Predictive Effects of Parenting Styles, Self-Regulation, and Resistance to Peer Influence on Drinking Behaviors in College Freshmen: A Social Learning Perspective

Saarah Danielle Kison

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PREDICTIVE EFFECTS OF PARENTING STYLES, SELF REGULATION AND RESISTANCE TO PEER INFLUENCE ON DRINKING BEHAVIORS IN COLLEGE FRESHMEN: A SOCIAL LEARNING PERSPECTIVE

by

Saarah Danielle Kison

A Dissertation
Submitted to the Graduate School and the Department of Psychology at The University of Southern Mississippi in Partial Fulfillment of the Requirements for the Degree of Doctor of Philosophy

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ABSTRACT

PREDICTIVE EFFECTS OF PARENTING STYLES, SELF REGULATION AND RESISTANCE TO PEER INFLUENCE ON DRINKING BEHAVIORS IN COLLEGE FRESHMEN: A SOCIAL LEARNING PERSPECTIVE

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August 2016

The first year of college may be a salient time period for the development of drinking practices in college populations. While parenting styles have been associated with global self-regulation, resistance to peer influence and college student drinking behaviors, a comprehensive evaluation of these relationships has yet to be established. Researchers have demonstrated that self-regulation acts as both a predictor and moderator of resistance to peer influence, which has been shown to be a more proximal predictor of drinking behaviors. While relationships between global self-regulation, parenting, and drinking have been empirically established, less attention has been given to specific methods of self-regulation such as regulatory focus. Thus, the current study examined the relationships between parenting styles, two modes of regulatory focus (i.e., promotion and prevention focus), resistance to peer influence and drinking behaviors in first year college students. It was hypothesized that regulatory focus and resistance to peer influence would be partial mediators between parenting styles and drinking behaviors, such that parenting styles would predict regulatory focus, which would in turn predict resistance to peer influence; subsequently, peer influence would predict drinking behaviors. It was also hypothesized that
each mode of regulatory focus would moderate the manner in which resistance to peer influence predicts drinking behaviors. Finally, given that researchers have also found race to be a common influential factor on all variables within the current study, racial differences across the aforementioned relationships were also examined. The current study sampled 323 college freshmen from a large southeastern college student population. A structural equation modeling approach was used to examine all variables of interest. Results indicated that promotion-focused self-regulation and resistance to peer influence sequentially mediated relationships between authoritative and permissive parenting styles and drinking behaviors. Prevention focused self-regulation was not associated with resistance to peer influence; thus, these constructs did not sequentially mediate relationships between parenting and drinking behaviors. Results also indicated that when resistance to peer influence mediated the relationship between a given parenting style and drinking behavior, it was also moderated by a mode of regulatory focus. Finally, while race was not shown to moderate either sequential mediation model, the influence of race on individual constructs was shown to be moderated by regulatory focus. Results of this study further inform literature on the effects of social learning constructs on drinking behaviors within the first year of matriculating to college. These results also provided further knowledge on what social (i.e., parenting, peer influence) and internal (regulatory focus) components may be important targets in alcohol interventions for college freshmen.
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DEDICATION

I would also like to thank my parents, grandmother and siblings for their unconditional love and encouragement.
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CHAPTER I - INTRODUCTION

Within American universities, the occurrence of harmful drinking, and alcohol-related negative consequences are an ongoing public health concern (Borden et al., 2011; National Institute on Alcohol Abuse and Alcoholism [NIAAA], 2004). College students are more likely than their non-college, same-aged peers to engage in harmful drinking (Johnston, O’Malley, Bachman, & Schulenberg, 2013). Moreover, students who engage in harmful drinking are more likely to experience increased alcohol-related negative consequences that can range from academic problems to death (Hingson, Zha, & Weitzman, 2009). In particular, the first year of college is a critical period where students are vulnerable to the effects of harmful drinking (Blanco et al., 2008). Accordingly, a growing body of literature focuses on examining how college students can protect themselves from alcohol-related negative consequences and the ways students are able to learn these skills (Martens, Pederson, LaBrie, Ferrier, & Cimini, 2007; Pearson, 2013). Specifically, some researchers have examined strategies used while drinking to avoid alcohol-related negative consequences (i.e., protective behavioral strategies) and constructs that may predict the likelihood that students will engage these strategies.

Among these constructs, parenting styles and peer influence have been shown to contribute to the way college students learn to engage in problematic or protective drinking behaviors (Borsari & Carey, 2001; Patock-Peckham, King, Morgan-Lopez, Ulloa & Filson Moses, 2011). While the influence of peers on college student drinking behaviors has been examined extensively, limited
research has been conducted on college students’ ability to resist direct offers to engage in harmful drinking behaviors (Villarosa, Kison, Madson, & Zeigler-Hill, 2016). Self-regulation plays a substantial role in how parenting styles and resistance to peer influence are linked to drinking behaviors in the college age population (Patock-Peckham, Cheong, Balhorn, & Nagoshi, 2001; Steinberg & Monahan, 2007). In particular, parenting styles have predicted self-regulation, while in separate studies self-regulation has been shown to predict the ability to resist peer influence (Wills, Pokhrel, Morehouse, & Fenster, 2011). Further, in adolescent populations, self-regulation has moderated the relationship between peer substance use and participant substance use/substance-related problems (Wills et al., 2011). Self-regulation has also moderated the impact of resistance to peer influence on deviant behaviors (Meldrum, Miller, & Flexon, 2013).

The current study aimed to examine whether self-regulation and the ability to resist peer influence will mediate the relationship between parenting styles (e.g., authoritative, authoritarian, permissive) and college student drinking behaviors (e.g., alcohol use, harmful drinking patterns, alcohol-related negative consequences, and use of PBS). It was hypothesized that parenting styles would be related to self-regulation, which in turn would be related to resistance to peer influence, which would subsequently be related to drinking behaviors. This study also examined self-regulation as a moderator of resistance to peer influence, where resistance to peer influence was predicted to act as a mediator between parenting styles and drinking behaviors. Finally, due to previous findings of racial differences within parenting styles (Brody & Flor, 1998; Greening, Stoppelbein, &
Luebbe, 2010), peer influence (Humara, & Sherman, 1999; Skidmore, Murphy, Martens, & Dennhardt, 2012; Steinburg & Monahan, 2007), and drinking behaviors (Madson, Villarosa, Moorer & Zeigler-Hill, 2015; Madson & Zeigler-Hill, 2013; O’Malley & Johnston, 2002; Paschall, Bersamin, & Flewelling, 2005; Siebert, Wilke, Delva, Smithm, & Howell, 2003), the variability of these relationships between African American and White non-Hispanic students was also assessed.
CHAPTER II – REVIEW OF RELATED LITERATURE

Drinking Behaviors among College Students

Alcohol Use and Harmful Drinking

Alcohol consumption has become an integral aspect of college culture, and after high school, college students are more likely than their non-college peers to engage in harmful drinking (Blanco et al., 2008; NIAAA, 2013). It has been estimated that 54% of college students drank alcohol in the past month, while 40% engaged in harmful drinking (Johnston et al., 2013). Researchers have also demonstrated that more than half of students who drank prior to entering college increased their consumption in college, while the number of abstainers decreased (Parks, Romosz, Bradizza, & Hsieh, 2008). Individuals between the ages of 18 and 24 experience the highest rates of harmful drinking (Kanny, Liu, Brewer, Garvin, & Balluz, 2012). For example, 80% of college students report drinking alcohol, while almost half report heavy episodic drinking (4 or more drinks for women; 5 or more for men) within the past two weeks (NIAAA, 2013). Among students who engage in heavy episodic drinking, many exceed the minimum number of drinks to qualify as a heavy episodic drinking episode (Wechsler et al., 2002; White, Kraus, & Swartzwelder, 2006). Johnson and colleagues (2013) estimated that 14% of students have 10 or more drinks in a row during a two week period and that 5% of students have 15 drinks or more. The freshman year of college stands out as a critical period for emerging adult drinking behaviors (Blanco et al., 2008; Borsari, Murphy, & Barnett, 2007). In
fact, Sher and Rutledge (2007) demonstrated that the rate of heavy drinking, for both men and women may increase significantly from pre- to post-college matriculation. Moreover, these increases were shown in non-heavy drinkers becoming heavy drinkers, as opposed to heavy drinkers drinking more heavily. Among college freshmen, 67% report drinking within the past 30 days, while 8 out of 10 report drinking within the past year (Wechsler et al., 2002). Further, approximately 55% of college freshmen reported drinking within the past two weeks, while one-third reported an increase in their alcohol consumption within the past year (White, Kraus, & Swartzwelder, 2006). Of further concern, the first academic year of college has been noted as a particular period where incoming students are vulnerable to harmful drinking and alcohol-related negative consequences, due to the social pressures that arise at the start of an academic career (NIAAA, 2013). White and colleagues (2006) found that 41% of males and 34% of females met or exceeded the heavy episodic drinking threshold at least once in the previous two weeks and that approximately 20% of males drank 10 or more drinks and 10% of females drank 8 or more drinks at least once in the previous two weeks. These trends in harmful drinking behavior have become particularly concerning due to the established association between harmful drinking and alcohol-related negative consequences (Martens et al., 2004; Romosz & Quigley, 2013).
Alcohol-Related Negative Consequences

According to Johnston and colleagues (2013), the rate of harmful drinking among college students has remained relatively stable since 1993; however, the prevalence of alcohol-related negative consequences has continued to rise (Hingson, Zha, & Weitzman, 2009). Alcohol-related negative consequences are the outcomes associated with excessive alcohol use (Mallett et al., 2011). Students who engage in harmful drinking are more likely to be exposed to a multitude of alcohol-related negative consequences including academic problems, interpersonal problems, physical and sexual assault, drunk driving arrests, risky sexual activity, injuries, and death (Hingson et al., 2009; NIAAA, 2013). Hingson and colleagues (2009) found that more than 787,000 college students are victimized by alcohol-related violent crimes or sexual assaults annually. Moreover, they estimated that 5,534 U.S. college students die annually as a result of unintended alcohol-related injuries. Further, Romosz and Quigley (2013) found that high school students who reported experiencing alcohol-related negative consequences were more likely to continue using alcohol, which was subsequently related to an increase in their experiences of alcohol-related negative consequences in college. Consequently, there is increasing interest in identifying harm reduction strategies currently used by college students to reduce the occurrence of these alcohol-related negative consequences in order to develop more effective prevention and intervention approaches (Hickman et al., 2001; Larsen et al., 2010; Martens et al., 2007a, 2004; Martens, Pederson,
Protective Behavioral Strategies

Protective Behavioral Strategies (PBS) are safe or controlled drinking practices that are used to reduce alcohol-related negative consequences (Pearson, 2013). These practices include limiting alcohol intake (e.g., deciding beforehand how many alcoholic beverages one will limit themselves to), alternating alcoholic beverages with non-alcoholic beverages, the avoidance of consuming alcohol quickly (e.g., avoiding shots of liquor), and planning or avoiding serious harm (e.g., having a designated driver or knowing where one’s drink is at all times). Increased PBS use has been linked with reductions in alcohol use and alcohol-related negative consequences (Delva et al., 2004; Howard, Griffin, Boekeloo, Lake, & Bellows, 2007; Madson, Moorer, Zeigler-Hill, Bonnell, & Villarosa, 2013). According to Martens et al. (2004), after accounting for alcohol use, a negative relationship exists between PBS and alcohol-related negative consequences. A majority of college students tend to use a repertoire of multiple PBS without intervention (Sugarman & Carey, 2009). Thus, throughout the last decade, mounting interest and research has been dedicated to understanding variables that predict PBS use. Variables such as alcohol use (Martens et al., 2004), gender (Pearson, Kite, & Henson 2012, Walters, Roudsari, Vader, & Harris, 2007), race (Madson & Zeigler-Hill, 2013), drinking self-control (Pearson et al., 2012), self-regulation (D'Lima, Pearson, & Kelley,
and descriptive norms (Benton, Downey, Glider, & Benton, 2008; Lewis, Rees, & Lee, 2009) have been identified as significant predictors of PBS use. Further, it has been suggested that understanding social influences may be helpful in predicting protective drinking strategy development and the reduction of harmful drinking behaviors (Astudillo, Connor, Roiblatt, Ibanga, & Gmel, 2013).

Development of Alcohol Use: A Social Learning Theory Perspective

Social learning theory posits that learning through observation is more efficient and less costly in many ways than directly experiencing all given situations (Bandura, 1977). Our capacity to learn through observation allows us to accumulate and integrate various behaviors without necessarily having to engage in every behavior to understand its outcome. Vicarious learning occurs through either direct observations of consequences that occur from a model's actions, or a model’s verbal expression of the consequences that will result from a given action (Bandura, 1977). Unlike other theories that involve reinforcement, such as operant conditioning (Skinner, 1953), social learning theory asserts that humans do not simply respond to consequences and reinforcement (Bandura, 1977). Rather, we are able to use reinforcement to inform future hypotheses of the likely outcome to various situations. Thus, to a large extent our actions are guided by the anticipation of a likely outcome, rather than direct external reinforcement. Through this process, we are likely to attend to and utilize observational learning in order to cognitively appraise and regulate our response to the new situation (Bandura, 1977).
According to social learning theory, self-regulation is formulated through the process of observing and attempting behaviors in order to formulate self-reinforcing standards of what is and is not acceptable (Bandura, 1977). As a result, individuals will judge and evaluate themselves, holding themselves to a high (self-rewarding) or low (self-punishing) esteem, based on whether they have met their self-appointed standards. Further, individuals are able to anticipate whether they will experience self-reward or self-punishment as a result of engaging in a given behavior. Thus, self-reinforcement is used as an internalized control mechanism used to self-regulate behaviors.

