**CHAPTER 3: RESEARCH METHODOLOGY**

Middle-class African Americans will experience race-related stress due to the influence of political ideologies which inform their perceptions of injustice (Kivikangas, Fernández-Castilla, Järvelä, Ravaja, & Lönnqvist, 2021; Leong, Chen, Willer, & Zaki, 2020). However, the sociological relationship between race-related stress and perceptions of injustice among middle-class African Americans in Chattanooga, TN, is unknown. This problem will be of particular concern in the American Southeast, where there is a dynamic of historical racism (Anderson, Span, 2016). Therefore, Chattanooga, TN, will be selected as the geographical delimitation for this study because Chattanooga, TN, is in the heart of the Southeast United States, and Tennessee is the historical, foundational origin of the Ku Klux Klan (Chalmers, 1987). The purpose of this quantitative, correlational study will be to examine the potential relationship between race-related stress and the perception of injustice among middle-class African Americans in Chattanooga, TN.

The research question will emerge from the purpose statement. The hypotheses will align with the research question to support the purpose of the study. The results of the study will answer the research hypotheses.

Research Question: What relationship, if any, exists between an African American’s self-assessed race-related stress and self-assessed perception of injustice?

Ho: No statistically significant relationship exists between levels of race-related stress and perceptions of injustice among middle-class African Americans in Chattanooga, TN.

Ha: A statistically significant relationship exists between levels of race-related stress and perceptions of injustice among middle-class African Americans in Chattanooga, TN.

Research design elements and rationale will be addressed in detail. Research procedures and the data analysis process will be sequenced in the appropriate order. Investigative procedures, population and sample selection, instrumentation, data collection, data preparation, data analysis, reliability and validity, and ethical procedures will conclude the research approach.

**Research Design**

This quantitative study will utilize a correlational design to examine the relationship between race-related stress and perception of injustice among middle-class African Americans in Chattanooga, TN.

Quantitative research methods will be used to gather and test data via Pearson’s *r* bivariate correlation. The Pearson’s *r* bivariate correlation will be used to determine if a relationship exists between middle-class African Americans’ level of race-related stress, measured by the IRRB-Short Form, and their perception of injustice, measured by the PIQ. The two inventories will be accessed via a secure and anonymous on-line survey. Data from the inventories will be provided in Excel spreadsheet format to easily transfer into WINKS SDA 7.0.

A Pearson’s *r* bivariate correlation measures the association between two continuous variables in the context of a linear relationship (Kent State University, 2019a). Correlated data will measure the magnitude of change in one variable in association with the magnitude of change in another variable, and the associations of the variables will be either in the same direction or in opposite directions (Schber, Boer, & Schwarte, 2018). The Pearson’s *r* bivariate coefficient will measure the covariance of two continuous variables with a scale ranging from -1 to +1. A general limitation of correlational research will be that causation cannot be properly inferred (Rohrer, 2018). The tendency to assume relationships merit causation is not sound because one variable preceding another is not sufficient to assume causation (Dorestani & Aliabadi, 2017).

Choosing the appropriate methodology will be essential to accurately analyze the findings of the study (Ong & Puteh, 2017). A qualitative methodological approach will not be appropriate for this correlational study because qualitative methods are subjective and do not provide consistent and reliable data (Eyisi, 2016). A quantitative ex post facto research design will not be appropriate for this study because a review of archival data will be required, and this study will focus on the need for current data to answer the research question.

**Research Procedure**

Recruitment will be through the Chief Strategy Officer for Hamilton County Schools in Chattanooga, TN (HCDE). The Chief Strategy Officer for Hamilton County Schools will receive a recruitment letter via e-mail (see Appendix B) requesting participation in the research study. The target will be middle-class African Americans from Chattanooga, TN, recruited between December 2023 and January 2023. Potential participants will receive an overview of the study and a consent form. Upon consent, participants will be administered a survey via a confidential code and link to the on-line survey. The confidential code and link will take participants to surveymonkey.com. The specific battery will include items from the Index of Race-Related Stress-Brief (IRRS-B), the Perception of Injustice Questionnaire (PIQ), and demographic questions about race, gender, education, and annual income. Participants will be informed that participation in the study can be ceased at any time. The survey will include items to assess eligibility for study participants. Participants who do not meet the study criteria will not be included. Criteria for exclusion as a study participant will be identifying as other than African American and falling outside of what is considered socio-economically defined as middle-class as promulgated by the US Census Bureau (US Census, 2018). Each participant will be informed that they will be administered an electronic survey that will include questions about her/his experience of race-related stress and perception of injustice.

