The Influence of Parental Behaviors and Family Structure on Adolescent Alcohol Use

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Dedication

I would like to dedicate this "work of art" to my immediate family.

First, to my parents, Rob & Karen Kaufman. I cannot adequately convey just how much they have done to support and love me throughout this unrelenting, strenuous, and honestly, maddening process. No matter what roadblock was thrown in front of me (and there were many) they were standing there routing me on. Thank you for reminding me from a young age to "find my passion" and that I could "achieve what my mind could perceive." For modeling determination, perseverance, and how to keep a positive attitude despite the obstacles in one's way. There is no question that without their love and unrelenting support, I would not be here today. My uncle, Bob Chapeskie, for reminding me that "school is cool, your uncle Bob is cool" whenever I did not want to go to school and more importantly, for teaching me that I need to keep on going even when everyone else drops out and despite the snow. My late Aunt (and Godmother) Maryjane Kaufman Riddell & Uncle Doug Riddell for beginning a college fund for me and for guiding me towards the mental health field. You are both missed and thought of every single day. I only wish you could be here for this chapter and for all the ones that have passed and those that have yet to come. I would also like to dedicate this to my husband, Ryan Walker, for his patience, support, and his assiduous appreciation for my unwavering perseverance (ha!). I love you more. And last but certainly not least, to my daughter, Josephine Emma Walker, who obviously knew that her constant smiles and laughter (along with sleeping through the night) would be the stress relief I needed throughout the end of this journey.

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contemplating the best way to respond to you, so here it is. Thank you for your doubts as they pushed me towards this very moment.

Abstract of Dissertation

The Influence of Parental Behaviors and Family Structure on Adolescent Alcohol Use

Alcohol is the most commonly used substance during adolescence. Alcohol use, particularly early initiation, carries many short- and long-term consequences that may persist long into adulthood. Despite evidence to suggest that single-parent family structures increase the risk of adolescent engagement in alcohol use, there is limited understanding of the parenting behaviors that may aid single-parents in potentially lowering the risk of alcohol engagement in this developmental period. This study examines the relationship between family structure and alcohol use behavior in adolescents as a function of early initiation and current alcohol use. Of particular interest is to what degree do specific parenting behaviors (monitoring, alcohol-specific communication, negative attitudes towards alcohol use, and encouragement) moderate the risk between single-parent family structure and adolescent alcohol use. Results suggest higher rates of early initiation and current alcohol use among adolescents from single-parent households when compared to their counterparts from two-parent households. Parental attitudes towards alcohol use was the only parental behavior shown to significantly moderate the effects of family structure on early initiation for adolescents from single-parent households.

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Chapter 1: Introduction

The purpose of this study was to examine the role parenting behaviors (e.g., monitoring, communication, parental attitudes towards alcohol use, parental encouragement) play in adolescent alcohol use behaviors, particularly in adolescents in single-parent households. These parenting behaviors were examined as potential moderators of adolescent alcohol use. More specifically, this study sought to establish the moderating effects of parental monitoring, communication, disapproving attitudes towards alcohol use, and encouragement on adolescent initiation and current use of alcohol. There is limited research that looked at these specific parenting behaviors in single-parent households with regard to adolescent alcohol use. Research shows that alcohol use by adolescents has a tremendous impact on their health and well-being. Alcohol impairs growth and development, is associated with engagement in risky behaviors such as substance-use, unprotected sex, accidents, and puts them at risk for addiction as well (Johnston et al., 2018).

Background and Context

The detrimental effects of alcohol use during this developmental period and beyond has initiated a wide range of prevention efforts. Federal efforts, in response to this public health crisis, have been growing since 1984. These efforts have increased since the early 2000s, when the federal government began a national call to action to prevent underage drinking that involved federal, state, and local governments (Hingson & White, 2014). In 1988, the legal drinking age was raised to 21years of age in response to the increase of alcohol-related deaths during adolescence, along with the Zero Tolerance underage drinking and driving laws (automatic Driving Under the Influence conviction

for any person under the age of twenty-one with alcohol in their system while driving), which resulted in a decline in past month alcohol use for adolescents (US Department of Transportation, 2016). Further, the US Department of Transportation stated that analysis by the National Highway Traffic Safety indicated that the higher minimum drinking age has prevented approximately thirty thousand adolescent alcohol-related deaths since 1975. With the release of the report Reducing Underage Drinking: A Collective Responsibility, the National Research Council and Institute of Medicine called for efforts to reduce underage drinking that involved all levels of government and the alcohol industry (Department of Health and Social Services, 2007). In 2004, Congress mandated the development of the Interagency Coordinating Committee for the Prevention of Underage Drinking (ICCPUD), made up of representatives from 15 federal agencies by initiating city hall meetings to prevent underage drinking in cooperation with community organizations around the United States (SAMSHA, 2015). Meetings supported community and state efforts to promote, implement, and sustain science-based prevention approaches shown to reduce underage drinking.

In 2006, the Sober Truth on Preventing (STOP) Underage Drinking Act, Public Law 109-422, was enacted, which directs that the ICCPUD was to assist in guiding policies and program development across the Federal Government in regard to underage alcohol use and provide resources to state and local governments. To this end, the STOP Act, administered by SAMHSA's Center for Substance Abuse Prevention, provided funding for annual grants to community coalitions that work to prevent and reduce underage drinking. The STOP Act also required ICCPUD to submit annual reports to Congress on federal underage drinking prevention programs and policy along with recent

data on the prevalence and patterns of underage drinking to gain insights to coordinate further prevention efforts (SAMSHA, 2015). Research has shown that prevention initiatives are enhanced when combined with early intervention practices that are reliant on in-depth knowledge of the risk factors that contribute to adolescent alcohol engagement (Chassin et al., 2014; Kim et al., 2017; Saunders et al., 2011; Zucker et al., 2008).

Statement of the Problem

Alcohol is the first and most commonly used substance during the adolescent developmental period and accounts for a number of both short- and long-term consequences. While there are numerous studies to support that adolescents residing in single-parent households are at a heightened risk of engaging in risky behaviors such as substance use, there is little research on ways single-parents can help insulate their children from said risks (Green, 2016; Hemovich & Crano, 2009; Rutel et al., 2014; Velleman et al., 2005; Zehe & Colder, 2014). However, despite the knowledge that the earlier parents intervene the greater chance of delaying the onset of alcohol initiation, there are few studies that look at the influence of parental monitoring, substance-specific communication, parental disapproval of drug and/or alcohol use, and parental encouragement on the impact of single-parent households on adolescent alcohol use and initiation.

Purpose of the Study

NSDUH (2014-2018) conducted an annual survey of individuals ages 12 and above about their substance use behaviors. This study was an attempt to elaborate on and

clarify the link between adolescent alcohol use behaviors, parental behaviors, and family structure. This study used four years of separate data sets from a total of 59,803 adolescents ages 12 to 17 to answer the following questions: (1) Does family structure influence adolescent age of initiation and continued use of alcohol? (2) Does parental monitoring moderate adolescent drinking behavior in single-parent households? (3) Do negative parental attitudes about adolescent alcohol use moderate adolescent drinking behavior in single-parent households? (4) Does alcohol-specific communication moderate adolescent drinking behavior in single-parent households? (5) Does parental encouragement moderate adolescent drinking behavior in single-parent households?

Research Questions and Hypotheses

This research study consists of 2 research aims:

Primary Aim I: Investigate the relationship between adolescent alcohol use and family structure. It is hypothesized that:

Research Question 1: Does alcohol use differ for adolescents from single-parent homes and two-parent homes?

H1a: Early initiation of alcohol use will be significantly different between adolescents in single-parent households and their counterparts in two-parent households.

H1b: Adolescents from single-parent households will be more likely to be engaged in alcohol use than those from two-parent households.

Primary Aim II: Investigate the moderating role of parental behaviors on the relationship between family structure and alcohol use in adolescents.

It is hypothesized that:

Research Questions 2: Do parental monitoring behaviors moderate the relationship between family structure and alcohol use in adolescents?

H2a.: Parental monitoring will decrease the impact of family structure on early initiation of alcohol use in adolescents, especially among those in single-parent households.

H2b: Parental monitoring will decrease the impact of family structure on current alcohol use in adolescents, especially among those in single-parent households.

Research Question 3: Does parental communication about the dangers of alcohol moderate the relationship between family structure and alcohol use in adolescents?

H3a.: Parental communication about the dangers of alcohol use will decrease the impact of family structure on early initiation of alcohol use in adolescents, especially among those in single-parent households.

H3b: Parental communication about the dangers of alcohol will decrease the impact of family structure on alcohol use in adolescents, especially among those in single-parent households.

Research Question 4: Do parental attitudes toward daily drinking moderate the relationship family structure on alcohol use in adolescence in single-parent households?

H4a. Strongly disapproving parental attitudes towards daily drinking will decrease the impact of family structure on early initiation of alcohol use in adolescents, especially among those in single parent households.

H4b: Strongly disapproving parental attitudes toward daily drinking will decrease the impact of family structure on alcohol use in adolescents, especially among those in single-parent households.

Research Question 5: Does parental encouragement moderate the relationship family structure on alcohol use in adolescents in single-parent households?

H5a: Increased parental encouragement will decrease the impact of family structure on early initiation of alcohol use in adolescents, especially among those in single-parent households.

H5b: Increased parental encouragement will decrease the impact of family structure on adolescent alcohol use, especially among those in single-parent households.

Theoretical Framework

Socialization is defined as the developmental process through which children learn beliefs, valves, knowledge, skills and behaviors important to the individual members of their social group (Jackson et al., 1998). Social Learning Theory (SLT) (Bandura, 1986) proposes that behaviors, both desirable and undesirable, are learned through environmental factors. SLT states that adolescents acquire and model the behaviors, cognitions, and emotions of others (Donovan, 2004). Bandura's theory proposes that adolescents acquire their beliefs about life from their role models, or those they spend most of their time with, including the development of deviant behaviors. These deviant behaviors include conduct problems, criminal behavior, substance-use, and risky sexual behaviors (Kam et al., 2017; Petraitis et al., 1995; Telzer et al., 2018). For instance, the theory asserts that adolescent exposure to parents or friends, who either use substances or hold favorable beliefs about substances, directly shape adolescents' outcome expectations, which is their beliefs surrounding the benefits or consequences of substance use. According to Telzer (2018), the exposure to positive and favorable beliefs about substances results in the adolescent being at an increased risk of using substances

themselves or associating with substance using peers. In 1995, Petraitis and colleagues argued that one does not need to witness a role model using said substance but rather hearing favorable statements or attitudes (pro-substance use) may be equally as influential.