When appraising new situations, rather than simply observing and learning the response to a given stimulus, individuals retain the more general symbolic meaning of the event by selecting to attend to what they perceive as relevant pieces of general information. Individuals are also likely to attend more closely to those persons who are in close proximity, simply because they are exposed more frequently to these models and are able to learn their behaviors more comprehensively (Bandura, 1977). Accordingly, parents are often the first models for learned behavior (Bandura & Huston, 1961). The degree to which the observer values the behavior of their model is a large determining factor of whether the behavior will be attended to and modeled. Consequently, observations are not likely to be retained if perceived in a negative manner. Thus, peers are also frequently used as models to be observed as they are often considered to have desirable characteristics (O'Fallon & Butterfield, 2012). In
early stages of development, a response is followed shortly after the observation of a behavior; however, in later years, observations can be more readily internalized and saved for later use. In relation to the current study, interest in prominent social models such as parents and peers have emerged due to their established impact on various drinking behaviors (Borsari & Carey, 2001; LaBrie, Ehret, Hummer, & Prenovost, 2011; Tildesley & Andrews, 2008).

Resistance to Peer Influence

Of the many constructs that predict alcohol-related behaviors in college students, peer influence has been shown to be one of the strongest (Borsari & Carey, 2001; Hawkins, Catalano, & Miller, 1992; Jacob & Leonard, 1994; Schwinn & Schinke, 2014). Peer influence is manifested indirectly through conformity to group norms and further strengthened through direct offers to drink (Brown, Clasen, & Eicher, 1986). Specifically, indirect peer influence consists of both social modeling and the tendency to base alcohol consumption on the perceived consumption rate of peers (i.e., perceived social norms). Direct social modeling involves the act of being explicitly offered a drink and requires an active immediate response (Wood, Read, Palfai, & Stevenson, 2001). Direct and indirect peer influence affect college student drinking in unique ways. According to Wood et al. (2001), while social modeling and direct offers to drink were strongly associated with both alcohol use and alcohol-related consequences, perceived social norms were only associated with alcohol use. As a result, preventive interventions should be designed to address active social influences.
and focus on strengthening refusal skills (Wood et al., 2001). However, in their review of peer-influence, Borsari and Carey (2001) stated that, due to the limited number of studies that have examined direct peer influence, it is difficult to derive consistent conclusions about how it may impact alcohol use in college students. The current study aimed to examine college student perceptions of their ability to resist direct peer influence.

The influence of peers has a significant effect on alcohol use; however, individuals differ in their susceptibility to peer influence (Steinberg & Monahan, 2007; Sumter, Bokhorst, Steinberg, & Westenberg, 2009). Susceptibility to peer influence is the variability between individuals’ tendencies to be influenced by the opinions, beliefs, and behaviors of their peers (Allen, Porter, & McFarland, 2006; Brown, 2004; Steinberg & Monahan, 2007). Adolescents who are highly susceptible to peer influence are more likely to engage in substance use, externalizing behaviors and risky sexual activity and are also more likely to experience negative peer pressure and symptoms of depression (Allen et al., 2006). In fact, susceptibility to peer influence may be a stronger predictor of alcohol use and misuse than peer use, peer norms, and family-related factors (Dielman, Butchart, Shope, & Miller, 1990). While susceptibility to peer influence has been extensively examined in adolescents and to a lesser extent in college aged individuals (Allen et al., 2006; Brown, 2004; Steinberg & Monahan, 2007), limited attention has been given to the college student population. However, related themes have emerged within research on direct peer influence that lend
to the importance of examining the ability of college students to resist peer influence. For instance, Rabow and Duncan-Schill (1994) found that not drinking at college social gatherings is considered to be abnormal behavior, which may result in repeated drink offers, and public ridicule. Factors such as maturity, being further along in school, and social confidence are also associated with one’s ability to refuse direct offers to drink (Rabow & Duncan-Schill, 1994). Conversely, students entering and adapting to the college environment may be more likely to accept direct offers to drink in an effort to make new friends (Klein, 1992).

Accordingly, while the impact of peer influence on drug and alcohol use is evident, more research is needed on susceptibility to peer influence and the factors that precede resistance or conformity to peer pressures, particularly among students entering and adapting to the college environment.

Predictors of Resistance to Peer Influence

While evidence exists that susceptibility to peer influence may be a significant predictor to many externalizing behaviors, including alcohol use and risky sexual activity, researchers have suggested that it may be important to examine constructs that are predictive of one’s susceptibility to peer influence (Allen et al., 2006; Brown et al., 1986; Dielman et al., 1990; McIntosh, MacDonald, & McKeganey, 2003). Researchers have found that as age increases, individuals become less susceptible to peer influence and that there is little change in one’s susceptibility to peer influence between ages 18 to 30 (Steinberg & Monahan, 2007; Sumter et al., 2009). While one’s resistance to peer influence
may increase with time, peer influence has been shown to be a prominent factor in drinking behaviors during the college years (Borsari & Carey, 2001). Males tend to be more susceptible to peer influence than females, both during adolescence and young adulthood (Crawford & Novak, 2007; Steinburg & Monahan, 2007); however, females tend to be more susceptible to conform to the behaviors of males, than to the behaviors of other females (Crawford & Novak, 2007). Regarding race, African Americans are shown to have lower rates of susceptibility to peer influence (Steinburg & Monahan, 2007). Additionally, individuals who place a high level of value on being a member of a group, such as Greek membership, show higher rates of susceptibility to peer influence (Crawford & Novak, 2007; Kiesner, Cadinu, Poulin, & Bucci, 2002). In addition to demographic variables, one’s ability to self-regulate has been shown to play a significant role in the degree to which one is susceptible to peer influence (Crawford & Novak, 2007).

Self-Regulation and Regulatory Focus

Global self-regulation is one’s ability to adjust their thoughts, emotions, and behaviors in order to achieve delayed gratification over immediate rewards (Carver & Scheier, 1982). This construct has a long history within psychology literature and has been researched and conceptualized into multiple theories. Kanfer’s theory was the first to provide a comprehensive conceptualization of the internalized global self-regulation process (Kanfer, 1970a; 1970b; 1971). According to Kanfer (1970a; 1970b; 1971), global self-regulation is achieved
through comparing and monitoring information in regards to one’s current state and one’s goal state. Specifically, those with a high ability to self-regulate will be better able to monitor, evaluate, and minimize the discrepancy between their current state and their desired goals. Among many other behaviors, global self-regulation has been shown to predict an increased tendency to engage in problematic drinking behaviors, the use of protective behavioral strategies and the ability to resist peer influence (D’Lima et al., 2012; Wills et al., 2011). However, researchers have yet to examine the association between regulatory focus and these aforementioned constructs. 

**Regulatory Focus**

Regulatory focus theory expands the concept of global self-regulation and postulates that individuals tend regulate their behaviors according to two distinctive motivational systems, which serve different functions for survival (Higgins 1997, 1998). The first of these two systems, termed promotion focused self-regulation, serves the survival function of obtaining nurturance and is motivated through underlying concerns for advancement or achievement. Further, the promotion focus system is focused on attaining pleasure and positive outcomes (i.e., gains) and to circumvent the pain associated with the absence of pleasure or positive outcomes (i.e., non-gains). Accordingly, when individuals employ a promotion focus, they are motivated to utilize eagerness as means of ensuring gains and avoiding non-gains. The second of these two systems, termed prevention focused self-regulation, serves the survival function of
obtaining security and is driven through concerns with safety and fulfillment of responsibilities. Thus, when individuals employ a prevention focus they are primarily concerned with the pleasurable absence of negative outcomes (i.e., non-losses) and avoidance of encountering negative outcomes (i.e., losses). Accordingly, individuals employing a prevention focus will primarily utilize vigilance tactics to ensure non-losses and avoid losses. According to Higgins (1997), although these two regulatory focus systems may be driven through distinctive means, they are often used to achieve the same end goal. For example, two students may have the same end goal of waking up on time for class in the morning; however, one student may use a promotion focused approach, such as setting an alarm, while a prevention focused student is more likely to use an avoidance tactic such as not going out late in order to wake up early. Higgins (2002) further asserted that promotion and prevention foci have been shown to operate independently and are not mutually exclusive constructs. Thus, although individuals tend to be oriented toward one or the other, it is plausible for an individual to be high or low in both systems of focus. Further Higgins (2002) also indicated that momentary situations are able to evoke temporary either a promotion or prevention focus within any given individual. Accordingly, an individual may utilize a promotion or prevention focus depending on whether a given situation induces concerns about achievement and approach means or concerns of security and avoidance means.
Self-Regulation and Drinking Behaviors

While no known research has been conducted to examine the relationship between regulatory focus and drinking behaviors, a considerable amount of research has been dedicated to understanding the relationships between global self-regulation, alcohol use, and alcohol-related negative consequences. Carey, Neal, and Collins (2004) found that self-regulation was predictive of alcohol-related negative consequences in a college student population, even after controlling for alcohol use and social desirability. However, self-regulation was not related to alcohol use (Carey et al., 2004). Many researchers have similarly found a significant relationship between global self-regulation and alcohol-related negative consequences, but no association with alcohol use, (Neal & Carey, 2005; Patock Peckham et al., 2001; Pearson, D’lima and Kelly, 2011). However, Hustad, Carey, Carey, and Maisto (2009) found that, among college students who were heavy drinkers, global self-regulation was negatively related to alcohol use and alcohol-related negative consequences over the course of 12 months. Taken together it appears that, while global self-regulation may not be linked to typical alcohol consumption, it may play an important role in harmful drinking patterns. Global self-regulation has also been shown to attenuate the relationship between alcohol consumption and alcohol-related negative consequences. Neal and Carey (2007) found that global self-regulation moderated the relationship between daily level of intoxication and alcohol-related negative consequences, such that at the same level of intoxication, high self-regulating students were less
likely to experience alcohol-related negative consequences than students with moderate and low self-regulating abilities. Further, these authors found that, while impulsivity and perceived control over drinking were negatively related to alcohol-related negative consequences, they were not uniquely predictive of alcohol-related negative consequences after controlling for global self-regulation. Thus, Neal and Carey (2007) suggested that impulsivity and perceived control over drinking may be subsumed under the construct of generalized self-regulation. Self-regulation may also play an important role in safe drinking behaviors.

Protective behavioral strategies have been referred to as a form of self-regulation that is specifically tailored to alcohol use (Martens et al., 2011). D'Lima and colleagues (2012) found PBS to be a significant mediator of the relationship between global self-regulation and alcohol-related negative consequences such that self-regulation was positively related to PBS, which in turn was negatively related to alcohol-related negative consequences. Pearson et al., (2012) also examined how PBS may mediate the relationships between distinct forms of global self-regulation (i.e., good self-control and poor regulation) and alcohol-related problems. In relation to the current study, these authors found empirical evidence that one's ability to engage in self-regulatory behaviors is predictive of the likelihood that one will engage in the use of PBS (D'Lima et al., 2012; Pearson et al., 2012). While researchers have recently begun to examine how one's ability to utilize global self-regulation may be predictive of
their tendency, or lack thereof, to utilize PBS, they have yet to examine these constructs within the context of regulatory focus. Further, researchers have yet to examine potential mediators of these relationships. Given its previously established relationships with drinking behaviors and the ability to self-regulate resistance to peer influence has emerged one such potential mediator (Gardner, Dishion, & Connell, 2008; Marshall, Molina, & Pelham, 2003).

Self-Regulation and Resistance to Peer Influence

Attempts to resist peer influence have been shown to rely on the ability to globally self-regulate (Burkley, Anderson, & Curtis, 2011). In particular, global self-regulation has been associated with many of the same constructs that have been linked to susceptibility to peer influence, such as impulsivity and sensation seeking (Baumeister & Heatherton, 1996; Hope & Chapple, 2005; Marshall et al., 2003; Urberg, Luo, Pilgrim, & Degirmencioglu, 2003; Vaughn, Perron, & Howard, 2007). Young adults with high reported levels of self-control may be more able to resist the temptations of their peers, while those with lower levels of global self-regulation may be more prone to being influenced by their peers (Vaughn et al., 2007). Further, older adolescents who score low in their ability to globally self-regulate have been shown to more likely to associate with peers who use substances (Gardner et al., 2008). Some researchers have asserted that impulsivity may be the primary aspect of global self-regulation that influences one’s ability to resist peer influence (Newman & Wallace, 1993). Specifically, individuals who tend to act impulsively are less likely to consider the potential
negative consequences of their behaviors and are less likely to plan their behaviors ahead of time. Thus, students with impulsive tendencies (i.e., poor self-regulation) may be more likely to acquiesce to the behaviors of their peers (Marshall et al., 2003). Additionally, conforming to peer behaviors has also been shown to enable the immediate gratification that impulsive individuals seek (Marshall et al., 2003). Specifically, conforming to peer behaviors may allow for the immediate gratification of engaging in the pleasing, yet problematic behavior, as well as the immediate gratification of receiving approval from peers.