The process of data collection will be standardized throughout the collection time period through monitoring by the researcher and the research dissertation team. Study volunteers will be invited to participate in a survey. Approximately 20 minutes will be required to complete the on-line survey. Institutional Review Board (IRB) approval will be obtained for the study.

**Participants**

The target population for this study will be middle-class African Americans in Chattanooga, TN, from HCDE. The total population represented in the study is 60 middle-class African Americans in Chattanooga, TN. Convenience Sampling (Bell, Bryman, & Harley, 2018) will be used to ensure representation of the sample population utilized to ensure eligible participants meet the inclusion/exclusion criteria until a minimum sample size of at least 60 participants is attained. Sample size will be calculated using G\*Power software (see Appendix A; Kent State University, 2019b). Permission to recruit participants will be secured from the Chief of Talent for Hamilton County Schools (HCDE) (see Appendix B).

**Demographics**

Participants will be asked to complete a questionnaire containing items regarding their gender identity, age, racial and ethnic self-identification, socio-economic status, academic level, and professional status (business owner, job position, place in job hierarchy).

**Instrumentation**

The quantitative correlational research study will explore whether a significant relationship between an African American's self-assessed level of race-related stress, measured by the IRRB-S and an African American's perception of injustice, measured by the PIQ, exists. Surveys will be utilized to evaluate African American's self-assessed level of race-related stress and African American’s self-assessed perception of injustice and the relationship between the two.

This study will utilize the Index of Race Related Stress – Brief (IRRS-B) (Utsey, 1999) instrument, which measures race-related stress using three subscales: racism based on Jones’s tripartite model of racism (Jones, 1971), Essed’s collective racism (Essed, 1990), and Lazarus and Folkman’s life stress theory (Lazarus & Folkman, 1984). Scoring of the IRRS-B will be based on a 4-point Likert scale ranging from 0 (*This never happened to me*) to 4 (*This happened, and I was extremely upset*). See Appendix C for the permission letter.

This study will utilize the Perceived Injustice Questionnaire (PIQ) (Neumann, Berge, & Kizilhan, 2021) instrument, which measures the perception of injustice using five subscales: emotional and cognitive consequences, injustice perception, injustice experience, revenge, and forgiveness (Neumann, Berger, and Kizilhan, 2021). The scoring of the PIQ will be based on a 5-point Likert scale from 1 (*strongly agree*), 2 (*agree*), 3 (*neither agree nor disagree*), 4 (*disagree*), and 5 (*strongly disagree*). See Appendix D for the permission letter.

In total, the survey to which participants respond will consist of a) The Index of Race-Related Stress-Brief Version (IRRS-B; Utsey, 1999; Appendix E), b) The Perceived Injustice Questionnaire (Neumann, Berger, & Kizilhan, 2021; Appendix F).

**IRRS-B.** The Index of Race-Related Stress-Brief Version (IRRS-B; Utsey, 1999) is a multidimensional self-report measure designed to assess the stress (perceived and encountered) experienced by Black individuals when they face racism. It is a shortened form of the Index of Race-Related Stress (IRRS; Utsey & Ponterotto, 1999) and contains 22 items. The IRRS-B has three subscales: Cultural Racism (where one’s culture is vilified or degraded; 10 items), Institutional Racism (due to systemic racism inherent in institutional policies or customs; 6 items), and Individual Racism (interpersonal experience of racism; 6 items; Utsey, 1999). The total score represents a measure of Global Racism.

Sample items include, “*You notice that when Black people are killed by the police, the media informs the public of the victim’s criminal record or negative information in their background, suggesting they got what they deserved*” (cultural racism); “*You have been subjected to racist jokes by Whites/non-Blacks in positions of authority and you did not protest*

*for fear they might have held it against you*” (institutional racism); and “*White people or other non-Blacks have treated you as if you were unintelligent and needed things explained to you slowly or numerous times*” (individual racism).

