Theses and Dissertations

2015

Profiles of African American College Students' Risky Behaviors: General and Culturally-Specific Stress and Social Support as Factors of Risk and Resilience?

Isha Walwina Metzger
University of South Carolina - Columbia

Follow this and additional works at: http://scholarcommons.sc.edu/etd

Part of the Clinical Psychology Commons, and the Community Psychology Commons

Profiles of African American College Students' Risky Behaviors: General and Culturally-Specific Stress and Social Support as Factors of Risk and Resilience?

by

Isha Walwina Metzger

Bachelor of Arts
Georgia State University, 2008

Master of Arts
University of South Carolina, 2011

_____

Submitted in Partial Fulfillment of the Requirements

For the Degree of Doctor of Philosophy in

Clinical-Community Psychology

College of Arts & Sciences

University of South Carolina

2015

Accepted by:

Shauna M. Cooper, Major Professor

Kate Flory, Committee Member

Mark Weist, Committee Member

Naomi B. Farber, Committee Member

Lacy Ford, Vice Provost and Dean of Graduate Studies

I dedicate this dissertation to my Lord and Savior, Jesus Christ. I thank You, Lord, for guiding, guarding, and protecting me throughout the past five years of my graduate studies, and for blessing me with the anointing and favor needed to make it this far. I thank You for the wisdom, understanding, and knowledge needed to successfully complete this dissertation. Not only do I dedicate my dissertation to you, Lord, but I continually entrust my entire life in Your ever-present hands.

I dedicate this dissertation to those who are with me in Spirit. To my maternal grandfather, Benjamin Davies: I thank you for your quiet strength that taught me to persevere through trials. To my maternal grandmother, Nannette Davies: I thank you for your joyous heart and deep laughter that reminded me to smile through difficult days. To my paternal grandmother, Theresa Metzger: I thank you for your endless prayers and constant reminders for me to "lan buk an nor falla bad compen". To all of my male and female ancestors, I thank you for backing me in Spirit, and I dedicate my dissertation to you as a humble token of gratitude.

This dissertation is dedicated to my mother, Akua Tilla Francsis Emeline Davies Metzger Ware, whose steadfast encouragement and support made this process possible. To the rest of my family: my fathers, Walcut Metzger and Eddie Ware, my sister MarieAkua, my brothers Kwame, Addis, and Aziz, my aunts, uncles, and countless cousins, I thank you all.

ACKNOWLEDGEMENTS

I would like to give the greatest of acknowledgements to my advisor and mentor, Dr. Shauna M. Cooper! I thank you for your constant support, guidance, feedback, patience, and encouragement through the entire five years that I have worked under you. Your commitment to mentoring me has been invaluable in fostering my critical thinking and analytical abilities, and your mentorship throughout the years has helped mold me into a better person, researcher, and academic in my field.

Additionally, I would like to thank Dr. Naomi Farber, Dr. Kate Flory, and Dr. Mark Weist for their time, feedback, and support throughout this process. Your feedback has proven invaluable in developing my dissertation into a final, comprehensive product.

Last, and certainly not least, I would like to thank my colleagues Melanie Avery, Brian Colar, and Chisom Onyeuku for their presence throughout this project. Your assistance in my data collection endeavors as well as your presence throughout the years has allowed us to established not only beneficial working partnerships, but life-long friendships. I am because we are.

ABSTRACT

Studies show that, while alcohol use and risky sexual activities increase during emerging adulthood, college students are more likely to engage in these behaviors than their non-student counterparts (Slutske et al., 2004). Researchers should explore risk behavior participation among African American youth, as they often face health disparities and more severe consequences of engaging in these acts than their White American counterparts (Sharma & Atri, 2006; Jackson, Hodge, & Vaughn, 2010). Although epidemiological and variable-centered studies often examine the drinking and sexual behavior of African American college students, there is a need for research utilizing a profile-oriented approach to explore within group differences that exist in these behaviors which often co-occur. As opposed to previous variable-centered approaches that force variables into predetermined categories, the multidimensional, profile oriented approach is beneficial in that it elucidates patterns in individual responses and allows for the identification of similar groups that exist within larger, heterogeneous groups (Jung & Wickrama, 2008). Utilizing Latent Class Analysis, the current study fills this gap by identifying risk behavior profiles of alcohol use (amount of alcohol consumed, drinking and driving), risky sex (number of partners), and co-occurrence of alcohol use and sexual activity among a college student sample of 228 African American emerging adults in college.

Additionally, as alcohol consumption is also described as a maladaptive response strategy that often leads to risky sex and co-occurring risk behaviors, the larger literature

indicates that student stress and social support serve as factors of risk and resilience that are associated with risk behavior participation among college enrolled youth (Unger, Hamilton, & Sussman, 2004; Plybon, et al., 2003). Because African American students experience compounded stress in the face of racial discrimination, studies also should explore the impact of culturally specific stress (Sue et al., 2007; Murry et al., 2005) and demographic variables (e.g., Pergamit, Huang, & Lane, 2001) on the behaviors of African American youth. Thus, this investigation also examines whether identified risk behavior profiles are associated with risk and resilience factors including general and culturally specific stress (interpersonal stress, intrapersonal stress, academic stress, environmental stress, and experiences with racial discrimination) and support (from one's family, friends, and college community), as well as demographic indicators (e.g., age, gender, and socioeconomic status) for this sample of African American emerging adults in college.

Results of a latent class analysis identified 5 distinct profiles among this sample- 1) *High Sexual Risk* (N=11), 2) *Abstainers* (N=102), 3) *Low Risk* (N=72), 4) *Alcohol Risk* (N=34), and 5) *Mixed Risk* (N=9). Partial evidence (i.e., overall differences for age, but not for gender or SES) was found for demographic variation among risk behavior profiles. Regarding contextual stress, identified profiles differed across interpersonal and environmental stress, but not across intrapersonal or academic stress. Also, differences among risk behavior profiles regarding self-reported frequency of experiences with racial discrimination between the *Alcohol Risk* profile and *Abstainers*. This investigation provided no support for mean differences between the classes in relation to the reported social support that students received from their family, friends, or college community.

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

CHAPTER 1

INTRODUCTION

Emerging adulthood is a transitional period that carries over the psychological, biological, and social change of adolescence. Although this developmental stage is characterized by transitional stress as youth begin to form their identities, it also provides new opportunities to succeed into adulthood (Arnett, 2000). It is important to understand alcohol use and sexual activity during emerging adulthood as they are major public health concerns shown to increase in this developmental stage (Choi, Meininger, & Roberts, 2006). Studies suggest that college students face increased risk for engaging in these behaviors, perhaps due to unprecedented academic pressure, independence, and opportunities to drink alcohol and engaging in sexual intercourse (Fromme, Corbin, & Kruse, 2008) that often characterize university settings.

Studies suggest that there is an increase in co-occurring risk behaviors among youth; namely, that alcohol use during emerging adulthood often co-occurs with risky sexual behaviors in this population (Hipp et al., 2012; Lindberg, Boggess, & Williams, 1999). These investigations show that youth who consume alcohol also are more likely to have more sexual partners than their counterparts who do not drink (e.g., Moore et al., 1995; Cooper, Pierce, & Huselid, 1994). While between 66 and 74% of emerging adults between the ages of 18 and 25 report drinking alcohol (National Epidemiologic Survey on Alcohol and Related Conditions, 2006), this number has been historically and

consistently higher (between 84% and 93%) for those in college (Slutske et al., 2004; Wechsler, 1996).

Problem drinking and sexual activity are shown to peak during emerging adulthood (Schulenberg & Maggs, 2002; Baer, 1993), to be stable across time (O'Neill & Sher, 2000; Vik, Carrello, Tate, & Field, 2000), and to lead to negative adjustment into adulthood (Sandfort, Orr, Hirsh & Santelli, 2007). Studies suggest that contextual and social role changes that occur when youth begin college put them at particular risk for engaging in risky drinking and sexual behaviors (Sandfort, Orr, Hirsh & Santelli, 2007; Arnett, 2000; Miller et al., 2004; Kogan et al., 2010). When problem drinking and sexual activity co-occur, youth are less likely to use proper contraception or birth control (Bachanas et al., 2002; Abma, Martinez & Copen, 2010), more likely to drink and drive (Brache & Stockwell, 2011; Miller 2008; Thombs et al., 2010) and more likely to face serious, potentially fatal outcomes of these behaviors including academic failure, problems with peers, unintended pregnancies, sexually transmitted diseases, potentially fatal alcohol related traffic accidents, and death (National Institute on Alcohol Abuse and Alcoholism, 2013; Godette, 2009; Brown et al., 2004; Sharma & Atri, 2006; Grant et al., 2001; Hingson, Zha, & Weitzman, 2009; Wechsler et al., 2003).

It should be noted, however, that behavior development within groups is heterogeneous, and that there are individual differences that exist within African American emerging adults. This information is especially important to understand because African American youth are at particular risk for experiencing more harmful social, legal, and health-related consequences of drinking and engaging in sexual intercourse than their Hispanic or White American counterparts (Godette, 2009;

Goldstein et al., 2009). However, much of the past literature on risk behaviors focuses on either adolescent or adult populations (see Utsey et al., 2007; Hughes et al., 2006) and does not study risk behaviors during emerging adulthood- a critical point in one's development. Further, there are certain methodological characteristics of the variable-centered approach typically taken to examine risk behaviors. This approach is particularly limited in that it does allow for the exploration of the ways that alcohol use and sexual activity interrelate (e.g., Resnick et al., 1997; Johnston et al., 2011; Schulenberg & Maggs, 2002). A multidimensional, profile-oriented approach is one which allows for the exploration of within-group differences in alcohol use to be examined alongside sexual activity and co-occurring drinking and sex behaviors (McCutcheon, 1987; Jung & Wickrama, 2008; Weaver & Kim, 2008; Laursen & Hoff, 2006). Simply, this type of profile analysis has particular utility in the literature because it uses similarities across responses to multiple measures and classifies a group of heterogeneous people (e.g., African American emerging adults in college) into relatively homogenous groups (Roeser, Eccles, & Sameroff, 1998).

After gaining an understanding of variations that exist in risk behavior engagement among this group of youth, the logical next step is to examine the association of demographic indicators, as well as risk and resilience factors that are shown to impact alcohol use and sexual activity for African Americans in college. Overall, studies show that youth growing up in low-SES families are at greater risk of alcohol use and risky sexual behaviors (Arthur et al., 2002; Furstenberg & Cherlin, 1991; McLanahan, 1999). Research also suggests gender differences in sexual behaviors and alcohol use between African American male and female college students. Specifically, African American

males are more likely to have had more lifetime sexual partners (Hayes et al., 2009; Taylor, et al., 1997), and that young African American females are more likely to abstain from alcohol (Caetano & Kaskutas, 1995; Jones-Webb, 1998; Herd, 1990).

Moreover, through relating risk and resilience factors to specific patterns of risky behaviors, prevention scientists will gain insight into how the experiences of these African American youth are related to their alcohol use and sexual activity. This, perhaps, could lead to the development of prevention programming that seeks to reduce risk factors and increase resilience factors among African American emerging adults in college. The larger literature indicates that contextual stress and social support serve as factors of risk and resilience that are associated with developmental outcomes for students (Stinson, 2002; Rodney et al., 1999; Garbarino, 1999; Satcher, 2001). Moreover, studies suggest the impact of cultural factors on risk behaviors among African American emerging adults in college, showing that these students are at particular risk for encounters with racial discrimination that have the potential to negatively impact development (Cabrera et al., 1999; Ancis, Sedlacek, Mohr, 2000). Overall, these factors (student stressors, experiences with racial discrimination, and social support) have most often been cited in the literature as particularly influential on risk behavior participation among African American emerging adults in college (Brook & Pahl, 2005; Turner-Musa & Lipscomb, 2007; Flay et al., 2004; Williams & Mohammed, 2009).

However, an approach to understanding these issues through utilizing profile-oriented methodology to examine patterns that exist in African American students' risk behavior participation also is needed. Investigators should explore the ways in which both general and culturally specific risk and resilience factors and demographic variables

impact behavioral outcomes for this population. Drawing from tenets of the Developmental-Contextual Perspective and the Integrative Model of Developmental Competencies, the current study begins to fill these gaps in the literature.

Specifically, the purpose of this investigation is to utilize a multidimensional, profile-oriented approach (Latent Class Analysis) to examine patterns that exist in drinking behaviors (frequency and amount of alcohol consumed), sexual activity (number of lifetime partners), and sexual activity while under the influence of alcohol among a sample of African American college students. The current study also examines the relationships between identified risk behavior profiles and general and culturally specific stress (contextual stress, experiences with racial discrimination) and social support (from one's family, friends, and college community) as risk and resilience factors that are identified in the literature as associated with African American emerging adults' behavioral outcomes. Lastly, as previous studies have suggested that engagement in risk behaviors vary by demographic indicators, the current investigation will examine whether the identified profiles vary across age, gender, and SES.

CHAPTER 2

LITERATURE REVIEW

2.1 RISK BEHAVIORS AMONG AFRICAN AMERICANS

The critical stage of emerging adulthood occurs between 18-25 years of age (Eccles et al., 1993; Hamburg & Takanishi, 1989; Robinson et al., 1993). For those who seek higher education, emerging adulthood is often marked by youth beginning college, a setting in which there is unprecedented unstructured time, time away from parents, stress, and opportunities to engage in risk behaviors (Fromme, Corbin, & Kruse, 2008; National Institute on Alcohol Abuse and Alcoholism, 2013; Hingson, Zha, & Weitzman, 2009; Weden & Zabin, 2005; Stueve & O'Donnell, 2005). Thus, emerging adults who enter college are undergoing character development and identity formation, and they are at particular risk for engaging in risk behaviors, (Arnett, 2000; Miller et al., 2004, Kogan et al., 2010).

Alcohol Use.

Alcohol is the drug most commonly found among polydrug users (Watson, 1990), and it is the most frequently used drug among emerging adults, with between 23% and 55% entering college report having been drunk at least once in their life (Johnston et al., 2008; Johnston, O'Malley, & Bachman, 2011; Brown et al., 2004). While this estimate is true for the general population, college student drinking is a prevalent risk behavior that is a growing problem on campuses around the nation with the reported rate of alcohol use

6

ranging between 84% and 93% of undergraduate students (National Institute on Alcohol Abuse and Alcoholism, 2006; Slutske et al., 2004; Wechsler, 1996). Further, problem drinking behaviors peak during emerging adulthood (Schulenberg & Maggs, 2002; Baer, 1993), and students who begin drinking at this time are likely to carry their behavior patterns into adulthood (Chen & Jacobson, 2012). Thus, the importance of understanding and seeking to reduce alcohol use in college is particularly evident.

Research utilizing variable centered approaches to studying alcohol use in college students explore binge-drinking behaviors (i.e., males consuming five or more drinks, or females consuming 4 or more drinks in a two hour period) and show that approximately 50% of men and 37% of women report engaging in binge-drinking in a 2 week period (Wechsler et al., 1995). Although a standard drink contains 14 grams of "pure" alcohol (e.g., the equivalent to 12oz of beer with 5% alcohol; 5oz of wine with 12% alcohol; 1.5oz distilled spirits, or liquor, with 40% alcohol), college students often drink serving sizes that are large, over-poured, or mixed with more alcohol than a standard drink (National Institute on Alcohol Abuse and Alcoholism, 2013). Research also has explored heavy episodic drinking behaviors and shown that binge drinking is more prevalent among college students than among their same aged peers who are not in college (Wechsler et al., 1995; National Institute on Alcohol Abuse and Alcoholism, 2013).

Investigations focusing on the non-student adult population indicate a bimodal distribution in drinking behaviors for African Americans ages 25-75. These studies show that the majority of adults are either abstainers (i.e., those who do not often drink alcohol) or heavy drinkers (i.e., consuming five or more drinks in a row at least once in a two week period) (Chen, Dufour, & Yi, 2004). Other than epidemiological studies (Johnston,

O'Malley, & Bachman, 2011) there is a dearth of research examining the drinking behavior of African American college students. Overall, researchers have focused on demographic variables, finding that African Americans who are heavy drinkers are more likely to be younger men, and those who abstain from alcohol use are more likely to be women and younger in age (Caetano & Kaskutas, 1995; Jones-Webb, 1998; Herd, 1990). Although many African American youth experience easier access to, increased exposure to, and more pressure to use alcohol (Kosterman et al., 2000; Cherry et al., 1998; Flay et al., 2004), it has been consistently documented that African Americans report less lifetime and heavy alcohol use or binge drinking than their White and Hispanic counterparts (National Institute on Alcohol Abuse and Alcoholism, 2006; Rinehart, Bridges, & Sigelman, 2006; SAMHSA, 2007; Rothman et al., 2009; CDC, 2009; Wallace et al., 2009). This investigation fills existing gaps through examining specific alcohol related behaviors including alcohol consumption frequency and binge drinking rates among African American emerging adults in college.

Sexual Risk Behaviors.

Sexual risk-taking is defined as "any behavior that increases the probability of negative consequences associated with sexual contact, including AIDS or other sexually transmitted diseases (STDs) and unplanned pregnancy (Cooper, 2002, pp. 101-102), of which, having multiple sexual partners is the most commonly cited sexual risk behavior in the literature. Nationally, approximately 60% of twelfth-graders report having had sex (Grunbaum et al., 2002). Among the 63.9% of American youth who transition to college immediately after graduating from high school, levels of sexual activity are lower than

the national average. Studies show that, while upwards of 50% of freshmen in college have never had sex (Siegel et al., 1999), the majority who have not had sex by freshmen year are likely to have sexual intercourse for the first time during college, reaching about 86% of students by senior year (Cooper, 2002; Siegel et al., 1999).

Studies on African American emerging adults report that they are more likely to have more sexual partners and to engage in higher rates of sexual intercourse in their lifetime than their Hispanic or White American counterparts (Chapin, 2001; Faryna & Morales, 2000).Having a greater number of sexual partners has been associated with having sexual intercourse without effective contraception or methods of birth control, STD contraction, and pregnancy (Bachanas et al., 2002; Abma, Martinez, & Copen, 2010). Other studies suggest that African American youth are particularly vulnerable during their transition to college when contextual (i.e., moving away from home) and social role changes (i.e., forming new peer groups) impact sexual activity (Sandfort, Orr, Hirsh & Santelli, 2007; Arnett, 2000; Miller et al., 2004; Kogan et al., 2010). Thus, the current study examines the sexual activity of African American college students between the ages of 18 and 25.

Co-occurring Risk Behaviors.

Alcohol use and sexual activity in emerging adulthood also are important behaviors to understand because the literature suggests an increase in the co-occurrence of these behaviors among college students (Bachanas et al., 2002; Crosby et al., 2008; Li et al., 2001; Guo et al., 2002; Stueve & O'Donnell, 2005; Weden & Zabin, 2005; Slutske et al., 2004; Hayes et al., 2009). Studies show that, perhaps due to lowered inhibitions,

impaired decision making, or believing that alcohol can enhance sexual experiences, youth who drink alcohol often report simultaneously engaging in sexual intercourse and to have several sexual partners (Hendershot & Heorge, 2007; Cho & Span, 2010; Crosby et al., 2008; Li et al., 2000; Guo et al., 2002).

Rothman and colleagues (2009) examined co-occurring alcohol and sexual risk behaviors among a sample of African American (55.4%), Hispanic (19.9%), and White (19.2%) youth (N=1,110) between the ages of 14 and 21 years old who were receiving services at an inner-city hospital. These researchers found racial differences wherein African American males were less likely than all other races to report having had sex after drinking during their lifetimes and within the past month (Rothman et al., 2009). Although this study is based on a clinical population that may not be reflective of the entire population, results suggest a link between alcohol use and sexual behaviors among the general population, and point to a need to better understand these behaviors among African American emerging adults in college.

Consequences of Risk Behaviors.

When examining consequences of risk behaviors, it is important to note that, although African Americans are engaging in some of these activities at lower rates than youth of other races, perhaps due to a lack of financial, social, and community resources, African American youth often suffer disproportionately higher or more severe negative consequences. These consequences include family conflicts, school dropout, financial difficulty, loss of jobs, DUI's and arrests, ill health, HIV and STD contraction, unintended pregnancies, school related disciplinary consequences, low educational

expectations, and poor academic performance (Heeren, Levenson, Jamanka, & Voas, 2002; Brown et al., 2004; Godette, 2009; Goldstein et al., 2009; Jackson, Hodge, & Vaughn, 2010).

Adverse effects specific to college drinking including reports of more frequent violence against others, homicides, rapes, mental health problems, premature death, and more serious alcohol-related sentences for African Americans than other races have also been documented (Jackson, Hodge, & Vaughn, 2010; Watson, 1990). Overall, studies suggest that the severity of alcohol use (e.g., frequency and amount of drinking) is related to several potentially harmful health and social consequences including alcohol abuse and dependence, other drug use, traffic accidents, and risky sexual behavior throughout adolescence and into adulthood (Komro, 2010; Grant et al., 2001; Hingson, Zha, & Weitzman, 2009; National Institute on Alcohol Abuse and Alcoholism, 2013; Wechsler et al., 2003).

Specific to risky sex, having multiple sexual partners places African American college students at significantly higher risk for STDs, HIV/AIDS infection, and unintended pregnancies when compared to their Hispanic and White American counterparts (Jackson, Hodge, & Vaughn, 2010; Dawson, Grant, & Li, 2007; Centers for Disease Control and Prevention, 2000; Santelli et al., 2004; Bachanas et al., 2002; Weden & Zabin, 2005). Moreover, when considering students who engage in sexual activity while under the influence of alcohol, these risks remain, with added risk for reported sexual abuse and rape (Godette, 2009; Sharma & Atri, 2006; Weden & Zabin, 2005; Hingson, Heeren, & Winter, 2005). Overall, results of these studies point to frequent drinking, binge drinking, having multiple sexual partners, and sexual activity while

intoxicated as major markers that are associated with these harmful outcomes. Thus, a deeper understanding of these variables, particularly for African Americans, is needed.

Limitations of Past Research.

  While past studies give us a broad understanding of the prevalence rates of risk behavior engagement, prior studies have several limiting characteristics. Perhaps most notably, these studies utilize variable-centered approaches which assume data comes from a homogeneous population and describe the average behavior of a sample group through forcing constructs into predetermined categories. By describing relationships among variables, this methodological approach fails to adequately describe higher-risk or lower-risk individuals (Hill et al., 2000), and does not explore individual variation that exists specifically within African American emerging adults (Komro et al., 2010). Thus, these investigations do not tell us anything about patterns that exist in the drinking activity or sexual behaviors of college students which may lead to differential outcomes in this group.

  Also, many of these studies show that high-risk sexual contact is often exacerbated by alcohol use, and that many students engage in both of these behaviors simultaneously. As noted, variable centered approaches are limited in their ability to contribute to a full understanding of the co-occurring nature of alcohol use and risky sex for this population (Weden & Zabin, 2005; Stueve & O'Donnell, 2005). Given severe consequences of alcohol use and increased sex for African Americans, the co-occurring nature of these behaviors is critical for researchers to understand.

Further, past studies do not capture these behaviors for African Americans during the critical transition of emerging adulthood. Contextual changes that occur in college give emerging adults greater opportunities to drink and have sex (Sandfort, Orr, Hirsh & Santelli, 2007; Arnett, 2000; Miller et al., 2004; Kogan et al., 2010). Last, although demographic variables tell us which African Americans are engaging in different risk behaviors, little is known still about specific factors that are associated with within group differences that exist among African American emerging adults. An understanding of risk and resilience factors that are related to alcohol use, sexual activity, and co-occurring risk behaviors will provide researchers and practitioners with potential targets for prevention programming aimed at reducing negative outcomes for this population.

The current study begins to fill these gaps in the literature through 1) utilizing a multidimensional, profile-oriented approach to identify patterns in alcohol use, sexual activity, and co-occurring risk behaviors, and 2) exploring factors which are associated with more or less engagement in risk behaviors among African American emerging adults in college.

2.2 PROFILE-ORIENTED APPROACH TO UNDERSTANDING RISK BEHAVIORS

When considering the aforementioned dangerous and potentially fatal outcomes associated with risk behaviors, exploring differences and patterns that exist within groups is a particularly important next step for prevention researchers. As noted, however, the majority of past investigations exploring alcohol and sexual activity are limited methodologically in that they do not explore how risk behaviors work in concert. Relatively recently, studies taking a multi-dimensional, profile-oriented approach to

understanding risk behaviors have begun to explicate heterogeneity that exists in drinking behaviors and sexual contact. These studies, however, are not without limitations. First, past investigations are focused on primarily White populations which may not be representative of minority populations. Thus, studies are needed which speak to the behavioral development of African Americans specifically. Given the aforementioned consequences of simultaneous engagement, the necessity for elucidating the co-occurring nature of risk behavior participation in the areas of alcohol use and sexual activity is apparent.

Although previous studies have identified patterns of drinking behaviors among adolescents, few studies have explored risk behaviors in the emerging adult population. Among the few existing studies, Ray and colleagues (2012) examined drinking related behaviors in a recent study utilizing a random sample of predominately White (91.7%), African American (0.9%), Asian (4.4%), Hispanic (2.2%), and Multiracial or "Other" (2.6%) college student drinkers. Latent profile analysis identified subgroups of drinkers with distinct patterns of drinking behaviors including 1) students who frequently used responsible drinking behaviors (i.e., pacing consumption) and seldom engaged in risky drinking behaviors (i.e., playing drinking games), 2) students who frequently used risky drinking behaviors and seldom engaged in responsible behaviors, and 3) students who used both risky drinking behaviors and responsible drinking behaviors at similar frequencies. This investigation found significant differences in profile membership in relation to age of drinking onset, gender, alcohol-related consequences, social drinking, and weekend and episodic drinking. Here, males were found to engage in higher risk drinking (Ray et al., 2012). Although participants were mostly White students, results of

this study support the exploration of age and gender differences that might exist in the behavior patterns of African American emerging adults in college.

Nocolai and colleagues (2012) took a profile-oriented approach to exploring alcohol expectancies and use across age and gender among a community sample of Germans between 18 and 59 years of age. Latent profile analyses showed that positive and negative alcohol expectancies (i.e., sexual enhancement) decreased as individuals aged, but that (in line with previous findings) alcohol consumption patterns were fairly stable from emerging adulthood into later development. These findings suggest that there may be differences in the co-occurrence of alcohol consumption and sexual contact as youth age, but that the levels of drinking behaviors might remain constant into adulthood. It is necessary, however, to acknowledge the importance of understanding factors that contribute to or thwart the engagement in these behaviors among emerging adults in college- an important next step in the literature that may influence future prevention efforts. Further, exploring specific risk and protective factors that are relevant to African American college students is important given the disproportionate negative consequences that impact this population.

Though Mallett and colleagues (2013) included only a small percentage of African American participants and did not explore sexual activity in their study examining college students' use of alcohol mixed with energy drinks, this study contributes to the existent literature through its exploration of factors which could serve as risk or resilience factors for risky behaviors in college students. These researchers identified four distinct patterns of alcohol use among study participants who were White (78.9%), Hispanic or Latino (8%), Asian (7.2%), African American (6.7%), and

multiracial or other race (7.2%) college students. These investigators found that there were 1) moderate alcohol drinkers consuming low levels of mixed drinks, 2) heavy alcohol drinkers consuming low levels of mixed drinks, 3) moderate alcohol drinkers consuming high levels of mixed drinks, and 4) heavy alcohol drinkers consuming high levels of mixed drinks.

In this study, moderate alcohol consumers drank between 8 and 12 drinks a week and heavy drinkers averaged between 23 and 25 drinks per week. Consistent with previous research, students who drank more mixed drinks perceived their peers in school to drink significantly more than students who drank less. These students also reported significantly more alcohol-related consequences than students who drank less (Mallett et al., 2013). A significant next step of this research is for researchers to also examine sexual behaviors in conjunction with alcohol use, as well as risk and resilience factors that are shown to be influential for African American emerging adults (i.e., experiences with discrimination) in college.

Co-occurring Risk Behaviors.

An example of a study exploring alcohol and sex behaviors can be seen in Patrick and Maggs' (2010) work which identified drinking motivation profiles based on motivation for (relaxation/coping, fun/social, sex, image) and motivation against (behavioral, physical) alcohol related behaviors. These researchers also examined sex motivational profiles based on motivations for (coping, intimacy, and enhancement) and motivations against (health, not ready) risky sexual activities among 18-20 year old college students (27.9% Hispanic, 27.0% White, 15.5% African American, 19.3% Asian,

10.3% multiracial). Latent profile analysis identified students who were highly opposed to drinking, students who were average in their drinking motives, and those who were described as highly in favor of drinking. Patterns for sex beliefs emerged wherein students were either highly against sex, highly in favor of sex, or moderately opposed to sex. In this study, drinking motivational profiles were associated with psychosocial adjustment and alcohol use, while sex motivational profiles were associated with actual sexual experiences (Patrick & Maggs, 2010). These findings are in line with previous suggestions that there are differential reasons for engaging in risk behaviors during emerging adulthood. However, these researchers did not investigate alcohol and sex simultaneously, and they did not explore patterns that exist in co-occurring risk behaviors (i.e., having sex under the influence of alcohol).

Stappenbeck and colleagues (2013) utilized latent profile analysis to identify patterns of alcohol usage and expectancies among women in order to examine how drinking patterns are associated with sexual risk behaviors. Seven hundred women between the ages of 18 and 35 of various racial backgrounds (66.2% White, 7.1% African American, 7.9% Asian, 8.6% Hispanic, 18.7% other) were included in this study of which 31% of participants were currently full-time college students. Results identified three patterns in drinking behaviors. Participants were either 1) moderate drinkers, 2) regular heavy episodic drinkers, or 3) frequent heavy episodic drinkers. In this study, frequent heavy drinks had the greatest number of sexual partners and drank the most alcohol before having sex. Also, regular and frequent heavy episodic drinkers reported more positive beliefs about casual sex, and a greater likelihood of having future unprotected sex than women who drank moderately (Stappenbeck et al., 2013).

These results suggest that there are patterns that exist within the drinking behaviors of women, and that these patterns are related to different sexual risk taking behaviors. Again, exploration is needed in risk and resilience factors which contribute to these behaviors, as well as the drinking and sexual behaviors among African American emerging adults, as studies show differences in these behaviors based on culture and experience.