To date, no research exists on the relationship between regulatory focus and resistance to peer influence. However, global self-regulation has been shown to moderate the relationship between peer substance use and adolescent substance use (Wills et al., 2011). Meldrum and colleagues (2013) found that global self-regulation was positively related to resisting peer influence and that global self-regulation moderated the relationship between resistance to peer influence and delinquent behaviors in adolescents. Specifically, they found that peer-influence was more likely to contribute to delinquent behavior for those who scored high in global self-regulation (Meldrum et al., 2013). Conversely, peer-influence was less likely to contribute to delinquent behavior in adolescents who scored low in global self-regulation. Thus, although being able to globally self-regulate was positively related to resisting peer influence, peer influence was found to be a more salient factor in whether high self-regulating adolescents engaged in delinquent behavior. Moreover, parenting styles have been shown to
be more distally predictive of global self-regulation, regulatory focus, resistance to peer influence and drinking behaviors.

Parenting Styles

Parenting styles are processes by which parents model and reinforce appropriate behaviors to their children, and are based on the interacting constructs of warmth, empathetic understanding of and receptiveness to one’s child, control, and the modeling and enforcement of specific rules for conduct (Baumrind, 1971; Buri, 1991). The Baumrind model (1971) consists of three parenting styles, permissive, authoritarian and authoritative. Permissive parenting is characterized by high warmth and low control. Thus, permissive parenting entails allowing a child to make their own decisions with the absence of appropriate modeling, reinforcement, and regulation of a child’s behaviors (Baumrind, 1971). Conversely, authoritarian parents are characterized as having low warmth with high control. Specifically, authoritarian parents do not consult with their children in order to determine appropriate rules of conduct, and expect to be obeyed as an absolute authority (Baumrind, 1971; Buri, 1991). Further, authoritarian parents engage in limited explanation as to why a given behavior is acceptable. Finally, authoritative parenting is characterized by high warmth and control. Thus, an authoritative parenting style entails the promotion of a democratic decision making process and providing rationale to rule making, while setting clear and firm boundaries (Baumrind, 1971; Buri, 1991). Based on the assertion that parents are considered to be an individual's first model of learning
and reinforcement (Bandura, 1977), researchers have examined how parenting styles are used in order to model appropriate behaviors such as the ability to self-regulate and the ability to engage in drinking behaviors that may be outside the realm of perceived peer norms (Buri, 1991; Coombs & Landsverk, 1988; Durbin, Darling, Steinberg & Brown, 1993; Patock-Peckham et al., 2001).

**Parenting Styles and Drinking Behaviors**

Few studies have explored parenting-related variables as predictors of PBS. However, intervention-based studies examining the way PBS can be used to reduce alcohol use have found that parenting may have some influence on PBS use and alcohol-related negative consequences (Turrisi et al., 2009).

Recently, Kison (2013) found evidence to suggest that PBS may mediate the relationship between authoritative and authoritarian parenting styles and alcohol use such that high levels of both parenting styles may result in increased levels of PBS, which in turn may result in decreased alcohol use. Kison (2013) also found that PBS mediated the relationship between authoritative parenting, authoritarian parenting, and alcohol-related negative consequences; however, permissive parenting was not found to be a significant predictor of PBS. The finding that authoritarian parenting was positively related to PBS was neither consistent with their initial hypothesis nor with previous literature which has generally not found authoritarian parenting to be a protective factor in relation to alcohol and self-control related variables (Patock-Peckham et al., 2011; Patock-Peckham & Morgan-Lopez, 2006). Kison (2013) hypothesized that one potential
explanation for their findings was that authoritative and authoritarian parenting styles both involve aspects of control, which may explain why they were shown to predict behaviors related to self-control while drinking.

While the relationship between regulatory focus and parenting styles has yet to be examined within the context of drinking behaviors, the relationship between parenting styles and alcohol use/consequences has been shown to facilitate the ability to globally self-regulate. For instance, Patock-Peckham et al. (2001) found self-regulation to be positively related to authoritative parenting, and negatively related to permissive parenting. In turn, self-regulation was positively associated with drinking control, negatively associated with alcohol use, and negatively associated with alcohol-related problems. Impulsivity has been identified as a key aspect of poor regulation (Dvorak & Simons, 2009). Patock-Peckham and Morgan-Lopez (2006) found that permissive and authoritarian parenting styles were positively associated with impulsivity, which mediated the relationship between these two parenting styles and alcohol use/alcohol-related problems. Further, authoritative parenting was negatively associated with impulsivity, which mediated the relationship between this parenting style and alcohol use/alcohol-related problems (Patock-Peckham & Morgan-Lopez, 2006). Authoritative parenting was also positively related to drinking control, which mediated the relationship between authoritative parenting and alcohol use/alcohol-related problems (Patock-Peckham & Morgan-Lopez, 2006). Permissive parenting was negatively associated with drinking control, which mediated the
relationship between permissive parenting and alcohol use/alcohol-related problems. Thus, it appears that global self-regulation has been shown to mediate the relationship between parenting styles and drinking behaviors within the college student population.

**Parenting Styles and Regulatory Focus**

Regulatory focus theory posits that children acquire self-regulation goals from their parents (Keller, 2008). For instance, a parent’s social regulatory style can emphasize a focus toward nurturance of their hopes and aspirations (associated with a promotion focus) by bestowing or withdrawing love when a child does or does not behave in a desired way respectively. A parent may also foster a security focus (associated with a prevention focus) by imparting or withdrawing criticism when a child does not or does or does not fulfill what are appraised to be their duties or obligations. While the influence of parenting on global self-regulation has been well established, to date, very little research has explored the impact of parenting styles on regulatory focus (Keller, 2008; Manian, Papadakis, Strauman, & Essex, 2006). Keller (2008) conceptualized how Baumrind’s parenting styles may be congruent with parental implementation of regulatory focus. Specifically, Keller (2008) posited that the authoritarian style primarily mirrors the critical/punitive parent that is likely to foster a prevention focus; whereas the authoritative style reflects a parent who bolsters their child through nurturing their aspirations, and likely fostering a promotion focus. With regard to permissive parenting Keller (2008) conceived that this style would not
be conceptually related to either mode of regulatory focus, as permissive parenting does not model a specific type of control. However, this conceptualization has yet to be empirically examined. Manian and colleagues (1998) previously found that parental warmth was related to one’s congruence between their actual and ideal self, which conceptually, is likely to foster a promotion focus. However, the measures used within this study did not reflect the three parenting styles outlined in the Baumrind model (Manian, Strauman, & Denney, 1998).

**Parenting Styles and Resistance to Peer Influence**

The majority of research on how parenting styles affect peer influence on substance use involves adolescents (Steinberg, & Silverberg, 1986; Tucker, Elickson, & Klien, 2008). Evidence exists that adolescents from authoritative households are less susceptible to peer influence, are less likely to affiliate with deviant peers, and are more likely to reference their parents over their peers for advice on important situations (Bendar & Fischer, 2003; Durbin et al., 1993; Steinberg, Blatt-Eisengart, & Cauffman, 2006; Steinberg, & Silverberg, 1986). Further, authoritative parenting may indirectly affect adolescent substance use through its effect on one’s ability to resist peer influence (Simons-Morton & Chen, 2009; Simons-Morton et al., 2004). In other words, individuals who grow up with parents that utilize both warmth and control are more likely to implement effective self-control regarding resisting peer influence to engage in potentially harmful behaviors than parents who do not incorporate both warmth and control.
Conversely, researchers have found that adolescents who are parented with an authoritarian style are more likely than others to reference their peers for advice and are willing to forego their parents’ rules in order to affiliate with their peers (Bendar & Fischer, 2003). Further, adolescents who are not given emotional support from their parents have been shown to associate with deviant peers (Steinberg et al., 2006). Permissive parenting has also been associated with adolescent susceptibility to peer influence and the likelihood of affiliating with deviant peers (Durbin et al., 1993; Steinberg, & Silverberg, 1986; Steinberg et al., 2006). For example, Tucker et al. (2008) found that adolescents from permissive households were more likely than those with non-permissive parents to engage in heavy drinking, had been more exposed to pro-drinking peer influences, and had greater exposure to alcohol by the 9th grade. However, these researchers also found that adolescents from permissive households were less likely to drink heavily, and were less likely to believe that alcohol had positive consequences, if they had less exposure to drinking and greater perceived peer disapproval of drinking (Tucker et al., 2008). Further, it has been shown that adolescents from permissive households are more likely to variably reference other adults, parent, and peers (Bendar & Fischer, 2003). Thus, it appears that while authoritative parenting may result in more adaptive interactions with peers, being parented by an authoritarian style may lead to more maladaptive peer relations. Further, it appears that adolescents parented through a permissive style may be open to a wider variety of external influences.
Upon matriculating to college, a marked change from the primary social influence of parents to peers occurs. Specifically, adolescents begin to spend more time with their peers, and upon emerging into adulthood, they become increasingly dependent on the support of their peers (Abar & Turrisi, 2008; Van Ryzin, Fosco, &, Dishion, 2012). Alcohol is often used a means through which college students begin establishing independence from the control of their parents and develop new identities (Abar & Turrisi, 2008; Borsari & Carey, 2006; Hustad et al., 2014). Students are also faced with increased pressure and reinforcement to drink heavily as they attempt to establish new peer relationships (Borsari & Carey, 2006). It has been suggested previously that, upon matriculation to college, peer influence becomes substantially more salient than parent influence (Borsari & Carey, 2001; Windle, 2000; Wood, Vinson, & Sher, 2001). However, research findings have also suggested that parental factors continue to impact the influence of peers and alcohol use in college (Fairlie, Wood, & Laird, 2012; Jessor, Costa, Krueger, & Turbin, 2006; Wood, Read, Mitchell, & Brand, 2004). Further, researchers have found that peer influence can also enhance or detract from the effects of parental social influence and that parents, peers, and personality may all have independent effects on substance use (Brook, Whiteman, & Gordon, 1983). Thus, it appears that parenting may play a more distal, yet relevant role in college student drinking behaviors. For instance, in a population of college students, Wood et al. (2004) found a moderating effect for degree of permissive parenting on the relationship between
peer influences and alcohol use and alcohol-related negative consequences. Specifically, for students who perceived their parents to put more strict limits on alcohol use, the relationship between direct drink offers and heavy episodic drinking was weaker than those students who perceived their parents to have more lenient limits on alcohol use (Wood et al., 2004). Parent permissiveness toward drinking also moderated the relationship between indirect peer influence (i.e., perceived norms, social modeling) and alcohol-related negative consequences; however, this relationship was non-significant at higher perceived levels of parental monitoring (Wood et al., 2004). Fairlie and colleagues (2012) also found suggesting that low permissive parenting was protective against the negative influence of peers on alcohol use, heavy drinking, and alcohol-related negative consequences over the first two years of college. A strong positive relationship was also found between direct peer-influence and alcohol-related negative consequences at low levels of perceived parental monitoring (Fairlie et al., 2012). Based on these findings, it appears that the style with which students were parented may facilitate their ability to resist peer influences, which in turn may influence their drinking behaviors and alcohol-related negative consequences. Moreover, it appears that factors such as resistance to peer influence may have a more proximal relationship to drinking behaviors among college students.

Taken together these findings lend compelling evidence toward examining parenting styles, regulatory focus, and resistance to peer influence as salient
predictors of drinking behaviors among college students. Researchers have also suggested that racial differences may exist among these variables (Greening et al., 2010; Siebert et al., 2003; Skidmore et al., 2012). Thus, an additional goal of the current study was to examine the potential racial differences among all variables of interest.

Racial Differences, Drinking Behaviors and Associated Predictors

While racial differences in alcohol use between White non-Hispanic and African American students have been examined within the context of epidemiological studies, few studies have examined the way different races experience alcohol-related negative consequences (O’Malley & Johnston, 2002; Skidmore et al., 2012). Researchers who have examined the differences in drinking behaviors among White non-Hispanic and African American students have found that college tends to be protective against drinking for African American students. These researchers have also shown that heavy episodic drinking tends to be more culturally normative among White non-Hispanic students (Paschall et al., 2005). Consequently, African American students have reported drinking less alcohol and experiencing fewer alcohol-related negative consequences than White non-Hispanic students (Madson & Zeigler-Hill, 2013; Skidmore et al., 2012). However, Skidmore and colleagues (2012) found that both races experience serious alcohol-related negative consequences such as black outs and impaired driving at similar rates. Researchers have found evidence that the links between PBS, harmful drinking and alcohol-related
negative consequences may be moderated by race (Madson & Zeigler-Hill, 2013). For instance, African Americans have been shown to utilize more protective strategies while engaging in alcohol consumption (Sieber et al., 2003). However, Madson and Zeigler-Hill (2013) found that while PBS resulted in a decrease in harmful drinking for both African Americans and White non-Hispanic students, a greater decrease in harmful drinking behaviors and alcohol-related negative consequences existed for White-non Hispanic students. These findings highlight the unique experiences of drinking behaviors among African American and White non-Hispanic that warrant further investigation (Madson et al., 2015; Madson & Zeigler-Hill, 2013).