While Social Learning Theory states that adolescents acquire their beliefs from peer and/or parent relationships, extant literature suggests parents may have the first and strongest initial impact on adolescent beliefs and values surrounding substance use behaviors (Schofield et al., 2015; Shakya et al., 2012; Velleman, 2005). Adolescent Socialization Theory supports that both parents and peers are influential; however, the idea that parents continue to impact the attitudes, decisions, and behaviors of their children along with moderating the impact of outside influences is also supported (Kam & Miller-Day, 2017; Telzer et al., 2018). For instance, Bahr et al. (2005) found that adolescents with parents who were accepting of substance use were at a higher risk of associating with deviant and substance using peers. Further, Bahr & Colleagues (2005) found that parental factors are associated with an increased occurrence of substance use behaviors during adolescence. Velleman (2005) concluded that having a positive relationship with parents impacted the influence of substance-using peers.

Researchers Fisher & Showron (2017) put theory into practice and noted changes in the key parenting practices (i.e.: communication, monitoring, attitude about substance use, and encouragement) reduced engagement in alcohol use along with improved outcomes in overall child and adolescent development. In other words, the more an adolescent's patterns of associations are balanced toward exposure to positive behaviors and attitudes, the greater likelihood one will engage in positive behaviors instead of

engaging in risk behaviors. While there is considerable research showing the powerful influence of friends during adolescence, for the purposes of this study, parental influence will be the primary focus due to their potential of being the first and strongest influence on not only adolescent beliefs and values, but also on peer choice and the ability to moderate the effects of associating with deviant peers (Petraitis et al., 1995).

Chapter 2: Literature Review

While much is known about the effects of parental influence on adolescents' decisions to initiate the use of alcohol, very little research has been done on the moderating impact of parental behaviors on alcohol use by adolescents in single-parent households. This paper examined the influence of parental behaviors on adolescent alcohol use in single-parent families. It is generally agreed upon "adolescence begins with the onset of physiologically normal puberty and ends when an adult identity and behavior are accepted. This period of development corresponds roughly to the period between the ages of 10 and 19 years" (Sacks, 2003, 577). While this is the most widely used chronologic definition of adolescence, many instances can be identified in the literature of definitions that refer to spans as early as 9 and as late as 26 years of age (APA, 2002). The inherent challenge with this definition is the vast difference in developmental needs and capacities of these ages; theoretically, 10-year old's have little in common with 18-year old's. For the purpose of this literature review, adolescence will refer to the span of 14-18 years, when early initiation of alcohol use typically occurs and when individuals are at the highest risk for developing alcohol-related issues (Buchmann et al., 2009; DeWit et al., 2000; Ellickson et al., 2003; Hingson et al., 2006; Kim et al., 2017; Kuntsche et al., 2015; Liang et al., 2015; Morean et al., 2014).

Adolescence and Risk

Adolescence is a time when risk-taking behaviors and impulsive decision-making are the most common and potentially the most destructive, often leading to long-term consequences (Hingson et al., 2006; Liang et al., 2015; Kuntsche et al., 2015; Liddle & Rowe, 2006). According to Goncy et al. (2013), adolescents' engagement in risky

behaviors such as alcohol use may be influenced by either the presence or absence of risk factors in their lives. An example of risk-taking behavior in adolescence is alcohol use, and much research has been conducted regarding its short- and long-term effects on the developing adolescent brain. Memory and concentration, as well as motor and coping skills, are significantly impaired, sometimes permanently, by alcohol use during this developmental period (Chung et al., 2018).

Alcohol use among adolescents can be prevented by understanding the role of risk exposure, and by increasing protective factors, which is defined as, characteristics associated lessening the impact of risk factors (Clark, 2004; SAMHSA, 2019; White,1999). Risk factors are defined as biological, individual, and environmental factors that increase the chances of an individuals' engagement in risky behaviors including substance use and abuse (Buchmann et al., 2009; Chung et al., 2018; Donovan, 2004). The more risk factors a child is exposed to, the more likely the child will abuse substances during their adolescent years (Robertson et al., 2003). Individual risk includes antisocial behavior; conduct disorder, poor coping skills, history of abuse, and poor emotional regulation (Bolland et al., 2016). Environmental factors include those related to family, school/community, and peers (Goncy et al., 2013). Goncy (2013) stated that family-related factors include parental attitudes towards substance use, lack of adult supervision, and positive attitudes towards alcohol use. Clark (2004) explained that school and community risks include poor school performance, accessibility and availability of alcohol, and alcohol use norms within the community. Peer-related risk factors involve associating with substance using or substance approving peers and peer pressure (US Department of Health and Human Services, 2010).

Adolescent Alcohol Use and Related Consequences

According to the literature, 30 to 50 percent of substance use disorders begin in childhood or adolescence (DeWit et al., 2000; Hingson et al., 2006; Kandel,1992). One adolescent twin study, which examined the genetic and environmental overlap in alcohol use (including initiation, frequency, and problem drinking), found that the frequency of use and risky behaviors associated with alcohol use had a 50% genetic influence, while the connection between initiation and risky drinking was largely due to environment (Lynskey et al., 2010, p. 5). This, and related studies (Goyal, 2016; Karlsson et al., 2016; O'Donohue et al., 2013; Poelen et al., 2008), suggest that, while environment plays a key role in the initiation of alcohol use, genetics impacts the continuance of drinking. Thus, it is important to implement preventative measures instead of focusing solely on interventions to discontinue alcohol use once it has already begun.

Not only is alcohol the most widely used and abused substance during adolescence, alcohol use is involved in approximately 4,300 teenager deaths each year, more than all drug-related deaths combined (Centers for Disease Control, 2016; Sacks et al., 2015). In fact, 11% of all alcohol consumed in the United States is done so by underage drinkers (SAMHSA, 2016). Adolescent alcohol use heightens the risk of future alcohol-related disorders such as, dependency and abuse, and has been correlated with engagement in other risky behaviors (e.g., smoking and other substance use, risky sexual behavior, vehicle accidents, violence, truancy, and socialization with deviant peers) (Chan et al., 2016; Marshall, 2014; Ryan, et al., 2011; Windle et al., 2016). Adolescents who consume alcohol have a 50% increased likelihood of experimenting with cocaine than their counterparts who have never used alcohol (Peiper et al., 2016). Considering the

impact of alcohol use on our society and the difficulty encountered in developing consistently effective treatment methods, preventive efforts beginning in adolescence may be the most effective way to make an impact on this worldwide problem (Buchmann et al., 2009; Chung et al., 2018; Clark, 2004; Donovan, 2004; Hingson et al., 2006; Tarter, 2002). Research has shown that accepting attitudes and beliefs towards the use of alcohol increase during middle and high school years. According to the Monitoring the Future study, in 2015, 26% of students had consumed alcohol by 8th grade, increasing to 64% by 12th grade (Johnston et al., 2018). There is an abundance of evidence confirming that alcohol use during adolescence has many short and long-term consequences (Ellickson et al., 2003; Kuntsche et al., 2015; Liang et al., 2015; Morean et al., 2014). Documented consequences include: heightened chance of dropping out of school, poor academic performance, peer and familial difficulties, delinquency, antisocial behaviors, structural changes to the brain, and an increased risk not only for medical complications, but also mental health problems and suicide (Liddle et al., 2006; Newcomb et al., 1986; Saunders et al., 2011).

Early Initiation and Related Consequences

The younger the age of alcohol initiation, the increased likelihood that adolescents will engage in behaviors that harm themselves and others (NIAAA, 2016). Early initiation of alcohol use is defined as, having the first drink of alcohol at the age of 14 or younger. Adolescents who begin drinking before the age of 14 are at a fivefold increased risk of developing an alcohol-related disorder (dependence and abuse) than those who begin drinking after the age of 20 (Research Society on Alcoholism, 2016). In fact, at the 10-year follow up, 9% who initiated drinking at age 14 met diagnostic criteria for an

alcohol dependence diagnosis compared to 1% that began drinking at age 19 or older (Capaldi et al., 2016). Early initiators have a 1.9-2.5 times higher chance of heavier, more frequent, and problematic drinking into adulthood (Gilligan et al., 2012; Masten et al., 2009; Rütel et al., 2014; Saunders et al., 2011; Windle, 2016). The Research Society on Alcoholism (2016) explained that early initiation allows them to predict with 74% accuracy who will develop alcohol-related disorders into adulthood. Longitudinal studies have confirmed the findings between the age at which alcohol is first used and both subsequent alcohol consumption and alcohol use disorders (Dewit et al., 2000; Newton-Howes et al., 2016). Dewit (2000) further noted that adolescents who began using alcohol at age 14 showed more alcohol-related harm (car accidents, other drug use, mortality, dependence, impairment, unintentional injury, increased suicide risk, violent behaviors, blackouts, and other negative health-related issues) than those who began using alcohol at a later age. Research suggests that for each year initiation is delayed, the risk of alcohol dependence drops by 21% (Crews et al., 2016; Kim et al., 2017; Marshall et al., 2014; McCambridge et al., 2011). In 2016, The Research Society of Alcoholism stated that there is a need to further assess at-risk adolescents and find ways to employ preventative efforts especially in regard to early initiation of alcohol.

Adolescent Alcohol Socialization

According to the Social Learning Theory, the initiation and development of alcohol use during adolescence is dependent on the interactions with others who help inform beliefs and attitudes towards substance use through observation, imitation, and reinforcement (Bandura, 1986). Further, Bandura (1986) stated that these adolescent interactions primarily focus on parent and peer relationships. Adolescent Socialization

Theory combines aspects of both Social Learning and Social Control theories and suggests that adolescent substance use depends on intergenerational influences from parents as well as from peers (Kandel & Andrews, 1987). Kandel and Andrews (1987) further explained that these influences occur by adopting the definitions and values held by significant others. However, the theory also posits that parents are the first and primary source of socialization for the initiation of substance use and their behaviors act as a control against the influence of peers (Donovan & Molina, 2011).