Laska and colleagues (2009) examined behavioral patterns in a range of interrelated health and risk behaviors including diet and exercise, substance use, sexual behaviors, sleep, and stress among 2,026 emerging adults between the ages of 18 and 25 in college. Latent class analysis was utilized to identify mutually exclusive, homogeneous patterns of multiple risk behaviors for males and females. Female profiles were categorized to where 1) 40% of females reported poor lifestyle (diet, physical activity, sleep), yet low-risk behaviors (smoking, binge drinking, sexual risk, drunk driving; 2) 24.3% of females were high risk (high substance use, drunk driving, intoxicated sex, poor diet, inadequate sleep; 3) 20.4% were described as having moderate lifestyles due to engaging in few risk behaviors; and 4) 15.4% were health conscious, as seen through favorable diet/physical activity with some unhealthy weight management. Male profiles were identified as including 1) 9.2% poor lifestyle, low risk (significantly high stress, insufficient sleep); 2) 33.6% high risk similar to class 2 in females; 3) 51% moderate lifestyle, low risk; and 4) 6.2% of male participants were classic jocks with high physical activity and binge drinking).

This study is contributory to the literature because it highlights the influence of stress on health and risk related outcomes, particularly for youth in college. Although this

study was one of the first of its kind to explore such a wide range of complex health behaviors and lifestyle patterning among college youth, participants were predominately White (83%), with the remaining 17% of participants being African American, American Indian, Asian Pacific Islander, Hispanic, or mixed race. Further, though potential risk and resilience mechanisms for the associations between risk behaviors have been explored in the literature, little evidence is available which leads towards comprehensive understanding of the relationship between influential factors and risk behavior patterns for this subset of the population.

The Current Study.

Each of these reviewed studies contributes to the previous literature that typically employed direct, variable-centered methodology. These studies used a multi-dimensional, profile-oriented approach to explore patterns that exist in risk behavior participation. The current study goes beyond the scope of these investigations and explores risk behaviors during emerging adulthood, as results of recent investigations combine to suggest that behaviors that begin during this critical developmental stage are often stable over time. Further, the current study explores important characteristics of alcohol use (i.e., frequency of drinking, amount of alcohol consumed), sexual risk (i.e., number of partners), and sexual activity while under the influence of alcohol, as past research suggests that these behaviors often co-occur and can lead to severe consequences.

In contrast to the majority of these past studies that 1) included either alcohol use or sexual activity, 2) utilized separate profile analyses on both risk behavior outcomes individually, but not simultaneously, or 3) explored a wide range of health and risk

behaviors, the current study posits the importance of understanding patterns in the ways in which college drinking and sexual behaviors occur together, as opposed to separately. Also, as opposed to past studies that explored these behaviors using a sample of majority White students, or did not explore within group variation in African Americans, the current investigation is an extension of existing investigations through taking a profile-oriented approach to exploring variations in alcohol use and sexual activity of African American emerging adults in college. This is important because research shows that African American youth are engaging in these behaviors differently than their peers, and that they are often disproportionately affected by negative social, health, and legal consequences.

Moreover, in contrast to past research which consistently explores negative consequences of these risky behaviors, this investigation instead seeks to understand the ways in which identified risk behavior profiles are associated with risk and resilience factors including general and culturally specific stress (contextual stress, experiences with racial discrimination) and social support (from one's family, friends, and college community), as well as demographic factors (age, gender, and SES). Thus, results of this study have implications for future prevention and treatment efforts through highlighting contributing and inhibiting factors that are associated outcomes such as risk behavior participation among African American emerging adults in college.

2.3 THEORETICAL PERSPECTIVES OF AFRICAN AMERICAN ALCOHOL AND SEXUAL RISK
BEHAVIORS

Addressing the importance of integrating general and culturally specific perspectives, the current investigation draws from multiple theoretical models available in the larger field of human development. First, the Developmental-Contextual Perspective (Bates, 1987; Elder, 1998) is a primary theory guiding the current investigation because it considers the impact of contextual influences and person-context interactions on development. This theoretical framework posits that contextual influences are most likely to impact development and behavioral outcomes during transitions between pre-transitional settings (e.g., high school) and new settings (e.g., college). Thus, the Developmental-Contextual Perspective explains alcohol use and risky sexual behaviors through exploring a person's behaviors during developmental transitions that involve a significant change in one's ecological roles, settings, and environments (Schulenberg & Maggs, 2002). This work suggests that risk behaviors such as alcohol use and sexual activity are deeply embedded in the college experience, and that the social climate of university settings is what leaves undergraduate students at higher risk for engagement in these behaviors than their non-student peers (Wechsler et al., 1998; Schulenberg & Maggs, 2002).

Perhaps the most salient illustration of the Developmental-Contextual Perspective can be seen through studies concerning alcohol use trajectories (Johnston et al., 2011; Schulenberg & Maggs, 2002). Past reports show that college-bound students have lower rates of alcohol use than their non-college-bound classmates during high school. During the years following high school, however, college students have higher rates of alcohol

use and frequent heavy drinking than their counterparts who did not go to college (Johnston et al., 2011; Schulenberg & Maggs, 2002). Overall, the Developmental-Contextual Perspective emphasizes multidimensional and multidirectional development across the lifespan, and points to the shifting of contexts and environments as responsible for changes in alcohol use rates in emerging adulthood (Schulenberg & Maggs, 2002, pg. 55). Through considering the basis of this theory which focuses on person-context interactions, less importance should be placed on understanding behavior norms across groups. Conversely, the exploration of co-occurring behaviors as well as within group differences and patterns should be emphasized in the literature. In doing so, researchers will begin to fully understand the ways in which emerging adults in college process their experiences and environment, as well as their resulting behavioral outcomes.

In addition to understanding the risk behaviors of African American youth through exploring them within both developmental and social contexts, researchers stress the importance of investigating cultural factors that may significantly impact African American youths' development (i.e., Ogbu, 1981; Slaughter-Defoe et al., 1990). In particular, Ogbu (1981) defined cultural ecology as the study of the ways in which a person is influenced by the social organizations and cultural values of a population. Through understanding cultural ecology and the ways that youth view, explain, and interact with cultural factors, we are better able to understand specific and unique factors that greatly impact African American youths' development (Brice-Heath, 1982; Slaughter-Defoe et al., 1990).

Moreover, other researchers (Garcia Coll et al., 1996; Keogh & Weisner, 1993) posit that the assessment of factors that influence outcomes should not be restricted to

individual and community levels, but also should include factors such as culture and socioeconomic levels. These researchers suggest that in order to fully understand developmental processes, cultural contexts in which youth develop must be taken into consideration. Thus, it is implied that theories like the Developmental-Contextual Perspective propose an insufficient understanding of developmental outcomes because they do not specifically address culture or the racial/ethnic minority experience within a larger sociocultural environment. These researchers posit that it is necessary to understand influential race specific factors (i.e., experiences with racial discrimination) in conjunction with general factors of risk and resilience (i.e., student stress, social support) that are suggested in the literature to be associated with outcomes among African American youth (Garcia Coll et al., 1996; Keogh & Weisner, 1993).

The Integrative Model of Developmental Competencies is one such culturally specific theory which suggests that general and cultural experiences that exist in ecological contexts have direct and indirect effects on the development of minority youth (Spencer & Dupree, 1996; Garcia Coll et al., 1996). In conjunction with the Developmental-Contextual Perspective, the Integrative Model of Developmental Competencies enhances the relevance of traditional developmental perspectives pertaining to African American youth through positing that contextual variables including factors that are culturally-, racially-, and economically-specific variables such as culture, socioeconomic status, and racial discrimination are important factors that contribute to youth outcomes.

This theoretical framework provides additional insight through addressing proximal and distal impacts of culture. Researchers concerned with the Integrative Model

of Developmental Competencies further suggest that influential experiences and settings work to influence outcomes differently depending on one's developmental stage, the ecocultural characteristics of individuals, and their environment. Thus, the need for exploration of risk behavior patterns and factors that impact alcohol use and risky sex in African American college students is evident.

The current investigation bridges tenets of the Developmental-Contextual Perspective and the Integrative Model of Developmental Competencies to deepen the understanding of within-group variation in African American emerging adults' risk behaviors in college. Specifically, this study explores the relationship between these behaviors (frequency of drinking, amount of alcohol consumed, number of lifetime sexual partners, and sexual activity while under the influence of alcohol) and general and culturally specific factors that impact development (contextual stress, experiences with racial discrimination, and various sources of social support) and demographic variables (age, gender, and SES) for this population.

2.4 GENERAL AND CULTURALLY SPECIFIC STRESS AND SUPPORT AS FACTORS OF RISK AND RESILIENCE

Past studies document the prevalence of alcohol use and sexual activity and their related consequences across demographic groups (Kogan et al., 2010; Arrington & Wilson, 2000; Arthur et al., 2002). However, factors that are related to more or less engagement in these behaviors also should be understood. Researchers concerned with risk and resiliency emphasize the importance of identifying ways that different factors foster positive development (promotive factors), buffer the effects of negative

experiences (protective factors), or contribute to potentially harmful outcomes (risk factors) (Luthar, 2006; Arrington & Wilson, 2000; Compas, Hinden, & Gerhardt, 1995).

Resilience refers to the process of developing positive outcomes, thriving despite less than favorable experiences, and avoiding negative trajectories that are often associated with risk exposure (Luthar, Cicchetti & Becker, 2000; Masten & Powell, 2003; Fergus & Zimmerman, 2005). Specific to resilience, protective and promotive factors are indicative of stable adaptive and behavioral functioning. Promotive factors foster resilience in youth. Similarly, protective factors are those positive behaviors and situations that hinder the potential negative influence of risk factors on outcomes and encourage healthy development despite the presence risk factors (Pergamit, Huang, & Lane, 2001; Cowan et al., 1996; Compas, Hinden, & Gerhardt, 1995; Arrington &Wilson, 2000). Conversely, risk factors are behavioral and situational mechanisms (i.e., academic underachievement, maladaptive peer relationships, and disengagement from school and community activities; Arrington &Wilson, 2000) that have the potential to increase the likelihood that a negative outcome (i.e., binge drinking and having multiple sexual partners) will occur, or to decrease the likelihood that a positive outcome (i.e., (academic success) will develop (Pergamit, Huang, & Lane, 2001).

It is also important to note that factors of risk and resilience are developmentally distinct, namely that risk factors for alcohol use and sexual activity in early development may be different from risk factors for drinking and engaging in risky sex in emerging adulthood. Similarly, it should be noted that risk and resilience factors do not only vary between groups (White and African American, for example), but they also vary within groups (African American emerging adults), and by the outcomes of interest, as well as

25

important demographic, contextual, and individual characteristics including gender and age (Hops et al., 1999; Schulenberg & Maggs, 2002).

Researchers suggest that risk is increased when youth's surroundings make them vulnerable (i.e., a lack of social resources, institutions not being supported, etc.) (Masten & Garmezy, 1985; Tinzmann, 1990; Garmezy & Masten, 1991; Resnick & Burt, 1996). In their conceptualization, these researchers consider individual, school, community, and family characteristics that have the potential to influence outcomes. Thus, this ecological model of risk is more inclusive than other definitions that only point to potentially harmful individual or situational factors; however, their definition of risk is not without limitations. The most significant limitation of this definition, like other early conceptualizations, is that it does not address differences that occur due to cultural factors. For example, experiences with discrimination and racism are specific to youth across diverse cultures and contexts that may increase the possibility of negative outcomes in African Americans and other minority populations (Resnick & Burt, 1996; Arrington & Wilson, 2000).

Researchers have begun to identify a range of ecological and culturally specific factors that contribute to or decrease the likelihood of drinking alcohol and engaging in sexual risk behaviors for African American youth (Lightfoot & Milburn, 2009) that also can be addressed through prevention strategies and efforts (DiClemente et al., 2004; Dolcini, Harper, Boyer & Pollack, 2010; Marshall, Crepaz, & O'Leary, 2010). Prevention and intervention studies highlight the influence of general and culturally specific factors which impact behavior, and demonstrate the importance of targeting co-occurring behaviors for African American youth (Cooley-Strickland et al., 2009; Guthrie, Cooper,

Metzger, & Brown, 2012; Xue, Zimmerman, & Cunningham, 2009). Through doing so, efforts are more likely to reduce the effects or likelihood of the more serious health related and social consequences associated with risk behaviors like drinking and engaging in risky sex (Metzger et al,. 2013).

Research indicates that African American emerging adults in college are developing independence and autonomy from their parents, and that risk and resilience factors that influence alcohol use and unsafe sexual behaviors for these youth are likely contextual stressors and sources of support that occur in university settings. An important contribution of this investigation is that it explores both general and culturally specific factors of risk and resilience that are shown to be influential on risk behaviors for these youth. Specifically, school-related stress, daily experiences with racism and discrimination, and social support from one's family, friends, and college community have often been associated with risk behaviors among African American youth in college.

Contextual Stress.

As a result of the growth and transition that characterize emerging adulthood, many youth face increased stressors that are both internal (i.e., perceived impact of stressors; worries about the future; thought processes associated with transitions, maturation, and growth) and external (i.e., work- and school-related stress; transitional stress; stress caused by interpersonal interactions). College students are a group of emerging adults particularly at risk for experiencing stress (D'Zurilla & Sheedy, 1991; Ross, Niebling, & Heckert, 1999). College students are often living away from home for

the first time, attempting to maintain a high level of academic achievement, and functioning within a social environment that is much different from that typical of their early development. Regardless of their year in school, college students often deal with pressures to prepare for and find a career after graduation, and many of these emerging adults also are beginning to think about finding a potential life partner.

This transitional life stress may leave many youth susceptible to negative outcomes that are a result of increased participation in risk behaviors including alcohol use and risky sexual activity (Aseltine & Gore, 2000; Unger, Hamilton, & Sussman, 2004). Stress-coping theory explores alcohol use and risky sexual activity as reactions to life stress and negative life events (Wills et al., 2001; Brody et al., 2010). Through this understanding, life stressors function as a risk factor for substance use in emerging adulthood through causing perceptions of limited efficacy and control as well as emotional distress (Fergus & Zimmerman, 2005). In contrast to studies which indicate that emerging adults are developing cognitive mechanisms to deal with this transitional stress, the Developmental Contextual Perspective suggests that youth who are actively engaged in ecological contexts like college may be at particular risk due to other maladaptive responses such as drinking alcohol being used at alarming rates (Schulenberg & Maggs, 2002).

For college students specifically, contextual stressors are typically from interpersonal sources, intrapersonal sources, academic sources, and environmental sources of stress (Ross, Neibling, & Heckert, 1999). Interpersonal sources of stress are those which result from interactions with other people such as trouble with parents or a fight with a boyfriend or girlfriend. Internal stressors such as changing sleeping or eating

28

habits are typically described by researchers as intrapersonal sources of stress. Transferring schools and increasing one's class workload are school-related activities and issues that serve as academic sources of stress for many college students. Also, problems in the environment that are outside of academics like experiencing computer problems or having car problems are environmental sources of stress. Within these categories of potential sources of stress, stressors have been identified as either daily hassles (e.g., being placed in an unfamiliar situation, speaking in front of class) or major life events (e.g., starting college, getting married, or change in alcohol use or drug use).

Researchers suggest, however, that these stressors alone do not cause anxiety or tension, but that stress results from the interaction between these events and an individual's perception of those stressors (Romano, 1992; Ross, Niebling, & Heckert, 1999). Thus, as someone's perceptions of stressful events vary, so might a particular experience or situation impact individuals differently (D'Zurilla & Sheedy, 1991) and be related to different patterns of risk behaviors.

Studies suggest a strong link between student stress and risk behavior engagement (Baer et al., 2001; Perkins, 2002; Fisher & Fisher, 1992). Results specific to African American emerging adults are inconsistent, however. Specifically, there is recent indication that African American youth face increased risk for compromised psychological functioning and behavioral outcomes as a result of life stressors during emerging adulthood (Choi, Meininger, & Roberts, 2006). For example, past studies specific to African American college students suggest that "escapist drinking" occurs when alcohol is consumed with the hopes of eliminating anxiety, social problems, or stress (Williams et al., 1993; Clifford & Jones, 1988). Conversely, more recent

investigations suggest that African American youth experience certain markers of emerging adulthood (e.g., increased responsibilities and family roles) earlier in their development than their White American counterparts (Cohen et al., 2003), and are perhaps better prepared for the transition into adulthood. Thus, a deeper understanding of the specific ways that contextual stressors serve as risk and resilience factors among African American emerging adults in college is particularly important given increased social demands and responsibilities (i.e., school and work duties, financial worries, family obligations) and thoughts and plans about their future (i.e., aspirations, goals, potential barriers, etc.).

Racial Discrimination.

In addition to changing developmental contexts and experiencing student stress, African American emerging adults in college experience increases in racial discrimination, especially when attending predominately White institutions (Cabrera et al., 1999; Ancis, Sedlacek, Mohr, 2000). According to past research, up to 60% of African American students report having experienced racial discrimination at least once or twice on their college campus (D'Augelli & Hershberger, 1993; Hoggard, Byrd, & Sellers, 2012). It is important to understand stress caused by racial discrimination because the cumulative impact of general stressors alongside racial stressors that youth of other races and cultures do not necessarily experience is what puts African American youth at even greater risk for engaging in escapist drinking and risky sexual behaviors.

While racial discrimination may be blatant or subtle (Feagin & Sikes, 1994; Feagin, 1991), African Americans more often report experiences with subtle or covert

interpersonal racial discrimination commonly known as racial hassles or microaggressions (Sue et al., 2007; Harrell, 2000; Kessler et al., 1999; Sellers & Shelton, 2003). Microaggressions are "brief and common, verbal, behavioral, and environmental indignities" (Sue et al., 2007, p. 271). These daily hassles are subtle everyday acts of racism (e.g., being ignored, overlooked, or not given service in a restaurant, store, etc.) that are often unintentional, automatic, and ambiguous, and may be seen as trivial by the perpetrator (Sue et al., 2007: Harrell, 2000; Pierce, 1995). Microaggressions involve mistreatment that occurs when the causes are not clearly determined; thus, the interpretations and resulting stress from these events are based on perspective of the victim (Harrell, 2000).

Research shows that exposure to racial discrimination is a normative stressor that is associated with various negative health behaviors and outcomes for African American youth (Cooper et al., 2013; Brown et al., 2000; Landrine & Klonoff, 1996; Schulz et al., 2006; Williams, Neighbors, & Jackson, 2008). Experiences with discrimination is a stressor that induces anger, distress, frustration, and anxiety (Wong, Eccles, & Sameroff, 2003, Pearlin, Schieman, Fazio, & Meersman, 2005), adversely affects mental and physical health (Wong, Eccles, & Sameroff, 2003), and leads to increases in substance use and risky sexual activity (Williams, Neighbors, & Jackson, 2003; Brody et al., 2010).

Similar to contextual stress, the ways that individuals respond to stressors may explain the impact that stress caused by racial discrimination has on individuals (Harrell, 2000; Utsey et al., 2007; Gaylord-Harden & Cunningham, 2009; Noh et al., 1999). Research suggests that the strategies used by an individual to manage the stress caused by negative racial experiences may be a source of within-group differences in African

31

American's psychological, behavioral, and mental health outcomes (Clark et al., 1999). Certain strategies are shown to influence the many negative psychological and behavioral consequences associated with experiencing racial discrimination (Utsey et al., 2000; Gaylord-Harden & Cunningham, 2009; Noh et al., 1999), while only some actually help to encourage positive mental health and behavioral outcomes (Utsey et al., 2007). Specifically, receiving social support has been found to prevent negative outcomes (Brondolo et al., 2008), whereas the findings regarding avoidance strategies (e.g., turning to alcohol or sex) has been shown to lead to negative outcomes among African Americans (Utsey et al., 2000).

Several studies have found relationships between perceived racial discrimination and the use of alcohol and other substances among African Americans in retrospective self-report (Neblett, Terzian, & Harriott, 2010; Borrell et al., 2007; Gibbons et al., 2007; Landrine et al., 2006). In a recent investigation by Gibbons and colleagues (2010), when some youth were asked to envision a discriminatory experience and others were not, youth who imagined racially charged situations were shown to report higher levels of substance use willingness than youth imagining a nondiscriminatory situation. Moreover, stressful life events such as experiences with racial discrimination have been consistently suggested as an important risk factor linked to risky sexual behavior among African American youth (Stock et al., 2013; Chapin, 2001; Pachter & Garcia Coll, 2009; Pascoe & Smart Richman, 2009; Williams & Mohammed, 2009). Other recent studies report relationships between racial discrimination and sexual risk-taking in emerging adulthood, showing that 1) an increase in alcohol and substance use behaviors mediate this relationship, and 2) that the relationship between experiences with racial discrimination

and risk behaviors exist independent of other life stressors among African American youth (Stock et al., 2013).

Social Support.

Various sources of social support also have been cited in the literature as influential risk and resilience factors associated with risk behavior engagement. As studies suggest that emerging adults increase their use of adaptive behaviors and reliance of social support (e.g., Masten, et al., 2004), this mechanism of resilience may be particularly important to consider when exploring risk behaviors for youth in this developmental stage who are enrolled in college. Historically, African Americans have established and relied upon their own traditional forms of social support (Bagley & Carrol, 1998; Brown, 2008) that includes the family, extended family, the African American community, and the adoption of fictive kin (individuals who are not biological relatives but play an active role in developmental success) (Thorton, 1998; Pipes-McAdoo, 2002; Boyd-Franklin, 2003).

These extensive social support networks are a cultural pattern that African Americans are entwined in which contributes to their ability to overcome adversity and still thrive despite facing various risks (Pipes-McAdoo, 2002). Many studies have shown significant relationships between social support and youth risk behavior participation where support systems serve as resilience-enhancing factors that buffer the effects of psychological distress (Bagley & Carroll, 1998; Constantine, Wilton, & Caldwell, 2003), alleviate negative behavioral outcomes (Zimmerman, Ramirez-Valles, Zappert, & Maton,

2000; Plybon, et al., 2003), and encourage optimal development (Bean, Bush, McKenry, & Wilson, 2003) despite encountering social and environmental risk.

The current literature, however, is limited in its exploration of the ways in which African American youths' tendency to deal with stress through seeking outside support is related to their engagement in risk behaviors. This relationship is complicated by recent studies which suggest that one's family and extended family, typical sources of support, may serve as a burden for some African Americans in college (Miller-Cribbs & Farber, 2008). For example, these college students, especially those from low SES backgrounds, may bear the responsibility of contributing financially to people within their support networks. These youth who face typical developmental transitions that come from being in a new environment, are also faced with responsibilities that tie over from their old environments (e.g., contributing financially to their families). Thus, while broader contextual social influences are important to keep in mind, it is also necessary to use multidimensional measures of support. Through doing this, researchers will be able to identify those specific social support networks that have a positive impact on behavioral outcomes for these youth. Thus, the current investigation is necessary and contributory to the field through seeking to uncover relationships between risk behavior engagement and risk and resilience factors including contextual stress, experiences with discrimination, and social support from friends, family, and the college community of these African American emerging adults.

2.5 RESEARCH QUESTIONS, SPECIFIC AIMS, AND HYPOTHESES

Guided by tenets of the Developmental-Contextual Perspective and the Integrative Model of Developmental Competencies, research questions for the current investigation include: What patterns and within-group differences exist in the alcohol use and sexual behaviors of African American emerging adults? How are general and culturally specific stressors and support related to risk behavior participation among these college students? And, how are demographic variables associated with associated risk behavior profiles for this sample of African American emerging adults in college? Latent Class Analysis is appropriately conducted in an exploratory manner; as such, a priori hypotheses suggesting the nature or number of latent classes found in the sample is not predetermined (Hoijtink, 2001; Finch & French, 2014). However, theoretical predictions are made (see hypotheses below).

A conceptual model of the current investigation can be found in Figure 2.1. Specifically, this model addresses individual differences that exist in the alcohol consumption rates, binge drinking frequencies, number of sexual partners, and co-occurring alcohol and sexual risk behaviors of African American emerging adults in college. This model also indicates the exploration of whether student stress, racial discrimination, and social support from friends, family, and college community serve as risk and resilience factors associated with identified risk behavior profiles for these emerging adults. Last, the current study explores the ways in which age, gender, and SES are related to alcohol use, sexual activity, and co-occurring risk behavior patterns for African American college students. Specific aims and their accompanying hypotheses include:
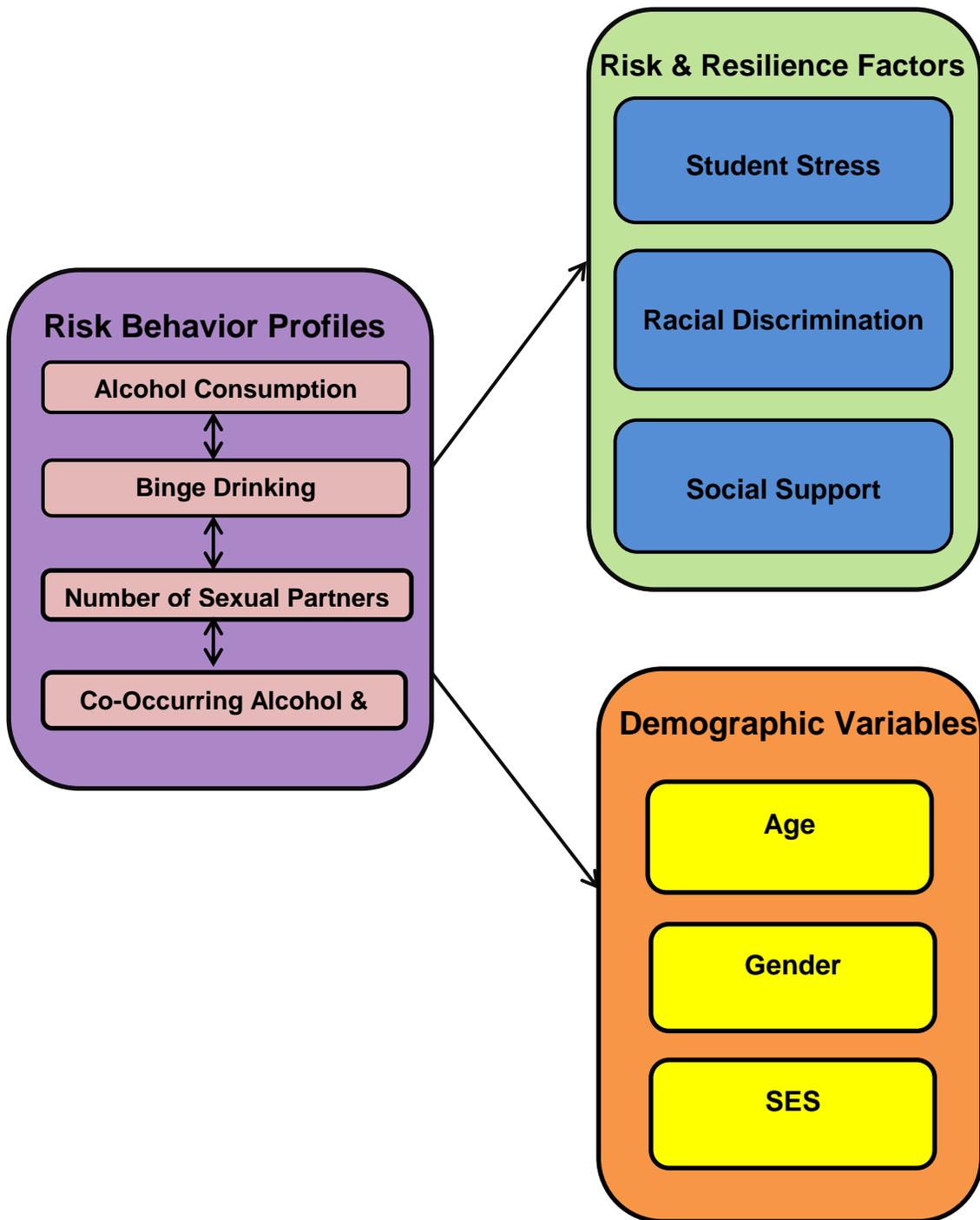
Figure 2.1. *Conceptual Model of the Current Study*

Specific Aim #1: Utilize Latent Class Analysis to identify risk behavior profiles of alcohol use (amount of alcohol consumed, binge drinking), risky sex (number of partners), and co-occurrence of alcohol use and sexual activity among African American emerging adults.

Hypothesis #1: Given greater incidences of co-occurring alcohol and sexual risk behaviors, patterns in individual responses are expected in alcohol and sexual risk profiles among this population. Although the numbers of profiles that will emerge will not be hypothesized, it is posited that there will be profiles of concurrent alcohol and sexual risk behaviors, profiles of greater alcohol risk, and profiles of greater sexual risk. Also, as some studies have suggested behavioral patterns where youth who drink responsibly are also less likely to engage in sexual intercourse, it is expected that a risk behavior avoidant group also will emerge to mimic these previous results within the current sample of African American college student participants.

Specific Aim #2: Examine the ways in which identified risk behavior profiles are associated with risk and resilience factors including general (e.g., student stress) and culturally specific stress (experiences with racial discrimination) and support (from one's family, friends, and college community) among this sample of emerging adults in college.

Hypothesis #2: It is hypothesized that there will be a relationship between identified

profiles and factors of risk and resilience for this sample of African American

emerging adults where profiles characterized by riskier alcohol (e.g., more

frequent drinking, higher rates of binge drinking), sex (e.g., greater number of

sexual partners, less condom usage), and co-occurring risk behavior engagement

will be associated with higher levels of risk factors and lower levels of resilience

factors and that profiles with less frequent and lesser amounts of alcohol usage

and risky sex will be associated with lower levels of risk factors and higher levels

of resilience factors.

Specific Aim #3: Examine how identified profiles of African American emerging adults'

risk behaviors are associated with demographic variables (age, gender, SES).

Hypothesis #3: It is hypothesized that there will be a significant relationship between the

identified profiles and demographic variables (age, gender) where profiles with

less frequent and lesser amounts of alcohol usage and risky sex behaviors will be

associated with younger females for this sample of African American college

students. A relationship between identified risk behavior profiles and SES is not

expected.

