are not of retirement

age, they must assume responsibilities associated with working parents while endeavoring to manage chronic health conditions.

PURPOSE OF THE STUDY AND HYPOTHESIS

The purpose of this study was to examine the relationships among parental stress, health (defined as level of systolic and diastolic blood pressure, and body mass index), childcare characteristics, and social support. The hypothesis for this study is that parenting stressors as measured by Index of Parental Attitude (IPA) total scores can be predicted from demographic variables (age, last grade attended, etc.), health related variables (average systolic and diastolic blood pressures [SBP and DBP, respectively], body mass index, etc.), and social support variables (number of children/grandchildren in the home, child/grandchild is physically/mentally disabled, ability to decrease stress, someone available to give good advice, etc.).

METHODS

Design

This study used a correlational research design. The study was nested within a longitudinal randomized clinical trial designed to test the effects of a home blood pressure telemonitoring intervention on blood pressure control. Baseline data were used for the present study. The Wayne State University Human Investigation Committee approved protocols for both studies.

Sample

Participants were recruited through free blood pressure screenings offered at community centers, drug stores, and grocery stores within the eastside of Detroit. One hundred twenty African Americans with uncontrolled hypertension and who were caring for children/grandchildren were included in our non-random sample. Inclusion criteria were: SBP ≥ 140 mmHg or ≥ 90 mm Hg (if diabetic SBP ≥ 130 mm Hg or DBP ≥ 80 mm Hg), African American ethnicity, ability to understand English, and an arm circumference less than 17.5 inches. Exclusion criteria were: active self-reported substance abuse, and/or a history of mental illness, end-stage cancer, or end-stage renal disease or other terminal illness. Sample size was justified based on results of a power analysis using a moderate effect size ($d = .25$) and an alpha level of .05.

Measures

Index of Parental Attitudes (IPA)—The Index of Parental Attitudes (IPA) questionnaire is a 25-item instrument that was used to measure parent and/or grandparent stress (i.e., relationship problems with a child; Hudson, 1992). It was designed to measure the extent and severity of parent-child relationship problems as perceived and reported by the parent and grandparent (Hudson). The IPA consists of questions pertaining to both caregiving parent/grandparent stressors, with the total score providing a parental relationship index (Hudson). The IPA may be used with parents who have children of any age, from infant to adult (Hudson), and has been determined to have a third grade reading level.

Parents/grandparents responded to each item on the questionnaire. Each of the 25 items was rated by parents using a 7-point scale, ranging from 1 (none of the time) to 7 (all of the time). After reverse scoring ten items as specified by the authors, the ratings for the 25 items are scored using the author's scoring protocol. This computation produces a score between 0 and 100, with higher scores indicating greater stress from parenting. A clinical score equal to or greater than 30 indicates that parents have a clinically significant stressful parent-child relationship (Hudson, 1992). Scores below 30 indicate that parents are generally free from clinically significant stress associated with the parent-child relationship (Hudson).

The IPA has been found to be reliable and valid (Hudson, 1992; Hudson, Wung, & Borges, 1980). The reliability and validity testing of the IPA was conducted on a sample of 93 participants seeking counseling for interpersonal relationship problems (Hudson et al.). The sample was selected by licensed therapists who determined that 36 of these participants had a relationship problem with one of their children while 57 did not (Hudson et al.). The obtained Cronbach alpha coefficient of .97, along with a low standard error of measurement of 3.64, indicated that the IPA had excellent internal consistency (Hudson et al.). A Cronbach alpha coefficient of .87 was obtained from the data being used in the present study. Known group validity was established by examining the IPA's ability to distinguish between parents seeking counseling for relationship problems with their children and those not seeking counseling for relationship problems (Hudson et al.). The IPA had a discriminant validity coefficient of .90 indicating that the instrument was able to discriminate between the two groups of participants (Hudson et al.). Content validity and item-analysis testing for construct validity also were assessed (Hudson; Hudson et al.).