Peer Influence

Substantial research has shown that during adolescence peers become increasingly more influential (Chung, 2018; Padilla-Walker, 2014; Patrick et al., 2015; Patterson et al., 2000; Sussman et al., 2011; Su & Supple, 2018). Padilla-Walker (2014) suggested that associating with deviant peers results in the initiation and continuation of risk behavior participation. According to Padilla-Walker (2014) and Patterson et al. (2000), these risk behaviors include lack of participation in school activities, lower grades, delinquent behaviors, substance use, bullying, and physical aggression. Numerous studies have identified deviant peer association as the one of the primary predictors of an increased frequency of risk behaviors, specifically substance use. Further, Sussman et al. (2011) found that association is not the only influencer of deviant behaviors among peers, but the perceptions of peer substance use was also related to an increase in substance use and associated risk during adolescence. According to Patrick (2015), peer influence may promote youth alcohol use through various mechanisms that include peer selection, alcohol use modeling, and social facilitation effects of alcohol use. Chung and Colleagues (2018) found evidence suggesting that high-risk adolescents tend to select deviant peer

associations, and through the process of reciprocal socialization, reinforce positive attitudes towards substance use by peers. Further, Chung and Colleagues found this phenomenon to be especially robust with adolescents from high-risk families who may become reliant on peer associations as a means of social support. Research has shown that certain parental behaviors such as minimal supervision and monitoring, low warmth, inconsistent discipline, or neglect not only influence substance use involvement, but peer group selection (Day & Cramer, 2018; Gilligan & Kypri, 2012; Windle et al., 2016).

Parental Influence

Parental influences on adolescent engagement in risky behaviors, specifically substance initiation and use, have been widely studied (Abar et al., 2017; Abar et al., 2008; Barnes et al., 1986; Chartier et al., 2017; DeWit et al., 2000; Hayes et al., 2001; Lawson et al., 1992; Nash et al., 2005; Nebor et al., 1986; Pettigrew et al., 2017). Research has undoubtedly shown that parenting behaviors during adolescence can have an impact on development in later adolescence and continue to be a powerful source of influence on their children (Janssens et al., 2014). Catalono (1996) states that parents affect their children in two important ways with regard to alcohol use behaviors: they can inhibit their adolescent's use directly, and they can reinforce their involvement through acknowledgement and encouragement in other areas like school achievement. The impact of parental behaviors may act as a risk or a protective factor for substance use engagement during adolescence. In fact, findings from a number of studies suggest prevention efforts should focus on parenting behaviors to help decrease the likelihood of early initiation of alcohol use during adolescence (Goncy & Mrug, 2013; Lopez et al., 2008). Kim et al. (2017) asserts that some of the strongest protective factors emerge from

within the family. While some research argues that peers are more influential than parents during adolescence (Rossow et al., 2015) a great deal of research supports the continued influence of parents throughout adolescence, along with the moderating effects parenting has on the influence of peers (Chassin et al., 2014; Ennett et al., 2012; Fergus et al., 2005).

There is a consensus among researchers that parental influence is the most influential source of risk and protection for substance use during adolescence due to the length and intensity of the parent-child relationship (Ennett et al., 2012; Kinney, 2009; Kim et al., 2015; Vakalahi, 2001). Parental attitudes towards substance use, parental drinking behaviors or modeling, parental monitoring, parental encouragement, and disapproval of alcohol use have been identified as specific parental behaviors that protect against adolescent engagement in risky behaviors (Abar et al., 2017; Griffin et al., 2000; NIAAA, 2016; Rioux et al., 2015; Ryan et al., 2011; Robertson et al., 2003; Sharmin et al., 2017). The above findings provide justification for the proposed study to focus primarily on the impact of parenting behaviors on adolescent alcohol use behaviors instead of peer influence.

Parental Behaviors

Parental Monitoring

Parental monitoring has been defined as, a parent's effort to manage and monitor children's behavior and whereabouts, set limits and define expectations, and guide their children to reduce problem behaviors (Amato & Fowler, 2002). Parents can monitor their children by being aware of and setting limits on the adolescent's free time or time spent with friends, limiting time watching television, or assisting with their homework

(Campbell et al., 2016; Johnston et al., 2016). Studies have consistently indicated that parental supervision, or monitoring, aids in the prevention of, as well as delaying the onset of, adolescent alcohol use (Arria et al., 2013; Clark et al., 2012; Colder et al., 2016; Scheier et al., 1996). Decreased parental monitoring has been associated with increased rates of adolescent alcohol use and a younger age of initiation (Griffin et al., 2000). One theory suggests that adolescents are at an increased risk of engaging in problematic behaviors such as alcohol use when they have more opportunities to engage in said behavior due to limited parental intervention (Cookston, 2009). Monitoring can limit access to alcohol along with reinforce family rules and values, which prohibit the use of alcohol (Bonnie & O'Connell, 2004). Low levels of parental monitoring magnify the risk of adolescents adopting the attitudes, behaviors, and values of their peers which leads to an increase of engaging in alcohol use (Jackson et al., 2016; Tarter, 2002), whereas parents who actively monitor their adolescents decrease the influence of peers (Donovan, 2004; Hamdan-Mansour, 2016).

Alcohol-Specific Communication

Verbal communication is one of the most straightforward ways for a parent to explain their thoughts and feelings about alcohol-use (van der Vorst et al., 2009). Many studies reveal that communication between parents and children is considered a significant factor for family functioning and key in solving problems between parents and their children (Ackard et al., 2006; Barnes et al., 1986; Baumrind, 1980; Jackson et al., 1998; Noller et al., 1990). Further, positive associations between alcohol-specific communication and adolescents' alcohol use (Spijkerman et al., 2008), revealing that that communication about the risks associated with alcohol-use, along with parental

expectations or attitudes about adolescent use, resulted in less alcohol use (Oppenheimer et al., 2016; Velleman et al., 2005). Whereas other studies have found a no relationship between alcohol-specific communication and alcohol use during adolescence (Ennett et al., 2001). Ackard et al. (2006) found that a lower level of alcohol specific communication is associated with increased alcohol use in adolescents, numerous studies have also indicated. Oppenheimer et al. (2016) and Vellman et al. (2005) found that while the quality, as well as the level of family communication, is significant, drug and alcohol specific communication within the family is important too. Ryan et al. (2011), found that parental communication about the harms associated with alcohol use was shown to reduce adolescent's drug and alcohol use by as much as 42%.

Parental Disapproval of Substance Use

Parental disapproval of adolescent substance use, or a negative attitude towards substance use, involves the parental expression of disapproving attitudes toward alcohol use or not being permissive with regard to their adolescents' engagement in alcohol or drug use (Donovan, 2004). Further, parental approval of adolescent alcohol use has been identified as one of the most robust risk factors for the initiation and use of alcohol during adolescence (Oppenheimer et al., 2016; Shakya et al., 2012); however, the effects of parental disapproval seems to depend on the adolescents' view of their parents' attitudes (Ryan et al., 2010). Parents who approved of their adolescent engaging in alcohol use, whether at home or while out with friends, increased the risk of adolescents' alcohol consumption (Ennett et al., 2012; Foley et al., 2004; Zehe & Colder, 2014). One study reported that 91 percent of adolescents felt their parents would disapprove of drug or alcohol use, and those who perceived a strong level of disapproval reported less

substance use in the previous month compared to youth who did not observe strong levels of disapproval (SAMSHA, 2012). Another study found that parental disapproval of alcohol use resulted in less involvement with peers who used alcohol and greater avoidance of alcohol (Nash et al., 2005). A subsequent study found that parental disapproval resulted in less involvement with alcohol using peers, along with finding that parental approval resulted in more alcohol-related problems for adolescents (Messler et al., 2016).

The mechanisms that explain the observed relationship between parental attitudes and drinking-related outcomes are not well understood (Messler et al., 2016). Further, Messler et al. (2016) found that the interaction between perceived parental approval of alcohol use and alcohol-related issues may be due to the internalization of parental values surrounding alcohol use. Higher levels of parental disapproval of adolescent alcohol use could also be connected to an increase in parental monitoring, thus resulting in lower levels of alcohol use. Another potential issue could be due to the multiple ways parental attitudes has been operationalization (Bacikova-Sleskova et al., 2019; Brody et al., 2000). For instance, some studies defined parental attitudes as the parents providing alcohol or the allowance of adolescent drinking at home (Ary et al., 1993; Chan et al., 2016; Hausheet et al., 2014). Whereas a Bacikova-Sleskova et al. (2019) looked at parental alcohol use as a means of indirectly conveying their attitudes towards alcohol use through modeling or by parental rules or statements surrounding alcohol use.

Parental Encouragement

Parental encouragement, also referred to as warmth, is defined as a parent's interest in and acknowledgment of an adolescents' achievements (Visser & Reijneveld,

2012). A number of studies have researched the influence of parental warmth on adolescent alcohol use with mixed findings (Droomers et al., 2003). Some studies have found a negative association between emotional warmth and adolescent alcohol use behaviors, whereas subsequent studies have found no effect (Chung et al., 2018; Day et al., 2018; Oppenheimer et al., 2016). Handren and Colleagues (2016) found parental warmth and involvement were predictive of higher self-esteem and healthier behavioral and emotional adjustment which resulted in fewer alcohol-related behaviors in adolescence. Another study found that adolescents who experience emotional warmth from their parents were better equipped to regulate their emotions and cope with difficulties which in turn translated into the regulation of drinking behaviors in adolescents (Wills & Cleary, 1996). Parental warmth, referred to as supportive parenting in these particular studies, was shown to be negatively associated with alcohol use, school-related issues, deviant behavior, and symptoms of depression among adolescents (Barber, 1997; Hennan et al., 1997). Conversely, Brooks (2008) and Aquilino & Supple (2001) found that there was no connection between parental warmth and adolescent drinking behaviors. Due to these inconsistencies, further research is warranted to examine the effects of parental encouragement on adolescent alcohol initiation and use.