While the majority of research on the relationship between self-regulation and substance use has been conducted using predominantly White non-Hispanic samples, researchers have recently found that low levels of global self-regulation are related to substance use for both African American and White non-Hispanic populations (Pahl, Brook, & Lee, 2014). However, White Non-Hispanic individuals are more prone to experiencing social interpersonal problems and tend to be more susceptible to peer influence (Humara, & Sherman, 1999; Skidmore et al., 2012; Steinburg & Monahan, 2007). In regards to parenting style differences, authoritarian parenting has been found to be a protective factor for African Americans (Brody & Flor, 1998; Greening et al., 2010). Further, while an authoritative parenting style is generally associated with positive outcomes than an authoritarian style (Pittman & Chase-Lansdale, 2001), many of the risks
commonly associated with authoritarian parenting are not seen in African American children who have been parented under this style. Taken together, it is apparent that further research is needed to clarify the impact that racial differences may have on research findings related to resistance to peer influence, parenting styles and drinking behaviors. Accordingly, differences between White non-Hispanic and African American college students, regarding all variables of interest were also be examined, in order to further understand how the factors that predict drinking behaviors in college students may vary based on racial background.

Purpose of Study

Researchers have become increasingly interested in factors that may predict freshman college student drinking behaviors. Social learning constructs such as resistance peer influence, and global self-regulation have been shown to predict drinking behaviors (Borsari & Carey, 2001; D'Lima et al., 2012; Meldrum et al., 2013; Patock-Peckham et al., 2001; Hustad et al., 2009; Villarosa et al., 2016). Global self-regulation has also been found to predict and moderate resistance to peer influence (Meldrum et al., 2013). Further, researchers have demonstrated that parenting styles are associated with an individual’s ability to globally self-regulate and resist peer influence (Patock-Peckham et al., 2001; Patock-Peckham et al. 2011; Steinberg et al., 2006; Tucker et al., 2008).

Although attention has been given global self-regulation, researchers have yet to explore how specific ways that individuals self-regulate (i.e., regulatory focus)
may impact their drinking behaviors and ability to resist peer influence. Further, while susceptibility to peer influence has been shown to predict substance use behaviors within adolescent and college aged populations; less attention has been given to how susceptibility to peer influence may be impacting the college population (Borsari & Carey, 2001).

The current study had two primary aims: 1) to expand current knowledge on the sequence by which parenting styles (e.g., authoritative, authoritarian, and permissive), regulatory focus (e.g., promotion focused, prevention focused) and resistance to peer influence may impact college freshman drinking behaviors (e.g., alcohol use, harmful drinking patterns, alcohol-related negative consequences, and use of PBS) and, 2) to examine whether regulatory focus both predicts and moderates resistance to peer influence. Additionally, given that researchers have previously found race to be an influential factor on all variables of interest (Madson et al., 2015; Madson & Zeigler-Hill, 2013; Sieber et al., 2003; O'Malley & Johnston, 2002; Paschall et al., 2005; Skidmore et al., 2012), the current study also aimed to examine the impact of race on the relationships of interest. Given that many of these relationships have yet to be examined within existing literature the current study took an exploratory approach through the following questions:

**Research Question 1:** Are parenting styles (i.e., authoritarian, authoritative and permissive) indirectly related to drinking behaviors (e.g., alcohol use, harmful drinking patterns, alcohol-related negative consequences, and
use of PBS) through first year college student mode of self-regulation and resist peer influence?

*H1*: Regulatory focus and resistance to peer influence will sequentially mediate the relationship between each parenting style and drinking behavior (Figure 1).

*Research Question 2*: To what extent are the meditational effects of resistance to peer influence between parenting styles (e.g., authoritative, authoritarian, and permissive) and drinking behaviors (e.g., alcohol use, harmful drinking patterns, alcohol-related negative consequences, and use of PBS) moderated by mode of self-regulation (e.g., promotion focused, prevention focused)?

*H2*: Regulatory focus will significantly moderate the relationship between resistance to peer influence and drinking behaviors, such that the mediated effect of resistance to peer influence between each parenting styles and drinking behavior will be dependent on varying levels of regulatory focus (Figure 2).

*Research Question 3*: Are the relationships between parenting styles (e.g., authoritative, authoritarian, and permissive), mode of self-regulation (e.g., promotion focused, prevention focused), resistance to peer influence and drinking behaviors (e.g., alcohol use, harmful drinking patterns, alcohol-related negative consequences, and use of PBS) moderated by race?

*H3a*: The way regulatory focus and resistance to peer influence
sequentially mediate the relationship between each parenting style and drinking behavior will vary by race.

*H3b:* The way regulatory focus moderates the relationship between resistance to peer influence and drinking behaviors, such that the mediated effect of resistance to peer influence between each parenting styles and drinking behavior will be dependent on varying levels of regulatory focus, and will also vary by race (See Figure 2).
CHAPTER III – METHODOLOGY

Participants and Procedures

Data for this study included a sample of 323 (78% female; 22% male; 64% White Non-Hispanic; 36% African American) undergraduate freshmen from a large southeastern university. To qualify for this study, participants had to be in their first year of college, be 18 (66%) or 19 (34%) years old and were required to have consumed alcohol at least once within the past 30 days. The demographic features of the sample were consistent with the demographic features of the university from which this sample was drawn.

Data for the current study were collected via Qualtrics, a secure online survey software. Participants were recruited through multiple strategies. Some participants were recruited through the psychology department. These participants were directed to the study’s informed consent page (See Appendix A) by accessing a link through the psychology department’s research website (Sona Systems, Ltd.). Those who qualified for participation and completed at least 50% of study measures received class credit in exchange for their participation. Participants were also recruited through emailing lists which served the entire university community and advertising through organizations that cater to freshmen. Participants who were not recruited through class credit were directly emailed a message with a brief description of the study and a link to the study’s informed consent page. Those who qualified for participation and completed at least 50% of study measures were entered into a drawing for a
chance to win one of 10 dining gift cards in exchange for their participation. Students were asked to enter an additional identifier (e.g., middle initial, mother's maiden name) to ensure that they are only able to participate once. After completing an online informed consent, participants were directed to the demographic questionnaire and study measures concerning perceptions of the way they were parented, perceptions of the way they self-regulate, perceptions of their ability to resist peer influence, alcohol consumption, harmful drinking patterns, use of protective behavioral strategies while drinking, and alcohol-related negative consequences. All participants were initially directed to complete the demographic questionnaire, and all remaining measures were presented in random order in effort to minimize order effects. The current study was approved and reviewed by the university Institutional Review Board (See Appendix B).

Measures

Demographic Questionnaire

Participants were asked to complete a demographic questionnaire in order to collect information about their race, age, and year in school.

Parental Authority Questionnaire

The Parental Authority Questionnaire PAQ (PAQ; Buri, 1991) was used to retrospectively examine the parenting styles of a caregiver chosen by the participant. This measure was developed to measure Baumrind’s three dimensions: Authoritative, Authoritarian, and Permissive Parenting. Participants
were asked to select one caregiver and rated their perceptions of this caregiver’s parenting style using a 5-point Likert-type scale ranging from 1 “Strongly Agree” to 5 “Strongly Disagree.” Participants received a score from 10 to 50, for each parenting style dimension, with higher scores indicating a greater level of the parenting style prototype measured. The PAQ has displayed acceptable test-retest reliability with scores for both mothers and fathers ranging from .77 to .92; the PAQ has also displayed adequate internal consistency with alpha coefficients ranging from .74 to .89 for both mothers and fathers (Patock-Peckham & Morgan-Lopez 2006; Kison, 2013). The PAQ also displayed adequate internal reliability within the current sample with subgroup alpha levels of .83 (authoritative and permissive) and .85 (authoritarian). The PAQ has displayed acceptable construct validity, with each parenting style being demonstrated as significantly different from the others (p<.01; Buri, 1991).

*Event Reaction Questionnaire*

The Event Reaction Questionnaire (Higgins et al., 2001) is based on a two-factor model where participants will rate the degree to which they focus on promotion or prevention related regulatory concerns. Promotion focus is rated on a 5-point Likert-type scale ranging from “never or seldom” to “very often” for questions such as “Compared to most people, are you typically unable to get what you want out of life?” Prevention focus is also rated on a 5-point Likert-type scale ranging from “never or seldom” to “very often” for questions such as “Growing up, would you ever “cross the line” by doing things that your parents
would not tolerate?” Previous factor analyses revealed only modest correlation between the two subscales of regulation \((r=0.21; \text{Higgins et al. 2001})\). Each scales has also previously exhibited internal reliability \((\text{alpha}= 0.73 \text{ for the Promotion scale}; \text{alpha} =0.80 \text{ for the Prevention scale})\) with alpha levels of .52 for the Promotion scale and .62 for the prevention scale within the current sample. It should be noted that the same Likert scale was used for all questions related to regulatory focus, which deviated from the change in Likert scale for two questions related to promotion focus in the original Event Reaction Questionnaire. However, these questions were not shown to affect the measure’s internal consistency.

**Resistance to Peer Influence Scale**

The Resistance to Peer Influence Scale \((RPI; \text{Steinberg & Monahan, 2007})\) is a 10-item self-report measure that captures the extent to which participants resist conforming to the behaviors and attitudes of others. Participants were asked to indicate the degree to which each set of statements is true for them using scales that range from 1 (sort of true for me) to 4 (really true for me). An example of an item is “Some people think it’s more important to be an individual than to fit in with the crowd” BUT “Other people think it is more important to fit in with the crowd than to stand out as an individual.” Scores range from 10 to 40, with higher scores indicating greater resistance to peer influence, whereas lower scores indicate lower resistance to peer influence. The RPI has displayed internal consistency, with an alpha level of .95 within the current
sample. The RPI has also displayed acceptable construct validity when compared to the Barrat Impulsiveness Scale \((r = -0.22)\) and antisocial risk taking measured by the Benthin Risk Perception Measure \((r = -0.12;\) Steinberg & Monahan, 2007).

**Daily Drinking Questionnaire**

Typical weekly alcohol consumption was assessed using the Daily Drinking Questionnaire (DDQ; Collins, Parks, & Marlatt, 1985). Participants were asked to report how many drinks they typically consume on each day of the week. Drinks per week were then calculated by summing the total amount of drinks consumed for a seven-day week for each participant. The DDQ displays convergent validity when compared to the Daily Practices Questionnaire, with a Pearson correlation of .50 (Collins et al., 1985).

**Alcohol Use Disorders Identification Test**

Harmful drinking patterns were assessed using the 10-item Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993), which detects early-phase harmful drinking patterns across different cultures and age groups including college students (e.g., Kokotailo et al., 2004). Participants were asked to respond to questions such as “How often do you have six or more drinks on one occasion?” using scales ranging from 0 (never) to 4 (daily or almost). Higher scores indicated more harmful drinking patterns with a clinical cutoff score of 8 for college students indicating harmful drinking (Devos-Comby & Lang, 2008). The AUDIT has displayed acceptable
test-retest reliability with Pearson correlation coefficients ranging from 0.87 to 0.95 (Reinert & Allen, 2007). The AUDIT also displayed adequate internal consistency within the current sample with an alpha level of .82. The AUDIT has also displayed acceptable construct validity when compared with the Michigan Alcoholism Screening Test \( (r = .61; \text{Conley, 2001}) \).

**Rutgers Alcohol Problem Index**

The Rutgers Alcohol Problems Index (RAPI; White & Labouvie, 1989) was used to assess alcohol-related negative consequences. The RAPI is a 23-item scale, which assessed the frequency with which participants have experienced consequences as a result of alcohol consumption. Participants were rated the occurrence of alcohol-related negative consequences such as “Not able to do homework or study for a test,” on a 4 point Likert-type scale ranging from 0 “Never” to 4 “More than ten times.” A total RAPI score was used with higher scores indicating more frequent alcohol-related negative consequences. Scores range from 0 to 92 with higher scores indicating a higher instance of alcohol-related negative consequences experienced. The RAPI displays acceptable convergent validity when scores are correlated with alcohol consumption.” The RAPI has also displayed acceptable internal consistency in past studies, with an alpha level of .94 (Kison, 2013; Villarosa et al., 2014), and an alpha level of .96 within the current sample. The RAPI has also displayed convergent validity when compared with The Young Adult Alcohol Consequences Questionnaire \( (r = .78; \text{Neal, Corbin, & Fromme, 2006}) \).
Protective Behavioral Strategies Scale Revised

The Protective Behavioral Strategies Scale Revised (PBSS-R; Madson, Arnau, & Lambert, 2013) is a 18-item measure that was used to measure student use of PBS. Participants responded to how often they engage in each stated behavior on a 6-point Likert-type scale ranging from 1 “Never” to 6 “Always.” Items included behaviors such as “Determine not to exceed a set number of drinks” or “Drink slowly, rather than gulp or chug,” “know where your drink has been at all times” and “use a designated driver.” Participants received a score from 18 to 108, with higher scores indicating a more frequent use of PBS. The PBSS-R has displayed internal consistency with alpha scores ranging from .89-.92 for the total score (Madson et al., 2013; Villarosa, Moorer, Madson, Zeigler-Hill, & Noble, 2014) and an alpha level of .95 for the utilized total score within the current sample. The PBSS-R has also displayed adequate convergent validity with both the Daily Drinking Questionnaire ($r = -.39$) and Alcohol Use Disorders Identification Test ($r = -.49$; Madson et al., 2013).

Attention Check

To protect data integrity attention check items such as “Leave this item unanswered,” and “Answer ‘never’ to this question” were sporadically placed throughout the survey to identify careless responding (Meade & Craig, 2012).