CHAPTER 3

METHOD

3.1 PARTICIPANTS

Inclusion and Exclusion Criteria

1,039 students between 18 and 25 years old were recruited from a university located in a mid-sized city in the southeastern United States. Because this investigation focused on within group variation among African American students, students who identified as Asian, American Indian or Alaska Native, Native Hawaiian or Other Pacific Islander, European American/Caucasian/White, Hispanic/Latino, or Native American/American Indian were excluded from analysis. Further, students who indicated that they were mixed with races that did not include African-American (i.e., "European-Asian mix" or "Eurasian", "White/Mexican" or "White Latino") were not included for analyses in the current study. The final sample consisted of 228 African American students. Also included in this sample were bi-racial students who self-identified as mixed with African American and another race (i.e., "Black/White", "Black and Hispanic", or "Afro Latina"; see Dennhardt & Murphy, 2011; Turner-Musa & Lipscomb, 2007).

Descriptive Information

The current study attempted to target a sample of 200 African American students due to statistical recommendations that suggest 50 observations per variable as optimal

for adequate power (Muthén & Muthén, 2002). Attempts were made to gain a representative sample of the university population (i.e., including males and females, as well as freshmen, sophomores, juniors, and seniors). Participants in the current study were between 18 and 25 years old (M= 20.53, SD= 1.87). Approximately 74.1% (N=169) of the sample was female. These demographics are somewhat similar to the university population, in that the average age of students at the recruitment university was 21 years old, with the student body being 54.3% female in 2013 (Annual Survey of Colleges, 2013). Also in 2013, the freshman class made up 18.5% of the university population (Annual Survey of Colleges, 2013). For the current investigation, approximately 24% (N=56) of the sample were freshmen, 18% (N=43) were sophomores, 22% (N=49) were juniors, and 35% (N=80) were seniors.

Approximately 69% (N=157) of the students in this sample reported a current grade point average of a B (3.0) or higher. Fifty six percent (N=128) of the students lived in households with both parents present, 27.8% (N=63) lived with their mother only, with an average of 2.8 (SD= 1.3) children living in the home. The majority of students (62%, N=142) reported having parents with at least some college education.

3.2 PROCEDURE

Human subject approval was granted from the University's Institutional Review Board. Methods of recruiting for this investigation included making the questionnaire available through the Psychology Participant Pool (largely available to freshmen) at the University of South Carolina. Participants recruited through this method received "extra credit" in their Psychology course for participation in this study about "Activities and

Behaviors in College", or "The ABC Study". As an important goal of this study was to explore alcohol use and sexual activity among African American emerging adults in college, this investigation also recruited from undergraduate sophomores, juniors, and seniors utilizing recruitment strategies including: advertising on email listservs, posting flyers, sampling African American organizations (e.g., fraternities and sororities), and snowball/network sampling methods. Please see Appendices D, E, F, and G for recruitment materials including study flyers and emails to organizations, teachers, and students. Participation in the study was voluntary for all students. A consent form describing the anonymous and voluntary nature of the study was the first page of the web survey, and, regardless of compensation method, students were not able to proceed with the questionnaire without consenting to voluntary participation.

Students not receiving extra credit were entered in a raffle to win one of 7 $100 gift cards. Additionally, African American students were given the option to elect to receive a guaranteed $10 gift card at survey completion. Because maintaining participant anonymity can be difficult in online research when attempting to compensate subjects for their time, some researchers (i.e., Kraut et al., 2004; Chiasson et al., 2006) suggest issuing previously purchased online gift cards with certification numbers to participants. This strategy was used for African American students who elected to immediately receive a $10 gift card. Because the current study also utilized raffle drawings to pay participants at the conclusion of data collection, all other students were asked to provide an email address that was not linked to their individual responses at survey completion. At the time of the raffle drawing, email addresses were entered into a random drawing, and 7 students were sent online gift cards addressed to them as an "ABC Study Participant".

Administration of surveys occurred online using a web-based survey (Survey Monkey). Thus, they were completed at a time and place convenient for students. Online survey administration was utilized because past studies show that the amount of sensitive information that survey participants report is positively related to the amount of privacy they perceive (Newman et al., 2002; Gribble et al., 2000). Students were not asked to disclose their names to complete the survey, thus, consent forms and questionnaires were anonymous. Also, previous studies show that reporting biases become more likely when assessing risk-behaviors wherein respondents may deliberately over- or underreport the frequency of risk behaviors (Kissinger et al., 1999). Further, a growing number of studies suggest higher and seemingly more accurate reporting of alcohol/drug use and risky sexual behavior with computer-based surveys compared to face-to-face interviews (Kurth et al., 2004; Chiasson et al., 2006; Kissinger et al., 1999; Newman et al., 2002; Perlis et al., 2004). It is suggested that the anonymity of online surveys increases validity because it allows participants to feel less pressure to report behaviors that are deemed socially desirable (Kissinger et al., 1999; Chiasson et al., 2006; Kurth et al., 2004; Jones, 2003). Overall, this survey technique was selected because online surveys are found to be valid for assessing low income, minority, and low computer-literate participants, and among college students and emerging adults (Ellen et al., 2002; Kurth et al., 2004; Bock et al., 1999; Williams et al., 1998; Schneider et al., 1991).

Although the benefits of utilizing web-based surveys have been well documented, the literature consistently suggests two main disadvantages to online data collection strategies: missing data and duplicate enrollments (Chiasson et al., 2006; Kissinger et al., 1999; Kraut et al., 2004; Williams, Cheung, & Choi, 2000; Williams et al., 2002). Certain

precautions were taken in an attempt to minimize or prevent these common sources of potential bias in online sampling. For example, the current study utilized a well-known online survey engine (Survey Monkey) that uses fast survey page loading and contains user-friendly software in an attempt to bypass survey time-outs and ensure survey completion. Based on recommendations from the literature, (Kraut, 2004; Nosek et al., 2002; Chiasson et al., 2006), the "Activities and Behaviors in College" questionnaire was piloted with 15 undergraduate students and three doctoral level graduate students in order to assure question clarity, and to estimate completion time. The average survey completion time for this investigation was estimated to have ranged from 15 to 20 minutes. Pilot testing of the survey was done on desktop computers, laptops, tablets, and smartphones.

Also in order to eliminate missing data, the survey designed for the current study did not allow for respondents to skip questions, leave response categories blank, or to select more than one answer for a given question, unless specified. Namely, if an answer was not selected or entered for a given question on the survey, or if more than one response was selected, respondents were given the appropriate error message (i.e., "This question requires an answer", "Please enter a comment", or "Please choose only one answer") and not allowed to proceed until the form was complete. Students who "dropped out" of the study by exiting the survey before completing their responses were not to be included in analyses for the current study. Thus, dropouts due to incompatible web browser, poor survey design, participants' lack of computer skills, and respondent fatigue are common reasons for missing data (Dillman & Bowker, 2001; Chiasson et al., 2006), that were both previewed and prevented in the current study

Because participants had the option of receiving class credits and financial incentives, researchers should attempt to both negate and detect multiple submissions by the same participant (Kraut et al., 2004; Birnbaum, 2004; Chiasson et al., 2006). Seen first, and even before the consent form of the survey, the title page of the "Activities and Behaviors in College (ABC) Study read: "You can ONLY complete this survey ONCE!! If you've taken it during a previous semester or for a different incentive (i.e., extra credit vs gift card vs raffle), you will not receive credit/compensation twice!" Also, the current study chose to utilize Survey Monkey software because it allows for the use of Internet protocol (IP) addresses to detect multiple survey responses from the same computer or cell phone. If identical IP addresses were detected among participants' responses, duplicate survey data were removed before analysis, during the data cleaning phase. Analyses revealed that there were no missing data points across all of the variables examined for the 228 African American college student participants in the current study.

3.3 MEASURES

Risk Behavior Outcomes

The Youth Risk Behavior Surveillance System (YRBSS) was developed by the Centers for Disease Control and Prevention (CDC, 1995) to monitor risk behaviors that contribute to public health concerns and social problems among youth in the United States. The Youth Risk Behavior Surveillance System measures risk behaviors through administration of the same items in 1) a national, state, and local school-based questionnaires of high school students conducted biennially since 1991 called the youth Risk Behavior Surveillance System (YRBS); 2) a home-based survey among a national

sample of 12 to 21-year-old youth in and out of school that was conducted once in 1992; and 3) the National College Health Risk Behavior Survey (NCHRBS) that was administered once, in 1995. These scales built on previous surveys of risk behaviors by assessing a broad range of risk behaviors that can be categorized in six areas: 1) behaviors that contribute to unintentional and intentional injuries; 2) tobacco use; 3) drug and alcohol use; 4) sexual behaviors that contribute to unintended pregnancy and STDs such as human immunodeficiency virus (HIV) infection; 5) unhealthy dietary behaviors; and 6) physical inactivity. Items assessing alcohol use and sexual behaviors were utilized in the current study.

Although the NCHRBS has not been administered nationally since 1995, its use continues in the literature through smaller-scale investigations exploring risk behavior participation in college students (e.g., Smith & Wessel, 2011; Kenya et al., 2003). Because the YBRS continues to be administered biennially, the most recent version (YBRS, 2013) was used to measure alcohol use and sexual behavior in the current investigation. Though no known studies have assessed risk behaviors utilizing this measure with a sample comprised of only African American participants, a number of reliability studies conducted between 1995 and 2003 with the general population suggest that items in the YRBSS have substantial or higher reliability (kappa = 61% - 100%) (Brener et al., 1995; Brener et al., 2002; Kann et al., 2002; Brener, Kann, & McManus, 2003; Brener et al., 2003).

To increase accuracy of responses, the survey included behaviorally specific terminology and introductory statements to orient students to questions for specific risk behaviors (Kilpatrick et al., 2003). For example, questions assessing alcohol consumption

stated that drinking alcohol is proceeded by the statement "This includes drinking beer, wine, wine coolers, and liquor such as rum, gin, vodka, or whiskey. For these questions, drinking alcohol does not include drinking a few sips of wine for religious purposes. *One drink of alcohol is defined as a 12oz. can or bottle of beer or wine cooler, a 4oz. glass of wine, or a shot of liquor straight or in a mixed drink".

Alcohol Use. Two items from the Youth Risk Behavior Survey (YRBS, National Center for Chronic Disease Prevention and health Promotion, 2008) were used to assess aspects of youth alcohol use, specifically, alcohol consumption and binge drinking. Alcohol consumption was measured using two items: "On how many days did you have at least one drink of alcohol DURING THE PAST 3 MONTHS?" and "On how many days did you have 5 or more (if male) or 4 or more (if female) drinks of alcohol in a row, that is, within a couple of hours DURING THE PAST 3 MONTHS?" Responses on these items allowed students to estimate the number of days they engaged in each behavior on a 6 point likert scale assessing drinking behaviors from "0 days", "1 or 2 days a week" to "every day or almost every day". Reliability for these two items was reported to be .801 for the current study. The time point of 3 months was selected over other time points due to data analyses which suggest these two measures as the most reliable measures of alcohol use in the current study (30 day = .787; 6 month reliability = .714; past year reliability = .795).

Sexual Behavior. Youth sexual behavior was measured using an item on the Youth Risk Behavior Survey (YRBS; National Center for Chronic Disease Prevention and health Promotion, 2008), intended to capture students' number of sexual partners:

"During your life, with how many people have you had sexual intercourse?" (YBRS, 2013; Smith & Wessel, 2011; Kenya et al., 2003).

Co-Occurring Risk Behaviors. The co-occurrence of sexual behavior and alcohol use (i.e., sexual activity while under the influence of alcohol) was assessed through use of the YRBS question "When thinking about how often you drink alcohol before having sexual intercourse, does this happen: never, seldom, sometimes, most times, always?" (YBRS, 2013; Smith & Wessel, 2011; Kenya et al., 2003). Responses were recorded on a 5-point Likert scale wherein higher response scores indicated more instances of drinking before sex, or greater co-occurring risk behaviors.

Risk and Resilience Factors

Contextual Stress. The Student Stress Survey (SSS) (Ross, Niebling, & Heckert, 1999) is a 41-item scale used to assess the major sources of stress among college students. The SSS addresses each of the four dimensions of stress that the literature has shown affect college students: interpersonal, intrapersonal, academic, and environmental sources of stress. Although not studied specifically with African American samples, current reliability analyses indicated internal consistency coefficients that were between .7 and .8. Six items were used to assess interpersonal sources of stress (.76 current reliability), including "change in social activities," "roommate conflict," "new boyfriend/girlfriend," and "fight with boyfriend/girlfriend." Intrapersonal sources of stress were assessed through 16 items (e.g., decline in personal health, death of a family member, new responsibilities, financial difficulties, and started college) with an estimated reliability of .79 for the current investigation. The academic dimension of stress included

8 items which assessed school-related difficulties including transferring schools, getting in a serious argument with an instructor, changing a major, and receiving a lower grade than anticipated (reliability reported at .70). Environmental stressors were assessed through 11 items (reliability estimated to be .81) including "messy living conditions," "change in living environment," "car trouble," and "divorce between parents."

As opposed to previous studies which use "yes/no" responses and assign a score to each stressful event based on researchers' interpretations of the amount of readjustment a person has to make in life as a result of the change or simply count the number of items endorsed and assign individuals with a total score (Ross, Niebling, & Heckert, 1999), the current investigation instead took an approach which asked students to rate their perceptions of how much of a problem each event was for them. This approach is in line with previous research that posits that the effect of stress on one's life is a result of an individual's perception of the events and situations in question. Here, students were told to rate each stressful event on a 4-point Likert scale and to choose from zero "not a problem at all," to three "very much a problem," in response to the prompt: "In the last six months, how much of a problem have the following been to you?"

Racial Discrimination. The Daily Life Experiences Scale (DLE-R) is an 18-item subscale of the Racism and Life Experiences Scales (RaLES; Harrell, 2000) which assess the frequency of everyday experiences with racial discrimination. The DLE-R has undergone previous psychometric validation with African American participants, showing excellent reliability with reported reliability coefficients between .94 and .96 (Hoggard, Byrd, & Sellers, 2012; Matthews et al., 2013). Participants were asked to read

each of the items on the scale and "determine how often you have experienced each event because of your race or racism in the past year". Thus, this scale assessed the frequency of the aforementioned racial microaggressions commonly experienced by African Americans (Sue et al., 2007) that are still emphasized in current literature (Hoggard, Byrd, & Sellers, 2012; Matthews et al., 2013). Using a Likert scale ranging from 0 (never) to 5 (once a week or more), participants rated each of the 18 events (e.g., "being accused of something or treated suspiciously," "being treated rudely or disrespectfully," "being observed or followed in public places," "overhearing or being told an offensive joke or comment"). Reliability for the 18 items in this scale designed to assess participants' frequency of discriminatory experiences was found to be .95 for the current study.

Social Support. The Multidimensional Scale of Perceived Social Support (MPSS; Zimet, Dahlem, Zimet & Farley, 1988) was used to measure the relative importance of social support in participants' lives (Zimet, Dahlem, Zimet, & Farley, 1988). This instrument was designed to assess the perceptions of social support adequacy from one's family, influential adults outside of one's family, and friends. The MPSS contains three subscales that were modified to assess support from families (e.g., "My mother really tries to help me", "I get the emotional help and support I need from my father"; 9 items with an estimated reliability of .85) and friends (e.g., "I can count on my friends when things go wrong", "I can talk about my problems with my friends"; 6 items; reliability of .94). Because, according to Canty-Mitchell and Zimet (2000), the Significant Others subscale of the MPSS explores aspects of social support that may be culturally or developmentally unique to various individuals, the "influential adults outside of one's

family" scale was modified to reflect participants' sense of support from their college community (e.g., "I feel like a member of my college community", "My college community helps me fulfill my needs"; 8 items with a current reliability estimated at .94). This is in line with research (e.g., Bagley & Carrol, 1998; Brown, 2008) which suggests that African Americans are likely to rely upon their own traditional forms of social support that includes their surrounding community.

Responses were based on a 7-point Likert scale response ranging from 1 (very strongly agree) to 7 (very strongly disagree). Each subscale was scored by totaling the items within the scale, and higher scores were indicative of higher levels of perceived social support in each domain. Past studies have found this scale to be a reliable measure for use with African American youth (although not college students), with internal reliability coefficients of .91 for Family, .89 for Friends, and .91 for Special Persons which was tailored for the current study to assess sense of college community (Canty-Mtichell & Zimet, 2000). Although the full scale score was not utilized for analyses in the current study, the full MPSS scale has demonstrated high internal consistency reliability with a coefficient alpha ranging from .91 to .93 in past studies with African American participants (Canty-Mitchel & Zimet, 2000; Brown, 2008).

Demographic Variables

The current study explores the relationship between identified risk behavior profiles and demographic variables including SES, age, and gender, as research indicates they are associated with risk behavior engagement (e.g., Pergamit, Huang, & Lane, 2001). For the current study, age was represented numerically; females = 0, and males

=1; and SES was measured by parents' education level (coded 0= *Other, unknown, none*, 1= *High school equivalency (e.g., GED)*, 2= *High school diploma*, 3= *Vocational tech diploma*, 4= *Associate degree*, 5= *R.N. degree*, 6= *Bachelor's degree*, 7= *Master's degree*, 8= *M.D., Ph.D., Law, Dental*).

3.4 DATA PREPARATION

Prior to analyses, data were examined to ensure analytic assumptions were met. Latent class analyses operate under two essential assumptions: 1) data collected on the population is theoretically appropriate for non-parametric testing, and 2) observations are conditionally independent in each class. As noted, one benefit to the person centered approach is that it does not force variables into predetermined categories, and allows for the exploration of data to as it exists in a population. Latent class analysis is a technique where constructs are created and identified from unobserved, or latent, subgroups that are based on individual responses from categorical data (Marcoulides & Moustaki, 2014). As such, latent class analysis is a data analytic technique often used in psychological and risk behavioral health research to identify meaningful groups of individuals within a larger heterogeneous population based on a set of variables (p. 307, Finch & French, 2014; Hedden, Whitaker, & von Thomsen, 2011; Henry & Muthen, 2010).

The distinguishing characteristic of non-parametric tests is that no explicit assumptions of normal distribution, linearity, or homogeneity are made (Marcoulides & Moustaki, 2014). As noted, because the literature shows that some of these risk behaviors are typically skewed in the general population, the latent class data analytic strategy is

51

appropriate because, theoretically, we did not expect normal distributions for variables in the current study.

A numerical and visual examination of skewness and kurtosis is often useful in identifying whether the distribution of a variable is significantly different from a normal distribution (Osborne, 2002). Table 3.1 contains distribution descriptives which indicate and results of normality testing, and skewness and kurtosis values for variables in the current study. The literature suggests that, if data are normally distributed, the Shapiro-Wilk Test of Normality p-value should be above 0.05 (Shapiro & Wilk, 1965; Razali & Wah, 2011). In the case of variables in the current study, the Shapiro-Wilk Test yielded p-values which were are below .05 for each variable, indicating that our data is not normally distributed. Further, when exploratory descriptive analyses are conducted, skewness and kurtosis should be as close to zero as possible if data are normally distributed. As a consequence, after dividing the measure by its standard error, we are given skewness and kurtosis z-values, which should be between ±1.96 for normally distributed variables (Cramer, 1988; Cramer & Howitt, 2004; Doane & Seward, 2011). For the current study, Shapiro-Wilk's tests (p-values < .05) (Shapiro & Wilk, 1965; Razali & Wah, 2011) showed that the variables of interest in the current study were not normally distributed with varying significance of skewness and kurtosis (Cramer, 1998; Cramer & Howitt, 2004; Doane & Seward, 2011).

Specific to the risk behaviors of interest, drinking in the past 3 months yielded a skewness of -.019 (SE = .161) and a kurtosis of -1.44 (SE = .32); binge drinking in the past 3 months had a skewness of 1.197 (SE = .161) and a kurtosis of .395 (SE = .321); number of past sexual partners showed a skewness of 2.015 (SE = .161) and a kurtosis of

Table 3.1. *Correlations, Means, Standard Deviations, Range, Skewness (SE) and Kurtosis (SE) Values of Core Study Variables*

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Age ‡	1.00														
2. Gender ‡	.004	1.00													
3. SES ‡	-.003	.061	1.00												
4. Drink 3 Months	.128[c]	.130[b]	.100	1.00											
5. Binge 3 Months	-.054	.078	.170[b]	.677[a]	1.00										
6. Sexual Partners	.268[a]	.127[c]	.009	.283[a]	.198[a]	1.00									
7. Co-Occurring Risk	.181[a]	.029	.020	.348[a]	.251[a]	.393[a]	1.00								
8. Interpersonal Stress	-.033	-.018	.048	.169[b]	.223[a]	.123	.078	1.00							
9. Intrapersonal Stress	-.085	-.042	.034	.052	.149[b]	.007	-.033	.586[a]	1.00						
10. Academic Stress	.015	-.025	-.055	.117	.110[c]	-.028	-.079	.488[a]	.615[a]	1.00					
11. Environmental Stress	-.100	-.043	.030	.034	.181[a]	-.017	-.088	.673[a]	.719[a]	.564[a]	1.00				
12. Racism Frequency	.099	.168[b]	.076	.128[c]	.173[a]	.058	.073	.346[a]	.393[a]	.250[a]	.337[a]	1.00			
13. Family Support	-.055	.048	.121[c]	.031	-.053	-.039	-.030	-.200[a]	-.122[c]	-.034	-.167[b]	-.162[b]	1.00		
14. Friends Support	.017	.024	-.163[b]	.026	.009	.101	.049	-.096	-.121[c]	-.004	-.124[c]	-.089	.515[a]	1.00	
15. Community Support	-.181	.155[b]	-.015	-.067	-.001	.110	.000	-.128[c]	-.152[b]	-.150[b]	-.162[b]	-.098	.347[a]	.566[a]	1.00
Mean	20.53	1.26	3.94	2.16	1.08	4.93	.92	.50	.51	.57	.47	1.15	3.98	3.65	3.69
SD	1.87	1.87	1.69	1.67	1.43	6.03	.58	.46	.37	.46	.46	1.03	.83	.79	1.00
Range	18 - 25	1 – 2	0 – 8	0 - 6	0 - 6	0 - 26	0 - 2	0 – 2.67	.0 – 2.13	0 – 3	0 – 2.64	0 – 4.78	1 - 5	0 3 4.31	0 – 5
Skewness (SE)	.56 (.16)	1.11 (.16)	.23 (.16)	-.02 (.16)	1.20 (.16)	2.02 (.16)	.01 (.16)	1.55 (.16)	1.25 (.16)	1.35 (.16)	1.73 (.16)	1.27 (.16)	-1.10 (.16)	-1.84 (.16)	-.86 (.16)
Kurtosis (SE)	-.40 (.32)	-.78 (.32)	-.41 (.32)	-1.44 (.32)	.40 (.32)	4.00 (.32)	-.05 (.32)	3.23 (.32)	2.28 (.32)	3.50 (.32)	4.18 (.32)	1.39 (.32)	1.58 (.32)	4.34 (.32)	1.01 (.32)

Note: ‡Indicates study covariate; Gender was coded 1 = *female* and 2 = *male*; Socioeconomic Status was measured by parents' highest degree earned and coded 0= *Other, unknown, none*, 1= *High school equivalency (e.g., GED)*, 2= *High school diploma*, 3= *Vocational tech diploma*, 4= *Associate degree*, 5= *R.N. degree*, 6= *Bachelor's degree*, 7= *Master's degree*, 8= *M.D., Ph.D., Law, Dental*; Drink 3 Months and Binge 3 Months were coded from 0= *0 days*, to 6= *every day or almost every day*; Lifetime Sex was coded from 0= *I have never had sexual intercourse* to 26= *26 or more people*; Co-Occurring Risk was coded as 0= *I have never had sexual intercourse*, 1= *No*, 2= *Yes*. [a]p < .01; [b]p < .05; [c]p < .10

4.003 (SE = .321); and co-occurring risk behavior resulting in a skewness of .006 (SE = .161) and a kurtosis of -.051 (SE = .321).

Social support measures also were not normally distributed, with skewness and kurtosis values as follows: the subscale measuring social support from family's skewness was -1.099 (SE = 1.61) and kurtosis was 1.584 (SE = .321); social support from peers subscale's skewness was -1.842 (SE = .161) and kurtosis was 4.336 (SE = .321); and social support from community subscale's skewness was -.864 (SE = .161) and kurtosis was 1.005 (SE = ..321).

None of the subscales measuring stress were normally distributed for emerging adults in the current study. Specifically, interpersonal stress had a skewness of 1.550 (SE = .161) and a kurtosis of 3.232 (SE = .321); intrapersonal stress had a skewness of 1.252 (SE = .161) and a kurtosis of 2.283 (SE = .321); academic stress had a skewness of 1.374 (SE = .161) and a kurtosis of 3.502 (SE = .321); and environmental stress had a skewness of 1.729 (SE = .161) and a kurtosis of 4.176 (SE = .321).

Similarly, the scale measuring the frequency of experiences with racism also was not normally distributed for the African American college students sampled for the current study. Here, frequency of experiences with racism had a skewness of 1.271 (SE = .161), and a kurtosis of 1.387 (SE = .321). Again, because Latent Class Analysis make no assumptions about the normality of distributions, these non-normal distributions are acceptable for the current study.

Also, researchers often utilize "eyeballing," or visual inspection of data, and suggest that histograms should visually indicate whether data are approximately normally distributed (Orr, Sackett, and DuBois, 1991). As noted, for the current study, none of the

variables of interest were normally distributed. It is suggested, again, that a non-parametric test (latent class analysis) is appropriate for analyzing the current data because no assumptions about normality in the distribution is made.

Another major assumption of LCA is local dependence (or, conditional independence), which suggests that each variable should be statistically independent or uncorrelated with one another, given their membership in a specific latent class (Marcoulides & Moustaki, 2014; Vermunt & Magidson, 2003; Goodman, 2002; Finch & French, 2014). Correlated data among observations from the same clusters occurs when participants are sampled in communities and then grouped together. When this assumption is violated, the result can be biased standard errors, parameter estimation inaccuracy, and inflated Type I error rates for the model tests (Vermunt, 2003, 2008; Asparouhov & Muthen, 2008; Finch & French, 2014). In an attempt to sample an adequate number of African American participants, the current study did target and survey students from some specific classes (i.e., African American Studies Program classes); however, 1) because the majority of study participants were from either general psychology classes or the entire university population, and 2) because the risk behaviors of interest are not assumed to vary systematically based on the classes students were enrolled in, the likelihood of violating the assumption of local dependence was minimal.

Further, Mplus data analytic software was utilized in the current study because, if the assumption of local dependence were violated when conducting latent class analyses, a "warning in model command" message would display, indicating that "all variables are correlated with all other variables within class" and instruct the user to "check that this is what is intended" (Mplus Version 6.11; Muthén & Muthén, 2010). Data analyses for the

current investigation indicated that study variables were indeed locally dependent and not in violation of this assumption. Thus, after assessing for violations of assumptions in the core study variables, data analysis began.

3.5 DATA ANALYTIC APPROACH

Specific Aim #1.

This investigation utilized a Latent Class Analytic framework. This analysis was utilized to identify patterns of alcohol use and sexual risk behaviors among African American emerging adults. Specifically, the latent class approach is an extension of the k-means technique because it provides more formal, statistical, criteria for selecting an ideal number of clusters among several alternatives (Magidson & Vermunt, 2004). Latent Class Analysis was utilized to determine the sustainability of multiple cluster solutions using Mplus software (Version 6.11; Muthén & Muthén, 2010). Here, several proposed models are applied, each distinguished from the other by the number of latent classes, and the comparative fit of the models is assessed using indices designed to highlight the model that best represents the observed sample data (Hoijtink, 2001). Dimensions of concern in the current investigation include frequency of alcohol consumption, frequency of binge drinking, number of sexual partners, condom use, and co-occurring alcohol and sexual risk behaviors.

In order to identify the best-fitting cluster solution, several steps were taken. First, based on previous studies (e.g., Nylund, Asparouhov, & Muthen, 2007), Akaike Information Criterion (AIC; Akaike, 1974) and Bayesian Information Criterion (BIC; Schwarz, 1978) were used to determine the optimal number of classes. Previous studies

suggest that AIC and BIC scores be interpreted in comparison to one another, and that lower scores (e.g., closer to 0) are indicative of better fitting model (Nylund, Asparouhov, & Muthen, 2007). Entropy values also were used as an indicator of which cluster-solution is most accurate at classifying risk behaviors. Values closer to or exactly 1.0 indicate a better classification. Further, because AIC, BIC, and entropy should be examined in conjunction with other model fit indices, a Lo-Mendell-Rubin Adjusted Likelihood Ratio Test (LMRT; Lo, Mendell, & Rubin, 2001; Nylund, Asparouhov, & Muthen, 2007) and Bootstrapped Likelihood Ratio Test (BLRT; Arminger, Stein & Wittenberg, 1999; McLachlan & Peel, 2000) also were used to identify the best fitting model. The p-values generated for the LMRT and BLRT compare nested latent class models wherein cluster solutions with a p-value less than .05 indicate that a particular solution, k is a better fit than the next lowest cluster, $k - 1$ (e.g., 5-cluster solution is a better fit than the 4-cluster solution) while cluster solutions with a p-value that is greater than .05 suggest that the higher cluster solution is not a better fit than the lower cluster solution (Nylund, Asparouhov, & Muthen, 2007; McLachlan & Peel, 2000).

In addition to these fit indices, each cluster solution was evaluated on its interpretability, according to past research (e.g., Merz & Roesch, 2011) which suggests using this technique to determine whether the profiles were generated as an artifact of a nonnormal distribution, or if they were in fact representing different classes of individuals (Muthen, 2006). Further, small classes (those containing far less than 5% of the 2285 participants sampled; N=11) are generally considered forced classes and associated with cluster solutions with too many classes (Hipp & Bauer, 2006; Merz &

Roesch, 2011), Thus, class sizes were also considered when determining the best fitting cluster solution.

Specific Aim #2.