Gaps in the Literature

Family Structure

In 2017, more than 20 million children resided in single-parent households in the United States (Statistica, 2017). Of these 20 million children, 65% were from African American households, 41% Latino and 24% White (Population Reference Bureau, 2017). According to the US Census Bureau (2012) poverty is not the norm for single-parent

families; however, single-mothers and their children are twice as likely to live in poverty than the rest of the US population. According to Statistica (2017), seventy six percent (76%) of single-mothers and 85.1% of single-fathers are gainfully employed. Adolescents residing in a single-parent household are said to be at an increased risk for substance use behaviors when compared to their counterparts in two-parent households (Blum et al., 2000; Cookston, 2009; Hemovich et al., 2009; Hoffmann et al., 1998; Patock-Peckham et al., 2011; Usakli, 2013; Vakalahi, 2001). Conversely, Rütel and Colleagues (2014) found no relationship between family structure and adolescent deviant behaviors such as delinquency or substance use. However, Hoffmann et al. (1998) found that there is some evidence to suggest that adolescents residing in two-parent households report less frequent alcohol use than those living with a single-parent, stepparent, or neither parent. Further, there is also a lower probability of teen pregnancy, gang affiliation, academic difficulties, and emotional problems in adolescents from two-parent households (Bolland et al., 2016; Buchmann et al., 2009; Chung et al., 2018; Donovan, 2004). There is research suggesting that children from two-parent households are 20-35% healthier than children from single-parent households (Barrett et al., 2006; Flewelling et al., 1990; Griffin et al., 2000), suggesting that two-parent households may have protective functions against adolescent alcohol use (Eitle, 2006; Velleman et al., 2005). Several theories have been discussed in the literature in regard to why single-parent households heighten an adolescent's risk for engaging in substance use behaviors. One theory suggests that single-parent households have an impaired parent-child relationship due to the "diminished relationship quality" (Flewelling et al., 1990). Another explanation looks at the difference between different family structures and concluded that

single-parent families are lower income when compared to their two-parent counterparts resulting in economic deprivation (Reiss et al., 2019). According to the Population Reference Bureau (2017), 31% of single-parent families had incomes below the poverty line (an annual income of $17,240 according to the Department of Health and Human Services), compared to only 7% of two-parent families. This financial deprivation is thought to influence alcohol and substance use behaviors in adolescents due to lower parental monitoring and supervision and while living in high poverty areas (Reiss et al., 2019). Research has shown that high poverty areas have increased instances of poor health, higher rates of crime and violence, inadequate schooling due to limited funding, and higher rates of substance use (Clemmensen, 2016). Further, Clemmensen (2016) explains that children from single-parent families had fewer coping skills to handle life stressors and a lack of supervision that resulted in an increase of substance use and susceptibility to peer pressure. Griffin et al. (2000), found that certain factors contributed to risk associated with single-parent families including minimal financial resources and fewer coping resources compared to a traditional two-parent household. Pew Research Center (2015) found that children from two-parent households have been shown to fare better in a number of areas than children from single-parent families.

According to Velleman et al. (2005), studies have shown that parental supervision is enhanced in two-parent households, thus directly delaying adolescent drug and alcohol use. Single-parent households are shown to lack parental monitoring, which allows an adolescent to have more unsupervised time to engage in alcohol use or associate with deviant peers, which has also been shown to influence the initiation of alcohol use in adolescence (Cookston, 2009). As stated by Cookston (2009), initiation of drug use

behaviors in adolescents from two-parent households was delayed two-years. Despite these theories, there is support for the argument that the potential impact of family structure on adolescent substance use, alcohol in particular, may be moderated by parental behaviors such as parental monitoring and disapproval of alcohol use, therefore, the need to further assess the impact of specific parenting behaviors on adolescent alcohol use in single-parent families is significant (Wagner et al., 2010).

Conclusion

The purpose of this literature review was to examine the research pertaining to the effects of specific parental behaviors and family structure on adolescent alcohol use. It is evident from the research reviewed that while the research on adolescent alcohol use and parenting practices is plentiful, there is an absence of research looking at the moderating effects of specific parenting behaviors on adolescent alcohol use behaviors in single-parent families. With the changing family structure composition and the risks associated with alcohol use during adolescence, it is imperative to continue to understand ways to help moderate the potential negative effects of the single-parent households. Despite the limitations in past research, there is a consensus that while adolescents' transitions toward independence, parents continue to exert a strong influence over their choices regarding substance use (Abar et al., 2008; Ewing et al., 2015; Kim et al., 2017; McCann et al., 2016; Rioux et al., 2015). This literature review has shown that there are numerous gaps in the literature pertaining to this demographic. Through my research, I aim to provide insight into the parental behaviors that will help to mitigate the impact of single-parent families on adolescent alcohol use.

Chapter 3: Methods

Research Design and Rationale

Current literature highlighted several findings which were essential to understanding the significance of this study: (1) adolescents are continuing to use alcohol at an alarming rate (Johnston et al., 2016; Martin & Milot, 2017; Newton-Howes & Boden, 2016; Pedersen & von Soest, 2015), (2) alcohol is the most commonly used substance during adolescence, and has many harmful short- and long-term effects (Kim et al., 2017; Kuntsche et al., 2015; Nash & Bray, 2005), (3) parents (e.g., supervision, attitudes, communication, parental encouragement) play a role in the extent to which adolescents are engaging in alcohol use (Ewing et al., 2015; Hutchinson et al., 2008; Kam & Abendschein, 2015; Lee, 2012; Rioux et al., 2015; Whitesell et al., 2013), and (4) adolescents in single-parent households are at an increased risk of using alcohol (Hoffmann, 2017; Wood et al., 2004; Zehe & Colder, 2014). To date, only a small body of research had examined how parental behaviors influence the effects of family composition on adolescent alcohol use. This study sought to examine the role parental behaviors played in alcohol use behaviors of adolescents from single-parent households.

Sample

This study used a subset of data from the National Survey of Drug Use and Health (NSDUH) collected between 2014-2018. Participants were ages 12 to 17 (M = 14.593, SD = 1.668) with a relatively equal distribution between males (n = 30,213, 50.52%) and females (n = 29,590, 49%). More than half (n = 33,114) of participants identified racially as White, 12.2% (n = 7,278) as African American, 4% (n = 2,335) as Asian/Asian American, 1.3% (n = 796) as Native American, 0.4% (n = 266) as Pacific Islander, and

5.4% (n = 3,250) as more than one race. Additionally, 21.3% (n = 12,764) identified as Hispanic. Single-parent households comprised 29% (n = 17,486) of the sample with the majority being single-mother (95%; n = 16,786) households with single-father households comprising the remainder (5%, n = 699). The majority of participants did not engage in early initiation of alcohol use (83%, n = 49,898) leaving the remaining 17% (n = 9,905) of the participants who had engaged in early initiation. Similarly, current alcohol use showed that the majority of participants did not engage in current alcohol use (89%, n = 53,545), with only 11% (n = 6,258) of participants having engaged in current use.

Table 1

Participant Demographics Across Years 2014 – 2018

Demographic	N	%
Age		
12	8425	14.09
13	9784	16.36
14	10297	17.22
15	10563	17.66
16	10640	17.79
17	10094	16.88
Sex		
Male	30213	50.52
Female	29590	49.48
Race		
White	33114	55.37
Black/African American	7278	12.17
Native American/Alaskan Native	796	1.33
Native Hawaiian/Pacific Islander	266	0.44
Asian	2335	3.90
more than one race	3250	5.43
Hispanic	12764	21.34

Table 2

Participant Alcohol Use and Family Structure Demographics

Demographic	N	%
Early Alcohol Use		
No	49898	83.44
Yes	9905	16.56
Current Alcohol Use		
No	53545	89.54
Yes	6258	10.46
Single-Parent Household		
No	42317	70.76
Yes	17486	29.24
Single-Mother-Households	16787	95.23
Single-Father Households	6991	4.77

Procedures

Data Collection

The NSDUH codebooks and datasets for years 2014-2018 were obtained through the Substance Abuse and Mental Health Data Archive. These were federally funded and

publicly available datasets for research purposes. The NSDUH employed multistage area probability sampling methods to select representative samples of U.S. civilians ages 12 and older. Participants were advised that survey participation was voluntary along with the significance of honesty and accuracy while providing their answers. Interviewers provided participants with the survey on laptop computers and were instructed to answer the survey questions directly into their laptops; thus, the interviewers were blind to participant responses. Computer literacy was not required for survey participation. After the computer-assisted interview, data was electronically submitted. Participants were compensated for their participation and survey completion.

This study analyzed data collected from 2014 - 2018 inclusive (SAMHSA, 2014, 2015, 2016, 2017, 2018). This cross-sectional survey is administered annually to a nationally representative sample. Subsequently, data files are available by administration year. The following steps were taken to retrieve the existing data. First, the researcher downloaded the requisite data sets from the Inter-university Consortium for Political and Social Research (ICPSR) found at https://www.icpsr.umich.edu/web/ADDEP/series/64. Once the files were downloaded, the data was combined and inputted into SPSS version 26 for statistical analysis. As this was a publicly available dataset, no permissions or additional consents were required. The retrieved data sets were securely stored on a password-protected laptop that remained in the sole possession of the researcher at all times.

Research Questions and Hypotheses

There were five research questions that guided the investigation of the moderating effects of parental behaviors on the relationship between family structure and adolescent alcohol use behaviors.

Research Question 1: Do alcohol use behaviors differ for adolescents from single-parent homes and two-parent homes?

H1a: Early initiation of alcohol use will be significantly different between adolescents in single-parent households and their counterparts in two-parent households.

H1b: Adolescents in single-parent households will have more current alcohol use than those in two-parent households.

The next series of research questions explicate the particular parenting behaviors under investigation:

Research Questions 2: Do parental monitoring behaviors moderate the relationship between family structure and alcohol use behavior in adolescents?

H2a. Parental monitoring will decrease the impact of family structure on early initiation of alcohol use in adolescents, especially among those in single-parent households.

H2b.: Parental monitoring will decrease the impact of family structure on current alcohol use in adolescents, especially among those in single-parent households.

Research Question 3: Does parental communication about the dangers of alcohol moderate the relationship between family structure on current alcohol use in adolescence?

H3a. Parental communication about the dangers of alcohol use will decrease the impact of family structure on early initiation of alcohol use in adolescents, especially among those in single-parent households.

H3b. Parental communication about the dangers of alcohol will decrease the impact of family structure on current alcohol use in adolescents, especially among those in single-parent households.

Research Question 4: Do negative parental attitudes about daily drinking moderate the relationship family structure on current alcohol use in adolescence?

H4a: Strongly disapproving parental attitudes about daily drinking will decrease the impact of family structure on early initiation of alcohol use in adolescents, especially among those in single-parent households.

H4b: Strongly disapproving parental attitudes about daily drinking will decrease the impact of family structure on adolescent alcohol use in single-parent households.

Research Question 5: Does parental encouragement moderate the relationship family structure on current alcohol use in adolescents in single-parent households?

H5a: Increased parental encouragement will decrease the impact of family structure on early initiation of alcohol use in adolescents, especially among those in single-parent households.

H5b: Increased parental encouragement will decrease the impact of family structure on adolescent current alcohol use in single-parent households.

Validity

One threat to the internal validity of this study was confounding, as it was possible that variables that were not of interest to this study, although possibly included

in the data set (i.e. other specific drug use, parental alcohol use, etc.), may have had an effect on the relationship between the independent and or dependent variables. Given the large, nationally representative sample, this study was expected to have high external validity despite the retrospective research design.