Items were scored on a Likert-type scale ranging from 0 (*This never happened to me*) to 4 (*This event happened and I was extremely upset*). Mean scores are calculated, and higher scores are indicative of more experiences of cultural, institutional, individual race-related stress as well as global racism (Szymanski & Lewis, 2015). Utsey (1999) reported Cronbach’s alphas for IRRS-B subscales as .78 (Cultural Racism subscale), .69 (Institutional Racism subscale), and .78 (Individual Racism subscale; Utsey, 1999). Convergent validity was found with other similar measures of racism and psychological distress for African Americans. The measure has also been found to discriminate between the racism-related experiences of Black Americans and White Americans (Utsey, 1999).

Only the total score, Global Racism, was used in these analyses, with internal consistency, Cronbach’s alpha of .89 in the current study. This was due to two reasons. First, reliability analyses of the subscales revealed low Cronbach’s alpha for the Institutional Racism subscale (.57). And second, the Institutional Racism and Individual Racism subscales presented with high multicollinearity (.66). As further support for this decision, in a study examining the item functioning and structural performance of the IRRS-B through item response and confirmatory factor analyses, Chapman-Hilliard and colleagues (2020) indicated that the Institutional Racism subscales has often been found in the "questionable" (that is, Cronbach's alpha of .60 to .69; p. 556) range of internal consistency in numerous studies. They also reported that the three-factor structure did provide a good model fit, and a one-factor solution was the "most parsimonious" fit.

Respondents are asked to indicate which racism events they or a family member has experienced over their lifetime and then indicate the impact that each racism event had on them using a 5-point Likert scale (0 = *this has never happened to me*. 1 = *event happened but did not bother me*. 2 = *event happened and I was slightly upset*. 3 = *event happened and I was upset.* 4 = *event happened and I was extremely upset*). Summing the items for each IRRS-Brief subscale produces a total score for each race-related stress category.

Higher scores on the IRRS-Brief subscales are indicative of higher levels of race-related stress in each perceived racism domain. The IRRS-Brief has been found to have adequate construct and convergent validity with another measure of stress due to racism (Racism and Life Experience Scale-Revised) (Utsey, 1999). Internal consistency for the IRRS-Brief has been reported to be adequate, with Cronbach's alpha for the IRRS-Brief subscales ranging from .64 to .81 for college samples and community samples (Utsey, 1999; Utsey, Chae, Brown, & Kelly, 2002). Internal consistency for the IRRS-Brief total score in the current sample was .93. The internal consistency for the cultural racism scale was .89, it was .76 for the individual racism subscale, and .73 for the institutional racism subscale.

The Index of Race-Related Stress (IRRS; Utsey and Ponterotto 1996) and its brief counterpart (IRRS-B; Utsey 1999) were designed to capture and measure stress associated with day-to-day racial struggles experienced by Black Americans while emphasizing the ubiquity of racism in the United States. The IRRS and IRRS-B are the most extensively used instruments to assess race-related stress among Black Americans. Since the publications introducing the IRRS and IRRS-B to the research literature in 1996 and 1999, the instruments have been used in dissertations (Cruz, 2015; Franklin, 2002; Mullins, 2012; White, 2013) and empirical studies published in academic journals (Driscoll, Reynolds, Todman, 2015; Szymanski & Lewis, 2015). Scholars have also used the IRRS and IRRS-B to assess race-related stress within the African Diaspora (Joseph & Kuo, 2009) as well as Black immigrants in the United States (Case & Hunter, 2014; Hunter, Case, Joseph, Mekawi, & Bokhari, 2017).

**PIQ.** Perception of injustice will be measured using Neumann, Berger, and Kizilhan's (2021) Perceived Injustice Questionnaire. The developers aimed to develop an instrument that could be applied to assess the individual perceptions of injustice experiences and their emotional and cognitive consequences (Neumann, Berger, and Kizilhan, 2021). Studies have indicated a moderate to strong correlation between perceived injustice and depression (Lynch, Fox, D’Alton, Gaynor, 2021). According to the PIQ developers, until now, the questionnaires previously used frequently specifically referenced one event, a specific study, or assessed not only man-made injustice but also non-man-made disasters: natural catastrophes or unintentional disasters - accidents, for example. However, the perception of injustice is not merely a mental construct (Sullivan, 2020). It is most often based on a number of justice violations, especially in the case of human rights violations (Neumann, Berger, Kililhan, 2021).