After identification of profiles, a one-way analysis of variance (ANOVA) with post-hoc comparisons between identified profiles was conducted. Bonferroni adjusted alpha levels were used to examine demographic variation (age, gender, SES) across profiles. These tests were utilized because they allow for the identification of overall mean differences based on a given variable (e.g., age), and they also indicate whether differences exist across the identified classes (e.g., whether individuals were significantly older based on being classified as belonging to Class 1, Class 2, Class 3, Class 4, or Class 5).

Specific Aim #3.

Last, a one-way variance (ANOVA) and Chi-Square analyses was utilized to examine whether there were mean differences in risk and resilience factors including general and culturally specific stress (contextual stress, experiences with racial discrimination) and support (from one's family, friends, and college community) based on class membership for this sample of emerging adults in college.

RESULTS

4.1 PRELIMINARY DESCRIPTIVE STATISTICS

Descriptive statistics, including the means, standard deviations, and range of core study variables were computed, and are presented in Table 3.1. Overall, students reported moderate frequencies of drinking in the past 3 months (M= 2.16; SD= 1.67), and lower levels of binge drinking in the past 3 months (M=1.08; SD= 1.43). Pertaining to sexual activity, participants reported having an average of nearly 5 lifetime sexual partners (M= 4.93; SD= 6.03) with responses ranging between 0 and 26 or more sexual partners. As for co-occurring alcohol use and sexual activity, the majority of students in the current study reported that they did not drink alcohol before their last sexual intercourse (M= 92; SD= 58).

Frequency and percent values for each of the risk behaviors were also analyzed, and can be found in Table 4.1. Of the participants in the current study, 26.3% (N= 60) of students were non-users who reported not drinking alcohol in the past 3 months. Approximately fifteen percent of students (14.9%, N=34), reported drinking seldom (1 or 2 days in the past 3 months), and 9.2% reported drinking approximately once a month, or 3 times in the past three months. Thus, approximately 50% of the African American students surveyed for the current study reported either not drinking at all, or drinking less than once a month in the past three months. Further, 21.1% of students (N=48) reported drinking 2 or 3 days a month, or 6 to 9 times in the past 3 months, and are thus described

Table 4.1. *Frequency and Percent of Risk Behavior Indicators*

Variable	Code	Value	Frequency	Percent
	.00	0 days	60	26.3%
	1.00	1 or 2 days	34	14.9%
	2.00	Once a month (3 times in 3 months)	21	9.2%
Drink 3 Months	3.00	2 or 3 days a month	48	21.1%
	4.00	1 or 2 days a week	53	23.2%
	5.00	3 to 5 days a week	12	5.3%
	6.00	Every day or almost every day	0	0.0%
	.00	0 days	119	52.2%
	1.00	1 or 2 days	42	18.4%
	2.00	Once a month (3 times in 3 months)	24	10.5%
Binge 3 Months	3.00	2 or 3 days a month	21	9.2%
	4.00	1 or 2 days a week	17	7.5%
	5.00	3 to 5 days a week	4	1.8%
	6.00	Every day or almost every day	1	0.4%
	.00	0 I have never had sexual intercourse	49	21.5%
	1.00	1	28	12.3%
	2.00	2	25	11.0%
	3.00	3	20	8.8%
	4.00	4	15	6.6%
	5.00	5	23	10.1%
	6.00	6	14	6.1%
	7.00	7	11	4.8%
	8.00	8	6	2.6%
	9.00	9	4	1.8%
Number of Sexual Partners	10.00	10	7	3.1%
	11.00	11	2	0.9%
	13.00	13	1	0.4%
	14.00	14	5	2.2%
	15.00	15	3	1.3%
	17.00	17	1	0.4%
	18.00	18	1	0.4%
	20.00	20	4	1.8%
	23.00	23	1	0.4%
	26.00	26	8	3.5%
	.00	I have never had sexual intercourse	48	21.1%
Co-Occurring Risk	1.00	No	150	65.8%
	2.00	Yes	30	13.2%

as occasional drinkers. Twenty three percent of students (N=53) reported drinking 1 or 2 days a week (frequent drinkers) over the past three months. Twelve of the 228 students surveyed (5.3%) reported drinking 3 to 5 days a week, and are described as very frequent drinkers. No students reported drinking every day or almost every day.

Of the students surveyed in the current study, over fifty percent reported not engaging in binge drinking behaviors (drinking 5 drinks in a row for men, and 4 drinks for women) in the past 3 months (52.2%, N=119), and are described as non-bingers. Forty-two students (18.4%) reported binge drinking on 1 or 2 days in the past 3 months, and 24 students (10.5%) reported binge drinking approximately once a month, or 3 times in the past 3 months. Nine percent of students (N=21) reported binge drinking 2 or 3 days a month (up to 9 times) in the past 3 months, and 7.5% (N=17) of students reported binge drinking 1 or 2 days a week (up to 24 times) in the past 3 months, and are described as moderate to heavy bingers, respectively. Four students (1.8%) reported binge drinking 3 to 5 days a week for the past 3 months, and one student (.4%) reported binge drinking every day or almost every day, and were considered extremely heavy binge drinkers.

As for sexual partners, 21.5% (N=49) of students in the current study reported that they have never had sexual intercourse. Twenty-eight students (12.3%) stated that they had sex with only one partner at the time of the survey. Eighty-three students (36.5%) reported having sex with between 2 and 5 lifetime sexual partners. Specifically, 25 students (11%) had sex with two partners, 20 students (8.8%) had sex with 3 partners, 15 students (6.6%) had sex with 4 partners, and 23 students (10.1%) had sex with 5 partners in their lifetime. Eighteen percent (N=42) of students in the current study reported having between 6 and 10 sexual partners. Here, 6% (N=14) of students had 6

sexual partners, 5% (N=11) of students had 7 sexual partners, approximately 3% (N=6) of students had 8 sexual partners, 1.5% (N=4) reportedly had 9 sexual partners, and 3% (N=7) had 10 sexual partners. A combined total of 7.4% of students (N=17) had between 11 and 20 sexual partners, and only one student reported having 23 sexual partners (.4%). Eight students in the current study (3.5%) reported having sex with 26 or more people in their lifetime.

Co-occurring alcohol and sexual risk behaviors were also reported by African American emerging adults in the current study. Again, 21% of students (N=48) reported that they have never had sexual intercourse. Over 65% of students (N=150) reported that they did not drink alcohol before their last sexual intercourse. Conversely, 13% (N=30) reported drinking alcohol before the last time they had sex, and these students are therefore described as engagers in co-occurring risk behaviors.

4.2 BIVARIATE ANALYSES

As noted in Table 4.1, bivariate analyses indicated that age was marginally associated with alcohol consumption ($r = .128$, $p < .10$), with older students being slightly more likely to drink than younger students. Age was not associated with binge drinking. As for sexual activity, age was significantly associated with lifetime sexual partners ($r = .268$, $p < .01$), wherein older students were more likely to have had sexual intercourse with more partners. In relation to co-occurring risk behaviors, age was significantly associated with drinking before last sexual intercourse ($r = .181$, $p < .01$), indicating that older students were more likely to report consuming alcohol before engaging in sex than their younger counterparts.

In relation to gender, alcohol consumption was related to this demographic variable, wherein males were significantly more likely to have consumed alcohol in the past 3 months ($r = .130$, $p < .05$). Gender was not associated with binge drinking for the participants in the current study, namely, neither boys nor girls were more likely to have consumed 4 or 5 drinks in a row in the past 3 months ($r = .078$, $p > .10$). There was a marginal association between lifetime sexual partners wherein males were slightly more likely to have had more sexual partners than females ($r = .127$, $p < .10$). Gender was not associated with co-occurring risk behaviors; specifically, neither males nor females were more likely to have consumed alcohol before having sexual intercourse.

Correlational analyses revealed that SES was not associated with alcohol consumption. SES was, however, associated with binge drinking in the past 3 months ($r = .170$, $p < .05$), with students from higher economic backgrounds being significantly more likely to report having 4 or 5 drinks in a row more often than students from lower economic backgrounds were. Socioeconomic status was not related to number of sexual partners or co-occurring risk behaviors.

As for the specific risk behaviors of interest in the current study, drinking in the past 3 months was significantly associated with binge drinking in the past 3 months ($r = .677$, $p < .01$), lifetime sexual partners ($r = .283$, $p < .01$), and co-occurring risk behaviors ($r = .348$, $p < .01$) for this sample of African American emerging adults in college. Namely, students who reported drinking in the past 3 months were also more likely to report binge drinking, having intercourse with more people, and to drink alcohol before engaging in sexual activity. Similarly, binge drinking was significantly associated with number of sexual partners ($r = .198$, $p < .01$) and co-occurring risk behaviors ($r = .251$, p

< .01) wherein students who reported more instances of binge drinking also were more likely to report more lifetime sexual partners and more likely to report drinking before having sex. Students' number of lifetime sexual partners also was related to drinking before sexual intercourse ($r = .393$, $p < .01$) for the students in this sample.

4.3 LATENT CLASS ANALYSIS: RISK BEHAVIOR PROFILES

Latent class solutions containing 2- through 8-classes were fit to the data. Model fit indices for each latent class solution of risk behavior profiles can be seen in Table 4.2. Results of the Latent Class Analysis indicated that a 5-class solution fit the data most optimally (AIC = 3085.284; BIC = 3181.183; Entropy = .922; LMRT = 62.541, p = .0404; BLRT = -1547.065, p = .0000). Specifically, based upon the LMRT value (p = .0000), the 2-class solution was deemed a better fit than the 1-class solution, and the 3-class solution was a better fit than the 2-class solution (p = .0002). Further, although the LMRT values did not indicate that the 4-class solution was a better fit than the 3-class solution (p = .2743), the 5-class solution was found to be a significantly better fit than the 4-class solution (p = .0404). However, the LMRT values did not indicate that the 6-class solution was a better fit than the 5-class solution (p = .5236) or that the 7-class (p = .1585) or 8-class (p=.6655) solutions were better fitting models than their next lower class solutions.

Although the 6-, 7-, and 8-class solutions had lower AIC and BIC values, and the 7- and 8-class solutions had higher entropy values than the 5-classsolution, their non-significant LMRT values as well as exploration of class size further indicated that the 5-classsolution was the best fitting model due to the 6, 7, and 7-class solutions each

Table 4.2. *Model Fit Indices for 2- to 8- Class Solutions of Risk Behavior Profiles*

Model	AIC	BIC	Entropy	LMRT	BLRT
2 Class	3316.665	3361.189	.926	-221.654, *p*=.0000	-1760.245, *p*=.0000
3 Class	3194.025	3255.674	.908	127.924, *p*=.0002	1645.333, *p*=.0000
4 Class	3140.131	3218.905	.916	61.622, *p*=.2743	-1579.012, *p* =.0000
5 Class	**3085.284**	**3181.183**	**.922**	**62.541, *p*=.0404**	**-1547.065, *p*=.0000**
6 Class	3056.498	3169.521	.913	37.407, *p*=.5236	-1514.642, *p*=.0000
7 Class	2992.833	3122.981	.951	-404.480, *p*=.1585	-1252.449, *p*=1.0000
8 Class	2483.350	2630.623	.965	39..127, *p*=.6651	-1218.566, *p*=.0000

Note: Bold indicates best fitting model.

AIC = Akaike Information Criterion, BIC = Bayesian Information Criterion,

LMRT = Lo- Mendell-Rubin Test, BLRT = Bootstrap Likelihood Ratio Test

yielding two class sizes that were too small to be of substantive value. Specifically, the 6-class solution contained 2 classes (N=9; N=10), the 7-class solution had 2 classes (N=7; N=10), and the 8-class solution had 2 classes (N=4; N=6) with fewer than 5% (N=11) of the 228 participants in the current study. Thus, the 5-class model was solidified as the final cluster solution and five distinct classes were identified.

The overall sample means and cluster means were used to interpret the pattern of each identified risk behavior profile (See Tables 4.3 and 4.4, and Figure 4.1). Further, a depiction of the identified profiles using standardized means of the study variables (used for more clear interpretation of class means in comparison to the overall sample mean) is presented in Figure 4.2. The five identified classes were: 1) *High Sexual Risk* (N=11, 4.82%); 2) *Abstainers* (N=102, 44.74%); 3) *Low Risk* (N=72, 31.58%); 4) *Alcohol Risk* (N=34, 14.91%); and 5) *Mixed Risk* (N=9, 3.95%).

Classes were described according to patterns seen in risk behavior engagement (i.e., consuming alcohol, binge drinking, number of sexual partners, and drinking before having sexual intercourse. Class 1 was identified as the *High Sex Risk* profile due to students in this group reporting far greater than average number of sexual partners, and lower than average alcohol consumption frequency and rates, as well as low levels of reported drinking before sexual activity. The second class reflected participants who reported lower than average rates of drinking, amounts of consuming alcohol, number of sexual partners, and co-occurring risk behaviors. As such, Class 2 was identified as the *Abstainers* profile. Students in Class 3 were identified as a part of the *Low Risk* profile due to alcohol consumption frequency, rates of binge drinking, number of sexual partners, and drinking before sexual intercourse being reported at levels that were close to

Table 4.3. *Overall Sample Means (Standard Deviations) and Risk Behavior Class Means*

	Sample Mean (N=228)	Class 1 (N=11)	Class 2 (N=102)	Class 3 (N=72)	Class 4 (N=34)	Class 5 (N=9)
Drink 3 Months	2.16 (1.67)	2.081	.560	3.229	3.847	4.369
Binge 3 Months	1.08 (1.43)	.535	.108	.954	3.449	3.824
Lifetime Sex	4.93 (6.03)	22.956	2.270	4.720	3.860	17.257
Co-Occurring	.92 (.58)	1.157	.682	1.083	1.001	1.609

Table 4.4. *Overall Sample Means and Standardized Risk Behavior Class Means*

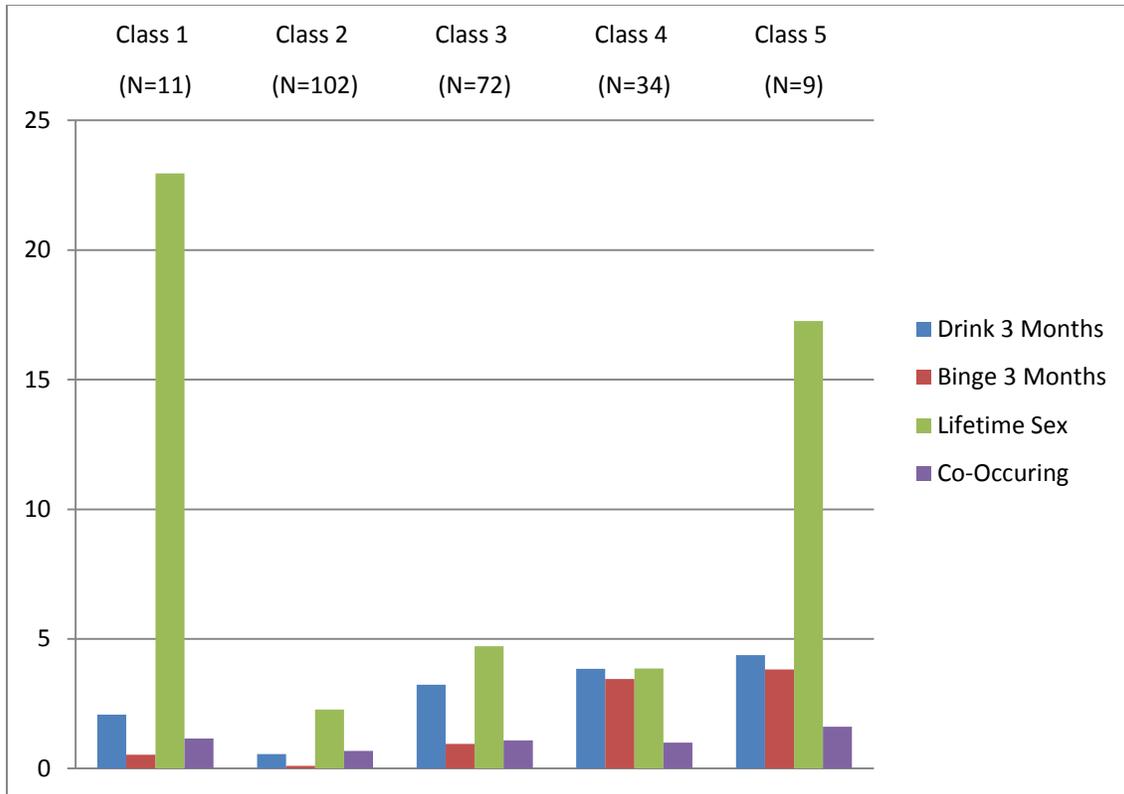|	Sample Mean	Class 1 High Sex Risk	Class 2 Abstainers	Class 3 Low Risk	Class 4 Alcohol Risk	Class 5 Mixed Risk
	(N=228)	(N=11)	(N=102)	(N=72)	(N=34)	(N=9)
Drink 3 Months	2.16	-0.079	-1.6	1.069	1.687	2.209
Binge 3 Months	1.08	-0.545	-0.972	-0.126	2.369	2.744
Lifetime Sex	4.93	18.026	-2.66	-0.21	-1.07	12.327
Alcohol Sex	0.92	0.237	-0.238	0.163	0.081	0.689

Figure 4.1. *Class Counts and Means for 5- Class Solution of Risk Behavior Profile*
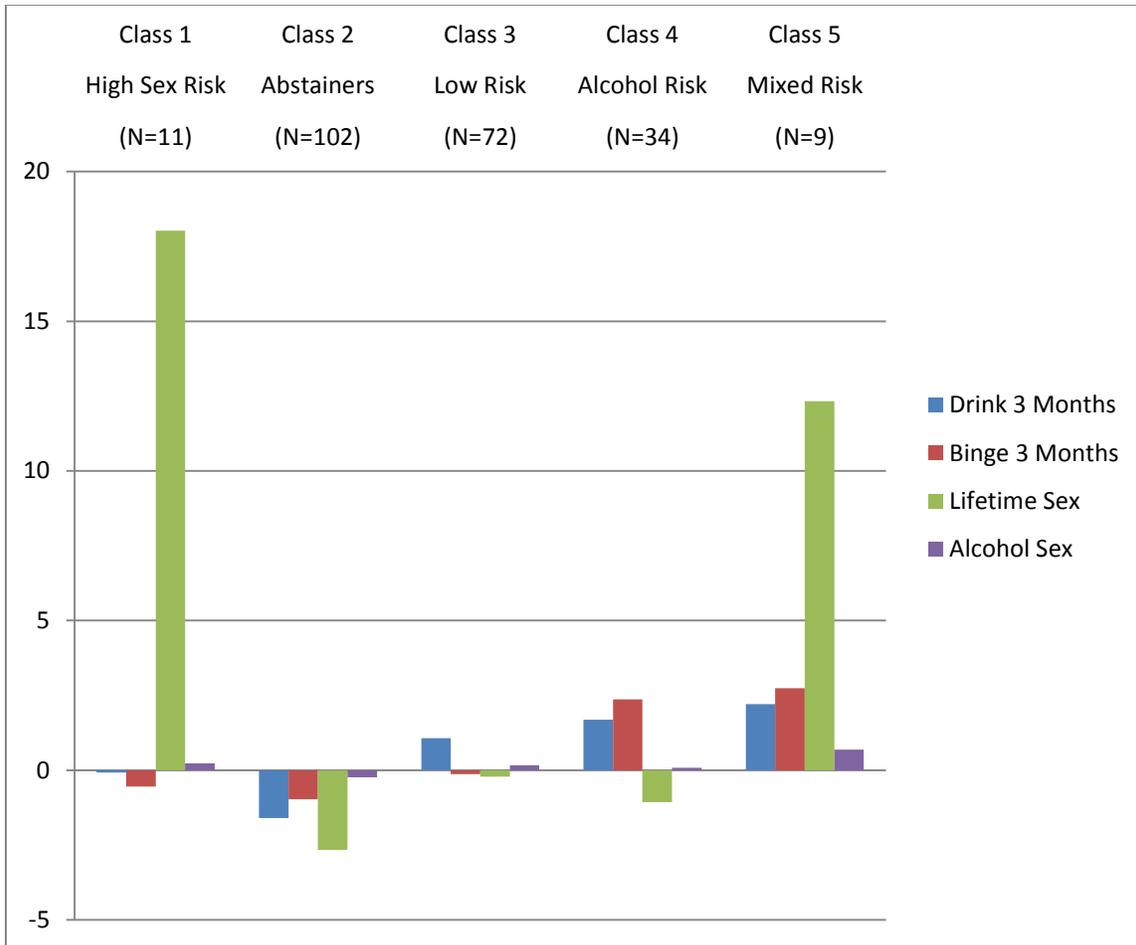
Figure 4.2. *5-Class Solution of Risk Behavior Profile Using Standardized Means*

70

the overall sample mean. The *Alcohol Risk* profile (Class 4) was classified as such due to their frequency of drinking and rates of binge drinking being higher than average, while their lifetime sexual partners remained lower than average, and the likelihood of them drinking before having sex remained closer to average. Class 5 was identified as the *Mixed Risk* profile due to elevated frequency of reported alcohol consumption, increased rates of binge drinking, and number of sexual partners that were above the overall sample average, and the highest rates of co-occurring alcohol use and sexual activity when compared to other classes.

4.4 DEMOGRAPHIC VARIATIONS AMONG IDENTIFIED PROFILES

A one-way analysis of variance (ANOVA) with post-hoc comparisons between identified profiles was conducted using Bonferroni adjusted alpha levels to test for mean differences in the demographic variables of interest. As shown in Table 4.5, a significant mean difference was found for age *(F (4, 223) = 3.252, p = .013)*, but not for gender (*F* (4, 223) = 1.686, p = .154) or SES (*F* (4, 223) = 1.215, p = .305).

Table 4.5 shows ANOVA results for each demographic variable, risk behavior, and stress and support factor. Specific to age, students in Class 1 (*High Sex Risk;* M=21.91*)* were significantly older (p = .042) than students in Class 2 (*Abstainers;* M=20.27). Further, students in Class 1 (the *High Sex Risk* profile) were significantly older (p = .041) than students in Class 4 (*Alcohol Risk;* M=20.12). However, there was no significant mean difference in the age of students in Class 1 (*High Sex Risk*) and students in Classes 3 (*Low Risk*, p = .315; M= 20.78) or 5 (*Mixed Risk*, p = .956; M= 21.33). And,

71

Table 4.5 *ANOVA Results: Demographic Variation, Stress and Social Support Mean Differences (Standard Deviation) by Risk Behavior Classess*

	Class 1 High Sex Risk	**Class 2** Abstainers	**Class 3** Low Risk	**Class 4** Alcohol Risk	**Class 5** Mixed Risk
	(N=11)	(N=102)	(N=72)	(N=34)	(N=9)
Demographic Variables					
Age	$21.91\ (2.12)^{ab}$	$20.27\ (1.83)^{a}$	20.78 (1.87)	20.12 $(1.55)^{b}$	21.33 (2.21)
Gender	$1.55\ (.52)_{1}$	$1.21\ (.41)_{1}$	1.62 (.44)	1.29 (.46)	1.33 (.50)
SES	4.09 (1.83)	3.81 (1.63)	3.79 (1.78)	4.43 (1.56)	4.44 (1.74)
Risk andResilience Factors					
Contextual Stress					
Interpersonal Stress	.64 (.80)	$.41\ (.41)^{cd}$	.46 (.41)	$.67\ (.55)^{c}$	$.85\ (.36)^{d}$
Intrapersonal Stress	.49 (.55)	.49 (.33)	.16 (.33)	.64 (.45)	.66 (.39)
Academic Stress	.72 (.61)	.52 (.46)	.57 (.41)	.68 (.55)	.39 (.38)
Environmental Stress	.41 (.65)	$.45\ (.45)_{2}$	$.39\ (.34)^{e}$	$.69\ (.61)^{e}_{2}$	.54 (.22)
Experiences with Racism					
Racism Frequency	1.63 (1.23)	$.97\ (.82)^{f}$	1.11 (1.06)	$1.54\ (1.34)^{f}$	1.31 (.92)
Support					
Family Support	3.93 (.96)	4.04(.80)	3.92 (.87)	3.91 (.90)	4.02 (.35)
Friends Support	3.86 (.70)	3.63 (.73)	3.65 (.81)	3.59 (.99)	3.84 (.43)
Community Support	4.06 (1.01)	3.69 (.92)	3.67 (1.03)	3.60 (1.08)	3.76 (1.35)

Note. Means sharing a common superscript[a,b,c,d,e,f] are significantly different ($p < .05$).
Means sharing a common subscript[1,2] are marginally different ($p < .10$).

there were no other significant mean differences in ages between Classes 2 (*Abstainers*), 3 (*Low Risk*), 4 (*Alcohol Risk*), and 5 (*Mixed Risk*) when compared to each other.

Although, as noted, there were no significant mean differences found for gender overall, a marginal difference was seen when comparing Class 1 (*High Sex Risk*) to Class 2 (*Abstainers*). Specifically, boys were slightly more likely ($p = .106$) to belong to the *High Sex Risk* class than they were to belong to the *Abstainers* profile, and girls were marginally more likely to be *Abstainers* (Class 1) than they were to be of *High Sex Risk* (Class 1). There was no other demographic variation found in class membership based on participants' gender. Specifically, *Low Risk* class (Class 3) members, *Alcohol Risk* class (Class 4) members, and *Mixed Risk* class (Class 5) members were no more likely to be boys than they were to be girls.

For African American emerging adult participants in the current study, there was no significant variation in class membership based on students' SES. Namely, lower SES students were no more likely than higher SES students to belong to one class than they were to belong to any of the others.

4.5 VARIATION IN CONTEXTUAL STRESS AMONG RISK BEHAVIOR PROFILES

To test for mean differences in indicators of contextual stress, a one-way analysis of variance (ANOVA) with post-hoc comparisons between identified profiles was conducted (See Table 4.5). Overall, findings revealed significant mean differences in profile membership based on participants' reported levels of interpersonal stress ($F_{(4, 223)} = 3.855$, $p = .005$) and environmental stress ($F_{(4, 223)} = 2.849$, $p = .025$), but not

for intrapersonal stress (F (4, 223) = 1.758, p = .138) or academic stress (F (4, 223) = 1.401, p = .234).

For interpersonal stress, mean differences were found between Class 2 (*Abstainers;* M= .41) and Classes 4 (*Alcohol Risk;* M=.67) and 5 (*Mixed Risk;* M= .85). Specifically, students who were *Abstainers* reported significantly fewer interpersonal stressors than students in the *Alcohol Risk* profile (p = .035). Further, the *Abstainers* also reported significantly fewer interpersonal stressors than students who were classified as belonging to the *Mixed Risk* profile (p = .045). Interpersonal stress was not significantly or marginally related to membership in any of the other classes.

Environmental stress was associated with students' membership in Class 4 (*Alcohol Risk*) compared to some of the other profiles. Here, students reporting more environmental stressors were marginally more likely to be in the *Alcohol Risk* class (Class 4; M= .69) than they were to be in the *Abstainers* class (Class 2, p = .056; M= .45). Similarly, students with more environmental stressors were significantly more likely to be in the *Alcohol Risk* (Class 4) profile than they were to be in the *Low Risk* profile (Class 3, p = .011; M= .39). Students in the *Alcohol Risk* class (Class 4) did not report marginally or significantly higher levels of environmental stress than students in the *High Sex Risk* class (Class 1, p = .352; M= .41) or students in the *Mixed Risk* class (Class 5, p = .884; M= .54). There were no other significant mean differences found between classes in relation to the environmental stressors reported by participants in the current study.

As depicted in Table 4.5, no significant mean difference was found between any of the classes based on the intrapersonal stressors reported by the African American college students in the current study. Namely, students with greater reported amounts of

intrapersonal stressors were no more or less likely to be in Class 1 (*High Sex Risk),* Class

2 (*Abstainers),* Class 3 (*Low Risk*), Class 4 (*Alcohol Risk*), or *Class* 5 (*Mixed Risk*) when

compared to each other.

Similarly, a significant mean difference for class membership also was not found

in relation to the academic stress reported by students. Here, results indicated that

students who were of *High Sex Risk* (Class 1; M= .72), students who were *Abstainers*

(Class 2; M= .52), students who were *Low Risk* (Class 3; M= .57), students who

displayed more *Alcohol Risk* (Class 4; M= . 68)*,* and students who were of *Mixed Risk*

(Class 5; M= .39) did not appear to have any systematically significant difference in the

amount of academic stress that they reported at the time of data collection for the current

study.

4.6 VARIATION IN RACIAL DISCRIMINATION AMONG RISK BEHAVIOR PROFILES

A one-way analysis of variance (ANOVA) with post-hoc comparisons between

identified profiles was conducted to test for mean differences in reported frequency of

racial discrimination of the African American participants in the current study (see Table

4.5). Analyses revealed significant mean differences in risk behavior profile membership

based on participants experiencing racism (F (4, 223) = 2.722, p = .030). Specifically,

students who were in the *Alcohol Risk* class (Class 4; M= 1.54) were significantly more

likely (p = .042) to report more frequent experiences with racial discrimination than

students who were *Abstainers* (Class 2; M= .97). In reference to whether students were of

High Sex Risk (Class 1; M=1.63), *Low Risk* (Class 3; M= 1.11), or *Mixed Risk* (Class 5;

M=1.31), results indicated no other significant mean differences in students' reported experiences with racism.

4.7 VARIATION IN SOCIAL SUPPORT AMONG RISK BEHAVIOR PROFILES

Please see Table 4.5 for results of a one-way analysis of variance (ANOVA) with post-hoc comparisons between identified classes which was conducted in order to test for mean differences in social support across class membership. Findings revealed no significant mean differences in profile membership based on the social support received by participants from their family (F (4, 223) = .303, p = .876), friends (F (4, 223) = .384, p = .820), or community (F (4, 223) = .458, p = .766).

There were no significant mean differences between the classes in relation to the reported social support that students in the current study received from their families. Namely, students in Class 1 (*High Sex Risk:* M= 3.93*)* reported no significantly greater or fewer levels of social support from their families than students in all the other classes, students in Class 2 (*Abstainers:* M= 4.04) reported similar levels of social support from families, students who were *Low Risk* (Class 3: M= 3.92) did not report significantly different levels of family support, and neither did students in Classes 4 (*Alcohol Risk;* M= 3.91), nor 5 (*Mixed Risk;* M= 4.02).