Instrumentation

Demographics. Participant demographics were assessed through a series of questions developed for use in the NSDUH. The following demographic variables are reported for participants: sex, age, race, income, marital status, and education level. All participant responses were collected via self-report. Family income was assessed by the survey question, *"For statistical purposes, please tell me which of these groups includes your family income before taxes last year."* Respondents answered by choosing the from the following categories, *"No income," "under $10,000," "$10 - 19,999," "$20 - 29,999," "$30 - 39,999," "$40 - 49,999," $50,000 plus."* Marital status was assessed by the survey question, *"What is your current marital status?"* Respondents answered by selecting from the following categories, *"married," "widowed," "divorced or separated," "never married,"* or "*cohabitating."* Education level was assessed by survey questions, *"What is your highest level of education?"* Respondents answered, *"no schooling," "less than 8th grade," "some high school," "high school graduate," "vocational/technical school," "some college,"* or *"college graduate/some graduate school."*

Early initiation: Early alcohol use initiation was determined using the survey question, *"At what age was your first use of alcohol?"* Respondents answered, *"14 years or younger," "15-17 years old," "18 years or older,"* or *"non-users."* This variable was

dichotomized to (1) "14 years or younger" and all others ("*15-17 years old," "18 years or older,"* and "*nonuser*") to zero (0), reflecting (1) early initiator and (0) non-early initiator, consistent with definitions for early initiation found in the literature (Buchmann et al., 2009; DeWit et al., 2000; Ellickson et al., 2003; Kim et al., 2017; Kuntsche et al., 2015; Liang et al., 2015; Morean et al., 2014; Sacks, 2003).

Alcohol use. Current alcohol use was determined within the existing data using the survey question, "*Have you used alcohol in the past month*?" Non-users were defined as those who reported they "*did not use in the past month"* (0), while current users were identified by those who responded that they had *"used within the past month"* (1).

Parental variables. Parental behavior was assessed as four variables: parental monitoring (monitoring), parental attitudes towards alcohol use (attitude), parental communication (communication), and parental encouragement (encouragement).
Monitoring. Parental monitoring was assessed as participant perception of their parent(s) monitoring of their schoolwork, TV consumption, and time spent with friends. Monitoring was assessed using three questions, [1] "*During the past 12 months, how often did your parents provide help with your homework when you needed it?"* [2] *"During the past 12 months, how often did your parents limit the amount of time you watched TV?"* and [3] *"During the past 12 months, how often did your parents limit the amount of time you went out with friends on a school night*?" These questions were answered using a 4-point Likert scale ranging from *"Always"* (1), "*Sometimes*" (2), "*Seldom*" (3), *"Never"* (4). For consistency purposes, the response options were recoded to "*Always*" (4), "*Sometimes*" (3), "*Seldom*" (2), and "*Never*" (1) such that higher scores would reflect higher levels of parental monitoring. Reliability was assessed with

Cronbach's alpha. The reliability coefficient for Parental Monitoring was .50. While the reliability coefficient for Parental Monitoring was below the threshold for adequate internal reliability (Webb et al., 1999), the constructs were not excluded due to extant literature which supported the notion that these particular parental behaviors were important measures of monitoring for adolescents (Cookston, 2009; Gilligan & Kypri, 2012; Hoskins, 2014).

Attitudes. Parental attitudes toward alcohol use were assessed using the question, "*How do you think your parents would feel about you having one or two drinks of an alcoholic beverage nearly every day?"* Responses were recorded on a 3-point Likert scale with response choices of "*Neither approve nor disapprove*" (1), "*Somewhat disapprove*" (2), and "*Strongly disapprove*" (3).

Communication. Alcohol-specific communication was assessed using the question, *"During the past 12 months, have you talked with at least one of your parents about the dangers of tobacco, alcohol, or drug use?"* Parental communication was answered by *"Yes"* (1) and *"No"* (2). The response options were recoded to 1 and 0, respectively, to provide uniformity throughout the measures.

Encouragement. Parental encouragement was assessed using the questions, *"During the past 12 months, how often did your parents let you know when you'd done a good job?"* and *"During the past 12 months, how often did your parents tell you they were proud of something you had done?"* Parental encouragement questions were assessed through a 4-point Likert scale ranging from *"Never"* (4), "*Seldom*" (3), "*Sometimes*" (2), "*Always*" (1). For consistency purposes, the scale was recoded to

"*Never*" (1), "*Seldom*" (2), "*Sometimes*" (3), and "*Always*" (4). Reliability was assessed with Cronbach's alpha.

Family structure. Family structure was assessed using two questions pertaining to whether there was a father and/or mother in the household, "*Mother in household*" and "*Father in household.*" Family structure was determined by "*Yes mother"* and *"No mother"* and *"Yes father"* and "*No father*." For the purposes of this study, single-parent households were defined as those who answered, "*yes mother*" and "*no father*" or "*no mother"* and *"yes father."*

Statistical Plan

All analyses for this study were done utilizing SPSS version 26 (SPSS, 2018). Descriptive statistics were run for all variables along with examining the group differences of each of the variables by survey administration year using one-way ANOVA, unless the variable was dichotomous then Chi-square test of independence was used. Further, Tukey post hoc was used for groups that has homogeneous variances while Games-Howell post-hoc analyses were examined when homogeneity of variance was violated. When the assumption of normality was violated, Welch's t-test was used. The survey questions used to create the parental behavior variables were extracted from the existing data (monitoring, attitude, communication, parental encouragement), entered into SPSS, and recoded as needed for consistency throughout the dataset. Missing values within the dataset were deleted listwise once dataset was obtained.

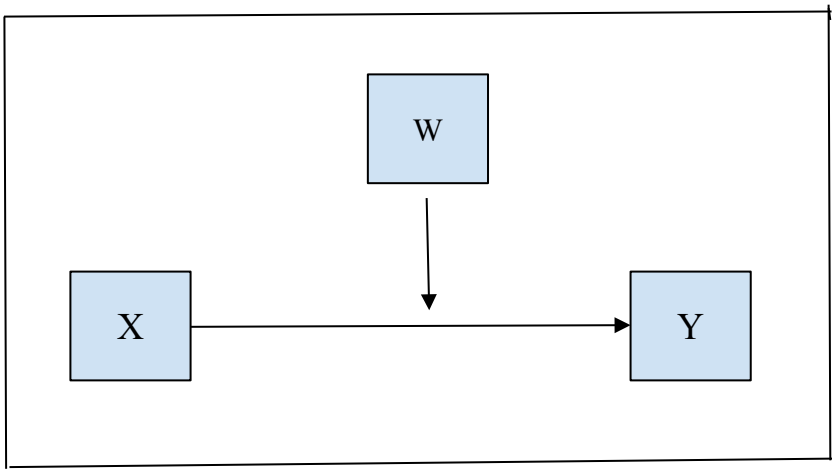
Hypotheses 1a and 1b examined associations between family structure and early initiation and between family structure and alcohol use. The Fisher exact test for 2 x 2 tables was used to determine whether the proportions of participants that fell into each

alcohol use behavior category (early initiation OR alcohol use) differed by family structure (single-parent or two-parent households). The Fisher's exact test was advantageous given that it was less sensitive to differences in cell size (e.g., a higher number of two-parent households than single-parent households) (Weisstein, 2019). Research questions 2-5 examined parental behaviors as single moderators (W) of the relationship between family structure (X) and alcohol use behaviors (Y) in adolescents. The following steps were repeated for each of the moderators independently. Due to having continuous and dichotomous moderating variables, the influence was modeled by the creation of a new variable which was the outcome of the variable that was being moderated (X-family structure) and the moderating variable (W). This interaction term (XW) was added into the regression equation after the linear main effects on the outcome (Y- alcohol use) of the moderating (W) and moderated variables (X- family structure) were estimated. If the effect of XW was meaningful, then the strength of the relationship between X (family structure) on Y (alcohol use) was accounted for by changes in W (Little et al., 2003). In other words, did the individual parenting behaviors influence the strength of the relationship between family structure and adolescent alcohol use? If the individual parenting behavior did influence the strength of the relationship between family structure and alcohol use (XW), a simple slopes test was required to determine if the relationship was significant, or not, for each component of the moderator variables. Structural Equation Modeling (SEM) using model 1 of the Hayes' PROCESS macro (2013) looked at all four moderator variables (monitoring, substance-specific communication, attitude, and encouragement) independently for their effects on the relationship between family structure and alcohol use behaviors in adolescents. SEM was

selected for its ability to attribute relationships between latent constructs (i.e., parental monitoring, parental encouragement) from measured variables, to estimate the strength of each model, and for its ability to work with both continuous and dichotomous variables. Thus, helping to identify which measured variables were good indicators of the latent construct. In other words, SEM is a statistical technique that was used to decrease the number of measured variables by forming a smaller number of more meaningful latent constructs by investigating the covariation among the measured variables (Hayes, 2013; Schreiber et al., 2006).

Figure 1

Hayes' PROCESS Model 1



Ethical Considerations

This study used secondary de-identified public use data for all analyses. Exemption approval from the Institutional Review Board was obtained from the investigator's university, The George Washington University.

Chapter 4: Results

The purpose of this study was to examine the effects of parental behaviors on adolescent alcohol use in single-parent households. More specifically, the moderating effects of parental monitoring, attitudes, alcohol-specific communication, and encouragement on alcohol use behaviors were investigated. Moderation was chosen to look at the influence of a third variable (moderator) on the strength of the relationship between the IV and DV. This chapter is organized as follows: preliminary analyses, descriptive statistics, and primary analyses to address each research question and test the corresponding hypotheses.

Preliminary Analyses

Assumptions

Data was assessed to ensure all analyses assumptions were met and that appropriate steps were taken in event they were not. Spearman rank-order correlation coefficients assume data is interval or ordinal and that the data is monotonically related (when one variable increases, the other increases or decreases) (Hinkle et al., 2003). These assumptions were met. Analysis of Variance (ANOVA) requires that the residuals be normally distributed (assumption of normality), the data should be continuous, measured at the ratio or interval level and be unbound and the factors should be dichotomous or categorical (Boslaugh, 2013). These assumptions were met. Hinkle et al. (2003) states that ANOVA also requires that the variance of each group be approximately equal (assumption of homogeneity of variance) and that continuous variables are normally distributed within groups (assumption of normality). The data violated both assumptions of equal variance and normal distribution. As a result, Games-Howell post

hoc analysis and Welch's t-test was run. Chi-square test and Fishers' Exact test assumes that all row and column totals are fixed and not random, sampling or allocation are random, observations are mutually independent, and that each observation is mutually exclusive (Statista.com). These assumptions were met. Logistic regression analysis in SEM does not assume linearity, normality, or homoscedasticity. However, logistic regression does assume that observations are independent of each other (assumption of observed independence), a linear relationship between predictor and log odds (assumption of linearity), limited multicollinearity (assumption of the multicollinearity), and a minimum of 10 cases (assumption of a large sample size) (statista.com). These assumptions were met.