Blood Pressure—Blood pressures were measured using an electronic blood pressure monitor (Omron HEM-737 Intellisense) that has been validated in accordance with criteria of the British Hypertension Society and the Association for the Advancement of Medical Instrumentation (Dabl Educational Trust, 2005). Blood pressures were measured following a 5-minute rest period; at least three blood pressures were measured and the average was used for analyses. Participants wore unrestrictive clothing and sat next to the interviewer's table, with their feet on the floor, their back supported, their arm abducted, slightly flexed and supported at heart level by the smooth, firm surface of the table. All blood pressure readings were taken in accordance with JNC-7 (The Seventh Report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure) guidelines (JNC-7, 2003).

Body Mass Index—Body mass index (BMI) was included as a variable in this study because obesity has been shown to be a significant risk factor for hypertension (AHA, 2004; Flack, 2003; JNC-7, 2003; Rosenberg, Palmer, Rao, & Adams-Campbell, 1999). Body mass index is a relationship between weight and height that is associated with body fat and health risk (Centers for Disease Control and Prevention [CDC], 2005). The formula for calculating BMI is weight in pounds divided by the height in inches squared (CDC). The result is then multiplied by 703 to provide the BMI. BMI over 25 is considered overweight, with BMI outcomes greater than 30 indicative of obesity (CDC).

Family and Social Support Characteristics—Long (2004) developed a short questionnaire to obtain information about the following childcare characteristics: relationship to the child, adult child, or grandchild for whom they were caring; number of children for whom participants were caring; number of hours per week spent caring for these children; if the child had cognitive or physical disabilities; and legal relationship to the child for whom they were providing care. The data collected on this questionnaire was an addendum to the Parent/Grandparent Demographic and Social Support Survey.

Parent/Grandparent Demographic and Social Support Survey—The parents/grandparents were asked to provide personal characteristics (age, gender, marital status, education, income, etc.) and information regarding social support (Artinian & Washington, 2004). The demographic items on this survey used either forced-choice or fill-in-the-blank response formats to obtain consistent information from the participants. Examples of social support items that are included are: frequency of being overwhelmed by problems, extent of stress control, ability to decrease stress, availability of someone to listen, and availability of someone to provide advice (Artinian & Washington). All participants were asked to rate the

frequency of these items on a 5-point Likert-type scale where 1 indicated “none of the time” and 5 “all of the time.”

RESULTS

Sample Characteristics

The mean age of the 120 parents/grandparents was 54.03 ($SD=13.15$) years of age, with a range from 22 to 82 years (See Table 1). The majority of participants were female ($n = 83, 69.2\%$). The mean number of years of education was 12.47 ($SD = 2.38$) years, with a range from 6 to 20 years. The largest group of participants ($n = 39, 32.5\%$) reported their marital status as single/never married, with 31 (25.8%) reporting they were married. The total household income ranged from less than \$5,000 ($n = 17, 14.4\%$) to more than \$50,000 ($n = 8, 6.8\%$). The majority of the participants ($n = 72, 60.0\%$) were not working, although 114 (95.0%) reported they had previously held a job. The reasons for not working were varied, with 20 (16.8%) reporting they were retired and an additional 23 (19.32%) indicating they were disabled. Thirteen (10.9%) participants were laid off from their jobs. Most of the participants who were working reported they worked at least 40 hours per week ($n = 30, 60.0\%$).

Parental and Grandparental Social Support

A majority of the parents/grandparents ($n = 61, 50.8\%$) reported they participated in religious activities to relieve stress associated with childcare. The number of hours spent in these types of activities ranged from 0 to 35, with a mean of 3.4 ($SD = 6.09$) hours per week. The parents/grandparents were not asked to provide specific types of religious activities.

Description of Health (Blood Pressure, Body Mass Index, and Parental Stress)

The mean systolic and diastolic blood pressure readings for the 120 participants were 155/92 mm Hg. The body mass index for all of the 120 participants in the study ranged from 18.27 to 64.22. The average body mass index for these participants was 32.63 ($SD = 7.09$) indicating that most participants were obese. The average parental stress score for the 120 participants in the study was 11. Parents self-reported mean score on the IPA was 11 while grandparents reported an average score of 12. The cut-off score indicating clinically significant stressful relationship are scores of 30 or greater. Although six participants did score greater than 30 on the IPA, on average, both parents and grandparents scored less than the clinically significant stressful relationship range.