Similar findings were seen when analyzing data for mean differences in social support from friends across class membership. Namely, students who were of *High Sex Risk* (Class 1; M= 3.86) reported statistically similar levels of college community support as students who were *Abstainers* (Class 2; M= 3.63), students who were deemed to be of *Low Risk* (Class 3; M= 3.65), students who predominately displayed *Alcohol Risk* (Class

4; M= 3.59), and students who displayed *Mixed Risk* behavior patterns (Class 5; M= 3.84). The same findings hold true for when all of these risk behavior classes are compared to one another in relation to the amount of college community support reported by African American students at this large southeastern university.

Last, there were no significant mean differences in the social support that students in the current study reported receiving from their college community across the five identified risk behavior classes. Please see Table 4.5 for significance values found when assessing for mean differences in college community support perceived for students who were in Class 1 (*High Sex Risk;* M= 4.06*),* Class 2 (*Abstainers;* M= 3.69), Class 3 (*Low Risk;* M= 3.67), Class 4 (*Alcohol Risk;* M= 3.60), and *Class* 5 (*Mixed Risk;* M= 3.76) when compared to one another.

CHAPTER 5

DISCUSSION

The Developmental-Contextual Perspective (Bates, 1987; Elder, 1998) points to the significant changes that occur in students' ecological roles, environments, and settings as the primary reason for the increase in alcohol use and sexual activity that occurs when emerging adults transition to college (Schulenberg & Maggs, 2002). Alcohol use and sexual activity are major public health concerns for emerging adults (Choi, Meininger, & Roberts, 2006), particularly those in college (Fromme, Corbin, & Kruse, 2008), that have been associated with potentially long-term, negative consequences including academic failure, drunk driving accidents, legal system involvement, the contraction of HIV/AIDS and other sexually transmitted diseases, as well as unintended pregnancies (National Institute on Alcohol Abuse and Alcoholism, 2013; Godette, 2009; Hingson, Zha, & Weitzman, 2009; Sharma & Atri, 2006; Brown et al., 2004; Wechsler et al., 2003). Further, there is a growing body of evidence which suggests that engaging in drinking and sexual acts simultaneously leads to greater occurrences of sexual abuse and rape (Godette, 2009; Sharma & Atri, 2006; Weden & Zabin, 2005; Hingson, Heeren, & Winter, 2005), which lead to detrimental and complex psychological consequences for both perpetrators and victims.

In addition to college students being at an increased risk for engagement in these behaviors when compared to the non-student population (Fromme, Corbin, & Kruse,

2008), African American emerging adults face disproportionate risk for more harmful social, legal, and health consequences of alcohol consumption and sexual activity than their Hispanic or White American counterparts (Godette, 2009; Goldstein et al., 2009). Thus, the risk behavior engagement of African American college students is important to understand from a prevention standpoint. Despite these disparities, there is a dearth of research examining within group differences among African American college students' risk behavior participation. Moreover, there is a lack of literature which examines specific factors that are associated with more or less engagement in these behaviors. The Integrative Model of Developmental Competencies (Spencer & Dupree, 1996; Garcia Coll et al., 1996) posits that researchers concerned with the effects of risk and resilience factors on minority youth development should explore both general and cultural experiences in order for understanding to be comprehensive and relevant for this population.

With this in mind, the current study utilized a multidimensional, person-centered approach to identify risk behavior profiles among African American college students and the ways in which general and culturally specific stressors and sources of support are associated with more or less engagement in these behaviors. The latent class analytic technique is beneficial because it allows the opportunity to identify various risky patterns (i.e., alcohol related risks, sexual activity, co-occurring risk behaviors) that emerge based on individual responses of African American emerging adults in college. Specifically, this investigation explored profiles using indicators of alcohol consumption (frequency of alcohol use, amount of alcohol consumed), sexual activity (number of sexual partners), and co-occurring risk behaviors (consuming alcohol before engaging in sexual

79

intercourse). An additional and equally important goal of this study was to examine whether the identified risk behavior profiles differed with respect to demographics, general and cultural stress, and social support reported by participants.

This investigation had several findings that contribute to the existent literature. First, this study identified five distinct risk behavior profiles among a sample of African American emerging adults in college. Second, this study provided evidence that these risk behavior profiles differed across ages, but that they did not significantly vary based on gender or SES. Last, findings indicated that behavior profiles varied based on stressors that these students faced in their day-to-day lives. A more in-depth discussion of study findings and linkages to the existent literature follows.

5.1 AFRICAN AMERICAN COLLEGE STUDENTS' RISK BEHAVIOR ENGAGEMENT

This investigation revealed descriptive information about risk behavior participation for African American emerging adults in college that was previously underreported in the literature. As noted, existing research concerning this specific subset of the population (i.e., African American emerging adults in college) is extremely limited. Thus, the current study contributes to the literature in its finding that the majority of these African American college students did not report drinking or a regular or consistent basis, and that, when they did, they were likely not binge drinking often. Further, over half of the students in the current study reported having sex with three or fewer sexual partners- nearly 22% of whom had not engaged in sexual intercourse at all at the time of the investigation. Although no known existing research exists on co-occurring risk behaviors for this specific population, a large majority of students (over

65%) in the current study reported that they did not drink alcohol before engaging in sexual intercourse. Given the aforementioned long-term and potentially severe consequences that exist for African American emerging adults who do engage in these risky behaviors, it is seen that less than half of these students are at high risk for engaging in these behaviors and experiencing these severe consequences. Thus, understanding differences that exist among African American college students' risk behavior participation and the ways in which these risk behaviors work in concert is critical from a prevention standpoint.

5.2 RISK BEHAVIOR PROFILES AMONG AFRICAN AMERICAN COLLEGE STUDENTS

This investigation revealed that alcohol consumption, binge drinking, engagement in sexual intercourse, and having sex while intoxicated are important considerations among African American emerging adults in college. Specifically, results of a latent class analysis identified 5 distinct profiles among this sample- 1) *High Sexual Risk* (N=11), 2) *Abstainers* (N=102), 3) *Low Risk* (N=72), 4) *Alcohol Risk* (N=34), and 5) *Mixed Risk* (N=9).

Students in the *High Sexual Risk* profile, which was 4.82% of the total sample, represented predominantly sexually active emerging adults, including those who reported having sex with more sexual partners, fewer occurrences of alcohol consumption and binge drinking, and infrequent drinking before having sex. Thus, based upon relation to other profiles, participants in this profile were classified as having higher sexual risk. Although a burgeoning body of literature, past studies do support the finding of the *High Sexual Risk* profile which emerged in the current study. Previous latent profile analyses

81

(Pactick & Maggs, 2010) identified drinking and sex motivational profiles among a sample of 18 to 20 year old college students (15.5% of whom were African American). Here, patterns emerged for risk behavior beliefs wherein students were highly in favor of sex. Patrick and Maggs (2010) found that sex motivational profiles, which were comprised of motivations for sex (i.e., intimacy, coping, enhancement) and motivations against sex (i.e., not ready, health risks) were associated with actual sexual experiences of college students. These researchers identified groups of students who were highly against sex and a group of students who were moderately opposed to sex. Although this study focused on motivations for and against sex, and although no previously known studies have reported findings that include variables that examine students' number of sexual partners similar to the manner of the current study, it is important to note that previous studies have indicated groups of students who are significantly more in favor of (and perhaps more likely to engage in) sexual activity than their peers.

The *Abstainers* profile was composed of students who reported not engaging in frequent alcohol, sexual, or co-occurring risk behaviors. These students reported not drinking alcohol and not binge drinking, having an average of 2 lifetime sexual partners, and not drinking before engaging in sexual intercourse. Similar to the previously discussed profile that emerged in the current study, Patrick & Maggs (2010) also identified students who were highly opposed to drinking, as well as students who were highly opposed to sex. Further, although existing studies utilizing profile-centered approaches to also examine co-occurring risk behaviors for this specific population are currently uncommon, results of this investigation are in occurrence with numerous variable-centered study results that have pointed to bimodal distributions of risk

behaviors (Chen, Dufour, & Yi, 2004). This profile identified the proportion of students (approximately 44.74%) who abstained from risky drinking, sex, and co-occurring risk behaviors. Thus, similar to subgroups indicated in the larger literature, our investigation suggested that a subset of students exist who did not drink, those who were not engaging in sexual intercourse, and those who did not drink before having sex. Because research of this kind is currently nonexistent in the literature, it is important to note that results of the current investigation suggest that individuals who abstained from alcohol, sex, and co-occurring risk behavior participation were among a sizeable majority of African American college student participants in the current study.

Analyses also indicated a distinct group of emerging adults who engaged in risk behaviors, but did so at low frequencies. In particular, the *Low Risk* profile reported moderate engagement in alcohol consumption, binge drinking, sexual activity, and drinking before sexual intercourse. This profile represented 31.58% of the current sample. This is in line with previous research. For example, a recent profile analytic study utilizing a university sample (.09% African American) identified profiles of drinking behaviors in which students reported engaging in responsible drinking behaviors (Ray et al., 2012) similar to that of the *Low Risk* profile identified in the current study. Here, researchers explored distinct drinking behaviors including pacing consumption and playing drinking games, wherein "responsible drinkers" reported consuming alcohol moderately and not binge drinking, as well as not engaging in risky drinking behavior. Although this study did not identify risk or protective factors associated with specific behavioral patterns, results did indicate differences in profile membership between "responsible drinkers" and others in reference to alcohol-related consequences. In another

83

profile study with a small percentage of African American participants (6.7%), identified

patterns of risk behaviors emerged that included a low to moderate group with low levels

of alcohol use, amongst other predictors (e.g., amount of mixed drinks consumed; Mallett

et al., 2013). In addition to moderate drinkers who consumed low levels of mixed drinks,

this study also identified students who were heavy alcohol drinkers who infrequently

drank mixed drinks, moderate alcohol drinkers who preferred mixed drinks, and heavy

alcohol drinkers who preferred mixed drinks. For participants in this study, students

classified as low to moderate also experienced significantly fewer alcohol-related

physical consequences than those who drank more seriously (i.e., more often, or with

more mixed drinks). These researchers, however, did not examine alcohol use in concert

with sexual activity or co-occurring risk behaviors. Stappenbeck and colleagues (2013)

explored the relationship between drinking patterns and sexual behaviors, and they

identified a group that was descriptively similar to the *Low Risk* profile. Here, researchers

identified a "moderate drinking" group that was associated with women who had

moderate beliefs about having sex. Although not including sexual behaviors in their

profile analyses, although they assessed sexual beliefs, and although only 7.9% of this

study's participants were African American, findings were similar to results of the

current study through identifying a distinct subset of the population who seemed to

participate in risk behaviors but regulated the frequency of (and/or beliefs about)

engagement. Further, these findings support the connection between drinking behaviors

and sexual activity, and support the exploration of these behaviors in concert, as done in

the current study. A study conducted by Laska and colleagues (2009) also suggested a

profile of "moderate lifestyle" participants who engaged in few drinking and sexual

behaviors when exploring a range of health (e.g., diet, physical activity, sleep) and risk (e.g., binge drinking, sexual risk, smoking, drunk driving) behaviors among a sample of 18 to 25 year old emerging adults in college. Here, moderate lifestyle" participants reported engaging in moderate health behaviors and few risk behaviors. However, this sample was comprised of predominately White (83%) students, and the researchers did not explore factors that were associated with more or less engagement in risk behavior participation. Overall, the finding of a *Low Risk* profile in the current study adds support to the existent literature which suggests a portion of students engage in alcohol and sexual behaviors, while doing so at low to moderate rates. The previous literature also suggests that low-risk groups often face fewer consequences than higher-risk groups, but that they are more at risk than abstainers. Again, the current study contributes to this body of work by providing insight into which factors in an individuals' environment are associated with membership in these distinct groups.

The current study also revealed a profile which was comprised of individuals who were at heightened *Alcohol Risk*. These students were described as such due to their tendency to engage in frequent drinking behaviors, and to drink large quantities when they were drinking, but to engage in sexual activity and co-occurring drinking and sex behaviors significantly less often. Though not assessing sexual intercourse specifically, Ray and colleagues (2012) did identify a profile of college students who frequently displayed risky drinking behaviors while at the same time reported seldom use of responsible drinking behaviors. These findings are similar to behaviors reported by students in the *Alcohol Risk* profile in the current study. Due to also identifying students who were either frequently responsible or students who were both responsible and risky

in their drinking behaviors (e.g., paced consumption but played drinking games), results suggest that variability exists even among students who are engaging in risk behaviors (Ray et al., 2012). Specifically, this profile, similar to the *High Sexual Risk* profile, highlights that students may frequently engage in some risky behaviors (e.g., drinking) without being more likely to engage in the other (e.g., sexual activity).

Last, students were identified in the current study who displayed *Mixed Risk* for engagement in alcohol use, sexual activity, and co-occurring risk behaviors. This group of students was identified as such because they represented participants who were more likely than other students to report drinking more often, to report drinking 4 or 5 drinks in a row at a given time, to report having more sexual partners, and to drink alcohol before having sex more often than their peers. Results from previous studies also substantiate these findings. For example, a study examining drinking patterns and sexual risk behaviors of 18 to 35 year olds (of which 31% were college students and 7.9% were African American), found that frequent heavy drinkers had the greatest number of sexual partners, and that they also were the most likely to drink alcohol before having sex (Stappenbeck et al., 2013). Through suggesting that alcohol risk is related to sexual risk, results of this study contribute greatly to the prevention literature by showing that frequent heavy drinkers also reported a greater likelihood of having future unprotected sex as well as more positive beliefs about casual sex than participants who were moderate drinkers (Stappenbeck et al., 2013). These results suggest that, perhaps, students who are of *Mixed Risk* are also at heightened risk for the related consequences of drinking and sexual activity including sexual abuse, pregnancies, STD contraction, and drinking and driving accidents, to name a few. Similarly, in their previously discussed study

examining behavioral patterns among a variety of college students' risk behaviors, Laska and Colleagues (2009) identified a homogeneous pattern that was characterized by high substance use and frequent intoxicated sex in conjunction with other health-related variables.

Overall, results of the current latent class analysis suggest that there is indeed significant variation in the risk behavior engagement of African American college students. Specifically, profiles emerged which indicate that students can be highly sexually active while refraining from potentially harmful drinking behaviors (*High Sexual Risk*); that they might have the tendency to abstain from drinking behaviors and sexual intercourse altogether (*Abstainers*); that they might engage in these behaviors at low to moderate levels (*Low Risk*); that they might engage in frequent alcohol use while consuming large amounts of alcohol in a setting but not have sex with multiple partners or endorse co-occurring risky behaviors at increased rates (*Alcohol Risk*); or that they might simultaneously report drinking frequently, binge drinking often, having multiple sexual partners, and frequently drinking before engaging in sexual intercourse (*Mixed Risk*). Furthermore, these findings indicate that these distinct profiles may have important implications for short- and long-term prevention efforts among African American emerging adults in university settings.

5.3 DEMOGRAPHIC VARIATIONS AMONG IDENTIFIED PROFILES

This investigation provided partial evidence that demographic variation exists among the identified risk behavior profiles for this sample of students. In particular, analyses suggest overall differences for age, but not for gender or SES. Specific to age,

results indicate that *High Sex Risk* students were significantly older than *Abstainers*. Similarly, *High Sex Risk* students also were significantly older than students in the *Alcohol Risk* profile. These findings signify a developmental pattern, suggesting that African American emerging adults are waiting to have sex and begin drinking alcohol. Although the first known study of its kind to analyze demographic variations that exist specifically among African American college students, these findings are in line with past developmental research which suggests that risk behaviors that begin in emerging adulthood are often continued as youth transition into adulthood (Chen & Jacobson, 2012). Further, research suggests that the college community provides contextual changes that leave students more susceptible to engaging in these behaviors (Schulenberg & Maggs, 2002; Arnett, 2000; Miller et al., 2004; Kogan et al., 2010; Sandfort, Orr, Hirsh & Santelli, 2007). Thus, one might deduce that youth are engaging in these behaviors as they age and settle into their college community. Although this investigation did not explore developmental trajectories or pathways, these findings are in line with other profile analytic studies suggesting that risk behaviors accumulate over time (Nocolai et al., 2012).

Also, although analyses did not indicate an overall significant mean difference among the profiles found for gender, a marginal difference was seen between the gender of students belonging to the *High Sex Risk* profile and the *Abstainers* profile. These findings suggest that African American male emerging adults are more likely to engage in sexual intercourse than they were to abstain from risk behaviors. Studies indicating greater sexual activity among African American males in the university population further substantiate this finding. Specifically, studies suggest that African American

males are more likely to report having more lifetime and recent partners than African American female college students (Hayes et al., 2009; Taylor, et al., 1997).

There were no marginal or significant mean differences in profile membership based on participants' reported SES. Because it is posited that underlying contextual variables (e.g., time away from home, heightened academic responsibilities, increases in unsupervised time with peers) more significantly impact risk behavior participation in African American college students, the finding that SES was not associated with profile membership (e.g., that students from low SES backgrounds were not significantly more or less likely to belong to any particular profile) was not surprising. This is perhaps explained by aforementioned studies which suggest that African American students from low SES backgrounds are more accustomed to dealing with transitional changes that are just beginning to increase for students from other income brackets when they switch contexts from high school to college. Specifically, the current study provides support for recent investigations (e.g., Cohen et al., 2003) that suggest that African American offspring of parents who work extended hours at multiple jobs experience the increases in freedom and responsibilities that may serve as new contextual challenges for other students earlier in their development. It is posited that these students are, thus, protected against the potentially negative association that one might expect to see between lower SES and heightened risk behavior engagement.

5.4 Variation in Contextual Stress among Risk Behavior Profiles

Regarding contextual stress, the current investigation suggested that identified risk behavior profiles differed across interpersonal and environmental stress, but not

across intrapersonal or academic stress. These findings are in line with previous studies which suggest varied links between stressors that African American youth face and their risk behavior engagement (Cohen et al., 2003; Williams et al., 1993; Clifford & Jones, 1988).

Specifically, current analyses indicated mean differences in interpersonal stress wherein emerging adults who were *Abstainers* reported significantly fewer interpersonal stressors than youth who were of high *Alcohol Risk*. When considered in reverse, it is seen that, for youth who engaged in frequent drinking and also were likely to consume large amounts of alcohol in one sitting (*Alcohol Risk*), interpersonal stressors were reported at significantly higher levels than for students who were *Abstainers* from the risk behaviors of interest in the current study. Further, results of the current study showed that students who were *Abstainers* also reported significantly fewer interpersonal stressors than those who were of *Mixed Risk*. Based on profile composition, it is seen that students who were *Abstainers* (i.e., more likely to report refraining from alcohol and binge drinking, more likely to report refraining from sexual intercourse, and more likely to not drink before engaging in sexual intercourse) were also students who reported experiencing fewer interpersonal stressors (i.e., change in social activities, conflicts with roommates, new boyfriends/girlfriends, and fights with their boyfriend/girlfriends) than students who were more likely to report consuming alcohol, drinking large amounts (*Alcohol Risk)*, or those who drank frequently and heavily while having more sexual partners, and consuming alcohol before having sex (*Mixed Risk)*. This finding that interpersonal stressors are associated with a variety of risk behavior engagement is in line with previous research which suggests that youth may engage in risk behaviors in hopes

90

of alleviating anxiety, social problems, or interpersonal stress (Williams et al., 1993; Clifford & Jones, 1988).

Environmental stressors seem to be associated with whether or not students were in of higher *Alcohol Risk* in comparison to some of the other profiles. Specifically, students reporting more environmental stressors were marginally more likely to be of higher *Alcohol Risk* than they were to be *Abstainers* or of *Low Risk*. Previous studies have documented the important role of environmental stress in the risk behavior participation of emerging adults. Studies have shown that college students are often living away from home for the first time, and are often functioning within a social environment that is contextually different from that of their secondary school years (Aseltine & Gore, 2000; Unger, Hamilton, & Sussman, 2004). These studies and others posit that environmental stressors often lead to engagement in alcohol use as a reactionary response to environmental stress (Wills et al., 2001; Brody et al., 2010). Environmental stressors endorsed by participants in the current study include messy living conditions, change in living environment, and car trouble, and are typical of the sort of stressors that previous studies suggest are associated with engagement in alcohol consumption and binge drinking. Thus, the finding that students who were of higher *Alcohol Risk* reported significantly more problems due to environmental stressors than students who were *Abstainers* or those who reported *Low Risk* behaviors was not surprising.

For the students in the current study, intrapersonal stress was not associated with membership in any of the risk behavior profiles. As previously noted, results from past studies suggest that African American youth are perhaps more prepared for facing

intrapersonal stressors associated with the transition into adulthood and college because they often experience markers of emerging adulthood earlier in their development than their White American counterparts (Cohen et al., 2003). Intrapersonal sources of stress were assessed through occurrences such as decline in personal health, death of a family member, new responsibilities, and financial difficulties. Again, because African American youth are often faced with environmental stressors such as increased responsibilities and family role changes well before they enter into college, it is suggested here that they are perhaps less negatively impacted by these occurrences when they are in university settings. These students, then, would not put African American college students at heightened risk for maladaptive coping behaviors such as drinking and sexual activity that might otherwise be seen in response to intrapersonal stress.

Students reporting varying levels of academic stress also were not more or less likely to belong to any of the risk behavior profiles over another in the current investigation. The academic dimension of stress in the current study assessed students' school-related difficulties including transferring schools, getting in a serious argument with an instructor, changing a major, and receiving a lower grade than anticipated. While the finding that general academic stress (e.g., increasing one's class workload) was not associated with risk behavior profile membership for the African American students in the current study was counterintuitive to what might be expected, these results may point to other, culturally specific school-related stressors that impact African American students on college campuses. Although existing literature examining culturally specific academic stressors that shape African American student outcomes is sparse (see Museus, 2008), some evidence supports the idea that academic stressors unique to this university

92

population include adverse physical structures (i.e., Confederate Flags flying on southern university campuses), social interactions in the classroom that are racially charged, and the exchange of knowledge that conveys message of devaluation, unimportance, and exclusion to minority students (Gonzalez, 2003). These culturally specific academic stressors, then, might be more strongly associated with risk behavior engagement that is thought to be a reactionary product of such occurrences. Hence, our lack of findings may be due to a lack of available measure to capture culturally specific academic stress. Further, instrument development and additional studies are needed to better understand these associations.

5.5 VARIATION IN RACIAL DISCRIMINATION AMONG RISK BEHAVIOR PROFILES

Also, this investigation suggested differences among risk behavior profiles regarding self-reported frequency of experiences with racial discrimination. In particular, analyses revealed that the *Alcohol Risk* profile reported significantly more frequent experiences with racial discrimination than students who were *Abstainers*. This is in line with multiple studies which show relationships between experiences with racism and discrimination and alcohol use among African Americans (Neblett, Terzian, & Harriott, 2010; Borrell et al., 2007; Gibbons et al., 2007; Landrine et al., 2006). The findings that students who were at higher *Alcohol Risk* experienced significantly more racial discrimination than students who were *Abstainers* extends the literature through confirming theoretical suggestions (i.e., stress-coping theory) that drinking is related to racially-stressful experiences due to attempts to "deal with" emotionally distressing

experiences that leave students with perceptions of limited control and efficacy (Fergus & Zimmerman, 2005; Brody et al., 2010).

The finding that experiences with racial discrimination was not related to any other risk behavior profiles (i.e., *High Sexual Risk, Mixed Risk*) is perhaps more surprising. Several recent studies indicate relationships between racial discrimination and sexual activity in emerging adulthood (Stock et al., 2013; Chapin, 2001; Pachter & Garcia Coll, 2009; Pascoe & Smart Richman, 2009; Williams & Mohammed, 2009). Moreover, other studies support the assertion that alcohol use also plays a role in the connection between sexual risk-taking and experiences with racism (e.g., Stock et al., 2013), so this is one surprising result (or, lack of findings) from the current study. When exploring the distribution of sexual behaviors for students in the current study, this finding is perhaps explained by the fact that over half of study participants (53.6%) of study participants reported having sex with 3 or fewer partners in their lifetimes. A larger sample size would possibly provide enough variation in the sample to elucidate such relationships between experiences with discrimination and other risk behavior patterns, if they exist in the African American college student population.

Alternative explanations for the lack of findings between experiences with racial discrimination and the risk behavior profiles which include participants with higher levels of reported sexual activity (i.e., *High Sexual Risk, Mixed Risk*) also exist. Specifically, findings from the current study showed that interpersonal stressors are serving as risk factors that are associated with risk behavior participation for this group. Additionally, findings revealed that social support from peers are *not* serving as protective factors for engaging in risk behaviors for this sample of participants. When taken together, it seems

94

logical, then, that African American students in the current study were simply less likely to turn to their intimate partners as a coping mechanism for experiencing racial discrimination, contrary to what past research may suggest. These findings are seemingly in line with previous studies which suggest that African American students on college campuses that are predominately White are often disconnected from their peers (Spurgeon & Myers, 2008; Chism & Satcher, 1998). While this "isolating" phenomenon prevents the protective mechanisms of social support from yielding buffering effects, it also seems to possibly prevent African American college students from engaging in intimate partner sexual risk behaviors that might otherwise occur in the face of discriminatory experiences. Notwithstanding, the potentially harmful effects of discrimination are still seen through the positive association between racially-charged occurrences and the *Alcohol Risk* group in comparison to the *Abstainers* class identified in the current study.

As previous research suggests that it is one's perception of the stress caused by experiences with discrimination (opposed to frequency of racially-charged occurrences; Ross, Niebling, & Heckert, 1999), future studies should examine the relationship between perceived racial stressors and risk behavior profiles. Further, the lack of findings from the current study could also be due to the way in which experiences with discrimination were measured. Studies show that distinct differences exist in dimensions of racial discrimination wherein African American report encountering microaggressions (i.e., brief, common experiences) or those that are more overt (i.e., blatant, typically more harsh) racially charged experiences. The current study assessed "daily hassles" that were subtle and perhaps more frequent than overt experiences with racism. It is possible that

95

these overt experiences, by nature of being more impactful, might differentially and more significantly predict risk behavior participation. As suggested by Stress-Coping theory (Wills et al., 2001; Brody et al., 2010), engagement in alcohol use and risky sex might better be understood through exploration of their relationship to more severe experiences with racism and discrimination.

5.6 VARIATION IN SOCIAL SUPPORT AMONG RISK BEHAVIOR PROFILES

Contrary to expectations, this investigation provided no support for marginal or significant mean differences between the classes in relation to the reported social support that students received from their family, friends, or college community. Namely, students who were classified as having *High Sexual Risk*, those who were *Abstainers,* those who were *Low Risk*, students who displayed predominantly *Alcohol Risk* behaviors, and those who displayed co-occurring and *Mixed Risk* behaviors reported statistically similar levels of social support from families, friends, and school communities.

The lack of findings seen for support from family can perhaps be explained due to the fact that emerging adults in college are, by context, spending a significant amount of time away from their home environments during this stage. While African Americans are shown by past studies to rely upon their families for social support (Thornton, 1998; Pipes-McAdoo, 2002; Boyd-Franklin, 2003), these studies do not specifically assess support among college student populations. When considering the aforementioned contextual changes brought about when youth transition out of their parents' homes, it is perhaps not surprising that family support was not related to risk behavior profiles indicating greater or lesser risk. This relationship is further complicated when considering

previously mentioned studies suggesting that families may serve as a burden for some African American college students. For example, emerging adults may have the responsibility of providing financial contributions to their family members, and they may experience little-to-no support from their families that would protect them from engagement in risk behaviors in the ways that we would imagine (Miller-Cribbs & Farber, 2008).

Students in the current study also did not report statistically significant mean differences across profiles in relation to the social support they perceived receiving from their friends. It is possible that students' perceptions of peer use of alcohol and sexual activity is more predictive of risk behavior engagement for emerging adults in college. Studies show that college students' perceptions of their friends' risky behaviors are also related to whether or not they consume alcohol, binge drink, engage in risky sex, and rates of risk-taking tendencies overall, which may include co-occurring alcohol use and sexual activity (Brache & Stockwell, 2011; Miller 2008; Thombs et al., 2010). Studies exploring the link between African American college students' perceptions of their friends' drinking behaviors and sexual activities should also be conducted in order to deepen our understanding of their relationship to risk behavior patterns.

The social support that students received from their college community was an adapted measure that did not assess for support that students may receive from their specific cultural group. Because the current study was conducted at a predominantly white institution in the Southeastern United States, this social support measure utilized in the current study might not have accurately captured support in the ways that it was intended. For example, a measure assessing participation in culturally specific groups

97

(i.e., Black Student Association) or church membership and associated support might better capture the support these students receive from their actual community, as well as variation in profile membership based on this support. Moreover, studies show that students who attend predominantly white institutions perceive a greater sense of isolation and alienation, a perceived lack of support from faculty, and a general lack of sense of community on their college campuses, and that this connection to one's college community might be stronger for students who attend predominately black or historically black colleges and universities (Spurgeon & Myers, 2008; Chism & Satcher, 1998). These studies suggest that African American students' inability to find membership and support from the cultures and subcultures on their campuses may lead to negative behaviors and adjustment, while students who perceive membership in and support from their subculture on college campuses often fair better across outcomes (Museus, 2008). The lack of findings for mean differences in community social support across risk behavior profiles is, thus, not surprising when considering both the potentially imprecise measurement of community social support, as well as the limited social support that African American students in the current study may have actually perceived receiving from their predominately White institution's community.

5.7 LIMITATIONS AND DIRECTIONS FOR FUTURE RESEARCH

Although the current study is progressive in its efforts, this investigation is not without limitations. The three main limitations of the current study point to suggestions for future investigations including 1) the use of larger sample sizes, 2) the inclusion of a wider range of risk behaviors in profile analyses, and 3) the development of more precise

measures designed to capture the risk and resilience factors that are unique to the African American college student population.