Missing Data

The National Survey of Drug Use and Health offered participants the option to refuse to answer any question(s), noting them as "refused." "Refused" responses were coded as "81, 83, 85, and 89" (and recoded to an assigned value of "0") (SAMHSA, 2017). Listwise deletion was employed once the data was obtained.

Descriptive Statistics

Descriptive Statistics for Study Variables

Descriptive statistics are reported across year (2014-2018) and shown in Table 3. Parental negative attitudes (M = 3.82, SD = .81) was the most highly rated parenting behavior on average, followed by parental encouragement (M = 3.38, SD = .77). Monitoring was the lowest scored (M = 2.76, SD = 0.74). Parental Monitoring had minimal skew and kurtosis values. However, both parental encouragement and parental attitude were negatively skewed; many responses were at or near the maximum. Parental

attitude had very high kurtosis, because most parents had the maximum negative opinion of "strongly disapprove" of their adolescent engaging in alcohol use.

Table 3

Descriptive Statistics for the Study Variable (N= 59,803)

	Mean	SD	SE	Median	Skew	Kurtosis
Age of adolescent participants	14.59	1.67	0.007	15	-0.064	-1.216
Parental monitoring	2.76	0.74	0.003	2.67	-0.284	-0.584
Parental encouragement	3.39	0.77	0.003	3.5	-1.248	0.937
Parental attitude	3.82	0.81	0.003	4	-3.547	12.038
Parents check if homework is done	3.27	0.93	0.004	4.00	-1.114	0.242
Parents limit tv time	2.13	1.08	0.004	2.00	0.347	-1.264
Parents limit time out w/ friends	2.89	1.11	0.005	3.00	-0.544	-1.084
Parents say good job	3.37	0.82	0.003	4.00	-1.217	0.809
Parents tell you they are proud	3.40	0.82	0.003	4.00	-1.273	0.868

Spearman Rank-Order Correlations between the Study Variables

A series of Spearman rank-order correlations were conducted in order to determine if there was an association between data collection years, the demographic variables, and the study variables. The findings, in Tables 4, reveal that most correlations were statistically significant but that the magnitude of the correlations was very weak

(i.e., most values were below .10). Therefore, only significant correlations above .10 will be highlighted in the following paragraphs.

Age was positively associated with early initiation ($r = .12$, $p < .01$) and current alcohol use ($r = .27$, $p < .01$) but negatively correlated with the following parenting behaviors: monitoring ($r = -.23$, $p < .01$), homework checking ($r = -.20$, $p < .01$), limiting TV ($r = -.21$, $p < .01$), saying "good job" to children ($r = -.13$, $p < .01$), and telling children that they were proud of them ($r = -.12$, $p < .01$). Early alcohol use was positively correlated with current alcohol use ($r = .12$, $p < .01$) but negatively correlated with the following: parental monitoring ($r = -.14$, $p < .01$), negative attitudes ($r = -.16$, $p < .01$), and encouragement ($r = -.14$, $p < .01$). Most parenting behaviors were significantly and positively correlated with one other, as expected. These correlations ranged from .06 (negative attitude toward alcohol use) to .28 (parental monitoring and parental encouragement).

Table 4

Correlation Table: Spearman Rank-Order and Point-Biserial Correlations for Study

	1	2	3	4	5	6	7	8	9	10
1. Year	-									
2. Age	-.003	-								
3. Sex	.000	-.001	-							
4. Single parent HH	-.001	.027**	.014**	-						
5. Early Alcohol Use	-.030**	.115**	.014**	.046**	-					
6. Alcohol Use Past Month	-.032**	.265**	.018**	.021**	.376**	-				
7. Parental Monitoring	-.020**	-.232**	.004	-.066**	-.144**	-.148**	-			
8. Parental Neg. Attitude	.005	-.096**	.028**	-.046**	-.158**	-.168**	.130**	-		
9. Parental Communication	.004	-.019**	.022**	-.046**	-.035**	-.004	.187**	.060**	-	
10. Parental Encouragement	-.009*	-.127**	-.046**	-.012**	-.135**	-.101**	.281**	.091**	.194**	-

Note. Variables 7- 9 comprise parental monitoring variable, variables 10 and 11 comprise encouragement variable.
* $p < .05$. ** $p < .01$

Group Differences by Year

Descriptive statistics for each data collection year are reported in Table 5. Group differences by year were determined by chi-squared for dichotomous or ordinal variables and Welch's t-test was performed when the two groups being compared did not have equal variances. To determine where the statistically significant differences lay, Tukey post-hoc analysis was used when the groups compared had approximately equal variances (homogeneity), when variances were unequal Games-Howell post-hoc test was used.

Table 5

Descriptive Statistics for Study Variables by Year

	2015				2016				2017				2018			
	%		M	SD	%		M	SD	%		M	SD	%		M	SD
Age			14.61	1.66			14.57	1.66			14.61	1.67			14.59	1.68
Early Initiation	18%	17%		0.38	17%			0.37	17%			0.37	14%			0.35
Current Alcohol	12%	11%		0.31	9%			0.29	10%			0.30	9%			0.29
Monitoring			2.77	0.74			2.77	0.74			2.74	0.74			2.74	0.74
Encouragement			3.38	0.78			3.41	0.75			3.37	0.77			3.37	0.77
Attitude			3.81	0.62			3.84	0.58			3.82	0.61			3.82	0.61
Communication			0.59	0.49			0.58	0.49			0.59	0.49			0.59	0.49

Early Alcohol Initiation

Results indicated that early alcohol initiation differed significantly by year, Chi-Square χ^2 *(1, N = 59,803) = 125.83, p = .0001.* There was an overall downward trend in early alcohol initiation: 2014 (18.22%), 2015 (16.97%), 2016 (16.60%), 2017 (16.62%), 2018 (14.34%). The plotted means by year can be found in Figure 2. Tukey post hoc analyses were used to determine where the statistically significant differences lay [H1]. Results, found on Table 6, showed significant differences between year 2014 and years 2016 (p = .008), 2017 (p = .010) and 2018 (p = .000). Further, differences were seen between the years 2015 and 2018 (p = .000), 2016 and 2018 (p = .000) and 2018 and 2017 (p = .000).

Table 6

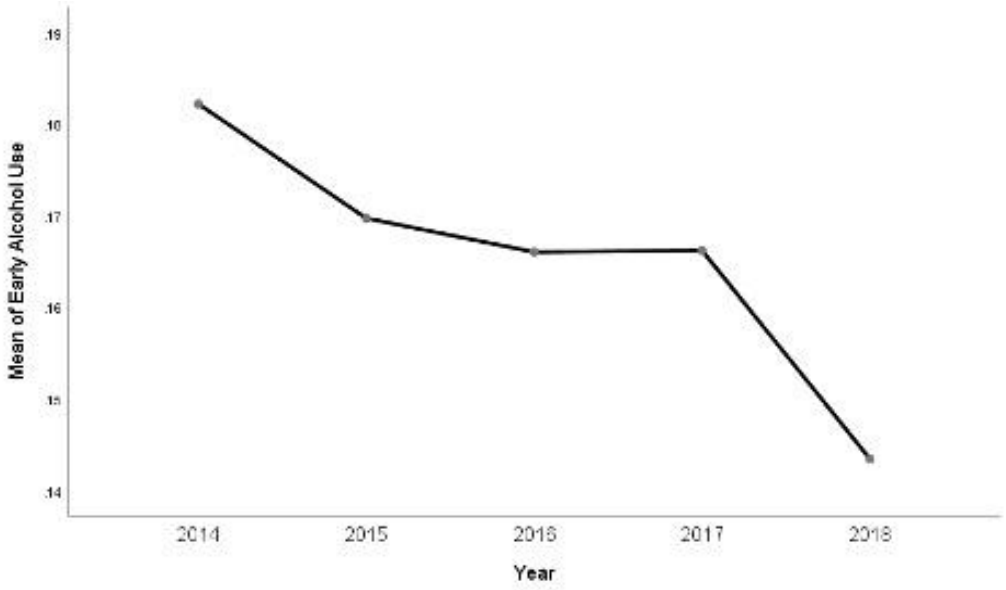
Group Differences in Early Initiation Means by Data Collection Year

Year (A)	*Year (B)*	*Difference (A-B)*	*p*
2014	2015	.012	.084
	2016	.016*	.008
	2017	.016*	.010
	2018	.039*	.000
2015			
	2016	.004	.939
	2017	.004	.950
	2018	.026*	.000
2016			
	2017	.000	1.000
	2018	.023*	.000
2017	2018	.023*	.000

*$p < .05$

Figure 2

Early Alcohol Initiation Means by Data Collection Year



Current Alcohol Use

In examining whether current alcohol use differed by data collection year, results indicated significant differences, χ^2 (1, N = 59803) = 26.18, p = .0001. Similarly, there was an overall downward trend in current alcohol use: 2014 (12.41%), 2015 (10.96%), 2016 (9.42%), 2017 (10.29%), and 2018 (9.28%). The plotted means for current alcohol by year can be found in Figure 3. Tukey post hoc analyses were used to determine how the groups differ [HJ2]. Results, reported in Table 7, showed significant difference between 2014 and years 2015 (p = .004), 2016 (p = .000), 2017 (p = .000), and 2018 (p = .000). There were significant differences between 2015 and years 2016 (p = .001) and 2018 (p =.000).