Family Characteristics

The participants provided information about their families. The largest group of participants was caring for grandchildren ($n = 59, 49.2\%$), with 48 (40.0%) caring for their children less than 18 years of age and 13 (10.8%) providing care for their biological adult children. The number of grandchildren/children in each household ranged from 1 to 9, with the majority of grandparents/parents reporting 1 child ($n = 67, 55.8\%$). The number of hours spent caring for grandchildren/children ranged from 4 hours per day ($n = 1, 0.8\%$) to complete care 7 days a week, 24 hours a day ($n = 71, 59.1\%$). Nine (7.5%) of the participants reported that their child is physically or mentally ill. Fifty-one (42.5%) of the participants had legal custody of their children/grandchildren.

Relationship of Parental Characteristics and Stress

Pearson product moment correlations were used to examine the relationship between IPA scores and selected personal characteristics. Parents/grandparents who were employed outside the home full-time reported lower levels of stress from parenting ($r = -.33, p = .020$). Greater numbers of children/grandchildren living in the home were associated with greater levels of

parental stress ($r = .21, p = .022$). Parents/grandparents responsible for caring for a child/grandchild with disabilities were more likely to report higher levels of stress ($r = -.25, p = .006$). The levels of parental stress were compared by type of respondent: parent or grandparent, using a t -test for independent samples. The results of this analysis were not statistically significant, $t(118) = .70, p = .488$, indicating that parental stress did not differ across the two types of parents.

A hierarchical multiple linear regression analysis was used to determine if parental stress could be predicted from demographic characteristics, health-related variables, specific parental stressors, and social support. The demographic characteristics, including age, gender, and educational level, were entered on the first step of the regression analysis. None of these variables were significant predictors of parental stress. Health-related variables, average diastolic blood pressure, and body mass index were included on the second step. Average diastolic blood pressure was a significant predictor of parental stress, $\beta = .21$. The total amount of variance in parental support that was explained by the demographic and health-related variables was 7%. Specific parent/grandparent characteristics included numbers of children/grandchildren in the home and care of a child/grandchild with a physical/mental disability were entered on the third step of the regression analysis. Average diastolic blood pressure, $\beta = .19$, remained a statistically significant predictor, with number of children/grandchildren in the home, $\beta = .26$, and having a child/grandchild who was physically/mentally disabled, $\beta = -.28$, also significant predictors of parental stress. The cumulative amount of variance explained by demographic variables, health-related variables, and parental/grandparent characteristics was .19. The fourth step of the hierarchical regression analysis included variables measuring social support resources: frequency of being overwhelmed by problems, extent of stress control, ability to decrease stress, having someone to listen, and having someone available to provide advice. Four predictor variables, ability to decrease stress, $\beta = -.29$; number of children/grandchildren in the home, $\beta = .21$; presence of a child who is physically or mentally disabled, $\beta = -.20$; and average diastolic blood pressure, $\beta = .19$ entered the hierarchical multiple linear regression equation, accounting for 32% of the variance in parental stress, $F(12, 107) = 4.21, p < .001$. These findings indicated that parents/grandparents with higher average diastolic blood pressure readings and with more children/grandchildren living in the home, those who had a child with a physical or mental disability, and those who were not able to decrease stress were more likely to report higher levels of parental stress. The remaining predictor variables did not enter the hierarchical multiple linear regression equation, indicating they were not statistically significant predictors of parental stress. (See Table 2.)

DISCUSSION

Results from this study indicated that urban African American parents and grandparents generally did not perceive parenting as stressful. However, several predictors of stress were identified. Regression analyses indicated that the following variables were significant predictors of parental stress: number of children in the home, inability to decrease stress (lack of social support), and taking care of a child with a physical or mental disability. In addition, participants with greater levels of parental stress had higher diastolic blood pressure readings. These results remained even when accounting for age, gender, socioeconomic factors, and relationship to the child (parent or grandparent). Nurses encounter parenting caregivers in a variety of health care settings and environments. They are among health care providers who can perform holistic assessments of daily hassles and parenting stressors that could be placing vulnerable parents/grandparents at a disadvantage, especially if they have a physically or mentally disabled child/grandchild. Psychiatric Mental Health Nurses (PMHNS), especially those in advanced practice roles, can collaborate with providers in multiple settings to assess stressors and physiological health in order to help parents/grandparents achieve positive health outcomes and psychological well-being. Primary health clinics, college/university health