As already alluded to in the discussion of the current study's results, a larger sample size would have allowed for the analysis of more indicator variables to be included in risk behavior profiles. Although the current study surveyed a total of 1,039 university students, given the relatively small proportion of African American students (N=228) that were among the students sampled, analyses were only able to be conducted on 4 risk behaviors (alcohol consumption, rates of binge drinking, number of sexual partners, and co-occurring alcohol use and sexual activity). A larger sample of African American participants, for instance, could have allowed for the study of both short and long-term drinking patterns (i.e., assessing alcohol use and binge drinking for the past 30 days and the past 6 months, for example). Given that university students have extended "breaks" during the year (i.e., Fall Break, Spring Break, Christmas Holiday, Thanksgiving Break, Summer Vacation), that typically allow for more freedom and alcohol consumption, understanding variation that exists across time would allow for a deeper understanding of drinking habits. This would only be possible, however, if the sample size increased by at least 50 participants per indicator variable added into the latent profile analysis (see power recommendations in Muthén & Muthén, 2002).

Further, the inclusion of a relatively limited number of risk behaviors is a limitation because multiple indicators of drinking and sexual activity would provide a more comprehensive depiction of patterns that exist for African American emerging adults in college. A larger sample size would also allow for exploration of a more comprehensive range of risk behaviors in the profile analyses of future studies. For

example driving under the influence of alcohol is another behavior related to alcohol consumption that often leads to negative consequences including traffic accidents and involvement in the legal system (Jackson, Hodge, & Vaughn, 2010; Dawson, Grant, & Li, 2007; Weden & Zabin, 2005). Future studies should attain a large enough sample size to ensure that they have the power needed to analyze the indicators included in the current study in addition to drinking and driving behaviors of African American college students. Understanding students' alcohol consumption patterns in addition to their subsequent drinking and driving behaviors would allow for future prevention researchers to highlight the specific behaviors that are important to target in their implementation efforts.

Although the 5-class solution had 1 class (Class 5; *Mixed Risk*) that contained less than 5% (N=9) of the total participant count (N=228), the current study did not exclude this class from ANOVA analyses due to the contributions that the exploration of these findings make to the literature. Specifically, a primary goal of the current study was to identify co-occurring risk behaviors and risk and resilience factors that were associated with different risk behavior profiles. The current study did find that students who were identified as having *Mixed Risk* reported encountering significantly more interpersonal stressors than their peers who were *Abstainers,* suggesting that tumultuous interpersonal relationships might be a stressor that leads to more alcohol use, binge drinking, sexual activity, and engaging in sexual intercourse while under the influence of alcohol. This has implications for prevention programs which seek to prevent these behaviors, and suggests that researchers might target interpersonal relationship factors (e.g., romantic partner communication, efficacy about talking to partners about safe sex, etc.) in their prevention

100

efforts. Again, attaining data on the behavior and experiences of a larger sample of African American students in college will allow for a more trustworthy replication of study findings.

In addition to drunk driving, future studies should also allow for the inclusion of condom use as a risk behavior due to its potentially detrimental impact on youth health. Past studies show that, while variability exists in the number of sexual partners that African American college students report having, they also report variation in the precautions that students take which can reduce the risk for adverse effects such as STD's and unplanned pregnancies (Oswalt & Matsen, 1993). These studies show that, while between zero and up to 70 or 80% of students report being sexually active, great variability also exists in the number of students who report using a condom the last time they had sexual intercourse. For example, Rothman and colleagues (2009) examined co-occurring alcohol and sexual risk behaviors among a sample of White (19.2%), African American (55.4%), and Hispanic (19.9) youth (N=1,110) between the ages of 14 and 21 years old who were receiving services at an inner-city hospital. These researchers found racial differences wherein African Americans were less likely than all other races to report having had sex without using a condom or birth control after drinking during their lifetimes and within the past month (Rothman et al., 2009). Although this study is based on a clinical population that may not be reflective of the African American college student population, results suggest a link between alcohol use and potentially protective sexual behaviors. Given disproportionate health consequences for African Americans, and when considering heightened risk for engaging in risk behaviors when in college, results of this study and the current investigation point to a need for a better

understanding condom use among sexually active African American emerging adults in college.

Also as mentioned, future studies also should refine the measurement tools used to assess specific risk and resilience factors that are unique to African Americans. In addition to more accurate measurement of academic stress that African American students encounter on the campuses of predominately White institutions, work should be done by researchers to understand the social support that these students are able to access and benefit from in their college communities. Further, past studies emphasize the importance of assessing not only the frequency of discriminatory experiences, but also the perceived impact of racially charged experiences on the outcomes of African Americans. Thus, a valid and reliable measure of participants' perception of the stress caused by racial discrimination also is necessary. Development of instrumentation in these domains will deepen our understanding of the association between risk and resilience factors and risk behavior engagement. Further, this work will contribute to the prevention literature when considering dissemination of programs meant to bolster resilience and alleviate the potential effects of general and culturally specific stress that African American college students encounter that often lead to participation in risk behaviors.

5.8 IMPLICATIONS AND STUDY CONCLUSIONS

In its exploration of alcohol use, sexual activity, and co-occurring risk behaviors among African American emerging adults in college, the current study has several strengths that make it both progressive and compelling. Namely, the study is concerned

with risk behavior engagement of a population that often suffers comparatively severe consequences of participating in these activities. Also, as we know that differences occur within groups, the current study was concerned with identifying homogeneous groups that exist within this subset of the population. Through this exploration, the current study lays a foundation which identifies "high risk" individuals, as well as those who are "abstainers" or of "mixed risk". As such, implications exist for prevention researchers who might seek to target alcohol use, sexual activity, or co-occurring risk behaviors as ways of reducing HIV and pregnancy risk, drinking and driving accidents, rape occurrences, and legal system involvement among many other serious consequences that result from engaging in these behaviors. Further, as opposed to previous studies which are concerned with already-established consequences of risk behaviors, the current study takes a "strengths-based approach" which highlights risk and resilience factors that are associated with the identified risk behavior profiles. Through this work, prevention researchers may begin to understand aspects of youths' environments that are important to foster in programming, in an attempt to bolster protective mechanisms. Similarly, the current study has implication for certain stressors (interpersonal and environmental) that emerging adults should be prepared for in their transition to college. Thus, protective factors can be increased, the effect of risk factors can be decreased, and students may begin to engage in risk behaviors at lower rates.

As previous studies suggest that traditional prevention programs have limited impact on African Americans (e.g., Gil, Wagner, & Tubman, 2004; Coard et al, 2004), current risk behavior prevention programs should be sure to include components that are relevant to the lives of the youth being targeted. The current study is in line with previous

research (e.g., DiClemente et al., 2004) which suggests that seeking to improve interpersonal relationships and intimate partner communication skills for African Americans may bolster the change potential of prevention programming. Further, as the current study suggests that preparing African American youth for environmental stressors and experiences with racial discrimination might be a beneficial next-step for prevention scientists, implications are seen for other potential prevention program components. Specifically, as racial socialization messages are shown to promote positive emotional, psychological, and behavioral development (Coard, et al., 2004) in the face of discriminatory experiences, researchers should determine whether adding racial socialization messages to culturally sensitive prevention programs may offset some of the maladaptive coping response patterns identified in the current study. These components have shown preliminary positive results for African American youth participating in HIV prevention programs (e.g., DiClemente et al., 2004). These two strategies taken together are in line with the Integrative Model of Developmental Competencies which posits that both general and culturally specific factors are significantly impactful in the lives of minority youth (Spencer & Dupree, 1996; Garcia Coll et al., 1996). Therefore, results of the current study strongly suggest that, through employing intervention strategies which seek to improve interpersonal relationships while at the same time including components that prepare youth for experiences with discrimination through utilizing racial socialization messages and teaching students positive ways to cope with racially charged situations (e.g., engaging the offending person, asserting oneself, seeking support, or using direct problem-solving strategies; Phinney & Chavira, 1995; Scott, 2003), future risk behavior prevention programs may begin to become truly comprehensive.

The current investigation also extends the current theoretical risk literature with African American emerging adults in several ways. Specifically, this study provides initial support for the existence of patterns in the ways in which African American emerging adults in college engage in alcohol use, sexual activity, and co-occurring drinking and sexual risk behaviors. The current study also suggests that these groups vary as college students age, but not significantly based on student gender, or across the SES of students in college. Last, the current study suggests that students who display various patterns of risk behavior engagement vary based on the amount of interpersonal, environmental, and racial stress that students are under.

As noted, the observed relationships between specific risk behavior patterns and sources of stress and support have implications for the development and use of programing aimed at preventing negative outcomes for African American emerging adults in college. The Developmental Contextual Perspective which suggest that the college environment in itself is one which promotes alcohol use and sexual behavior by nature of its contextual characteristics (Schulenberg & Maggs, 2002; Bates, 1987; Elder, 1998; Wechsler et al., 1998). Further, the Integrative Model of Developmental Competencies (Garcia Coll et al., 1996) suggests that cultural stressors such as racial discrimination also serve as culturally-specific risk factors associated with engagement in potentially unsafe behaviors. The stress-coping theory (Wills et al., 2001; Brody et al., 2010) suggests that life stressors serve as a risk factor for drinking and risky sex through causing emotional distress and perceptions of limited efficacy and control (Fergus & Zimmerman, 2005).

Thus, the current study suggests that emerging adults often engage in alcohol use and risky sexual activity as maladaptive reactions to occurrences such as negative interpersonal interactions, environmental stressors, and racially charged discriminatory experiences. The current study posits the need for research that identifies influential sources of social support for African American students in college, and posits the need for prevention programs that utilize these support sources in order to bolster the coping strategies of these students. Currently there are no known prevention programs specifically targeting alcohol and sexual risk behaviors among African American college students through targeting the variables explored in the current study. This investigation concludes by suggesting that, through bolstering the social support of African American emerging adults in college and equipping them with the tools necessary to cope with the general and culturally-specific stressors that they face, prevention programs will succeed in reducing the negative consequences of drinking, sexual activity, and co-occurring risk behaviors.

REFERENCES

Abma, J. C., Martinez, G. M., & Copen, C. E. (2010). Teenagers in the United States: sexual activity, contraceptive use, and childbearing, national survey of family growth 2006-2008. *Vital and health statistics. Series 23, Data from the National Survey of Family Growth*, 30, 1-47.

Akaike, H. (1974). A new look at the statistical model identification. *Automatic Control, IEEE Transactions on*, *19*(6), 716-723. Schwarz G. Estimating the dimension of a model. Annals of Statistics. 1978;6:461–464.

Ancis, J. R., Sedlacek, W. E., & Mohr, J. J. (2000). Student perceptions of campus cultural climate by race. *Journal of Counseling & Development*, *78*(2), 180-185.

Annual Survey of Colleges (2013) in Allen, I. E., & Seaman, J. (2013). *Changing course: Ten years of tracking online education in the United States*. Babson Park, MA: Babson Survey Research Group. Available from http://www.collegedata.com/cs/data/college/college_pg01_tmpl.jhtml?schoolId=1 666

Arnett, J. J. (2000). Emerging adulthood: a theory of development from the late teens through the twenties. *American Psychology, 55,* 469-80.

Arminger, G., Stein, P., & Wittenberg, J. (1999). Mixtures of conditional mean-and covariance-structure models. *Psychometrika*, *64*(4), 475-494.

Arrington, E. G., & Wilson, M. N. (2000). A re-examination of risk and resilience during adolescence: Incorporating culture and diversity. *Journal Of Child And Family Studies*, *9*(2), 221-230. doi:10.1023/A:1009423106045

Arthur, M. W., Hawkins, J., Pollard, J. A., Catalano, R. F., & Baglioni, A. r. (2002). Measuring risk and protective factors for substance use, delinquency, and other adolescent problem behaviors: The Communities That Care Youth Survey. *Evaluation Review*, *26*(6), 575-601. doi:10.1177/019384102237850

Aseltine, R. H., & Gore, S. L. (2000). The variable effects of stress on alcohol use from adolescence to early adulthood. *Substance Use and Misuse*, *35*, 643 − 668. doi:10.3109/10826080009148415

Asparouhov, T., &Muthen, B. (2008).Multilevel mixture models. In G. R. Hancock&K.M. Samuelsen (Eds.), *Advances in latent variable mixture models* (pp. 27–51). Charlotte, NC: Information Age.

Bachanas, P.J., Morris, M.K., Lewis-Gess, J.K., Sarett-Cuasay, E.J., Flores, A.L., Sirl, K.S., et al. (2002). Psychological adjustment, substance abuse, HIV knowledge, and risky sexual behavior in at-risk minority females: Developmental differences during adolescence. *Journal of Pediatric Psychology, 27,* 373–384.

Baer, J. S., & Carney, M. M. (1993). Biases in the perceptions of the consequences of alcohol use among college students. *Journal of Studies on Alcohol and Drugs*, *54*(1), 54.

Baer, J. S., Kivlahan, D. R., Blume, A. W., McKnight, P., & Marlatt, G. A. (2001). Brief intervention for heavy-drinking college students: 4-year follow-up and natural history. American Journal of Public Health, 91(8), 1310-1316.

Bagley, C. A. & Carroll, J. (1998). Healing forces in African American families. In H. I. McCubbin, E. A. Thompson, A. I. Thompson, & J. A. Futrell (Eds.), *Resiliency in African American families* (pp. 117-142). Thousand Oaks, CA: Sage.

Bagley, C. A. & Carroll, J. (1998). Healing forces in African American families. In H. I. McCubbin, E. A. Thompson, A. I. Thompson, & J. A. Futrell (Eds.), *Resiliency in African American families* (pp. 117-142). Thousand Oaks, CA: Sage.

Bean, R., Bush, K., McKenry, P., & Wilson, S. (2003). The impact of parental support, behavioral control, and psychological control on the academic achievement and self-esteem of African American and European American adolescents. *Journal of Adolescent Research*, *18*(5), 523-541.

Birnbaum, M. H. (2004). Human research and data collection via the Internet. *Annual Review of Psychology*, 55, 803-832.

Bock, B., Niaura, R., Fontes, A., & Bock, F. (1999). Acceptability of computer assessments among ethnically diverse, low-income smokers. *American Journal of Health Promotion*, *13*(5), 299-304.

Borrell, L. Jacobs, D., Williams, D., Pletcher, M., Houston, T., & Kiefe, C. (2007). Self-reported racial discrimination and substance use in the Coronary Artery Risk Development in Adults study. *American Journal of Epidemiology, 166,* 1068–1079. doi:10.1093/aje/kwm180

Boyd-Franklin, N. (2003). *Black families in therapy: Understanding the African American experience*. New York: Guilford.

Brache, K., & Stockwell, T. (2011). Drinking patterns and risk behaviors associated with combined alcohol and energy drink consumption in college drinkers. *Addictive Behaviors, 36,* 1133–1140. doi:10.1016/j.addbeh.2011.07.003

Brener, N., Collins J., Kann, L, Warren, C., & Williams, B. (1995). Reliability of the Youth Risk Behavior Survey Questionnaire. *American Journal of Epidemiology, 141*:575–80.

Brener, N., Kann L., & McManus T. (2003). A comparison of two survey questions on race and ethnicity among high school students. *Public Opinion Quarterly, 67:*227–36.

Brener, N., Kann L., McManus T., Kinchen S., Sundberg E., & Ross J. (2002). Reliability of the 1999 Youth Risk Behavior Survey Questionnaire. *Journal of Adolescent Health , 31*:336–42.

Brener, N., McManus, T., Galuska D., Lowry R., & Wechsler H. (2003). Reliability and validity of self-reported height and weight among high school students. Journal of Adolescent Health, 32, 281–87.

Brice-Heath, S. (1982). Questioning at home and at school: A comparative study. In G. Spindler (Ed.), Doing the ethnography of schooling: Educational anthropology in action (96-101). New York: Holt, Rinehart & Winston.

Brody. G. H., Chen, Y., Kogan, S. M., Smith, K., & Brown, A. C. (2010) Buffering effects of a family-based intervention for African American emerging adults. *Journal of Marriage and Family,72,* 1426-1435.

Brondolo, E., ver Halen, N. B., Pencille, M., Beatty, D., & Contrada, R. J. (2008). Coping with racism: A selective review of the literature and a theoretical and methodological critique. Journal of Behavioral Medicine, 32, 64–88. doi:10.1007/s10865-008-9193-0.

Bronfenbrenner, U. (1979). *The ecology of human development.* Cambridge, MA: Harvard University Press.

Bronfenbrenner, U., & Morris, P. A. (2006). *The Bioecological Model of Human Development.* In R. M. Lerner, W. Damon, R. M. Lerner, W. Damon (Eds.), Handbook of child psychology (6th ed.): Vol 1, Theoretical models of human development (pp. 793-828). Hoboken, NJ US: John Wiley & Sons Inc.

Brook, J. S., & Pahl, K. (2005). The protective role of ethnic and racial identity and aspects of an Africentric orientation against drug use among African American young adults. Journal of Genetic Psychology, 166, 329-345.

Brown, D. L., (2008). African Americna Resiliency: Examining Racial Socialization and Social Support as Protective Factors. *Journal of Black Psychology, 34,* 32- 48.

Brown, T., Flory, K., Lynam, D., Leukefeld, C., & Clayton, R., (2004). Comparing the developmental trajectories of marijuana use of African American and Caucasian adolescents: Patterns, antecedents, and consequences. *Experimental and Clinical Psychopharmacology,* 12, 47-56.

Brown, T., Williams, D., Jackson, J., Neighbors, H., Torres, M., Sellers, S., & Brown, K. (2000). "Being black and feeling blue": the mental health consequences of racial discrimination. Race and Society, 2, 117–131. doi:10.1016/S1090-9524(00)00010-3

Cabrera, A. F., Nora, A., Terenzini, P. T., Pascarella, E., & Hagedorn, L. S. (1999). Campus racial climate and the adjustment of students to college: A comparison between White students and African-American students. *Journal of Higher Education*, 134-160.

Caetano, R., & Kaskutas, L. E. (1995). Changes in drinking patterns among Whites, Blacks, and Hispanics, 1984-1992. Journal of Studies on Alcohol, 56, 558-565.

Canty-Michell, J., & Zimet, G. D. (2000). Psychometric properties of the Multidimensional Scale of Perceived Social Support in urban adolescents. *American Journal of Community Psychology*, *28*, 391-400.

CDC. Youth Risk Behavior Surveillance—United States, (2009) [pdf 3.5M] *MMWR* 2010;59(SS-5):1–142.

Center on Addiction and Substance Abuse, CASA (1999). *Dangerous liaisons: Substance abuse and sex* [On-line]. Available: http://www.casacolumbia.org/usr_doc/21598.PDF.

Chapin, J., (2001). It won't happen to me: The role of optimistic bias in African American teens' risky sexual practices. *The Howard Journal of Communications, 12,* 49-59.

Chen, C. M., Dufour, M. C., & Yi, H. Y. (2004). Alcohol consumption among young adults ages 18-24 in the United States: Results from the 2001-2002 NESARC Survey. *Alcohol Research & Health*.

Chen, P. & Jacobson, K. C. (2012). Developmental trajectories of substance use from early adolescence to young adulthood: gender and racial/ethnic differences. *Journal of Adolescent Health, 50*, 154-163.

Cherry, V, R., Belgrave, F. Z., Jones, W., Kennon, D. K., Gray, F. S., & Phillips, F. (1998). NTU: An Africentric approach to substance abuse prevention among African American youth. *The Journal of Primary Prevention, 18,* 319-339.

Chiasson, M. A., Parsons, J. T., Tesoriero, J. M., Carballo-Dieguez, A., Hirshfield, S., & Remien, R. H. (2006). HIV behavioral research online. *Journal of Urban Health, 83*(1), 73-85.

Chism, M., & Satcher, J. (1998). African American students' perceptions toward faculty at historically Black colleges. *College Student Journal, 32,* 315-320.

Cho, Y. H., & Span, S. A. (2010). The effect of alcohol on sexual risk-taking among young men and women. *Addictive Behaviors*, *35*(8), 779-785.

Cho, Y. H., & Span, S. A. (2010). The effect of alcohol on sexual risk-taking among young men and women. *Addictive Behaviors*, *35*(8), 779-785.

Choi, H., Meininger, J., & Roberts, R. (2006). Ethnic differences in adolescents' mental distress, social stress, and resources. *Adolescence, 41*(162), 263-283.

Clark, R., Anderson, N. B., Clark, V. R., & Williams, D. R. (1999). Racism as a stressor for African Americans. A biopsychosocial model. American Psychologist, 54, 805–816. doi:10.1037/0003-066X.54.10.805

Clifford, P. R., & Jones, W., Jr. (1988). Alcohol abuse, prevention issues, and the Black community. Evaluation and the Health Professions, 11(2), 272-277.

Coard, S. I., Wallace, S. A., Stevenson, H. C., & Brotman, L. M. (2004). Towards culturally relevant preventive interventions: The consideration of racial socialization in parent training with African American families. *Journal of Child and Family Studies, 13,* 277-293.

Cohen, P., Kasen, S., Chen, H., Hartmark, C., & Gordon, K. (2003). Variations in patterns of developmental transitions in the emerging adulthood period. *Developmental Psychology, 39,* 657-669.

Compas, B. E., Hinden, B. R., & Gerhardt, C. A. (1995). Adolescent development: Pathways and processes of risk and resilience. *Annual Review of Psychology, 46,* 265–293.

Constantine, M. G., Wilton, L., & Caldwell, L. D. (2003). The role of social support in moderating the relationship between psychological distress and willingness to seek psychological help among Black and Latino college students. *Journal of College Counseling*, *6*, 155-165.

Cooley-Strickland, M., Bradshaw, C. P., Furr-Holden, D., Stuart, E. A., Quille, T. J., & Griffin, R. S. (2009). Community Violence and Youth: Affect, Behavior, Substance Use, and Academics [electronic resource]. *Clinical Child And Family Psychology Review*, *12*(2), 127-156.

Cooper, A., Scherer, C. R., Boies, S. C., & Gordon, B. L. (1999). Sexuality on the Internet: From sexual exploration to pathological expression. *Professional Psychology: Research and Practice,* 30(2), 154.

Cooper, M. L. (2002). Alcohol use and risky sexual behavior among college students and youth: Evaluating the evidence. Journal of Studies on Alcohol, Suppl, 14, 101-117.

Cooper, S. M., Brown, C., Metzger, I., Clinton, Y., & Guthrie, B. (2013). Racial Discrimination and African American Adolescents' Adjustment: Gender Variation in Family and Community Social Support, Promotive and Protective Factors. *Journal of Child and Family Studies*, *22*(1), 15-29.

Cooper, M. L., Peirce, R. S., and Huselid, R. F. (1994). Substance use and sexual risk taking among black adolescents and white adolescents. *Health Psychology*, 13, 251-262.

Cowan, P. A., Cowan, C. P., & Schulz, M. S. (1996). Thinking about risk and resilience in families. In E. M. Hetherington & E. A. Blechman (Eds.), *Stress, coping, and resiliency in children and families* (pp. 1–34). Mahwah, NJ: Lawrence Erlbaum Associates.

Cramer, D. (1998). *Fundamental statistics for social research*. London: Routledge.

Cramer, d., & Howitt, D. (2004). *The SAGE dictionary of statistics*. London: SAGE.

Crosby R., DiClemente R., Yarber W.L., Snow G., & Troutman A. (2008). An event-specific analysis of condom breakage among African American men at risk of HIV acquisition. Sexually Transmitted Diseases, 35, 147–177.

D'Augelli, A. R., & Hershberger, S. L. (1993). African American undergraduates on a predominantly white campus: Academic factors, social networks, and campus climate. *Journal of Negro Education, 62,* 67–81. doi:10.2307/2295400

Dawson, D. A., Grant, B. F., & Li, T. K. (2007). Impact of age at first drink on stressreactive drinking. Alcoholism: Clinical and Experimental Research, 31, 69–77. doi:10.1111=j.1530–0277.2006.00265.x.

Dennhardt, A. A., & Murphy, J. G. (2011). Associations between depression, distress tolerance, delay discounting, and alcohol-related problems in European American and African American college students. *Psychology of addictive behaviors, 25*(4), 595.

DiClemente, R. J., Wingood, G. M., Harrington, K. F., Lang, D. L., Davies, S. L., Hook III, E. W., & Robillard, A. (2004). Efficacy of an HIV Prevention Intervention for African American Adolescent Girls: A Randomized Controlled Trial.

Dillman, D. A., & Bowker, D. K. (2001). The web questionnaire challenge to survey methodologists. *Dimensions of Internet science,* 159-178.

Doane, D. P., & Seward, L.E. (2011). Measuring Skewness. *Journal of Statistics Education*, 19(2), 1-18.

Dolcini, M. M., Harper, G. W., Boyer, C. B., & Pollack, L. M. (2010). Project ORE: a friendship-based intervention to prevent HIV/STI in urban African American adolescent females. *Health Education & Behavior*, *37*(1), 115-132.

D'Zurilla, T. J., & Sheedy, C. F. (1991). Relation between social problem-solving ability and subsequent level of psychological stress in college students. Journal of Personality and Social Psychology, 61(5), 841-846.

D'Zurilla, T. J., & Sheedy, C. F. (1991). Relation between social problem-solving ability and subsequent level of psychological stress in college students. *Journal of Personality and Social Psychology*, *61*(5), 841.

Eccles, J., & Harold, R. (1993). Parent-school involvement during the early adolescent years. Teachers College Record, 94(3), 568-587

Elder, G.H., (1998). The life course and human development. In: Damon, W. (Series Ed.) and LERNER, R.M. (Vol. Ed.) Handbook of Child Psychology, Vol. 1: Theoretical Models of Human Development, New York: John Wiley & Sons, 939-991.

Ellen, J. M., Gurvey, J. E., Pasch, L., Tschann, J., Nanda, J. P., & Catania, J. (2002). A randomized comparison of A-CASI and phone interviews to assess STD/HIV-related risk behaviors in teens. *Journal of Adolescent Health*, *31*(1), 26-30.

Else-Quest, N. M., Hyde, J. S., & DeLamater, J. D. (2005). Context counts: Long-term sequelae of premarital intercourse or abstinence. The Journal of Sex Research, 42, 102-112

Faryna, E., & Morales, E., (2000). Self-efficacy and HIV-related risk behaviors among multiethnic adolescents. Cultural Diversity and Ethnic Minority Psychology, 6, 42-56.

Feagin, J. R. (1991). The continuing significance of race: Antiblack discrimination in public places. *American Sociological Review*, 101-116.

Feagin, J. R., & Sikes, M. P. (1995). How Black Students Cope with Racism on White Campuses. *Journal of Blacks in Higher Education*, *8*, 91-97.

Fergus, S., & Zimmerman, M. A. (2005). Adolescent resilience: A framework for understanding healthy development in the face of risk. *Annual Review of Public Health*, *26*, 399 – 419. doi:10.1146/annurev.publhealth.26. 021304.144357

Ferguson, S. (1998). Peer counseling in a culturally specific adolescent pregnancy prevention program. *Journal Of Health Care For The Poor And Underserved*, *9*(3), 322-340.

Finch, W. H., & French, B. F. (2014). Multilevel Latent Class Analysis: Parametric and Nonparametric Models. The Journal of Experimental Education, 82(3), 307-333.

Fisher, J. D., & Fisher, W. A. (1992). Changing AIDS-risk behavior. *Psychological bulletin*, *111*(3), 455.

Flay, B. R., Graumlich, S., Segawa, E., Burns, J., & Holliday, M. (2004). Effects of 2 prevention programs on high-risk behaviors among African American youth: a randomized trial. *Archives of Pediatrics & Adolescent Medicine, 158(4),* 377-384.

Flory, K., Lynam, D., Milich, R., Leukefeld, C., & Clayton, R. (2004). Early adolescent through young adult alcohol and marijuana use trajectories: Early predictors, young adult outcomes, and predictive utility. Development and Psychopathology, 16, 193–213.

Fromme, K., Corbin, W. R., & Kruse, M. I. (2008). Behavioral risks during the transition from high school to college. *Developmental psychology*, *44*(5), 1497.

Furstenberg, F. F., Jr., and Cherlin, A. J. (1991). *Divided Families*. Cambridge, MA: Harvard University Press.

Garbarino, J. (1999). *Lost Boys: Why our sons turn violent and how we can save them*. Los Angeles: The Free Press.

Garcia Coll, C., Lamberty, G., Jenkins, R., McAdoo, H. P., Crnic, K.,Wasik, B. H., & Vasquez Garcia, H. (1996). An integrative model for the study of developmental competencies in minority children, *Child Development, 67,* 1891–1914.

Garmezy, N., & Masten, A. S. (1991). The protective role of competence indicators in children at risk.

Gaylord-Harden, N. K., & Cunningham, J. A. (2009). The impact of racial discrimination and coping strategies on internalizing symptoms in African American youth. Journal of Youth and Adolescence, 38, 532–543. doi:10.1007/s10964-008-9377-5.

Gibbons, F. X., Etcheverry, P. E., Stock, M. L., Gerrard, M., Weng, C., & O'Hara, R. (2010). Exploring the link between racial discrimination and substance use: What mediates and what buffers? *Journal of Personality and Social Psychology, 99,* 785–801. doi:10.1037/a0019880

Gibbons, F. X., Yeh, H., Gerrard, M., Cleveland, M. J., Cutrona, C., Simons, R. L., & Brody, G. H. (2007). Early experience with discrimination and conduct disorder as predictors of subsequent drug use: A critical period analysis. *Drug and Alcohol Dependence, 88,* S27–S37. doi:10.1016/j.drugalcdep.2006.12.015

Gil, A. G., Wagner, E. F., & Tubman, J. G. (2004). Culturally sensitive substance abuse intervention for Hispanic and African American adolescents: Empirical examples from the Alcohol Treatment Targeting Adolescents in Need (ATTAIN) Project. *Addiction, 99*(s2), 140-150.

Godette, D. C. (2009). Alcohol use and consequences for Blacks. In S. E. Taylor & H. M. Treadwell (Eds.), Health issues in the Black community (3rd ed., pp. 417-430). San Francisco, CA: Jossey-Bass.

Godette, D. C. (2009). Alcohol use and consequences for Blacks. In S. E. Taylor & H. M. Treadwell (Eds.), Health issues in the Black community (3rd ed., pp. 417-430). San Francisco, CA: Jossey-Bass.

Goldstein, N. E., Arnold, D. H., & Weil, J., et al. (2009). Comorbid symptom patterns in female juvenile offenders. *International Journal of Law and Psychiatry,* 26, 565-582.

González, K. P. (2002). Campus culture and the experiences of Chicano students in a predominantly White university. *Urban Education*, *37*(2), 193-218.