Data Analytic Approach

Prior to statistical analysis, all variables of interest were screened for missing and extraneous data. Of the 904 attained participants, 452 were
eliminated due to having reported consuming 0 drinks on the daily drinking questionnaire. Six participants were eliminated due to failing one or more validity check item. After screening for missing variables and additional 123 participants were eliminated for failing to answer 25% or more of items for all measures, leaving a total of 323 participants with usable data. Linear trend at point imputation was used to correct for all additional random missing data. All study variables were examined for issues with skewness or kurtosis using the $+/-3$ cutoff and outlier values were corrected through truncation. Upon statistical review of all data, means and standard deviations for all variables of interest were computed. Additionally, bivariate correlations were conducted to explore the relationships between all variables of interest. Internal consistencies were computed, where appropriate, through analysis of Cronbach’s alpha statistics.

*Research Question 1: Are parenting styles (i.e., authoritarian, authoritative and permissive) indirectly related to drinking behaviors (e.g., alcohol use, harmful drinking patterns, alcohol-related negative consequences, and use of PBS) through first year college student mode of self-regulation and resist peer influence?*

In order to examine the first research question, a sequential mediation analysis, which assessed for a three-path mediation effect (Taylor, Makinnon, & Tein, 2007), was conducted using a structural equation model (SEM) framework through Mplus 7.11 (Muthén & Muthén, 2012). There are several advantages to using SEM including: ability to statistically test the variables simultaneously in
order to view the impact of the variables on each other, ability to determine the reciprocal relationships among influential factors, and the ability of the error term to represent the influences of all variables (Meyers et al., 2013). The major advantage to using a SEM framework is the ability to test a single model with multiple outcome variables, while being able to account for the variance shared among variables. Figure 1 illustrates the proposed path model by which the two modes of self-regulatory focus (promotion and prevention), and resistance to peer influence act as sequential mediators in the relationship between each parenting style (i.e., authoritative, authoritarian, permissive) and alcohol use, harmful drinking, alcohol-related negative consequences, and protective behavioral strategies. Within this model, 24 total sequential mediation analyses were simultaneously conducted such that each parenting style (i.e., authoritative, authoritarian, permissive) individually predicted promotion and prevention focused self-regulation, which in turn predicted resistance to peer influence, which in turn predicted alcohol use, harmful drinking, alcohol-related negative consequences, and protective behavioral strategies. The significance of each sequential mediation was assessed through a bootstrapping confidence interval as suggest by Preacher and Hayes (2008). Each sequential mediation was considered to be significant if the confidence interval did not include zero. Within this model, prevention focused self-regulation, promotion focused self-regulation and resistance to peer influence were examined as mediators of the relationship
between parenting styles (independent variables), and drinking behaviors (dependent variables).

![Proposed Sequential Mediation Diagram]

**Figure 1. Proposed Sequential Mediation**

Proposed Path Model of authoritative, authoritarian and permissive parenting styles as predictor variables; promotion focused self-regulation, prevention focused self-regulation and Resistance to Peer Influence as mediators, and alcohol use, harmful drinking, alcohol-related negative consequences, and PBS as outcome variables. Direct paths from each predictor to each outcome variable are not shown within this model.

**Research Question 2:** To what extent are the meditational effects of resistance to peer influence between parenting styles and drinking behaviors moderated by mode of self-regulation?

In order to examine the second research question moderated mediation through structural model invariance analyses were conducted using a structural equation model (SEM) framework through Mplus 7.11 (Muthén & Muthén, 2012). Figure 2 illustrates the proposed path model by which promotion and prevention
focused self-regulation individually moderate the meditational effect of resistance to peer influence between each parenting style and alcohol-related drinking behavior relationship. Two separate models, one for each mode of regulatory focus, were individually tested for invariance. The following steps were conducted for both regulatory focus models. First, regulatory focus totals were transformed into three even groups, via a tertiary split, which represented high, medium and low regulatory focus. A mediation model was then created such that resistance to peer influence mediated the relationship between each parenting style and each alcohol-related behavior. Invariance was then tested to determine whether the relationships within the mediation model varied across the high, medium and low regulatory focus groups. Specifically, a model where all paths were constrained to be equal across groups was compared to an unconstrained model, where all paths were allowed to vary freely across groups, for statistically significant differences. The Satorra-Bentler correction was used to calculate the difference in Chi-square across models to correct for non-normality within the data set. If the chi-square difference, measured by the change in chi-square, was significant at a p-value that was less than .05, it was concluded that the given model varied across at least two groups (Cochran, 1952; Cheung & Rensvold, 2002). Because chi-square difference tests can be sensitive to sample size, the change in the comparative fit index (CFI) of more than .01 was also examined in order to verify whether each model varies across levels of regulatory focus (Cheung & Rensvold, 2002). If the constrained and unconstrained models were
variant across groups then follow-up analyses were then conducted to determine specific differences across groups.

   For follow-up analyses, after controlling for race, each mediation confidence interval was tested for significance across high, medium and low levels of regulatory focus. For example, confidence intervals for the mediation of resistance to peer influence between authoritative parenting and alcohol use were examined to determine at what levels of regulatory focus was the mediation statistically significant, if significant at all. Thus, 12 mediations were tested at high, medium and low for each mode of regulatory focus, which resulted in total a series of 72 follow-up mediations, with 36 conducted simultaneously for each mode of regulatory focus. As previously mentioned, any given mediation was considered to be statistically significant if the confidence interval did not cross zero. While there are multiple strategies that may be used to assess for moderated mediation, including examining interaction effects with conditional indirect effect post hoc analysis (Preacher, Rucker, & Hayes, 2007), the primary benefit to utilizing the method of moderated mediation explained above was that variables were able to be examined in a more parsimonious way without losing any of the desired information. Specifically, with other methods of moderated mediation, it would have not been possible to calculate and assess all mediations simultaneously as was possible through the utilization of invariance testing.
Figure 2. Proposed Moderated Mediation

Proposed Path Model of authoritative, authoritarian and permissive parenting styles as predictor variables; promotion and prevention focused self-regulation as moderators (high, medium and low levels); resistance to peer influence as the mediator; alcohol use, harmful drinking, alcohol-related negative consequences, and PBS as outcome variables; and race as a predictor variable, which also accounts for variability. Direct paths from each predictor to each outcome variable are not shown within this model.

Research Question 3: Are the relationships between parenting styles, mode of self-regulation, resistance to peer influence and alcohol use, harmful drinking patterns, alcohol-related negative consequences, and use of PBS moderated by race?

In order to examine the first hypothesis associated with the third research question, structural model invariance, as explained above, was assessed for the model outlined in Figure 1. Invariance will be analyzed through Mplus 7.11 software program (Muthen & Muthen, 2012). If the model was determined to be
invariant by race, post-hoc analyses were conducted utilizing the previously mentioned analytical approach. Specifically, a chi-square difference test was conducted across free and constrained versions of each model in order to determine whether the relationships within these models vary for African American and White on-Hispanic students. If the chi-square difference, measured by the change in chi-square, was significant at a p-value that is less than .05, it was concluded that the given model varied by race (Cochran, 1952; Cheung, & Rensvold, 2002). Because chi-square difference tests can be sensitive to sample size, the change in the comparative fit index (CFI) of more than .01 was also examined in order to verify whether each model varies across race (Cheung, & Rensvold, 2002).

The concern of substantial power reduction arose during analysis of the second hypothesis of the third research question. Namely, it became apparent that in order to examine how each moderation varied by race, it would be necessary to split high, medium and low levels of each self-regulation focus by race, which would have created a substantially low n for each comparison group. In order to address this concern, race was controlled for in each moderation model discussed in research question two. By entering race as a predictor of each variable two things were achieved. First, the variability accounted for by race was accounted for in each variable within the model. Second, any influence made by race was able to be examined during follow-up analysis. Specifically, race could also be examined as a potential predictor of any variable, at each
level of regulatory focus, without having to create smaller groups for comparison (i.e., groups by level and race). Thus, race was controlled for within the context of the moderated mediation analysis and was examined as a predictor of each variable within each level of self-regulation focus.
CHAPTER IV – RESULTS

On average, participants reported levels of authoritative (M = 34.7 SD = 7.2), authoritarian (M = 34.6 SD = 7.5), and permissive (M = 26.4 SD = 7.8) parenting styles were within a standard deviation of those reported in the literature (Buri, 1991). Participants reported using designated drivers, avoiding getting into a car with someone who has been drinking, and avoiding mixing alcohol with prescription drugs as the most frequently used protective behavioral strategies. On average, participants’ experienced higher levels of alcohol-related negative consequences (M = 10.1 SD = 13.1) compared to averages found in previous literature (D’Lima et al., 2012). The most frequently endorsed consequences included trying to control drinking to a certain amount and to certain places, missing a day of school or work, and having a bad time. Participants also reported a higher drinking average than reported by freshmen in previous literature (Hustad et al. 2014) with an average of 12.1 (SD = 14.2) standard drinks per week. Participants experienced an average harmful drinking score of 7.1, which is slightly above the established cut off for harmful drinking (DeMartini & Carey, 2012). When examining correlations among study variables, authoritative and authoritarian parenting was negatively related to alcohol use, negative alcohol-related consequences and harmful drinking. Authoritative and authoritarian parenting styles were positively related to resistance to peer influence, promotion focused self-regulation, and protective behavioral strategy use, while only authoritative parenting was positively related to prevention focused self-regulation. Permissive parenting was negatively correlated with
resistance to peer influence, and both forms of self-regulation. Permissive parenting was positively related to harmful drinking; however, permissive parenting was not significantly correlated with alcohol use, alcohol-related consequences, protective behavioral strategy use, or prevention focused self-regulation. Race was significantly related to resistance to peer influence and harmful drinking, such that African American freshmen were more resistant to peer influence but had more experiences of harmful drinking. Race was not significantly correlated with any other variable of interest. Refer to Table 1.
Table 1

Correlations of Regulatory Focus, Resistance to Peer Influence, Parenting Styles, Alcohol Use, Alcohol-related Negative Consequences, Harmful Drinking and PBS

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.RFQ Promotion</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.RFQ Prevention</td>
<td>0.329**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.RPI</td>
<td>0.301**</td>
<td>0.087</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.DDQ</td>
<td>0.123</td>
<td>-0.109*</td>
<td>-0.226**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.AUDIT</td>
<td>-0.221**</td>
<td>-0.202*</td>
<td>-0.303**</td>
<td>0.543**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.RAPI</td>
<td>-0.218**</td>
<td>-0.277**</td>
<td>-0.267**</td>
<td>0.449**</td>
<td>0.658**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.PBSS_R</td>
<td>0.217*</td>
<td>0.166*</td>
<td>0.270**</td>
<td>-0.341**</td>
<td>-0.427**</td>
<td>-0.325**</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. PAQ Authoritative</td>
<td>0.299**</td>
<td>0.154</td>
<td>0.195*</td>
<td>-0.167*</td>
<td>-0.146</td>
<td>-0.166*</td>
<td>0.261*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. PAQ Authoritarian</td>
<td>0.193</td>
<td>-0.067</td>
<td>0.177*</td>
<td>-0.127</td>
<td>-0.139</td>
<td>-0.119</td>
<td>0.178*</td>
<td>0.402**</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. PAQ Permissive</td>
<td>-0.305**</td>
<td>-0.125</td>
<td>-0.233**</td>
<td>0.024</td>
<td>0.179*</td>
<td>0.121</td>
<td>-0.020</td>
<td>0.135</td>
<td>-0.109</td>
<td></td>
</tr>
<tr>
<td>Mean</td>
<td>21.138</td>
<td>16.785</td>
<td>28.675</td>
<td>12.413</td>
<td>7.131</td>
<td>10.075</td>
<td>77.847</td>
<td>34.809</td>
<td>34.432</td>
<td>26.486</td>
</tr>
<tr>
<td>SD</td>
<td>3.6</td>
<td>3.4</td>
<td>5.6</td>
<td>4.2</td>
<td>5.4</td>
<td>13.1</td>
<td>20.8</td>
<td>7.2</td>
<td>7.5</td>
<td>7.8</td>
</tr>
</tbody>
</table>
Note.  * $p < .05$  ** $p < .01$  
RFQ Promotion= Promotion Focused Self-regulation; RFQ Prevention= Prevention Focused Self-regulation; RPI= Resistance to Peer Influence; DDQ= Alcohol Use; RAPI = Alcohol-related Negative Consequences; PBSS_R = Protective Behavioral Strategies; PAQ Parenting Styles.
Sequential Mediation: Parenting Styles and Alcohol Related Behaviors through Mode of Self-Regulation and Resistance to Peer Influence

The first research question asked whether parenting styles (i.e., authoritarian, authoritative and permissive) indirectly related to drinking behaviors (e.g., alcohol use, harmful drinking patterns, alcohol-related negative consequences, and use of PBS) through first year college student mode of self-regulation and resist peer influence. The following results outlined below partially support Hypothesis 1 such that promotion focused regulation and resistance to peer influence were shown to sequentially mediate relationships between authoritative/permissive parenting and college student drinking behaviors, while no other sequential mediations were shown to be significant (See Figure 3).