 The developers aimed to develop a new inventory that collects information on how individuals categorized potentially unjust experiences, whether those affect their perception of justice in general, or how they cope with that perception. These aspects are particularly relevant to one's experiences as it is assumed that one's perception of injustice (from experience) has an impact on various mental health conditions: depression, anxiety, and PTSD (Sullivan, 2020; Carriere, Pimentel, Yakobov, Edwards, 2020; Pham, Weinstein, Longman, 2004). Trauma increases the likelihood of developing PTSD and or depression. However, according to research, the increased perception of injustice is likely an additional contributor (Pham, et al., 2004; Tay, Rees, Tam, Savio, Da Costa, Silove, 2017). One explanation for this dynamic might be the transgression of the belief in a just world, the notion that people get what they deserve and deserve what they get (Lerner, 1965; Lerner, 1980). In order to maintain this belief despite the experiences of injustice, depressive thinking patterns such as self-blame could develop (Grove, 2019).

Quantitative and qualitative research methods and studies were triangulated in developing the PIQ (Neumann, Berger, and Kizilhan, 2021). Between May 2019 and October 2019, interviews and focus groups were used to ascertain feelings of injustice, an understanding of justice, and coping mechanisms. In addition, several iterative psychometric progressions were conducted on the PIQ, focusing on consistent internal reliability and validity (Neumann, Berger, Kililhan, 2021).

Internal reliability pertains to the degree of measurement error an instrument possesses, causing a differentiation in scores unrelated to participant responses. The lower the number of errors an instrument contains, the more reliable the instrument. The scoring of the PIQ will be based on a 5-point Likert scale from 1 (*strongly agree*), 2 (*agree*), 3 (*neither agree nor disagree*), 4 (*disagree*), and 5 (*strongly disagree*). The PIQ can be used by students at accredited institutions of higher learning for empirical research studies. However, psychometric properties such as reliability depend on the population and sample size and cannot be treated as fixed characteristics (Neumann, Berger, Kililhan, 2021).

**Data Collection**

Informational letters and follow-up letters will be composed in compliance with the American College of Education's Institutional Review Board (IRB) procedures. Once consent is obtained and approval granted to conduct the study with HCDE, a summary of the purpose and participation requirements of the study and consent forms will be provided to HCDE participants (see Appendix G for the consent form and Appendix H for the permission letter). Data will be collected from 60 participants over four weeks using on-line surveys. A confidential code and link will take participants to surveymonkey.com. On-line surveys help maintain data collection validity and reliability and are ecologically friendly (Dewaele, 2018).

The data collection method, surveys, will provide information for correlational examination with minimal risk to participants. Participants will not complete the surveys anonymously to ensure that data from each survey will be properly correlated. During the study, participants will remain confidential. Participants' names will not be revealed. Instruments used in the study will be submitted to the IRB for review and approval.

After consent forms to participate in the study are received, an e-mail will be sent to thank participants for agreeing to take part in the study. Data will be collected using on-line surveys; the e-mail will contain directions on how to access the surveys on-line. Completed survey data will be stored on a flash drive for three years. The information will be retrieved and exported to WINKS SDA 7.0 for analysis. WINKS SDA 7.0 is a software package used for statistical analysis. Survey responses of participants will be kept confidential.

**IRRS-B data collection.** Participants will receive a link to access the IRRS-B. The participants will access and complete the survey via the link. An e-mail notification will be generated to indicate that data are ready for collection.

**PIQ data collection.** Participants will receive a link to access the PIQ. The participants will access and complete the survey via the link. An e-mail notification will be generated to indicate that data are ready for collection.

**Data Preparation**

All participants will answer every question on the IRRS-BI and PIQ surveys. The IRRS-B and PIQ will be downloaded into WINK SDA 7.0 for preparation of analysis. Survey data will be input into WINKS SDA 7.0 for analysis. Examining data will allow researchers to rectify the common issue of missing data. Preceding statistical analysis, handling of missing values, and data exclusion will be executed. Frequency distributions for the variables will be created and examined for typing errors, outliers, and missing data. The variables will be assessed for distribution normality.

**Data Analysis**

Descriptive statistical computations will be performed for the IRRS-B and PIQ to include the means, standard deviations, and frequencies, as done by R. A. Johnson and Bhattacharyya (2019). The Cronbach’s alpha coefficients for the IRRS-B and PIQ will be evaluated. These processes will support the reliability of the study.