Goodman, L. A. (2002). Latent class analysis: The empirical study of latent types, latent variables, and latent structures. *Applied latent class analysis*, 3-55.

Grant, B. F., & Dawson, D. A. (1998). Age of onset of drug use and its association with DSM-IV drug abuse and dependence: Results from the National Longitudinal Alcohol Epidemiologic Survey. Journal of Substance Abuse, 10, 163–173.

Grant, B. F., Stinson, F. S., & Harford, T. (2001). Age at onset of alcohol use and DSM-IV alcohol abuse and dependence: A 12- year follow-up. Journal of Substance Abuse, 13, 493–504.

Gribble, J. N., Miller, H. G., Cooley, P. C., Catania, J. S., Pollack, L., & Turner, C. F. (2000). The impact of T-CASI interviewing on reported drug use among men who have sex with men. *Substance Use and Misuse,* 35:869–890.

Gruber, E., DiClemente, R. J., Anderson, M. M., & Lodico, M. (1996). Early drinking onset and its association with alcohol use and problem behavior in late adolescence. Preventive Medicine, 25, 293–300.

Grunbaum, J. A., Kann, L., Kinchen, S. A., Williams, B., Ross, J. G., Lowry, R., & Kolbe, L. (2002). Youth risk behavior surveillance- United States, 2001. Morbidity and mortality weekly report, 51, 1-64. Atlanta, GA: Centers for Disease Control.

Guo, J., Ick-Joong, C., Hill, KG., Hawkins, J.D., Catalano, R.E., & Abbott, R.D. (2002). Developmental relationships between adolescent substance use and risky sexual behavior in young adulthood. *Journal of Adolescent Health, 31,* 354-367.

Guthrie, B. J., Cooper, S. M., Brown, C., & Metzger, I. (2012). Degrees of Difference among Minority Female Juvenile Offenders' Psychological Functioning, Risk Behavior Engagement, and Health Status: A Latent Profile Investigation. Journal of Health Care for the Poor and Underserved, 23(1), 204-225.

Hamburg, D. A., & Takanishi, R. (1989). Preparing for life: The critical transition of adolescence. *American Psychologist*, *44*(5), 825.

Harrell, S. P. (2000). A multidimensional conceptualization of racismrelated stress: Implications for the well-being of people of color. American Journal of Orthopsychiatry, 70, 42–57. doi:10.1037/h0087722

Hayes, B. D., Holliday, R., Wade, B. H., Trawick, C., Hodge, M., Caplan, L., & Satcher, D. (2009). A comprehensive examination of the health knowledge, attitudes and behaviors of students attending historically Black colleges and universities. *Journal Of Health Care For The Poor And Underserved*, *20*(2,Suppl), 69-84. doi:10.1353/hpu.0.0159

Hedden, S L., Whitaker, D. E., & von Thomsen, S. (2011). Latent patterns of risk behavior in urban African American middle school students in Baltimore. *Journal of Child & Adolescent Substance Abuse*, *20*, 34–47. doi: 10.1080/1067828X.2011.534358

Heeren, T., Levenson, S., Jamanka, A., & Voas, R. (2002). Age of drinking onset, driving after drinking, and involvement in alcohol related motor-vehicle crashes. *Accident Analysis & Prevention*, *34*(1), 85-92.

Hendershot, C. S., & George, W. H. (2007). Alcohol and sexuality research in the AIDS era: Trends in publication activity, target populations and research design. AIDS Behavior, 11, 217−226.

Henry, K. L., Muth´en, B. (2010). Multilevel latent class analysis: An application of adolescent smoking typologies with individual and contextual predictors. *Structural Equation Modeling*, *17*, 193–215. doi: 10.1080/10705511003659342

Herd, D. (1990). Subgroup differences in drinking patterns among Black and White men: Results from a national survey. Journal of Studies on Alcohol, 51, 221-232.

Hill, K. G., White, H. R., Chung, I. J., Hawkins, J. D., & Catalano, R. F. (2000). Early adult outcomes of adolescent binge drinking: Person- and variable-centered analyses of binge drinking trajectories. Alcoholism—Clinical and Experimental Research, 24, 892–901.

Hingson, R., Heeren, T., & Winter, M. (2005). Age of drinking onset and duration, severity, and number of episodes of alcohol dependence. Paper presented at the Research Society on Alcoholism, Santa Barbara, CA, June 25–30.

Hingson, R.W., Zha, W., & Weitzman, E.R. (2009). Magnitude of and trends in alcohol-related mortality and morbidity among U.S. college students ages 18–24,1998–2005. Journal of Studies on Alcohol and Drugs Supplement16:12–20.

Hipp, L. E., Kane Low, L., & van Anders, S. M., (2012). Exploring women's postpartum sexuality: Social, psychological, relational, and birth-related contextual factors. *Journal of Sexual Medicine*, 2330-2341. doi: 10.1111/j.1743-6109.2012.02804.x

Hixson, J., & Tinzmann, M. B. (1990). Who are the "at-risk" students of the 1990s. *NCREL Monograph*.

Hoggard, L. S., Byrd, C. M., & Sellers, R. M. (2012). Comparison of African American college students' coping with racially and nonracially stressful events. *Cultural Diversity And Ethnic Minority Psychology*, *18*(4), 329-339. doi:10.1037/a0029437

Hoijtink, H. (2001). Confirmatory latent class analysis: Model selection using Bayes factors and (pseudo) likelihood ratio statistics. *Multivariate Behavioral Research*, *36*(4), 563-588.

Hops, H., Davis, B., & Lewin, L. M. (1999). The development of alcohol and other substance use: a gender study of family and peer context. *Journal of Studies on Alcohol and Drugs*, (13), 22.

Hughes, D., Rodriguez, J., Smith, E. P., Johnson, D. J., Stevenson, H. C., & Spicer, P. (2006). Parent's ethnic-racial socialization practices: A review of research and directions for future study. *Developmental Psychology*, *42*, 747-770.

Jackson, K. F., Hodge, D. R., & Vaughn, M. G. (2010). A meta-analysis of culturally sensitive interventions designed to reduce high-risk behaviors among African American Youth. *Journal of Social Service Research, 36,* 163-173.

Johnston, L. D., O'Malley, P. M., Bachman, J. G., & Schulenberg, J. E. (2011). Monitoring the Future national survey results on drug use, 1975-2010. *Ann Arbor: Institute for Social Research, The University of Michigan*, 744.

Johnston, L. D., O'Malley, P., Bachman, J. G., & Schulenberg, J. (2008). Monitoring the Future national results on adolescent drug use: Overview of key findings, 2007. Bethesda, MD: National Institute on Drug Abuse.

Jones, R. (2003). Survey data collection using audio computer assisted self-interview. *Western Journal of Nursing Research*, *25*(3), 349-358.

Jones-Webb, R. (1998). Drinking patterns and problems among African-Americans: Recent findings. Alcohol Health & Research World, 22, 260-264.

Jung, T., & Wickrama, K. (2008). An introduction to latent class growth analysis and growth mixture modeling. *Social and Personality Psychology Compass*, *2*(1), 302-317.

Kann, L., Brener, N. D., Warren, C. W., Collins, J. L., & Giovino, G. A. (2002). An assessment of the effect of data collection setting on the prevalence of health-risk behaviors among adolescents. *Journal of Adolescent Health, 31,* 327–35.

Keogh, B. K., & Weisner, T. (1993). An ecocultural perspective on risk and protective factors in children's development: Implications for learning disabilities, *Learning Disabilities Research and Practice, 8,* 3–10.

Kessler, R. C., Mickelson, K. D., & Williams, D. R. (1999). The prevalence, distribution, and mental health correlates of percieved discrimination in the United States. *Journal Of Health And Social Behavior*, *40*(3), 208-230. doi:10.2307/2676349.

Kissinger, P., Rice, J., Farley, T., Trim, S., Jewitt, K., Margavio, V., & Martin, D. H. (1999). Application of computer-assisted interviews to sexual behavior research. *American Journal of Epidemiology,* 149(10), 950-954.

Kogan, S. M., Brody, G. H., Chen, Y., Grange, C. M., Slater, L. M., & DiClemente, R. J. (2010). Risk and protective factors for unprotected intercourse among rural African American young adults. *Public Health Reports, 125,* 709-717.

Komro, K. A., Tobler, A. L., Maldonado-Molina, M. M., & Perry, C. L. (2010). Effects of alcohol use initiation patterns on high-risk behaviors among urban, low-income, young adolescents. *Prevention Science*, *11*(1), 14-23. doi:10.1007/s11121-009-0144-y

Kosterman, R., Hawkins, J. D., Guo, J., Catalano, R. F., and Abbott, R. D. (2000). The dynamics of alcohol and marijuana initiation: Patterns and predictors of first use in adolescence. *American Journal of Public Health*, 90, 360-366.

Kraut, R., Olson, J., Banaji, M., Bruckman, A., Cohen, J., & Couper, M. (2004). Psychological research online: report of Board of Scientific Affairs' Advisory Group on the Conduct of Research on the Internet. *American psychologist*, 59(2), 105.

Kurth, A. E., Martin, D. P., Golden, M. R., Weiss, N. S., Heagerty, P. J., Spielberg, F., ... & Holmes, K. K. (2004). A comparison between audio computer-assisted self-interviews and clinician interviews for obtaining the sexual history. *Sexually transmitted diseases,* 31(12), 719-726.

Landrine, H., & Klonoff, E. (1996). The schedule of racist events: A measure of racial discrimination and a study of its negative physical and mental health consequences. Journal of Black Psychology, 22, 144–168. doi:10.1177/00957984960222002

Landrine, H., Klonoff, E. A., Corral, I., Fernandez, S., & Roesch, S. (2006). Conceptualizing and measuring ethnic discrimination in health research. *Journal of Behavioral Medicine, 29,* 79–94. doi:10.1007/s10865-005-9029-0

Laska, M., Pasch, K. E., Lust, K., Story, M., & Ehlinger, E. (2009). Latent class analysis of lifestyle characteristics and health risk behaviors among college youth. *Prevention Science*, *10*(4), 376-386. doi:10.1007/s11121-009-0140-2

Laursen, B., & Hoff, E. (2006). Person-Centered and Variable-Centered Approaches to Longitudinal Data. *Merrill-Palmer Quarterly: Journal of Developmental Psychology*, *52*(3), 377-389.

Li, X., Stanton, B., & Feigelman, S. (2000) Impact of perceived parental monitoring on adolescent risk behavior over 4 years. *Journal of Adolescent Health, 27*(1), 49–56

Li, X., Stanton, B., Cottrell, L., Burns, J., Pack, R., & Kaljee, L. (2001). Patterns of initiation of sex and drug-related activities among urban low-income African-American adolescents. *Journal of Adolescent Health*, 28(1), 46-54. doi:10.1016/S1054-139X(00)00173-7

Lightfoot, M. A., & Milburn, N. G. (2009). HIV prevention and African American youth: examination of individual-level behaviour is not the only answer. Culture*, Health & Sexuality, 11*(7), 731-742.

Lindberg, L. D., Boggess, S., and Williams, S. (1999). *Multiple Threats: The co-occurrence of teen health risk behaviors*. Reported presented under contract from the Office of the Assistant Secretary for Planning and Evaluation (ASPE).

Lo, Y., Mendell, N. R., & Rubin, D. B. (2001). Testing the number of components in a normal mixture. *Biometrika*, *88*(3), 767-778.

Luthar S. S, Cicchetti D, Becker B. 2000. The construct of resilience: a critical evaluation and guidelines for future work. *Child Development,* 71:543–62

Luthar, S. S. (2006). Resilience in development: A synthesis of research across five decades. In D. Cicchetti & D. J. Cohen (Eds.), *Developmental psychopathology: Vol. 3. Risk, disorder, and adaptation* (2nd ed., pp. 739 – 795). Hoboken, NJ: Wiley.

Magidson, J., & Vermunt, J. (2004). Latent Class Models. In D. W. Kaplan (Ed.), *The Sage handbook of quantitative methodology for the social sciences* (pp. 175–198). Thousand Oaks, CA: Sage.

Mallett, K. A., Marzell, M., Scaglione, N., Hultgren, B., & Turrisi, R. (2013). Are All Alcohol and Energy Drink Users the Same? Examining Individual Variation in Relation to Alcohol Mixed With Energy Drink Use, Risky Drinking, and Consequences. Psychology Of Addictive Behaviors, doi:10.1037/a0032203

Marcoulides, G. A., & Moustaki, I. (Eds.). (2014). *Latent variable and latent structure models.* Psychology Press.

Marshall, K., Crepaz, N., & O'Leary, A. (2010). A Systematic Review of Evidence-Based Behavioral Interventions for African American Youth at Risk for HIV/STI Infection, 1988–2007 In African Americans and HIV/AIDS. (pp. 151- 180). Springer New York.

Masten, A. S., & Garmezy, N. (1985). Risk, vulnerability, and protective factors in developmental psychopathology. In *Advances in clinical child psychology,* (pp. 1-52). Springer U.S.

Masten, A. S., & Powell, J. L. (2003). A resilience framework for research, policy, and practice. In Luthar SS, ed. 2003. Resilience and Vulnerability: Adaptation in the Context of Childhood Adversities. New York: Cambridge Univ. Press. pp. 1–28.

Matthews, D. D., Hammond, W., Nuru-Jeter, A., Cole-Lewis, Y., & Melvin, T. (2013). Racial discrimination and depressive symptoms among African-American men: The mediating and moderating roles of masculine self-reliance and John Henryism. *Psychology Of Men & Masculinity*, *14*(1), 35-46. doi:10.1037/a0028436

McCutcheon, A. C. (1987). Latent class analysis. Beverly Hills, CA: Sage. In Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. Structural Equation Modeling, 14, 535-569.

McLachlan, G., & Peel, D. (2000). Finite mixture models. New York: Wiley.

McLanahan, S. (1999). Father absence and the welfare of children. In E. M. Hetherington (Ed.), *Coping With Divorce, Single Parenting, and Remarriage* (pp. 117-146). Mahwah, NJ: Lawrence Erlbaum Associates.

Meilman, P., & Presley, C. L. R. (1994). Black college students and binge drinking. The Journal of Blacks in Higher Education. 4, 70–71. doi:10.2307=2963376.

Merz, E. L., & Roesch, S. C. (2011). A latent profile analysis of the Five Factor Model of personality: modeling trait interactions. *Personality and individual differences*, *51*(8), 915-919.

Metzger, I., Cooper, S. M., Flory, K., & Zarrett, N. (2013). Culturally Sensitive Risk-Behavior Prevention Programs for African American Adolescents: A Systematic Analysis. *Clinical Child and Family Psychology Review, 16,* 187-212.

Miller, Ford, C. A., & Morris, M., Handcock, M. S., Schmitz, J. L., & Hobbs, M. M., et al. (2004). Prevalence of chlamydial and gonococcal infections among young adults in the United States. *JAMA, 29I,* 2229-36.

Miller, K. E. (2008). Wired: Energy drinks, jock identity, masculine norms, and risk taking. *Journal of American College Health, 56,* 481– 490. doi:10.3200/JACH.56.5.481-490

Miller-Cribbs, J. E., & Farber, N. B. (2008). Kin networks and poverty among African Americans: Past and present. *Social work*, *53*(1), 43-51.

Moore, K. A., Miller, B. C., Sugland, B. W., Morrison, D. R., Glei, D. A., and Blumenthal, C. (1995). *Beginning too soon: Adolescent sexual behavior, pregnancy and parenthood. A review of research and interventions* [On-line]. Available: http://aspe.hhs.gov/hsp/cyp/xsteesex.htm.

Murry, V. M., Brody, G. H., McNair, L. D., Luo, Z., Gibbons, F. X., Gerrard, M., & Wills, T. A. (2005) Parental involvement promotes rural African American youths' self-pride and sexual self-concpets. *Journal of Marriage and Family, 67,* 627-642.

Museus, S. D. (2008). The role of ethnic student organizations in fostering African American and Asian American students' cultural adjustment and membership at predominantly White institutions. *Journal of College Student Development*, *49*(6), 568-586.

Muthén, L. K., & Muthén, B.O. (2010). Mplus user's guide (5th Ed.). Los Angeles, CA: Muthén & Muthén.

Muthén, L.K. and Muthén, B.O. (2002). How to use a Monte Carlo study to decide on sample size and determine power. *Structural Equation Modeling, 4*, 599-620.

National Center for Chronic Disease Prevention and Health Promotion. (2008). YRBSS Youth online: Comprehensive results. Retrieved September 12, 2008 from http://apps.nccd.cdc.gov/yrbss/.

National Epidemiologic Survey on Alcohol and Related Consequences (2006). National Institute on Alcohol Abuse and Alcoholism. *National Institutes of Health, 70,* 1-6.

National Institute on Alcohol Abuse and Alcoholism (2013). College Drinking Fact Sheet. Accessed online September 4, 2013 at http://pubs.niaaa.nih.gov/publications/CollegeFactSheet/CollegeFactSheet.pdf.

National Institute on Alcohol Abuse and Alcoholism. (2006). Alcohol use and alcohol use disorders in the United States: Main findings from the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC) (No. NIH Publications No. 05–5737). Bethesda, MD: Author.

Neblett Jr, E. W., Terzian, M., & Harriott, V. (2010). From racial discrimination to substance use: The buffering effects of racial socialization. Child development perspectives, 4(2), 131-137.

Newman, J. C., Des Jarlais, D. C., Turner, C. F., Gribble, J., Cooley, P., & Paone, D. (2002). The differential effects of face-to-face and computer interview modes. *American Journal of Public Health,* 92(2), 294-297.

Nicolai, J. Moshagen, M., & Demmel, R. (2012). Patterns of alcohol expectancies and alcohol use across age and gender. *Drug and Alcohol Dependence, 126,* 347-353.

Nielsen, J. (2000). Designing Web Usability: The Practice of Simplicity. Indianapolis: New Riders Publishing.

Noh, S., Beiser, M., Kaspar, V., Hou, F., & Rummens, J. (1999). Perceived racial discrimination, depression, and doping: A study of Southeast Asian refugees in Canada. Journal of Health and Social Behavior, 40, 193–207. doi:10.2307/2676348.

Nosek, B. A., Banaji, M. R., & Greenwald, A. G. (2002). E-Research: Ethics, Security, Design, and Control in Psychological Research on the Internet. *Journal of Social Issues*, *58*(1), 161-176.

Nylund, K. L., Asparouhov, T., & Muthén, B. O. (2007). Deciding on the number of classes in latent class analysis and growth mixture modeling: A Monte Carlo simulation study. Structural Equation Modeling, 14, 535-569.

O'Malley, P. M., & Johnston, L. D. (2002). Epidemiology of alcohol and other drug use among American college students. *Journal of Studies on Alcohol and Drugs*, (14), 23.

O'Neill, S. E., & Sher, K. J. (2000). Physiological alcohol dependence symptoms in early adulthood: A longitudinal perspective. Experimental and Clinical Psychopharmacology, 8, 493–508. doi:10.1037=1064–1297.8.4.493.

Ogbu, J. (1981). Origins of human competence: A cultural ecological perspective. Child Development, 52, 413-429.

Orr, J. M., Sackett, P. R., & DuBois, C. L. Z. (1991). Outlier detection and treatment in I/O psychology: A survey of researcher beliefs and an empirical illustration. Personnel Psychology, 44, 473- 486.

Osborne, Jason (2002). Notes on the use of data transformations. Practical Assessment, Research & Evaluation, 8(6).

Oswalt R, Matsen K (1993). Sex, AIDS, and the use of condoms: a survey of compliance in college students. *Psychological Report,72*, 764- 766.

Pachter, L. M., & Garcia Coll, C. (2009). Racism and child health: A review of the literature and future directions. *Journal of Developmental and Behavioral Pediatrics, 30,* 255–263. doi:10.1097/DBP.0b013e3181a7ed5a

Pascoe, E. A., & Smart Richman, L. (2009). Perceived discrimination and health: A meta-analytic review. *Psychological Bulletin, 135,* 531–554. doi:10.1037/a0016059

Patrick, M. E., & Maggs, J. L. (2010). Profiles of motivations for alcohol use and sexual behavior among first-year university students. *Journal Of Adolescence*, *33*(5), 755-765. doi:10.1016/j.adolescence.2009.10.003

Patrick, M. E., Maggs, J. L., & Abar, C. C. (2007). Reasons to have sex, personal goals, and sexual behavior during the transition to college. *Journal Of Sex Research*, *44*(3), 240-249. doi:10.1080/00224490701443759

Pearlin, L. I., Schieman, S., Fazio, E. M., & Meersman, S. C. (2005). Stress, health, and the life course: Some conceptual perspectives. *Journal of Health and Social Behavior*, *46*, 205 – 219. doi:10.1177/002214650504600206

Pergamit, M. R., Huang, L., & Lane, J. (2001). The Long Term Impact of Adolescent Risky Behaviors and Family Environment. Report submitted to Office of the Assistant Secretary for Planning and Evaluation, U.S. Department of Health and Human Services.

Perkins, H. (2002). Surveying the damage: A review of research on consequences of alcohol misuse in college populations. *Journal of Studies on Alcohol and Drugs*, (14), 91.

Perlis, T. E., Des Jarlais, D. C., Friedman, S. R., Arasteh, K., & Turner, C. F. (2004). Audio-computerized self-interviewing versus face-to-face interviewing for research data collection at drug abuse treatment programs. *Addiction*, 99(7), 885-896.

Phinney, J. S., & Chavira, V. (1995). Parental ethnic socialization and adolescent coping with problems related to ethnicity. *Journal of research on adolescence*, 5(1), 31-53.

Pierce, C. (1995). Stress analogs of racism and sexism: Terrorism, torture, and disaster. In C. Willie, P. Reiker, B. Kramker & B. Brown (Eds.), Mental health: Racism and sexism (pp. 277–293). Pittsburgh, PA: University of Pittsburgh Press.

Pipes-McAdoo, H. (2002). Diverse children of color: Research and policy implications. In H. Pipes McAdoo (Ed.), *Black children: Social, educational, and parental environments* (2nd ed., pp. 13-26). Beverly Hills, CA: Sage.

Plybon, L. E., Edwards, L., Butler, D., Belgrave, F. Z., & Allison, F. (2003). Examining the link between neighborhood cohesion and school outcomes: The role of support coping among African American adolescent girls. Journal of Black Psychology, 29(4), 393–407.

Ray, A. E., Stapleton, J. L., Turrisi, R., & Philion, E. (2012). Patterns of drinking-related protective and risk behaviors in college student drinkers. *Addictive Behaviors*, *37*(4), 449-455. doi:10.1016/j.addbeh.2011.12.005

Razali, N. M., & Wah, Y. B. (2011). Power comparisons of Shapiro-Wilk, Kolmogorov-Smirnov, Lilliefors and Anderson-Darling tests. *Journal of Statistical Modeling and analytics,* 2(1), 21-33.

Reips, U. D. (2002). Standards for Internet-based experimenting. *Experimental psychology*, 49(4), 243.

Resnick, G., & Burt, M. K. (1996). Youth at risk: Definitions and implications for service delivery, *American Journal of Orthopsychiatry, 66,* 172–188.

Resnick, M. D., Bearman, P. S., Blum, R. W., Bauman, K. E., Harris, K. M., Jones, J., Tabor, J., Beuhring, T., Sieving, R. E., Shew, M., Ireland, M., Bearinger, L. H., and Udry, J. R. (1997). Protecting adolescents from harm. Findings from the National Longitudinal Study on Adolescent Health. *Journal of the American Medical Association*, 278, 823-832.

Rhodes, S. D., Bowie, D. A., & Hergenrather, K. C. (2003). Collecting behavioural data using the world wide web: considerations for researchers. *Journal of Epidemiology and Community Health,* 57(1), 68-73.

Rinehart, C., Bridges, L., & Sigelman, C. (2006). Differences between Black and White elementary school children's orientations toward alcohol and cocaine: A three-study comparison. Journal of Ethnicity in Substance Abuse, 5(13), 75–102. doi:10.1300=J233v05n03 05.

Robinson, W., Ruch-Ross, H., & Watkins-Ferrell, P., (1993). Risk behavior in adolescence: Methodological challenges in school-based research. *School Psychology Quarterly, 8,* 241-254.

Rodney, H. E. TAchia, H. R., & Rodney, L. W. (1999). The home environment and delinquency: A study of African American adolescents. *Families in Society, 80(6),* 551-559.

Roeser, R. W., Eccles, J. S., & Sameroff, A. J., (1998). Academic and emotional functioning in early adolescence: Longitudinal relations, patterns, and prediction by experience in middle school. Development and Psychology, 10, 321-352.

Romano, J. L. (1992). Psychoeducational interventions for stress management and well-being. Journal of Counseling and Development, 71, 199-202.

Ross, S. E., Neibling, B. C., & Heckert, T. M. (1999). Sources of stress among college students. College Student Journal, 33(2), 312-317.

Rothman, E. F., Wise, L. A., Bernstein, E., & Bernstein, J. (2009). The timing of alcohol use and sexual initiation among a sample of Black, Hispanic, and White adolescents. *Journal Of Ethnicity In Substance Abuse*, *8*(2), 129-145. doi:10.1080/15332640902896984

SAMHSA. (2007). Alcohol use, binge alcohol use, and heavy alcohol use in the past month among persons aged 12 to 17, by Demographic Characteristics: Numbers in Thousands, 2005 and 2006 In N. S. o. D. U. H. D. Tables (Ed.). Rockville, MD: U.S. Department of Health and Human Services, Substance Abuse & Mental Health Services Administration.

Sandfort, T. G., Orr, M., Hirsch, J. S., & Santelli, J.(2007). Long term health correlates of timing of sexual debut: Results from a national US study. *American Journal of Public Health, 98*(1), 155–161.

Santelli, J. S., Kaiser, J., Hirsch, L., Radosh, A., Simkin, L., & Middlestadt, S. (2004). Initiation of sexual intercourse among middle school adolescents: The influence of psychosocial factors. Journal of Adolescent Health, 34, 200–208.

Satcher, D. (2001). *Youth violence: A report of the surgeon general. Rockville*, MD: US Government Printing Office.

Schneider, D. J., Taylor, E. L., Prater, L. M., & Wright, M. P. (1991). Risk assessment for HIV infection: Validation study of computer-assisted preliminary screen. *AIDS education and prevention.*

Schulenberg, J. E., & Maggs, J. L. (2002). A Developmental Perspective on Alcohol Use and Heavy Drinking during Adolescence and the Transition to Young Adulthood. *Journal of Studies on Alcohol,* 14, 54 – 70.

Schulz, A., Gravlee, C., Williams, D., Israel, B., Mentz, G., & Rowe, Z. (2006). Discrimination, symptoms of depression, and self-rated health among African American women in Detroit: Results from a longitudinal analysis. American Journal of Public Health, 96, 1265–1270. doi:10.2105/AJPH.2005.064543

Scott, L. D. (2003). The relation of racial identity and racial socialization to coping with discrimination among African American adolescents. *Journal of Black Studies*, 33(4), 520-538.

Sellers, R. M., & Shelton, J. N. (2003). The role of racial identity in perceived racial discrimination. Journal of Personality and Social Psychology, 84, 1079–1092. doi:10.1037/0022-3514.84.5.1079

Shapiro, S. S., & Wilk, M. B. (1965). An Analysis of Variance Test for Normality (Complete Samples). *Biometrika,* 52(3/4), 591-611.

Sharma,M., & Atri, A. (2006). Substance abuse in African Americans: In search of a culturally competent research agenda. *Journal of Alcohol and Drug Education, 50*(3), 3–7.

Siegel, D. M., Klein, D. I., & Roghmann, K. J. (1999). Sexual behavior, contraception, and risk among college students. Journal of Adolescent Health, 25, 336-343.

Slaughter-Defoe, D. T., Nakagawa, K., Takanishi, R., Johnson, D. J., (1990). Toward Cultural/ Ecological Perspectives on Schooling and Achievement in African- and Asian- American Children. Child Development, 61, 363-383.

Slutske, W. Hunt-Carter, E., Nabors-Oberg, R., Sher, K., Bucholz, K. et al. (2004). Do college students drink more than their non-college-attending peers? Evidence from a population-based longitudinal female twin study. *Journal of Abnormal Psychology, 11,*530 – 540.

Spencer, M. B. (1995). Old issues and new theorizing about African-American Youth: A phenomenological variant of ecological systems theory. In R. Taylor (Ed.), *African-American youth: Their social and economic status in the United States* (pp. 37–69). Westport, CT: Praeger Publishers.

Spencer, M. B., & Dupree, D. (1996). African-American youths' ecocultural challenges and psychosocial opportunities: An alternative analysis of problem behavior outcomes. In D. Cicchetti & S. L. Toth (Eds.) *Adolescence: Opportunities and challenges* (pp. 259–282). Rochester, NY: University of Rochester Press.

Spurgeon, S. L., & Myers, J. E. (2010). African American Males Relationships Among Racial Identity, College Type, and Wellness. *Journal of Black Studies*, *40*(4), 527-543.

Stappenbeck, C. A., Norris, J., Kiekel, P. A., Morrison, D. M., George, W. H., Davis, K., & Abdallah, D. (2013). Patterns of alcohol use and expectancies predict sexual risk taking among non–problem drinking women. *Journal Of Studies On Alcohol And Drugs*, *74*(2), 223-232.

Stinson, N. (2002). Cooperative agreement with Central with Central State University for the family and Community violence prevention program. *Federal Register, 67,* 10413-10417.

Stock, M. L., Gibbons, F. X., Peterson, L. M., & Gerrard, M. (2013). The Effects of Racial Discrimination on the HIV-Risk Cognitions and Behaviors of Black Adolescents and Young Adults. *Health Psychology, 32,* 543-550.

Stueve, A. & O'Donnell, L. (2005). Early alcohol initiation and subsequent sexual and alcohol risk behaviors among urban youth. *American Journal of Public Health, 95*(5), 887-893.

Sue, D. W., Capodilupo, C. M., Torino, G. C., Bucceri, J. M., Holder, A. M. B., Nadal, K. L., & Esquilin, M. (2007). Racial microaggressions in everyday life: Implications for clinical practice. American Psychologist, 62, 271–286. doi:10.1037/0003-066X.62.4.271.