**Authoritative Parenting**

According to the criteria outlined by Mackinnon et al. (2007), promotion focused self-regulation and resistance to peer influence significantly mediated the relationship between authoritative parenting and all examined alcohol-related behaviors. Specifically, the relationship between authoritative parenting and alcohol use [C.I. (-0.022, -0.004); *mediated effect* (β = -0.013)], harmful drinking [C.I. (-0.026, -0.005); *mediated effect* (β = -0.015)], alcohol-related consequences [C.I. (-0.023, -0.004); *mediated effect* (β = -0.014)], and protective behavioral strategy use [C.I. (0.004, 0.024); *mediated effect* (β = 0.014)] were shown to be sequentially mediated through promotion focused self-regulation and resistance to peer influence. Authoritative parenting was positively related to promotion focused self-regulation (β = 0.169; *p* < .01), which was positively
related to resistance to peer influence ($\beta = 0.302; p < .01$). Resistance to peer influence was negatively related to alcohol use ($\beta = -0.495; p < .01$), harmful drinking ($\beta = -0.228; p < .01$) and alcohol-related consequences ($\beta = -0.482; p < .01$), and positively related to PBS ($\beta = 0.784; p < .01$).

According to the criteria outlined by Mackinnon et al. (2007), prevention focused self-regulation and resistance to peer influence did not sequentially mediate the relationships between authoritative parenting and any alcohol-related behavior. Specifically, prevention focused regulation and resistance to peer influence did not significantly mediate authoritative parenting and alcohol use [C.I. (-0.004, 0.005); medianed effect ($\beta = -0.001$)], harmful drinking [C.I. (-0.004, 0.006); medianed effect ($\beta = 0.001$)], alcohol-related consequences [C.I. (-0.003, 0.005); medianed effect ($\beta = 0.001$)], and protective behavioral strategy use [C.I. -0.005, 0.003]; medianed effect ($\beta = -0.001$)].

*Authoritarian Parenting*

The relationship between authoritarian parenting and alcohol use, harmful drinking, alcohol-related consequences, and protective behavioral strategy use were not shown to be sequentially mediated through promotion focused self-regulation and resistance to peer influence. Further, authoritarian parenting was not shown to predict promotion focused self-regulation ($\beta = 0.009; p = .71$) or resistance to peer influence ($\beta = .046; p = .34$) within the current model.

According to the criteria outlined by Mackinnon et al. (2007), prevention focused self-regulation and resistance to peer influence did not sequentially mediate the relationships between authoritarian parenting and any alcohol-related behavior.
related behavior. Specifically, prevention focused regulation and resistance to peer influence did not significantly mediate authoritarian parenting and alcohol use [C.I. (-0.004, 0.002); \textit{mediated effect} (β = -0.001)], harmful drinking [C.I. (-0.004, 0.003); \textit{mediated effect} (β = -0.001)], alcohol-related consequences [C.I. (-0.004, 0.003); \textit{mediated effect} (β = -0.001)], and protective behavioral strategy use [C.I. -0.002, 0.004]; \textit{mediated effect} (β = 0.001)].

\textit{Permissive Parenting}

Promotion focused self-regulation and resistance to peer influence significantly mediated the relationship between permissive parenting and all examined alcohol-related behaviors. Specifically, the relationship between permissive parenting and alcohol use [C.I. (0.004, 0.023); \textit{mediated effect} (β = 0.013)], harmful drinking [C.I. (0.005, 0.027); \textit{mediated effect} (β = 0.016)], alcohol-related consequences [C.I. (0.004, 0.023); \textit{mediated effect} (β = 0.014)], and protective behavioral strategy use [C.I. (-0.025, -0.004); \textit{mediated effect} (β = -0.014)] were shown to be sequentially mediated through promotion focused self-regulation and resistance to peer influence. Permissive parenting was negatively related to promotion focused self-regulation (β = -0.164; \(p < .01\)).

According to the criteria outlined by Mackinnon et al. (2007), prevention focused self-regulation and resistance to peer influence did not sequentially mediate the relationships between permissive parenting and any alcohol-related behavior. Specifically, prevention focused regulation and resistance to peer influence did not significantly mediate permissive parenting and alcohol use [C.I. (-0.004, 0.002); \textit{mediated effect} (β = -0.001)], harmful drinking [C.I. (-0.004,
0.003); mediated effect (β = -0.001), alcohol-related consequences [C.I. (-0.004, 0.002); mediated effect (β = -0.001)], and protective behavioral strategy use [C.I. -0.003, 0.004); mediated effect (β = 0.001)]
Figure 3. Sequential Mediation of Regulatory Focus and Resistance to Peer Influence between Parenting Styles, and College Freshman Drinking Behaviors

The second research question asked to what extent are the meditational effects of resistance to peer influence between parenting styles (e.g., authoritative, authoritarian, and permissive) and drinking behaviors (e.g., alcohol use, harmful drinking patterns, alcohol-related negative consequences, and use of PBS) moderated by mode of self-regulation (e.g., promotion focused, prevention focused). The following results outlined below partially supported Hypothesis 2 such that when resistance to peer influence significantly mediated parenting styles and drinking behaviors, these relationships were dependent on varying levels of regulatory focus. However, mediations were found to be non-significant.

Test of Invariance

The first test of invariance (see Table 2) assessed how the mediation of resistance to peer influence between parenting styles and each alcohol-related behavior may vary across high medium and low levels of promotion focused self-regulation. The Satorra-Bentler chi-square difference test, which assessed whether the mediation of resistance to peer influence between all parenting styles and alcohol-related behaviors varied across high, medium and low levels of promotion focused self-regulation, was statistically significant (\(\Delta\chi^2=149.44, 56; p< .01\)). Thus, the chi-square test indicated that the hypothesized model varied across at least two levels of promotion focused self-regulation. The change in the
CFI indicator was as greater than .01 ($\Delta$CFI= .15), which verified that the hypothesized model varied across at least two levels of promotion focused self-regulation. Thus, it was determined that if a parenting style predicted an alcohol-related behavior through resistance to peer influence, it was dependent on the level of the college student’s ability to engage in promotion focused self-regulation.

Table 2

*Outcomes of Moderated Mediation with Promotion Focused Self-Regulation as a Moderator, and Resistance to Peer Influence as a Mediator between Parenting Styles and College Freshman Drinking Behaviors After Controlling for Gender*

<table>
<thead>
<tr>
<th>Variables</th>
<th>$\Delta$χ²</th>
<th>$\Delta$CFI</th>
<th>Mediation Effects</th>
<th>Bootstrapping C.I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test of Overall</td>
<td>149.44, 56</td>
<td>.15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Model Invariance</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAQ- Authoritative:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DDQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>-0.040</td>
<td>-0.079, -0.001*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>-0.018</td>
<td>-0.070, 0.033</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>0.029</td>
<td>-0.029, 0.087</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAQ- Authoritarian:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>DDQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>-0.029</td>
<td>-0.037, 0.017</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>-0.032</td>
<td>-0.075, 0.012</td>
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</tr>
<tr>
<td>Low</td>
<td>-0.038</td>
<td>-0.098, 0.021</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAQ- Permissive:</td>
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<td></td>
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</tr>
<tr>
<td>DDQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>0.065</td>
<td>0.013, 0.117*</td>
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</tr>
<tr>
<td>Medium</td>
<td>0.019</td>
<td>-0.023, 0.060</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>0.005</td>
<td>-0.025, 0.034</td>
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</tr>
<tr>
<td>Authoritative:</td>
<td>RAPI</td>
<td>High</td>
<td>-0.040</td>
<td>-0.080, 0.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>-0.020</td>
<td>-0.073, 0.033</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>0.040</td>
<td>-0.036, 0.115</td>
</tr>
<tr>
<td>PAQ-</td>
<td>Authoritarian:</td>
<td>RAPI</td>
<td>High</td>
<td>0.017</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>-0.034</td>
<td>-0.081, 0.013</td>
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<td></td>
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<td>Low</td>
<td>-0.052</td>
<td>-0.127, 0.022</td>
</tr>
<tr>
<td>PAQ-</td>
<td>Permissive:</td>
<td>RAPI</td>
<td>High</td>
<td>0.065</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>0.020</td>
<td>-0.024, 0.064</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>0.006</td>
<td>-0.031, 0.044</td>
</tr>
<tr>
<td>PAQ-</td>
<td>Authoritative:</td>
<td>AUDIT</td>
<td>High</td>
<td>-0.063</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>-0.016</td>
<td>-0.063, 0.030</td>
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<tr>
<td></td>
<td></td>
<td>Low</td>
<td>0.024</td>
<td>-0.056, 0.103</td>
</tr>
<tr>
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<td>Authoritarian:</td>
<td>AUDIT</td>
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<td>0.027</td>
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<td></td>
<td></td>
<td>Medium</td>
<td>-0.028</td>
<td>-0.072, 0.016</td>
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<tr>
<td></td>
<td></td>
<td>Low</td>
<td>-0.031</td>
<td>-0.122, 0.061</td>
</tr>
<tr>
<td>PAQ-</td>
<td>Permissive:</td>
<td>AUDIT</td>
<td>High</td>
<td>0.102</td>
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<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>0.017</td>
<td>-0.021, 0.054</td>
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<td></td>
<td></td>
<td>Low</td>
<td>0.004</td>
<td>-0.037, 0.044</td>
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<tr>
<td>PAQ-</td>
<td>Authoritative:</td>
<td>PBS</td>
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<td>0.040</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>0.013</td>
<td>-0.026, 0.052</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>-0.063</td>
<td>-0.169, 0.044</td>
</tr>
</tbody>
</table>
The second test of invariance (see Table 3) assessed how the mediation of resistance to peer influence between parenting styles and each alcohol-related behavior may vary across high medium and low levels of prevention focused self-regulation. The Satorra-Bentler chi-square difference test, which assessed whether the mediation of resistance to peer influence between all parenting styles and alcohol-related behaviors varied across high, medium and low levels of prevention focused self-regulation, was statistically significant ($\Delta \chi^2= 101.544, 56; p< .01$). Thus, the chi-square test indicated that the hypothesized model varied across at least two levels of prevention focused self-regulation. The change in the CFI indicator was as greater than .01 ($\Delta$CFI= .09), which verified that the hypothesized model varied across at least two levels of prevention focused self-regulation. Thus, it was determined that if a parenting style predicted an alcohol-related behavior through resistance to peer influence, it was also dependent on the level of the college student’s ability to engage in prevention focused self-regulation.
**Authoritative Parenting Follow-up Analysis**

Resistance to peer influence mediated the relationship between authoritative parenting and alcohol use at high levels [C.I. (-0.079, -0.001); mediated effect ($\beta = -0.040$)], but not at medium or low levels of promotion focused self-regulation. Authoritative parenting was positively related to resistance to peer influence ($\beta = 0.150; p < .01$), which was negatively related to alcohol use ($\beta = -0.451; p < .05$). Resistance to peer influence also mediated authoritative parenting and harmful drinking at high [C.I. (-0.111, -0.015); mediated effect ($\beta = -0.063$)] levels, but not at medium or low levels of promotion focused self-regulation. Resistance to peer influence was negatively related to harmful drinking ($\beta = -0.263; p < .01$). Resistance to peer influence did not significantly mediate authoritative parenting and alcohol-related consequences or PBS at any level of promotion focused self-regulation. Resistance to peer influence did not significantly mediate authoritative parenting and any alcohol-related behavior at any level of prevention focused self-regulation.

**Authoritarian Parenting Follow-up Analysis**

Resistance to peer influence did not significantly mediate authoritarian parenting and any alcohol-related behavior at any level of promotion focused self-regulation. Resistance to peer influence did significantly mediated the relationship between authoritarian parenting and alcohol use at low [C.I. (-0.196, -0.015); mediated effect ($\beta = -0.105$)], but not high or medium levels of prevention focused self-regulation. Authoritarian parenting was positively related
to resistance to peer influence ($\beta = 0.214; p < .01$), which was negatively related to alcohol use ($\beta = -1.000; p < .01$). Resistance to peer influence significantly mediated the relationship between authoritarian parenting and alcohol-related consequences at medium [C.I. (-0.083, -0.001); \textit{mediated effect} ($\beta = -0.042$)], but not low or high levels of prevention focused self-regulation. Authoritarian parenting was positively related to resistance to peer influence ($\beta = 0.130; p = .05$), which was negatively related to alcohol-related consequences ($\beta = -0.583; p < .01$). Resistance to peer influence significantly mediated the relationship between authoritarian parenting and PBS at low [C.I. (0.010, 0.173); \textit{mediated effect} ($\beta = 0.091$)], but not high or medium levels of prevention focused self-regulation. Resistance to peer influence was negatively related to harmful drinking ($\beta = -0.258; p < .05$). Resistance to peer influence did not significantly mediate authoritarian parenting and harmful drinking at any level of prevention focused self-regulation. Resistance to peer influence ($\beta = 0.130; p = .05$), was positively related to PBS ($\beta = 1.387; p < .01$).

\textit{Permissive Parenting Follow-up Analysis}

Resistance to peer influence significantly mediated permissive parenting and alcohol use at high [C.I. (0.013, 0.117); \textit{mediated effect} ($\beta = 0.065$)], but not medium or low levels of promotion focused self-regulation. Permissive parenting was negatively related to resistance to peer influence ($\beta = -0.234; p < .01$). Resistance to peer influence significantly mediated permissive parenting and harmful drinking at high [C.I. (0.034, 0.170); \textit{mediated effect} ($\beta = 0.102$)], but not
medium or low levels of promotion focused self-regulation. Resistance to peer influence significantly mediated permissive parenting and alcohol-related consequences at high [C.I. (0.009, 0.121); *mediated effect* (β = 0.065)], but not medium or low levels of promotion focused self-regulation. Resistance to peer influence was negatively related to alcohol-related consequences (β = -0.316; *p* < .05). Resistance to peer influence significantly mediated permissive parenting and PBS at high [C.I. (-0.121, -0.007); *mediated effect* (β =-0.064)], but not medium or low levels of promotion focused self-regulation. Resistance to peer influence was positively related to PBS (β = 0.649; *p* < .01).