Figure 3

Current Alcohol Use Means by Data Collection Year

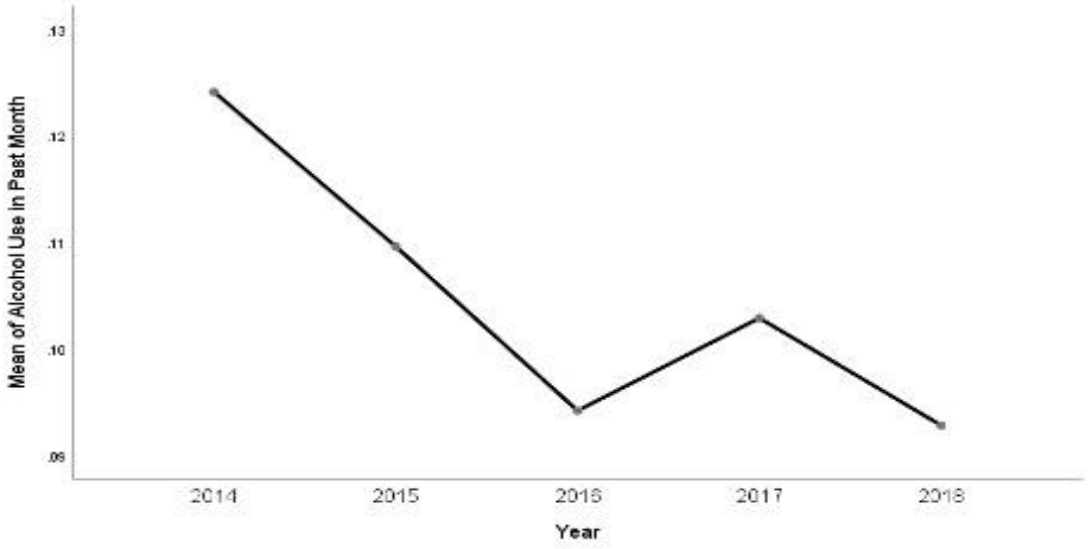


Table 7

Group Differences in Current Alcohol Use Means by Data Collection Year

Year (A)	*Year (B)*	*Difference (A-B)*	*p*
2014	2015	.015*	.004
	2016	.030*	.000
	2017	.021*	.000
	2018	.031*	.000
2015	2016	.015*	.001
	2017	.007	.442
	2018	.017*	.000
2016	2017	-.009	.150
	2018	.001	.996
2017	2018	.010	.070

** $p < .05$*

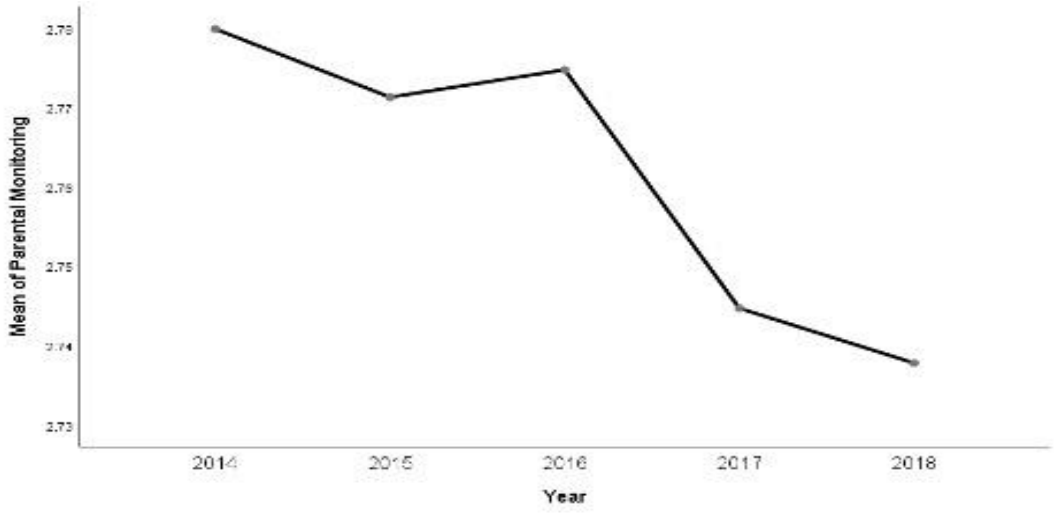
Monitoring

Next, monitoring was examined to look at whether there were differences by data collection year. Again, results indicated significant differences, Welch's $F(4, 29867.706) = 7.89$, $p < .0001$. Tukey post hoc analyses showed a downward trend in monitoring over

the years. The differences were statistically significant, but very small [HJ2]. The plotted means for monitoring by data collection year can be found in Figure 4.

Figure 4

Parental Monitoring Means by Data Collection Year

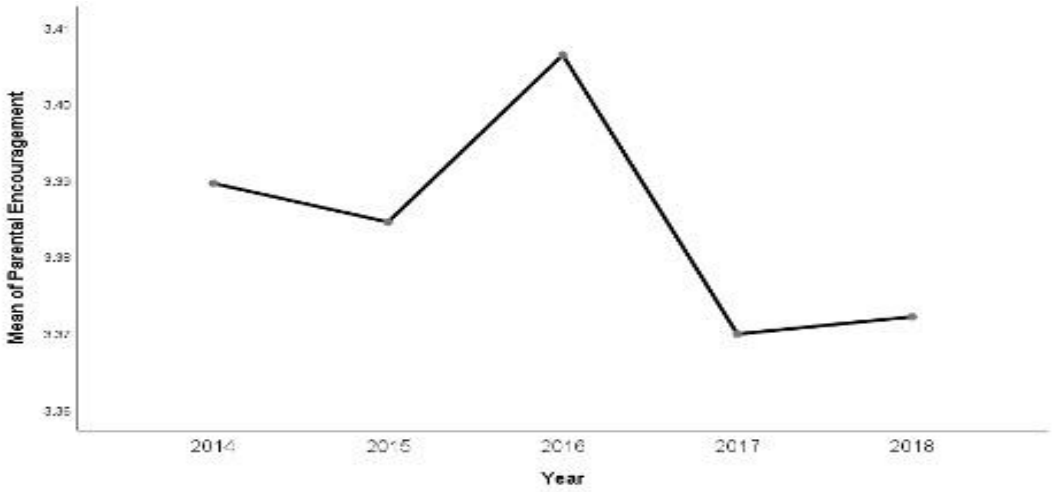


Parental Encouragement

Parental encouragement was also examined for differences between data collection years. Results indicated that parental encouragement differed significantly by year [HJ4], Welch's $F(4, 29857.692) = 4.57$, $p < .0001$. There was an overall downward trend, with the exception of 2016. Further, Games-Howell post hoc analysis showed only two statistically significant pairwise differences. Parental encouragement in 2016 ($M = 3.41$, $SD = 0.75$) was statistically significantly higher than parental encouragement in 2017 ($M = 3.37$, $SD = 0.77$, $p = .002$), and 2018 ($M = 3.37$, $SD = 0.77$, $p = .005$). The plotted means for parental encouragement by year can be found in Figure 5.

Figure 5

Parental Encouragement Means by Data Collection Year

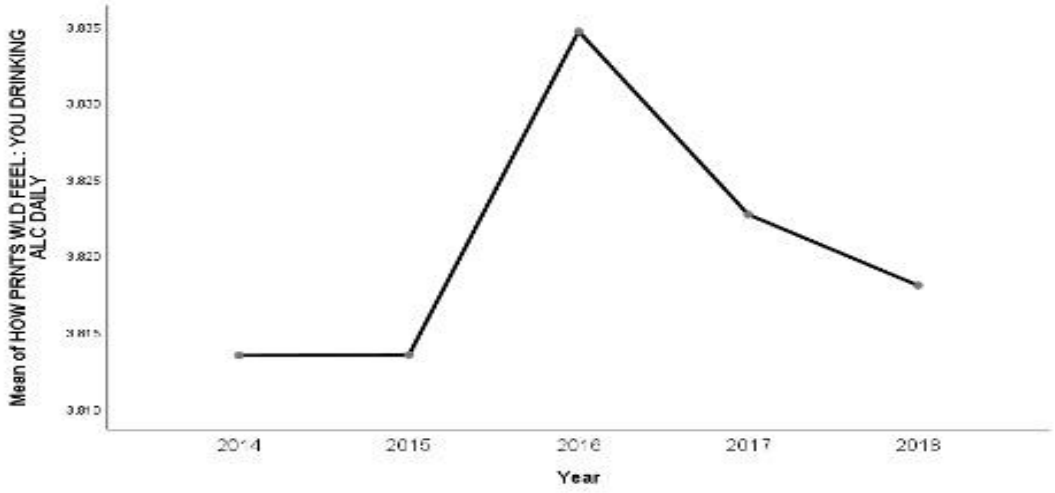


Attitudes

Next, parental attitudes were examined to see whether there were any differences between data collection years. The results indicated that parental attitudes differed significantly by year, Welch's $F(4, 29845.060) = 2.67$, $p < .05$. Again, due to the assumption of homogeneity being violated, Games-Howell post hoc analysis was run and revealed that there was somewhat of a downward trend in attitude after an increase in 2016. Although marginally, attitude in 2016 ($M = 3.84$, $SD = 0.58$) was statistically significantly higher than attitude in 2014 ($M = 3.81$, $SD = 0.62$, $p = .048$) and 2015 ($M = 3.81$, $SD = 0.62$, $p = .048$). No other comparisons were statistically significant. The plotted means for attitude by year can be found in Figure 6.

Figure 6

Parental Attitude Means by Data Collection Year



Communication

Finally, communication was examined if there were differences between study years. The results indicated that communication did not significantly differ by year, Welch's $F(4, 29867.718) = 0.62$, $p = .64$. The plotted means for communication by year can be found in Figure 7.