Taylor, S. E., Dilorio, C., Stephens, T. T., & Soet, J. E. (1997). A comparison of AIDS-related sexual risk behaviors among African-American college students. *Journal Of The National Medical Association*, *89*(6), 397-403.

Thombs, D. L., O'Mara, R. J., Tsukamoto, M., Rossheim, M. E., Weiler, R. M., Merves, M. L., & Goldberger, B. A. (2010). Event-level analyses of energy drink consumption and alcohol intoxication in bar patrons. *Addictive Behaviors, 35,* 325–330. doi:10.1016/j.addbeh.2009.11.004

Thorton, M. C. (1998). Indigenous resources and strategies of resistance: Informal caregiving and racial socialization in Black communities. In H. I. McCubbin, E. A. Thompson, A. I. Thompson, & J. A. Futrell (Eds.), *Resiliency in African American families*. Thousand Oaks, CA: Sage.

Turner-Musa, J., & Lipscomb, L. (2007). Spirituality and social support on health behaviors of African American undergraduates. *American Journal Of Health Behavior*, *31*(5), 495-501. doi:10.5993/AJHB.31.5.5

Unger, J. B., Hamilton, J. E., & Sussman, S. (2004). A family member's job loss as a risk factor for smoking among adolescents. *Health Psychology*, *23*, 308 − 313. doi:10.1037/0278-6133.23.3.308

Utsey, S. O., Bolden, M. A., Lanier, Y., & Williams, O. (2007). Examining the role of culture specific coping as a predictor of resilient outcomes in African Americans from high-risk urban communities. Journal of Black Psychology, 33, 75–93. doi:10.1177/0095798406295094.

Utsey, S. O., Ponterotto, J. G., Reynolds, A. L., & Cancelli, A. A. (2000). Racial discrimination, coping, life satisfaction, and self-esteem among African Americans. Journal of Counseling & Development, 78, 72–80. doi:10.1002/j.1556-6676.2000.tb02562.x

Vermunt, J. K. (2003). Multilevel latent class models. *Sociological Methodology*, *33*, 213–239.

Vermunt, J. K. (2008). Latent class and finite mixture models for multilevel data sets. *Statistical Methods in Medical Research*, *17*, 33–51. doi: 10.1177/0962280207081238

Vermunt, J. K.,& Magidson, J. (2003). Latent classmodels for classification. *Computational Statistics and Data Analysis*, *41*, 531–537. doi: 10.1111/j.0081-1750.2003.t01-1-00131.x

Vik, P. W., Carrello, P., Tate, S. R., & Field, C. (2000). Progression of consequences among heavy-drinking college students. Psychology of Addictive Behaviors, 14, 91–101. doi:10.1037=0893–164X.14.2.91.

Wallace, J., Vaughn, M., Bachman, J., O'Malley, P., Johnston, L., & Schulenberg, J. (2009). Race/ethnicity, socioeconomic factors, and smoking among early adolescent girls in the United States. *Drug & Alcohol Dependence, 104,* S42-S49.

Watson, A. L. (1990). African Americans and alcohol abuse: Considerations for rehabilitation counselor. *Journal of Applied Rehabilitation Counseling, 21,* 55-58.

Weaver, S. R., & Kim, S. Y., (2008). A person centered approach to studying the linkages among parent-child differences in cultural orientation, supportive parenting, and adolescent depressive symptoms in Chinese American families. *Journal of Youth and Adolescence, 37,* 36-49.

Wechsler, H. (1996). Alcohol and the American college campus: A report from the Harvard School of Public Health. *Change, 28,* 20-25.

Wechsler, H., Dowdall, G., Davenport, A., & Castillo, S. (1995). Correlates of college student binge drinking. *American Journal of Public Health*, 85, 921–926.

Wechsler, H., Dowdall, G.W., Maenner, G., Gledhill-Hoyt, J. & Lee, H. (1998) Changes in binge drinking and related problems among American college students between 1993 and 1997: Results of the Harvard School of Public Health College Alcohol Study. *Journal of American College Heaalth,* 47: 57-68, 1998.

Wechsler, H., Lee, J. E., Nelson, T. F., & Kuo, M. (2002). Underage college students' drinking behavior, access to alcohol, and the influence of deterrence policies: Findings from the Harvard School of Public Health College Alcohol Study. *Journal of American College Health*, *50*(5), 223-236.

Wechsler, H., Lee, J. E., Nelson, T. F., & Lee, H. (2003). Drinking and driving among college students: The influence of alcohol-control policies. *American Journal of Preventive Medicine, 25 (3), 1-7.*

Weden, M. M., & Zabin, L. S. (2005). Gender and ethnic differences in the co-occurrence of adolescent risk behaviors. Ethnicity & Health, 10, 213–234. doi:10.1080=13557850500115744.

Weden, M., Zabin, L. (2005). Gender and ethnic differences in the co-occurrence of adolescent risk behaviors. *Ethnicity & Health, 10,* 213–234.

Williams, D. R., & Mohammed, S. (2009). Discrimination and racial disparities in health: Evidence and needed research. *Journal of Behavioral Medicine, 32,* 20–47. doi:10.1007/s10865-008-9185-0

Williams, D. R., Neighbors, H. W., & Jackson, J. S. (2003). Racial/ethnic discrimination and health: Findings from community studies. *American Journal of Public Health*, *93*, 200 – 208. doi:10.2105/AJPH.93.2.200

Williams, D., Neighbors, H., & Jackson, J. (2008). Racial/ethnic discrimination and health: Findings from community studies. American Journal of Public Health, 98, S29–S37. doi:10.2105/AJPH.98.Supplement_1.S29.

Williams, J. E., Newby, R. G., & Kanitz, H. E. (1993). Assessing the need for alcohol abuse programs for African-American college students. *Journal Of Multicultural Counseling And Development*, *21*(3), 155-167. doi:10.1002/j.2161-1912.1993.tb00595.x

Williams, K. D., Cheung, C. K., & Choi, W. (2000). Cyberostracism: effects of being ignored over the Internet. *Journal of personality and social psychology*, *79*(5), 748-762.

Williams, K. D., Govan, C. L., Croker, V., Tynan, D., Cruickshank, M., & Lam, A. (2002). Investigations into differences between social-and cyberostracism. *Group Dynamics: Theory, Research, and Practice*, *6*(1), 65–77.

Williams, M. L., Freeman, R. C., Bowen, A. M., & Saunders, L. (1998). The acceptability of a computer HIV/AIDS risk assessment to not-in-treatment drug users. *AIDS care*, *10*(6), 701-711.

Wills, T. A., Sandy, J. M., Yaeger, A. M., Cleary, S. D., & Shinar, O. (2001). Coping dimensions, life stress, and adolescent substance use: A latent growth analysis. *Journal of Abnormal Psychology*, *110*, 309 – 323. doi:10.1037/0021-843X. 110.2.309

Windle, M. (2003). Alcohol use among adolescents and young adults. Alcohol Research & Health, 27, 70-85.

Wong, C. A., Eccles, J. S., & Sameroff, A. (2003). The influence of ethnic discrimination and ethnic identification on African American adolescents' school and socioemotional adjustment. *Journal of Personality, 71 ,*1197-1232.

Xue, Y., Zimmerman, M., & Cunningham, R. (2009). Relationship between alcohol use and violent behavior among urban African American youths from adolescence to emerging adulthood: a longitudinal study. *American Journal Of Public Health, 99(11),* 2041-2048. doi:10.2105/AJPH.2008.147827

Zimet, G. D., Dahlem, N. W., Zimet, S. G., & Farley, G. K. (1988). The Multidimensional Scale of Perceived Social Support. *Journal of Personality Assessment*, *52*, 30-41.

Zimmerman, M. A., Ramirez-Valles, J., Zapert, K. M., & Maton, K. I. (2000). A longitudinal study of stress-buffering effects for urban African American male adolescent problem behaviors and mental health. *Journal of Community Psychology*, *28*, 17-33.

What is your racial/ ethnic background? (Select one or more responses.)
A. Black or African American
B. Asian
C. American Indian or Alaska Native
D. Native Hawaiian or Other Pacific Islander
E. European American/White
F. Caribbean/Caribbean-American
G. Hispanic/ Latino
H. Native American/ American Indian
I. Other (please specify)

What is your age?
A. 18 years old
B. 19 years old
C. 20 years old
D. 21 years old
E. 22 years old
F. 23 years old
G. 24 years old
H. 25 years old
I. I am younger than 18 years old
J. I am older than 25 years old

What is your sex?
A. Female
B. Male

What is your college classification?
A. Freshman
B. Sophomore
C. Junior
D. Senior
E. Graduate Student

What is your current work status (select all that apply)?
A. Working, full-time
B. Working, part-time
C. Working more than one job
D. Volunteer work/community service (not for pay)
E. Participating in job training
F. Looking for work (not working or training)
G. Not working, and not looking for work (only going to school)

If currently employed, how many hours do you work per week on average?
A. I do not currently work
B. 5 hours or less per week
C. 6-10 hours per week
D. 11-20 hours per week
E. 21-30 hours per week
F. 31-40 hours per week
G. Over 40 hours per week

When you were in high-school, how many hours did you work per week on average?
A. I did not work in high school
B. 5 hours or less per week
C. 6-10 hours per week
D. 11-20 hours per week
E. 21-30 hours per week
F. 31-40 hours per week
G. Over 40 hours per week

Which of these best describe your current marital status?
A. Married (and living together)
B. Married, but separated
C. Living together, Not married
D. Divorced
E. Widowed
F. In a long-term or committed relationship
G. Currently Single

If previously married, how many times?

How many biological children do you have?

What was your high school GPA?

To the best of your knowledge, what is your current college GPA?

Where do you currently reside?
A. On campus housing
B. Off campus housing- with immediate family (i.e., parents)
C. Off campus housing- with other relatives (i.e., aunts, cousins)
D. Off campus housing- with friends
E. Off campus housing- with roommates whom I am not friends
F. Off campus housing alone

Which of the following organizations are you a part of? (select all that apply)
A. Fraternity or sorority
B. Academic clubs
C. Community organizations
D. Organized intramural sports
E. Community sports
F. University sports team
G. Member of a church
H. Non-university social organization
I. Political group
J. I am not a part of any organization
K. Other

How often do you participate in community service activities?
A. Never
B. 1 or 2 days in the past year
C. Once a month or less (3-12 times in the past 12 months)
D. 2 or 3 days a month
E. 3 to 5 days a week
F. More than 5 days a week, almost every day

This set of questions asks about your parents and your family makeup.

Growing up, who did you live with (primarily)?
A. Both biological parents
B. Mother and step-father
C. Father and step-mother
D. Mother only
E. Father only
F. Grandparent(s)
G. Other (please specify)

What is the highest degree or certificate your **MOTHER** holds?
A. None
B. High school equivalency (e.g., GED)
C. High school diploma
D. Vocational tech diploma
E. Associate degree
F. R.N. degree

G. Bachelor's degree
H. Master's degree
I. M.D., Ph.D., Law, Dental
J. Unknown
K. Other (please specify)

What is the highest degree or certificate your **FATHER** holds?
A. None
B. High school equivalency (e.g., GED)
C. High school diploma
D. Vocational tech diploma
E. Associate degree
F. R.N. diploma
G. Bachelor's degree
H. Master's degree
I. M.D., Ph.D., Law, Dental
J. Unknown
K. Other (please specify)

How many siblings did you have that grew up in your home with you (biological, step-, half- sibling)?

How many siblings did you have that grew up outside of the home you grew up in (biological, step-, half- sibling)?

Multidimensional Scale of Perceived Social Support (MPSS), Sense of College Community						
Please indicate how much you agree with each of the following statements.	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree	6 N/A
1. My mother really tries to help me.	1	2	3	4	5	6
2. I get the emotional help and support I need from my mother.	1	2	3	4	5	6
3. My father really tries to help me.	1	2	3	4	5	6
4. I get the emotional help and support I need from my father.	1	2	3	4	5	6
5. I get the emotional support I need from my sibling(s).	1	2	3	4	5	6
6. I get the emotional support I need from other close relatives (e.g., aunts; uncles; grandparents).	1	2	3	4	5	6
7. My friends really try to help me.	1	2	3	4	5	6
8. I can count on my family when things go wrong.	1	2	3	4	5	6
9. I can count on my friends when things go wrong.	1	2	3	4	5	6
10. I can talk about my problems with my family.	1	2	3	4	5	6
11. I have friends with whom I can share my joys and sorrows.	1	2	3	4	5	6
12. My family is willing to help me make decisions.	1	2	3	4	5	6
13. I can talk about my problems with my friends.	1	2	3	4	5	6
14. My friends give me good advice.	1	2	3	4	5	6
15. My friends accept me when I make a mistake.	1	2	3	4	5	6
16. I have a good bond with others in my college community.	1	2	3	4	5	6
17. I can get what I need in my college community.	1	2	3	4	5	6
18. My college community helps me fulfill my needs.	1	2	3	4	5	6
19. I feel like a member of my college community.	1	2	3	4	5	6
20. I belong in my college community.	1	2	3	4	5	6
21. People in my college community are good at influencing each other.	1	2	3	4	5	6
22. I feel connected to my college community.	1	2	3	4	5	6
23. I have a say about what goes on in my college community.	1	2	3	4	5	6

Student Stress Survey				
In the last six months, how much of a problem have the following been to you?	**0** **No problem at all**	**1** **A slight problem**	**2** **A moderate problem**	**3** **Very much a problem**
1. Change in social activities	0	1	2	3
2. Roommate conflict	0	1	2	3
3. Work with people you don't know	0	1	2	3
4. Fight with boyfriend/girlfriend	0	1	2	3
5. New boyfriend/girlfriend	0	1	2	3
6. Trouble with parents	0	1	2	3
7. Change in sleeping habits	0	1	2	3
8. Change in eating habits	0	1	2	3
9. New responsibilities	0	1	2	3
10. Financial difficulties	0	1	2	3
11. Held a job	0	1	2	3
12. Spoke in public	0	1	2	3
13. Change in use of alcohol or drugs	0	1	2	3
14. Outstanding personal achievement	0	1	2	3
15. Started college	0	1	2	3
16. Decline in personal health	0	1	2	3
17. Minor law violation	0	1	2	3
18. Change in religious beliefs	0	1	2	3
19. Death of a close family member	0	1	2	3
20. Death of a friend	0	1	2	3
21. Severe injury	0	1	2	3
22. Engagement/Marriage	0	1	2	3
23. Increased class workload	0	1	2	3
24. Lower grade than anticipated	0	1	2	3
25. Change of Major	0	1	2	3
26. Search for graduate school	0	1	2	3
27. Missed too many classes	0	1	2	3
28. Anticipation of graduation	0	1	2	3
29. Serious argument with instructor	0	1	2	3
30. Transferred schools	0	1	2	3
31. Vacations/breaks	0	1	2	3
32. Waited in long line	0	1	2	3
33. Computer problems	0	1	2	3
34. Placed in unfamiliar situation	0	1	2	3
35. Messy living conditions	0	1	2	3
36. Put on hold for extended period of time	0	1	2	3
37. Change in living environment	0	1	2	3
38. Car trouble	0	1	2	3
39. Quit job	0	1	2	3
40. Divorce between parents	0	1	2	3
41. Search for a job	0	1	2	3

Daily Life Experiences with Racism (DLER)						
These questions ask you to think about experiences that some people have because of their race as they go about their daily lives. Use the scale provided and circle the number that reflects 1) how often this has happened, and 2) how much of a problem each event has been for you IN THE PAST YEAR.	Please determine how often you have experienced each event because of your race or racism IN THE PAST YEAR					
	0 Never	1 Once or twice	2 A few times	3 About once a month	4 A few times a month	5 Once a week or more
1. Being ignored, overlooked, or not given service (in a restaurant, store, etc.)	0	1	2	3	4	5
2. Being treated rudely or disrespectfully	0	1	2	3	4	5
3. Being accused of something or treated suspiciously	0	1	2	3	4	5
4. Others reacting to you as if they were afraid or intimidated	0	1	2	3	4	5
5. Being observed or followed in public places	0	1	2	3	4	5
6. Being treated as if you were "stupid", being "talked down to"	0	1	2	3	4	5
7. Your ideas or opinions being minimized, ignored or devalued	0	1	2	3	4	5
8. Overhearing or being told an offensive joke or comment	0	1	2	3	4	5
9. Being insulted, called a name, or harassed	0	1	2	3	4	5
10. Others expecting your work to be inferior	0	1	2	3	4	5
11. Not being taken seriously	0	1	2	3	4	5
12. Being left out of conversations or activities.	0	1	2	3	4	5
13. Being treated in an "overly" friendly or superficial way	0	1	2	3	4	5
14. Other people avoiding you	0	1	2	3	4	5
15. Being mistaken for someone who serves others (i.e. janitor, bellboy, maid)	0	1	2	3	4	5
16. Being stared at by strangers	0	1	2	3	4	5
17. Being laughed at, made fun of, or taunted	0	1	2	3	4	5
18. Being mistaken for someone else of your same race	0	1	2	3	4	5

The next few questions ask about drinking alcohol. This includes drinking beer, wine, wine coolers, and liquor such as rum, gin, vodka, or whiskey. For these questions, drinking alcohol does not include drinking a few sips of wine for religious purposes. *One drink of alcohol is defined as a 12oz. can or bottle of beer or wine cooler, a 4oz. glass of wine, or a shot of liquor straight or in a mixed drink.

==Alcohol Consumption and Binge Drinking==

On how many days did you have at least one drink of alcohol?							
During the past 30 days	0 days	1 or 2 days	3 to 5 days	6 to 9 days	10 to 19 days	20 to 29 days	All 30 days
During the Past 3 months	0 days	1 or 2 days	Once a month (3 times in the past 3 months)	2 or 3 days a month	1 or 2 days a week	3 to 5 days a week	Every day or almost every day
During the past 6 months	0 days	1 to 3 days	Once a month or less (3-6 times in the past 6 months)	2 or 3 days a month	1 or 2 days a week	3 to 5 days a week	Every day or almost every day
During the past year	0 days	1 or 2 days in the past 12 months	Once a month or less (3-12 times in the past 12 months)	2 or 3 days a month	1 or 2 days a week	3 to 5 days a week	Every day or almost every day

On how many days did you have 5 or more (if male) or 4 or more (if female) drinks of alcohol in a row, that is, within a couple of hours? (gender code- Binge drinking is 4 for females, 5 for males)							
During the past 30 days	0 days	1 or 2 days	3 to 5 days	6 to 9 days	10 to 19 days	20 to 29 days	All 30 days
During the Past 3 months	0 days	1 or 2 days	Once a month (3 times in the past 3 months)	2 or 3 days a month	1 or 2 days a week	3 to 5 days a week	Every day or almost every day
During the past 6 months	0 days	1 to 3 days	Once a month or less (3-6 times in the past 6 months)	2 or 3 days a month	1 or 2 days a week	3 to 5 days a week	Every day or almost every day
During the past year	0 days	1 or 2 days in the past 12 months	Once a month or less (3-12 times in the past 12 months)	2 or 3 days a month	1 or 2 days a week	3 to 5 days a week	Every day or almost every day

The next group of questions asks about sexual behavior.

Number of Sexual Partners
During your life, with how many people have you had sexual intercourse?

Condom Use
The last time you had sexual intercourse, did you or your partner use a condom?
A. I have never had sexual intercourse
B. Yes
C. No

When thinking about your condom use overall, how often do you use condoms when engaging in sexual intercourse?

1	2	3	4	5
Never	Seldom	Sometimes	Most times	Always

Sexual Behavior and Alcohol Use
Did you drink alcohol before you had sexual intercourse the last time?
A. I have never had sexual intercourse
B. Yes
C. No

When thinking about how often you drink alcohol before having sexual intercourse, does this happen:

1	2	3	4	5
Never	Seldom	Sometimes	Most times	Always

Please answer the following questions about your experiences

Alcohol-related Traffic Accidents
In your lifetime, how many traffic accidents have you been in that occurred after you consumed alcohol?

Hangover
How often do you experience symptoms of a hangover after drinking the previous day/night? Common hangover symptoms include fatigue, thirst, headaches and muscle aches, nausea, vomiting or stomach pain, poor or decreased sleep, increased sensitivity to light and sound, dizziness or the sense of the room spinning, rapid heartbeat, red or bloodshot eyes, shakiness, decreased ability to concentrate, and mood disturbances such as depression or anxiety.

0	1	2	3	4
Never	Seldom	Sometimes	Most times	Always

Sexually Transmitted Diseases
During your lifetime, how many times have you contracted an STD? .Common STD's include but are not limited to syphilis, gonorrhea, chlamydia, genital herpes, human papillomavirus (HPV), and HIV/AIDS.

Pregnancy
How many times have you been pregnant (females)?
Or
How many times have you gotten a female pregnant (males)?

You have reached the end of this survey! Thank you for your participating in the Activities and Behaviors in College (ABC) Study!!

Please complete the below information and we will email you an online gift certificate valued at $10!! Please allow 1 week to receive your certificate via email.
Or
Please complete the below information and we will email you an online gift certificate valued at $100 if you are a raffle winner!! Raffle winners will be emailed once data collection has closed.
Or
Please complete the below information. Your email address will not be shared with anyone else, and you will only be contacted if we have questions regarding your survey responses.

If you have any questions, please contact me at metzgeri@email.sc.edu or (803) 250 - 5086.

Isha Metzger, M.A.,
Doctoral Student, Clinical-Community Psychology
University of South Carolina
1512 Pendleton Street, Box 86
Barnwell College, Room 552
Columbia, SC 29208

Please enter your current email address (gift card will be emailed to this address within 7 days). *(For those receiving payment)*
Email Address:

What type of gift card would you prefer?
Starbucks (Great for coffee breaks!!)
Amazon (Great for online shoppers!!)
Wal-mart (Great for everything!!)

UNIVERSITY OF
SOUTH CAROLINA

OFFICE OF RESEARCH COMPLIANCE

September 20, 2013

Ms. Isha Metzger
College of Arts & Sciences
Department of Psychology
Barnwell
Columbia, SC 29208

Re: **Pro00029274**
Study Title: *Profiles of African American College Students' Risky Behaviors: Relationships to Individual, School, Community, and Culturally-Specific Risk and Protective Factors*

FYI: University of South Carolina Assurance number: FWA 00000404 / IRB Registration number: 00000240

Dear Ms. Metzger:

In accordance with 45 CFR 46.101(b)(**2**), the referenced study received an exemption from Human Research Subject Regulations on **9/19/2013.** No further action or Institutional Review Board (IRB) oversight is required, as long as the project remains the same. However, you must inform this office of any changes in procedures involving human subjects. Changes to the current research protocol could result in a reclassification of the study and further review by the IRB.

Because this project was determined to be exempt from further IRB oversight, consent document(s), if applicable, are not stamped with an expiration date.

Research related records should be retained for a minimum of three years after termination of the study.

The Office of Research Compliance is an administrative office that supports the USC Institutional Review Board. If you have questions, please contact Arlene McWhorter at arlenem@sc.edu or
(803) 777-7095.

Sincerely,

Lisa M. Johnson
IRB Manager

cc: Shauna Cooper

_____
University of South Carolina ● Columbia, South Carolina 29208 ● 803-777-5458

An Equal Opportunity Institution

140

UNIVERSITY OF
SOUTH CAROLINA

DEPARTMENT OF PSYCHOLOGY

Activities and Behaviors in College (ABC) Study

Isha Metzger, M.A., Principal Investigator

Dear Student,

You are being invited to participate in the **Activities and Behaviors in College (ABC) Study** conducted by Isha Metzger, M.A., in the Department of Psychology. This investigation is exploring alcohol use and sexual behaviors of emerging adults and the ways that these behaviors are related to various risk and protective factors. Please read this form carefully and feel free to ask any questions before deciding to participate in this study.

The Study: This Study examines behaviors of emerging adults' in college, and the ways in which different factors influence engagement in these behaviors.

Description of Study Procedures: We will be administering questionnaires to approximately 350 college students between the ages of 18 and 25. Administration of surveys is online, thus, they should be completed at a time and place convenient for you, with the anticipated completion time ranging from 20 to 30 minutes. During this time, you will complete some survey questions about yourself, your family, and your experiences. Additionally, you will complete questions regarding your personal behaviors outside of school. As some questions may be of the sensitive nature (e.g., questions about use of alcohol; questions about sex; and questions about experiences with racial discrimination), all responses with be anonymous.

Risks of Participation: Given the aforementioned sensitive nature of some of our questions, some questions may be mildly uncomfortable. However, to reduce any possible stress from completing this questionnaire, you do not have to answer anything that you do not wish to answer and may stop at any time.

Benefits of Participation: Although there are no direct benefits of participation in this study, the information gathered from this study will lend insight into factors impacting African American emerging adults' engagement in risk behaviors.

Payments: You will be compensated for participation in the study in multiple possible ways. Students taking the survey as a part of an undergraduate course will be able to do so for extra credit points. Alternatively, students not taking the study for extra credit will receive a $10 gift certificate after completion of the survey.

Confidentiality of Records: Participation will be anonymous. Your name will not linked to your survey responses.

Voluntary Participation: Participation in this study is voluntary. You are free to not participate or to withdraw at any time without negative consequences. In the event that you do withdraw from this study, the information you have already provided will be destroyed.

Contact Information: If you have any additional questions about participation, please contact Isha Metzger, M.A., Department of Psychology, Barnwell College, Room 552, University of South Carolina, Columbia, SC, 29208 (metzgeri@email.sc.edu; (803) 250-5086).

If you have any questions about your rights as a participant in the Activities and Behaviors in College Study, contact Thomas Coggins, Director, Office of Research Compliance, University of South Carolina, Columbia, SC 29208, (803) 777-7095 or tcoggins@mailbox.sc.edu . Please sign the attached form and check the correct box to show whether or not you wish to participate in this study. Keep one copy of this letter for your records. Thank you very much for your time and consideration!

I have read the contents of this consent form and have been encouraged to ask questions. I have received answers to my questions. I give my consent to participate in this study. I have retained a copy of this consent form for future reference.

By clicking "yes", you are giving your consent to participate in this study. Would you like to continue with this survey?

A. Yes
B. No

Extra Credit Flyer

$10 Incentive Flyer

ATTENTION AFRICAN AMERICAN USC STUDENTS!!

Do you want to earn $10 for completing a survey?

Are you an African American student at USC between 18 & 25 years old?

Receive $10 for completing a survey about college students' behaviors & experiences!

(Responses are anonymous! $10 given online at survey completion!)

If you are interested in completing this survey and receiving $10, please call (803) 250-5086 or email metzgeri@email.sc.edu for more information!

$100 Raffle Flyer

UNIVERSITY OF
SOUTH CAROLINA

DEPARTMENT OF PSYCHOLOGY

Dear Organizational Leader,

My name is Isha Metzger, and I am a graduate student in the Department of Psychology at the University of South Carolina. Currently, I am conducting a study, the **Activities and Behaviors in College (ABC) Study,** which entails a survey that is completed online.

The purpose of this study is to examine the behaviors of African American emerging adults in college and the ways that these behaviors are related to various influential factors. African American students at USC between the ages of 18 and 25 years old are eligible to participate in the online survey and receive $10.

Because this survey is anonymous, and in order to allow participation to be completed at a time and place that is convenient for students, this survey can be completed in approximately 15 minutes online at https://www.surveymonkey.com/s/ABCStudy.

Additionally, I am requesting that you advertise this study within your organization in order to broaden the scope of students that participate in my study. To give you a little more information about this project, I am attaching a study flyer and consent form. As you will notice, all of the targeted 350 African American participants in the study will receive an online gift certificate $10 for their participation upon completion of the survey.

Thanks for your consideration! If students would like more information about the Activities and Behaviors in College (ABC) Study, or if you have any questions, please feel free to contact me at metzgeri@email.sc.edu or (803) 250-5086.

Best,
Isha Metzger, M.A.

APPENDIX F – EMAIL TO PROFESSORS

Subject: Participation in the Activities and Behaviors in College (ABC) Study

My name is Isha Metzger, and I am a graduate student in the Department of Psychology at the University of South Carolina. Currently, I am recruiting participants for the "**Activities and Behaviors in College (ABC) Study**" which entails a survey that can be completed online.

The purpose of this study is to examine the behaviors of emerging adults in college and the ways that these behaviors are related to various factors. Students at USC between the ages of 18 and 25 years are eligible to participate in this online survey for extra credit. As an instructor, you are able to determine the amount of extra credit students will receive. The online survey, which is completely anonymous, takes approximately 20-30 minutes to complete through Participant Pool. To give you a little more information about this project, I am attaching a study flyer and consent form.

If you would please share the attached flyer with students in your class, it will greatly aid in my data collection endeavors. The survey can be accessed directly through Participant Pool at https://sc.sona-systems.com/. If students are not registered for Participant Pool, they can complete the study at https://www.surveymonkey.com/s/ABCStudyExtraCredit and print the study completion page in order to show documentation and earn their extra credit.

If students would like more information about the Activities and Behaviors in College (ABC) Study, or if you have any questions, please feel free to contact me at metzgeri@email.sc.edu or (803) 250-5086.

Thanks for your consideration!

Best,

Isha Metzger, M.A.,
Doctoral Student, Clinical-Community Psychology
University of South Carolina
1512 Pendleton Street, Box 86
Columbia, SC 29208

Subject: Participation in the Activities and Behaviors in College (ABC) Study

Isha Metzger, graduate student in the Department of Psychology at the University of South Carolina, is recruiting participants for the "**Activities and Behaviors in College (ABC) Study**." The purpose of this study is to examine alcohol use and sexual behaviors of emerging adults and the ways that these behaviors are related to various risk and protective factors. African American students at USC between the ages of 18 and 25 years are eligible to participate in this online survey. The online survey, which is completely anonymous, takes approximately 20-30 minutes to complete. Participants will be compensated with a $10 online gift certificate immediately following survey completion. If you would like to participate in the Activities and Behaviors in College (ABC) Study, or if you have any questions, contact me at metzgeri@email.sc.edu or (803) 250-5086.

Thanks for your consideration!

Best,

Isha Metzger, M.A.,
Doctoral Student, Clinical-Community Psychology
University of South Carolina
1512 Pendleton Street, Box 86
Columbia, SC 29208