Resistance to peer influence significantly mediated permissive parenting and alcohol use at high [C.I. (0.004, 0.095); *mediated effect* (β = 0.050)], but not low levels of prevention focused self-regulation. Permissive parenting was negatively related to resistance to peer influence (β = -0.230; *p* < .01), which was negatively related to alcohol use (β = -0.299; *p* =.08). Resistance to peer influence significantly mediated permissive parenting and harmful drinking at high [C.I. (0.027, 0.147); *mediated effect* (β = 0.087)], but not low levels of prevention focused self-regulation. Resistance to peer influence was negatively related to harmful drinking (β = -0.191; *p* < .01). Resistance to peer influence significantly mediated permissive parenting and PBS at high [C.I. (0.134, -0.002); *mediated effect* (β =-0.068)], but not low levels of prevention focused self-regulation. Resistance to peer influence was positively related to PBS (β = 0.693; *p*=.05). Resistance to peer influence did not significantly mediate permissive parenting
and alcohol-related consequences at any level of prevention focused self-regulation.

Table 3

*Outcomes* of Moderated Mediation with Prevention Focused Self-Regulation as a Moderator, and Resistance to Peer Influence as a Mediator between Parenting Styles and College Freshman Drinking Behaviors After Controlling for Gender.

<table>
<thead>
<tr>
<th>Variables</th>
<th>$\Delta \chi^2$</th>
<th>$\Delta CFI$</th>
<th>Mediation Effects</th>
<th>Bootstrapping C.I</th>
</tr>
</thead>
<tbody>
<tr>
<td>Test of Overall Model Invariance</td>
<td>101.544,56 .09</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>PAQ- Authoritative: DDQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>-0.022</td>
<td>-0.054, 0.010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>-0.024</td>
<td>-0.063, 0.014</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>-0.017</td>
<td>-0.102, 0.067</td>
<td></td>
<td></td>
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<tr>
<td>PAQ- Authoritarian: DDQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>0.023</td>
<td>-0.016, 0.063</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>-0.034</td>
<td>-0.068, 0.001</td>
<td></td>
<td></td>
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<tr>
<td>Low</td>
<td>-0.105</td>
<td>-0.196, -0.015*</td>
<td></td>
<td></td>
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<tr>
<td>PAQ- Permissive: DDQ</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>0.050</td>
<td>0.004, 0.095*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>0.022</td>
<td>-0.006, 0.050</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>0.071</td>
<td>-0.001, 0.140</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

PAQ- Authoritative: RAPI

| High | -0.023 | -0.063, 0.016 |
| Medium | -0.030 | -0.080, 0.020 |
| Low | -0.009 | -0.057, 0.038 |

PAQ-
<table>
<thead>
<tr>
<th></th>
<th>Authoritarian:</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>RAPI</td>
<td>High</td>
<td>-0.020, 0.070</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>-0.083, -0.001*</td>
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<tr>
<td></td>
<td></td>
<td>Low</td>
<td>-0.124, 0.010</td>
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<tr>
<td></td>
<td>PAQ-</td>
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<tr>
<td></td>
<td>Permissive:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>RAPI</td>
<td>High</td>
<td>-0.003, 0.108</td>
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<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>-0.010, 0.065</td>
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<tr>
<td></td>
<td></td>
<td>Low</td>
<td>-0.011, 0.088</td>
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<td>PAQ-</td>
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<tr>
<td></td>
<td>Authoritative:</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>AUDIT</td>
<td>High</td>
<td>-0.065, 0.043</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>-0.082, 0.022</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>-0.086, 0.008</td>
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<td></td>
<td>PAQ-</td>
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<tr>
<td></td>
<td>Authoritarian:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>AUDIT</td>
<td>High</td>
<td>-0.019, 0.102</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>-0.094, 0.010</td>
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<tr>
<td></td>
<td></td>
<td>Low</td>
<td>-0.137, 0.003</td>
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<tr>
<td></td>
<td>PAQ-</td>
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<tr>
<td></td>
<td>Permissive:</td>
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<tr>
<td></td>
<td>AUDIT</td>
<td>High</td>
<td>0.027, 0.147*</td>
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<td></td>
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<td>Medium</td>
<td>-0.011, 0.066</td>
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<td></td>
<td></td>
<td>Low</td>
<td>-0.008, 0.098</td>
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<tr>
<td></td>
<td>PAQ-</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Authoritative:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PBS</td>
<td>High</td>
<td>-0.012, 0.073</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>-0.020, 0.077</td>
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<tr>
<td></td>
<td></td>
<td>Low</td>
<td>-0.058, 0.088</td>
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<tr>
<td></td>
<td>PAQ-</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>Authoritarian:</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>PBSS-R</td>
<td>High</td>
<td>-0.086, 0.022</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Medium</td>
<td>-0.006, 0.086</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Low</td>
<td>0.010, 0.173*</td>
</tr>
<tr>
<td></td>
<td>PAQ-</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Permissive:</td>
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</tr>
</tbody>
</table>
Moderated Sequential Mediation: Parenting Styles, Resistance to Peer Influence, Self-Regulation, and Alcohol-related Behaviors. Race as Moderator.

The third research questioned asked whether the relationships between parenting styles (e.g., authoritative, authoritarian, and permissive), mode of self-regulation (e.g., promotion focused, prevention focused), resistance to peer influence and drinking behaviors (e.g., alcohol use, harmful drinking patterns, alcohol-related negative consequences, and use of PBS) was moderated by race? The following results were determined. The following results outlined below did not support Hypothesis $H3a$ such that sequential mediations of regulatory focus and resistance to peer influence between parenting styles and drinking behaviors did not vary by race. Results outlined below partially supported hypothesis $H3b$ such that the influence of race varied by levels of regulatory focus for some variables of interest while it did not for others.

**Test of Invariance**

The Satorra-Bentler chi-square difference test, which assessed whether the mediation of resistance to peer influence and each separate mode of self-regulatory focus, between all parenting styles and alcohol-related behaviors varied across race, was not statistically significant ($\Delta \chi^2=55.735, 56; p=.27$).
Thus, the chi-square test indicated that the hypothesized model was invariant across all levels of promotion focused self-regulation. The change in the CFI indicator was as not greater than .01 (ΔCFI= .01), which verified that the hypothesized model was invariant across all levels of promotion focused self-regulation. Thus, it was determined that if a parenting style predicted an alcohol-related behavior through either mode of self-regulation and resistance to peer influence, it was not dependent on the college student’s race.

**Interactions of Race and Promotion Focused Self-regulation**

Race predicted resistance to peer influence such that Black engaged higher rates of resistance to peer influence than White non-Hispanic students at high (β = -2.635, p<.01) and medium (β = -3.094, p<.01), but not low levels of prevention focused self-regulation. Black students also reported engaging in less alcohol use (β = 5.689, p<.01) and harmful drinking behaviors (β = 1.440, p<.05) than White non-Hispanic students at high, but not low or medium levels of prevention focused self-regulation. Race did not significantly predict any parenting style, alcohol-related consequences or PBS use at any level of prevention focused self-regulation.
CHAPTER V – DISCUSSION

The primary purpose of the current study was to examine the sequences and means that social constructs such as parenting styles, self-regulation and resistance to peer influence are associated with alcohol-related behaviors (i.e., alcohol use, alcohol-related consequences, harmful drinking, and protective behavioral strategies) in freshmen college students. With regard to self-regulation, the current study specifically examined promotion and prevention regulatory focus, two constructs that represent approach or avoidant modes of self-regulation. Previous researchers have found that parenting styles are associated with self-regulation and resistance to peer influence (Patock-Peckham et al., 2001; Patock-Peckham et al. 2011; Steinberg et al., 2006; Tucker et al., 2008); however, few studies have examined the association between parenting styles and modes of regulatory focus. Further, while global self-regulation has been shown to both predict resistance to peer influence and moderate the relationship between resistance to peer influence (Meldrum et al., 2013) and alcohol-related behaviors (Borsari & Carey, 2001; D'Lima et al., 2012; Hustad et al., 2009; Patock-Peckham et al., 2001) regulatory focus has yet to be examined as a predictor of these constructs. Thus, the current study examined whether promotion and prevention focused self-regulation, and resistance to peer influence sequentially mediated the relationship between parenting styles and alcohol-related behaviors in college freshmen. Further, the current study examined whether the mediation of resistance to peer influence between
parenting styles and alcohol-related behaviors is individually moderated by promotion and prevention focused self-regulation. Finally, given that race has been shown to influence most of the aforementioned constructs (Madson et al., 2015; Madson & Zeigler-Hill, 2013; Sieber et al., 2003; O’Malley & Johnston, 2002; Paschall et al., 2005; Skidmore et al., 2012), differences between African American and White non-Hispanic freshmen were also examined within the context of each model.

Hypothesis 1, that regulatory focus and resistance to peer influence would sequentially mediate the relationship between each parenting style and drinking behavior, was partially supported. Specifically, the relationships between authoritative and permissive parenting styles and drinking behaviors (i.e., alcohol use, harmful drinking, alcohol-related consequences and PBS) among college freshman were sequentially mediated through promotion focused self-regulation and resistance to peer influence, such that authoritative parenting was positively and permissive parenting was negatively related to promotion focused self-regulation. However, the relationships between authoritarian parenting and drinking behaviors were not sequentially mediated through promotion focused self-regulation and resistance to peer influence, as authoritarian parenting was not significantly related to promotion focused self-regulation.

The current findings support Keller’s (2008) conceptualization of authoritative and authoritarian parenting styles as they relate to regulatory focus. According to Keller (2008), because authoritative parents are more likely to
emphasize nurturance of hopes and aspirations, they are more likely to foster an associated promotion focused nature within their child. Conversely, an authoritarian parenting style would not be associated with promotion focused self-regulation because authoritarian parents are more likely to reinforce their child’s behavior through imparting or withdrawing criticism that is more likely to foster children who desire the security associated with prevention focused self-regulation. The current results contradict previous findings by Keller (2008), which suggest that permissive parenting is not related to regulatory focus. Specifically, Keller (2008) posited that because permissive parenting is not associated with any aspect of control it is not likely to contribute to either mode of regulation in any way. However, the current results support previously stated findings by Patock-Peckham and Morgan-Lopez (2006), which suggest that permissive parenting is negatively associated with global self-regulation.

According to findings of the current study, promotion focused regulation was and prevention focused regulation was not found to be related to resistance to peer influence. According to the theoretical underpinnings and previous research on regulatory focus, prevention focused regulation is associated with security, safety and the avoidance of negative outcomes in order to meet one’s goals (Scholer, Zou, Fujita, Stroessner, & Higgins, 2010). Thus it would be logical to expect that prevention focused self-regulation would predict behaviors such as less drinking, fewer consequences and more PBS use, which infer safety and the avoidance of negative outcomes. However, while prevention focused regulation
may very well be associated with healthy drinking behaviors; the current findings suggest that this relationship does not occur through the process of resisting peer influence. According to regulatory focus theory, promotion focused individuals are more likely to engage in risky behaviors in order to meet their goals (Higgins, 2010). Further, individuals who are more promotion focused tend to be more independent, are more likely to distinguish themselves from others, and are more likely to work toward attaining their goals to the detriment of upholding a relationship (Higgins, 1998; Winterheld & Simpson, 2011). Consistent with this conceptualization, while promotion focused individuals tend to engage in more risky behavior, these individuals may be more likely to utilize resistance to peer influence as a protective strategy if their end goal is to successfully engage in safer drinking behaviors.

The second hypothesis, that regulatory focus would significantly moderate the relationship between resistance to peer influence and drinking behaviors, such that the mediated effect of resistance to peer influence between each parenting style and drinking behavior would be dependent on varying levels of regulatory focus, was partially supported by findings within the current study. Results of the current study suggested that at high levels of promotion focused self-regulation, authoritative parenting was associated with increased resistance to peer influence, which was in turn associated with less alcohol use and harmful drinking. Resistance to peer influence was not shown to mediate the relationship between authoritarian parenting and any freshman drinking behavior at any level.
of promotion focused self-regulation. However, resistance to peer influence mediated the relationship between authoritarian parenting and alcohol use, alcohol-related consequences and PBS at low to medium levels of prevention focused self-regulation. Specifically, authoritarian parenting was found to be positively associated with resistance to peer influence, which in turn was negatively related to alcohol use and alcohol-related consequences, but positively related to PBS. Resistance to peer influence also mediated the relationship between permissive parenting, and all college freshman drinking behaviors, at high levels of promotion focused self-regulation. Resistance to peer influence also mediated the relationship between permissive parenting and alcohol use, alcohol-related consequences and PBS at high levels of prevention focused self-regulation. Specifically, permissive parenting was negatively associated with resistance to peer influence, which was in turn positively associated with PBS and negatively associated with all other drinking behaviors.