clinics, pediatric hospitals, and counseling and psychological services are important sites of mental health promotion, primary prevention, and early intervention for parents/grandparents that involve PMHNS. Using anticipatory guidance and best practices, nurses can provide educational resources regarding the importance of stress-management, screening for stress, anxiety, and depression, helpful childcare resources, financial planning, household management, health-promotion strategies, and so forth for parents/grandparents (Sakraida, 2005).

LIMITATIONS OF THE STUDY

The study was limited to African American participants. As a result, findings may not be applicable to parents/grandparents of other ethnic or racial groups. A small segment of a large Midwestern urban area was used to recruit parents/grandparents for the study. Parenting families from other geographic areas (suburban and rural) may have different experiences that are unrelated to the present study. Parental stress was the only stress measure that was administered to participants. Measures of daily hassles, daily stressors, and depression may provide greater insight into the challenges of hypertensive parents and grandparents caring for themselves and their children/ grandchildren.

RECOMMENDATIONS FOR FURTHER RESEARCH

The present study was an initial attempt to develop a knowledge base about parenting attitudes and personal characteristics among hypertensive parents/grandparents who are caring for children/grandchildren. Because African American families are equally headed by parents and grandparents (U.S. Census Bureau, 2000), further family studies must include grandparents in order to obtain an accurate assessment of the urban African American family. Based on results of the present study, additional research needs to be completed to develop possible nursing interventions that can help parenting families (parents and grandparents) cope with parental stress and various daily stressors experienced as a result of caring for themselves and their children/grandchildren.

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TABLE 1

Descriptive Statistics—Age by Parental Relationship

Relationship	Number	Mean	SD	Median	Range	
					Minimum	Maximum
Grandparent	59	59.76	11.67	59	30	82
Parents with dependent children	48	45.31	10.35	47	22	77
Parents with adult children (disabled)	13	60.23	11.35	60	39	81

TABLE 2Hierarchical Multiple Linear Regression Analysis—Parental Stress with Selected Predictor Variables ($N = 120$)

Variable	<i>B</i>	<i>SEB</i>	<i>B</i>
Step 1			
Age	-.01	-.07	-.01*
Gender	2.46	1.85	.12*
Highest grade attended	-.35	-.37	-.09*
Step 2			
Age	-.05	-.07	-.08*
Gender	2.74	1.84	-.12*
Highest grade attended	-.44	-.37	-.11*
Average diastolic blood pressure	-.14	-.07	-.20*
Body mass index	-.13	-.12	-.10*
Step 3			
Age	-.06	-.07	-.08*
Gender	2.74	1.73	-.14*
Highest grade attended	-.52	-.35	-.13*
Average diastolic blood pressure	-.14	-.07	-.19*
Body mass index	-.11	-.12	-.09*
Number of children/grandchildren in home	1.70	-.58	-.26*
Child/grandchild is physically/mentally disabled	-9.69	3.03	-.28*
Step 4			
Age	-.08	-.07	-.12*
Gender	1.97	1.67	-.10*
Highest grade attended	-.40	-.33	-.10*
Average diastolic blood pressure	-.13	-.06	-.19*
Body mass index	-.11	-.11	-.08*
Number of children/grandchildren in home	1.37	-.57	-.21*
Child/grandchild is physically/mentally disabled	-6.96	2.98	-.20*
Frequency of being overwhelmed by problems	-1.16	-.83	-.16*
Extent of personal stress control	1.03	-.84	-.15*
Ability to decrease stress	-2.19	-.93	-.29*
Able to count on someone to listen	-1.51	1.23	-.18*
Someone is available to give good advice	-.40	1.24	-.05*

Note: $R^2 = .02$ for Step 1; $R^2 = .07$ for Step 2; $R^2 = .19$ for Step 3; and $R^2 = .32$ for Step 4.

* $p \leq .05$.