The Pearson’s *r* bivariate correlation will be used to determine if a significant relationship between an African American’s self-assessed level of race-related stress, measured by the IRRS-B, and self-assessed perception of injustice, measured by the PIQ, exists (Kent State University, 2019). WINKS SDA 7.0 will be utilized to calculate the composite (mean) scores for the race-related stress variable and the perception of injustice variable. The coefficients will be analyzed to investigate if a significant relationship exists between the variables. The goal of the study will be to discover if a relationship exists between the variables. A one-tailed test of significance will be used to test the relationship between the variables (Stockburger, 2016). A .05 significance level will be utilized to analyze the results.

**Reliability and Validity**

The sample for the study will consist of 60 middle-class African Americans representative of Chattanooga, TN. A larger sample size could yield more generalizable findings and statistical significance. Convenience sampling of the HCDE subjects from the 60 subjects in the total population of middle-class African Americans will yield a representative sample.

Construct validity from a systematic approach will maintain the validity of the study using appropriate methods for quantitative research (Mislevy, 2007). Sixty participants were selected based on the sample size calculation for a Pearson's *r* in G\*Power. A convenience sample will be used to select the first 60 participants to return a signed consent form.

Cronbach’s alpha will be used to measure internal consistency and scale reliability.

Cronbach’s alpha for the study will exhibit an expected alpha value between .70 and .90 (UCLA Institute for Digital Research & Education, 2019). The Cronbach’s alpha coefficients for the IRRS-B and PIQ will demonstrate evidence of strong internal consistency. Internal reliability coefficients for the IRRS-B were above the expected alpha value of .70, ranging between .75 and .87 (Utsey, 1999). The PIQ demonstrated internal reliability coefficients above the expected alpha value with a first order scale mean of .87, ranging between .75 and .90 (Neumann, Berger, & Kizilhan, 2021).

**Ethical Procedure**

To protect research participants, the National Institutes of Health (n.d.) established ethical guidelines. The research will be conducted responsibly, adhering to ethical principles of respect for participants, autonomy, protection of vulnerable populations, beneficence, and justice (Ross, Iguchi, & Panicker, 2018). Professional integrity will be paramount when conducting the research (Walton, Andrews, & Osman, 2019). The research will conform with applicable federal, state, and local laws concerning the protection of human subjects. To prevent perceptions of bias while conducting research, epistemic objectivity will be maintained throughout the process.

Correlational research has ethical advantages. The study of relationships between independent and dependent variables, or correlational research, has an ethical advantage because participants do not have to be subjected to potentially harmful treatment (Grand Canyon University, Center for Innovation in Research and Teaching, n.d.). The data collection method, surveys, will provide information for correlational examination with minimal risk to participants. Participants will not complete the surveys anonymously to ensure that data from each survey will be properly correlated. During the study, participants will remain confidential. Participants’ names will not be revealed. Instruments used in the study will be submitted to the IRB for review and approval.

Once approval to conduct the study is granted, potential participants will receive a recruitment letter (see Appendix B). Consent forms will include a summary of the purpose and participation requirements of the study and will be distributed via e-mail. The informed consent form will acknowledge participant rights and the research process. The research will be founded on evidence and unbiased methods of inquiry to best satisfy standards of verification (Urquhart, Lehmann, & Myers, 2010).

The feasible correlational research study will have reasonable time limits and a budget with minimal ethical issues. Participants’ test results will remain confidential. Study participants will receive individualized survey results upon completion of the inventories. Data will be stored on a flash drive used only for the study and secured in a safe at the researcher's home when not in use. Data will be maintained on a flash drive for a minimum of three years and then deleted.

**Chapter Summary**

A framework for the quantitative study on race-related stress and the perception of injustice will be included. Research design elements and rationale were detailed. Research and data analysis will be sequenced. Research procedures, population and sample selection, instrumentation, data collection, data preparation, data analysis, reliability and validity, and ethical procedures will conclude the research approach. The instruments for the study were selected carefully to ensure alignment with the research question. The instruments were also selected to ensure the validity and reliability of the quantitative research (Heale & Twycross, 2015). The next chapter illustrates and explains the research findings based on data analysis.