Taken together, current and previous findings suggest that the need to resist peer influences may be more salient for those with higher levels of promotion focused self-regulation, because those with lower rates of regulation may not have the desire to resist delinquent behavior (Meldrum et al., 2013). Further, the tendency to resist peer influences to drink may be stronger in individuals who were parented with high rates of both warmth and control (Simons-Morton & Chen, 2009). Thus, individuals parented through a more authoritative style may engage in less substance use due to their ability to resist
peer influence (Simons-Morton & Chen, 2009; Simons-Morton et al., 2004). Consistent with previous research, the current findings also suggest that individuals who are more prone to prevention focused self-regulation tend to lower their level of prevention focus if successfully negotiating a disagreement is necessary for a positive outcome (Elliot et al., 2006). Thus, it may be that individuals who are more prone to utilizing prevention focused self-regulation (i.e., those parented under an authoritarian parenting style) lower their prevention focus and increase their use of a promotion focus when resistance to peer influence is required to gain a positive outcome. Finally, these findings are supportive of previous literature, which suggest that individuals parented through a permissive style tend to be open to a wide variety of social influences, including influence by peers (Bendar & Fischer, 2003). These findings also add the additional insight that permissive parenting may negatively influence a high regulating college freshman’s ability to resist peer influence regardless of whether they are promotion or prevention focused.

The hypothesis that the way regulatory focus and resistance to peer influence sequentially mediate the relationship between each parenting style and drinking behavior would vary by race, was not supported by findings within the current study. Thus, it appears that while most of the constructs within the current study have been shown to vary by race (Greening et al., 2010; Madson & Zeigler-Hill, 2013; Skidmore et al., 2012; Paschall et al., 2005; Skidmore et al., 2012), the predictive paths between these constructs may not. For example,
although resistance to peer influences and alcohol use have both been shown to vary by college student race, the association between resistance to peer influence and alcohol use may be the same for both White non-Hispanic and African American college freshman. This suggests that race may be less likely to predict constructs associated with college student drinking when the sequence of these relationships are examined more comprehensively.

The hypothesis, which stated that the way regulatory focus moderates the relationship between resistance to peer influence and drinking behaviors would be dependent on varying levels of regulatory focus, and will also vary by race was partially supported by findings within the current study. Specifically, at high levels of promotion-focused self-regulation, African Americans reported engaging in higher rates of resistance to peer influence, less alcohol use, and less harmful drinking than White non-Hispanics. At high levels of promotion focused self-regulation, African Americans also reported being parented through an authoritarian style more often than White non-Hispanics freshmen. At high and medium levels of prevention focused self-regulation, African Americans engaged in higher rates of resistance to peer influence than White non-Hispanic students. African American students also reported engaging in less alcohol use and harmful drinking behaviors than White non-Hispanic students at high levels of prevention focused self-regulation. These results support those by Pahl and colleagues (2014) who found that lower self-regulation leads to substance use for both African American and White non-Hispanic individuals. However, the current
results further suggest that high levels of self-regulation may be even more protective for African Americans. Contrary to Keller (2008), who did not specify participants’ racial demographics, and found authoritarian parenting to be associated with prevention focused self-regulation, the current results suggest that there may be a relationship between authoritarian parenting and promotion focus self-regulation among African Americans. Thus, it may be that for African Americans, authoritarian parenting is more likely to be associated with factors, such as with nurturance and motivation toward advancement, that lend to being promotion focused.

Although the current study has produced promising findings, it is recommended that these results be interpreted in light of some limitations. The current results were derived using data from college freshmen on one campus in the southeastern region of the United States. Thus, it is recommended that these findings be generalized to college freshmen in other U.S. regions or countries with caution. Researchers have previously found that female self-regulation tends to be less impacted by punitive parenting and more bolstered by an authoritative parenting style (Morrell & Murray, 2003). Researchers have also previously established that female college students tend to drink less and experience fewer alcohol-related negative consequences (Hingson et al., 2009; NIAAA, 2013). Thus, given that the current sample consisted primarily of female students, it is also recommended that a more stratified sample be used in future in order to more confidently generalize results across gender. Another potential
limitation may have been the reliance on self-report to measure college freshman drinking behaviors. Specifically, although researchers have previously found that the privacy of computerized survey measure may reduce underreporting of stigmatized behaviors such as underage drinking (Simoes, Batos, Moreira, Lynch, & Metzger, 2006), participants may have been reluctant to disclose information regarding their previous engagement in illegal activity that also has the potential to impact their academic careers. Within the current study, levels of internal consistency for both promotion and prevention focused self-regulation were shown to be lower than those previously established (Higgins et al., 2001). These low levels of internal consistency may have compromised the degree to which promotion and prevention focused regulation were reliably measured and the degree to which the current findings can be reliably interpreted.

Given the primarily exploratory nature of the current study a major area for future research should be to replicate novel findings. Given that the current study included only one university from one region of the country, it may be particularly beneficial to explore whether the sequential mediation chain through promotion focused self-regulation remains significant when examined in a more national sample of college freshmen. As with race, researchers have previously found gender differences in how parenting styles (Patock-Peckham & Morgan-Lopez, 2006) and resistance to peer influence (Musher-Eizenman, Holub & Arnett, 2003) are associated with substance use behavior. Given that prevention focused self-regulation was not found to predict resistance to peer influence, but
was found to be associated with college freshman drinking behaviors, future studies should also examine other potential mediators of these relationships. For instance, in previous research related to smoke cessation, researchers found that prevention focused individuals responded more strongly to anti-smoking campaigns that emphasized the negative effects of cigarette use (Friedman-Wheeler, Rizzo-Busack, McIntosh, Ahrens, & Haaga, 2010). Thus, constructs such as negative alcohol-related expectancies may potentially mediate the relationship between prevention focused self-regulation and drinking behavior in college freshmen. Given that the majority of research done on regulatory focus and substance use has been experimental in nature, experimental designs, which examine drinking behavior campaigns based on regulatory focus may also be a fruitful avenue for future research.

In addition to research implications, the current findings also have implications for intervention and prevention efforts aimed toward college freshman drinking behaviors. Given that both promotion and prevention focused self-regulation were negatively associated with alcohol use, alcohol-related negative consequences and harmful drinking, it appears that the strength of a student’s overall ability to self-regulate may be an additional risk (or protective) factor to assess for unhealthy drinking. Throughout the current study, high levels of promotion focused self-regulation were consistently related to the increased ability to resist peer influence. Thus, it appears that measuring regulatory focus may be a useful tool for clinicians to see which freshmen may benefit from being
encouraged to utilize resistance to peer influence as a protective strategy. For instance if a student is assessed to be more promotion focused in nature, resisting peer influence may be a more effective way to achieve healthy drinking behaviors. Further, promotion focused students may be more receptive to an intervention that highlights resistance to peer influence as a protective drinking strategy. During a brief alcohol intervention, college freshmen may also be more receptive to utilizing resistance to peer influence as a strategy against harmful drinking when clinicians use promotion focused language that highlights advancement and achievement (e.g., being able to get to class and graduate) rather than avoidance consequences (avoiding a hangover). Further, incorporating discussion related to how social learning from one’s parents may contribute to future drinking behaviors may be beneficial to providing students a rational for learning or reinforcing healthy drinking practices.

In conclusion, the current study extends research examining college freshman drinking by demonstrating the sequential effects of parenting styles, regulatory focus and resistance to peer influence on alcohol use, alcohol-related negative consequences, harmful drinking and PBS. Moreover, the findings highlight the effect of resistance to peer influence on the relationship between parenting styles and college freshman drinking behaviors at different levels of regulatory focus. Finally, the current study examined the impact of race on these aforementioned relationships. Overall, the findings of this study suggest that while both promotion and prevention focused regulation are associated with
healthy drinking behaviors, resistance to peer influence appears to be a particularly salient mode through which individuals high in promotion focus may utilize to attain safe drinking practices. Current findings also suggest that while authoritative parenting may lead one to be more promotion focused in nature, an authoritarian parenting style may also lead to promotion focused regulation in African American populations. Further, it appears that while high levels of regulatory focus tend to be generally beneficial for college freshmen, regulatory focus may be even more protective for African American students. Current results support the importance of considering the role of parenting, regulatory focus and resistance to peer influence in assessment and interventions aimed toward college freshman drinking behaviors.
APPENDIX A – Institutional Review Board Approval

INSTITUTIONAL REVIEW BOARD
118 College Drive #5147 | Hattiesburg, MS 39406-0001
Phone: 601.266.5997 | Fax: 601.266.4377 | www.usm.edu/research/institutional.review.board

NOTICE OF COMMITTEE ACTION

The project has been reviewed by The University of Southern Mississippi Institutional Review Board in accordance with Federal Drug Administration regulations (21 CFR 21, 111), Department of Health and Human Services (45 CFR Part 46), and university guidelines to ensure adherence to the following criteria:

- The risks to subjects are minimized.
- The risks to subjects are reasonable in relation to the anticipated benefits.
- The selection of subjects is equitable.
- Informed consent is adequate and appropriately documented.
- Where appropriate, the research plan makes adequate provisions for monitoring the data collected to ensure the safety of the subjects.
- Where appropriate, there are adequate provisions to protect the privacy of subjects and to maintain the confidentiality of all data.
- Appropriate additional safeguards have been included to protect vulnerable subjects.
- Any unanticipated, serious, or continuing problems encountered regarding risks to subjects must be reported immediately, but not later than 10 days following the event. This should be reported to the IRB Office via the "Adverse Effect Report Form".
- If approved, the maximum period of approval is limited to twelve months.
  Projects that exceed this period must submit an application for renewal or continuation.

PROTOCOL NUMBER: 14100102
PROJECT TITLE: Parenting, Peers, Self-regulation and Drinking Behaviors in College Freshman: A Social Learning Perspective
PROJECT TYPE: New Project
RESEARCHER(S): Sarah Kison
COLLEGE/DIVISION: College of Education and Psychology
DEPARTMENT: Psychology
FUNDING AGENCY/SPONSOR: NIA
IRB COMMITTEE ACTION: Expedited Review Approval
PERIOD OF APPROVAL: 10/08/2014 to 10/07/2015

Lawrence A. Hosman, Ph.D.
Institutional Review Board
APPENDIX B – Informed Consent

PURPOSE: The present study is designated to examine social predictors of drinking. Results will be used to guide later research on promoting healthy behaviors among college freshmen.

DESCRIPTION OF STUDY: Participation will consist of completing several brief questionnaires via the Internet. The completion of these questionnaires should take approximately 30-45 minutes. In return you will receive .5 class credit points through the Psychology Department’s SONA website. Students may only participate in this study one time. Questionnaires completed via the Internet will concern your feelings, attitudes, behaviors, and experiences. You will only receive credit for completing the survey and answering honestly.

BENEFITS: Participants are not expected to directly benefit from your participation. However, it is hoped that this study will contribute to our understanding of personality. Participants will receive .5 extra credit points.

RISKS: No foreseeable risks, beyond those present in routine daily life, are anticipated in this study. If you find that are distressed by completing these questionnaires, you should visit the campus counseling center or notify the researcher immediately. The survey asks some personal questions about personal behavior including illegal behavior. The survey asks some personal questions about personal behavior including illegal behavior. Though unexpected, information from this survey may also be subjected to court subpoena. However, you are able to skip answering questions. Whereas no assurance can be made concerning results that may be obtained (since results from investigational studies cannot be predicted) the researcher will take every precaution consistent with the best scientific practice. Questions concerning the research should be directed to Saarah Kison at saarah.kison@eagles.usm.edu or her research supervisor Dr. Michael Madson at (601) 266-4546 (or e-mail at michael.madson@usm.edu).

If you become distressed as a result of your participation in this study, then you should contact an agency on-campus or in the surrounding community that may be able to provide services for you. A partial list of available resources is provided below:

University of Southern Mississippi Counseling Center (601) 266-4829
Community Counseling & Assessment Clinic (601) 266-4601
Pine Belt Mental Healthcare (601) 544-4641
Pine Grove Recovery Center (800) 821-7399
Forrest General Psychology Services (601) 288-4900
Lifeway Counseling Service Incorporated (601) 268-3159
Behavioral Health Center (601) 268-5026 Hope Center (601) 264-0890
If you experience distress as a result of your participation in this study, please notify Saarah Kison (saarah.kison@eagles.usm.edu)

CONFIDENTIALITY: You will place your name on the internet-based questionnaires for SONA credit. At the conclusion of data collection for this study, all identifying information will be deleted. Data gathered from the present study will be stored in a secure location for six years, at which time it will be destroyed. Findings will be presented at professional conferences or journals in aggregate form with no identifying information to ensure confidentiality.

PARTICIPANT ASSURANCE: This project and this consent form have been reviewed by the Institutional Review Board, which ensures that research projects involving human participants follow federal regulations. Any questions or concerns about rights as a research participant should be directed to the Chair of the Institutional Review Board, The University of Southern Mississippi, Box 5147, Hattiesburg, MS 39406, (601) 266-6820. Participation in this project is completely voluntary, and participants may withdraw from this study at any time without penalty, prejudice, or loss of benefits. Questions concerning the research should be directed to Saarah Kison at saarah.kison@eagles.usm.edu or her research supervisor Dr. Michael Madson at (601) 266-4546 (or e-mail at michael.madson@usm.edu).
REFERENCES


students’ norm perception reported use of protective behavioral strategies for alcohol consumption. *Journal of Studies on Alcohol and Drugs, 69,* 859-865.