Figure 7

Parental Communication Means by Data Collection Year

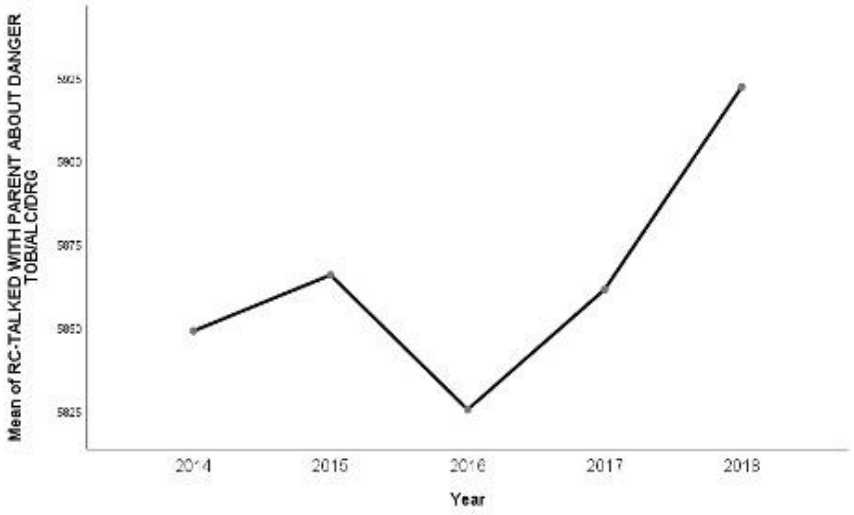


Table 8

Welch's F for by Early Initiation, Current Alcohol Use, Parental Monitoring, Encouragement, Attitude, and Communication for the Years 2014-2018

Variable	*Welch's F (df1, df2)*	*Sig.*
Early Initiation	17.32 (4,29873.27)	.000
Current Alcohol Use	19.84 (4,29843.89)	.000
Parental Monitoring	7.89 (4,29867.71)	.000
Encouragement	4.57 (4,29857.69)	.000
Attitudes	2.67 (4,29845.06)	.030
Communication	.62 (4,29867.72)	.644

Primary Analyses

Research Question 1

The first research question, do alcohol use behaviors differ for adolescents from single-parent households and two-parent households, consisted of two hypotheses. These hypotheses were tested using cross-tabulation procedures with Fisher's exact p-values (Table 9). The first hypothesis (H1a) was that early initiation of alcohol use would be significantly greater among adolescents in single-parent households and their counterparts in two-parent households. The cross-tabulation findings revealed a significant relationship between single-parent households and early initiation of alcohol use, $\chi^2(1) = 125.83$, Fisher's Exact $p < .001$ (see Table 10). In single-parent households, 19.2% of adolescents were early initiators, while only 15.5% used alcohol at this early age in two-parent households. Note, however, that the effect size ($OR = 1.30$, $\phi = .05$) was small, suggesting support for the first hypothesis but the magnitude of these differences may warrant closer review.

Table 9

Cross-Tabulation of Single-Parent Household by Early Initiation of Alcohol Use

	Early Alcohol Use	
Single Parent HH	No (row %)	Yes (row %)
No	35772 (84.5%)	6545 (15.5%)
Yes	14126 (80.8%)	3360 (19.2%)

Note. HH= household*; $\chi^2 = 125.83$, $df = 1$, $p < .001$*, Fisher's Exact $p < .001$.

The second hypothesis (H1b) was that adolescents from single-parent households current alcohol use would differ significantly from their counterparts in two-parent households. Findings suggested a significant relationship between single-parent households and current alcohol use, $\chi^2(1) = 26.18$, Fisher's Exact $p < .001$ (Table 10). In single parent households, 10.5% of adolescents were currently using alcohol while in two-parent households only 10.1% were currently using alcohol. Again, the effect size ($OR = 1.16$, $\phi = .05$) was small but the hypothesis was supported.

Table 10

Cross-Tabulation of Single-Parent Household by Current Alcohol Use

	Early Alcohol Use	
Single Parent HH	No (row %)	Yes (row %)
No	38063 (89.9%)	4254 (10.1%)
Yes	15482 (89.5%)	2004 (10.5%)

Note. HH = household; $\chi^2 = 26.177$, $df = 1$, $p < .001$, Fisher's Exact $p < .001$.

Research Questions 2-5

Research questions 2-5 investigate the role of parental behaviors in moderating, or their influence on the strength of the relationship, between family structure and adolescent alcohol use. These hypotheses were tested using model 1 in the Hayes (2013) PROCESS macro.

Research Question 2

Research question two, do parental monitoring behaviors moderate the relationship between family structure and alcohol use behaviors in adolescents, also consisted of two hypotheses.

The second hypotheses (H2a and H2b) were not supported as shown in Table 11 and Table 12. Increased parental monitoring did not lessen the impact of single-parent households on early initiation of alcohol use (*OR* = 1.00, 95% CI [.94, 1.06], Figure 8) nor did parental monitoring lessen the impact of single-parent households on current alcohol use (*OR* = .99, 95% CI [.91, 1.06], Figure 9). Family structure and parental

monitoring explained 3.7% of the variance of the dependent variable, early initiation, and 4.5% of the variance for current alcohol use. However, these results should be interpreted with caution due to less than desirable reliability coefficient of .05.

Table 11

Parental Monitoring as a Moderator of the Relationship Between Single-Parent Households and Early Initiation of Alcohol Use

Variables	*OR*	*SE*	*z*	*p*	95% CI for *OR* Lower	Upper
Single parent	.24	.08	2.5806	.009	1.05	1.47
Monitoring	.60	.02	-28.1396	.000	.58	.62
Single parent x monitoring	1.00	.03	-0.0818	.935	.94	1.06

Note. Overall model $\chi^2(3) = 1320.95$ $p < .001$, Nagelkerke $R^2 = .037$.

Figure 8

Change in Early Initiation of Alcohol Use When Parental Monitoring is Introduced in Single-Parent Households

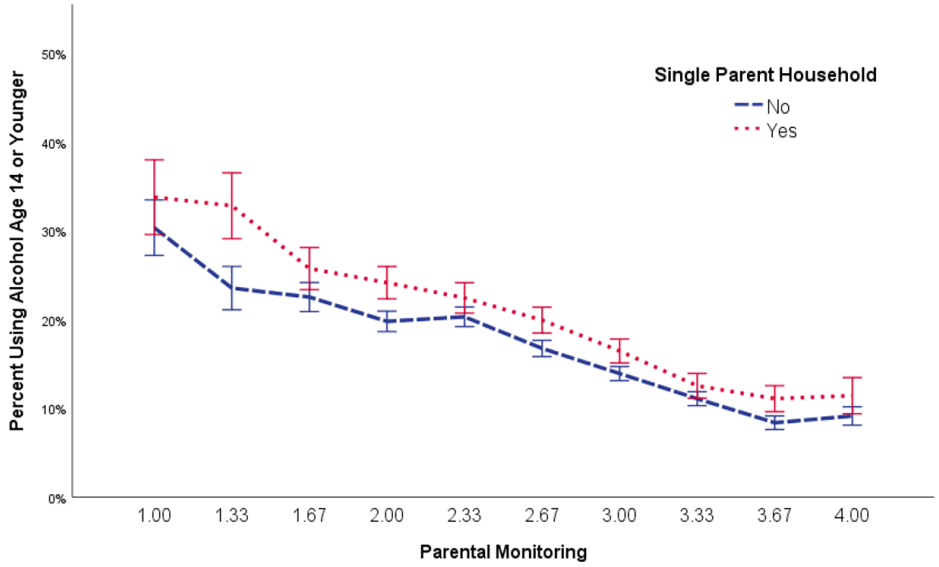


Table 12

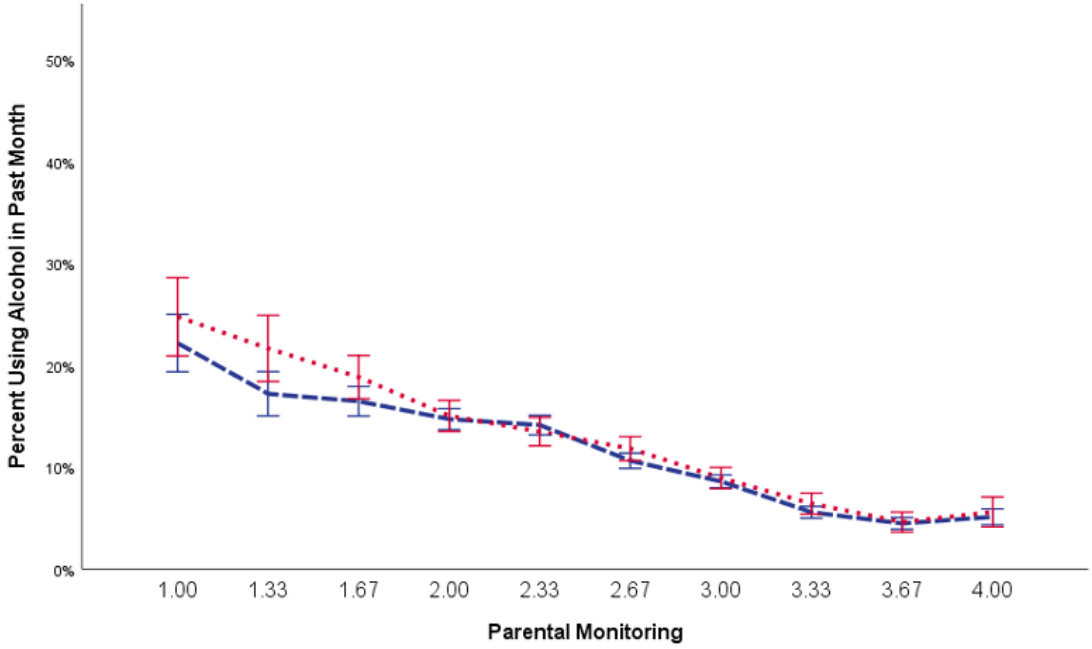
Parental Monitoring as a Moderator of the Relationship Between Single-Parent Households and Current Alcohol Use

Variables	*OR*	*SE*	*z*	*p*	95% CI for *OR* Lower	Upper
Single-parent	1.12	.02	1.16	.246	.92	1.37
Monitoring	.53	.04	29.29	.000	.51	.55
Single-parent x monitoring	.99	.06	.39	.698	.91	1.06

Note. Overall model $\chi^2(3) =$ 1318.156, $p < .001$, Nagelkerke $R^2 = .045$.

Figure 9

Change in Current Alcohol Use When Parental Monitoring is Introduced in Single-Parent Households



Research Question 3

The third hypotheses (H3a and H3b) were not supported. As shown on Table 13 and Table 14, parental communication about the dangers of alcohol use did not lessen the impact of family structure on early initiation of alcohol use (*OR* = 1.00, 95% CI [.91, 1.09], Figure 10) nor did parental communication about the dangers of alcohol use decrease the impact of family structure on current alcohol use, (*OR* = .92, 95% CI [.82, 1.03], Figure 11). However, both family structure and parent communication significantly predicted early initiation, it accounted for less than 1% of the variance of the dependent variable, whereas only family structure predicted current alcohol use and accounted for 1% of the variance.

Table 13

Parental Communication as a Moderator of the Relationship Between Single-Parent Households and Early Initiation of Alcohol Use

Variables	*OR*	*SE*	*z*	*p*	95% CI for *OR* Lower	Upper
Single parent	1.29	.03	7.41	.000	1.21	1.38
Communication	.84	.03	6.45	.000	.80	.89
Single parent x communication	1.00	.05	.10	.917	.91	1.09

Note. Overall model $\chi^2(3) = 186.349$, $p < .001$, Nagelkerke $R^2 = .005$.

Figure 10

Change in Early Initiation of Alcohol Use When Parental Communication is Introduced in Single-Parent Households

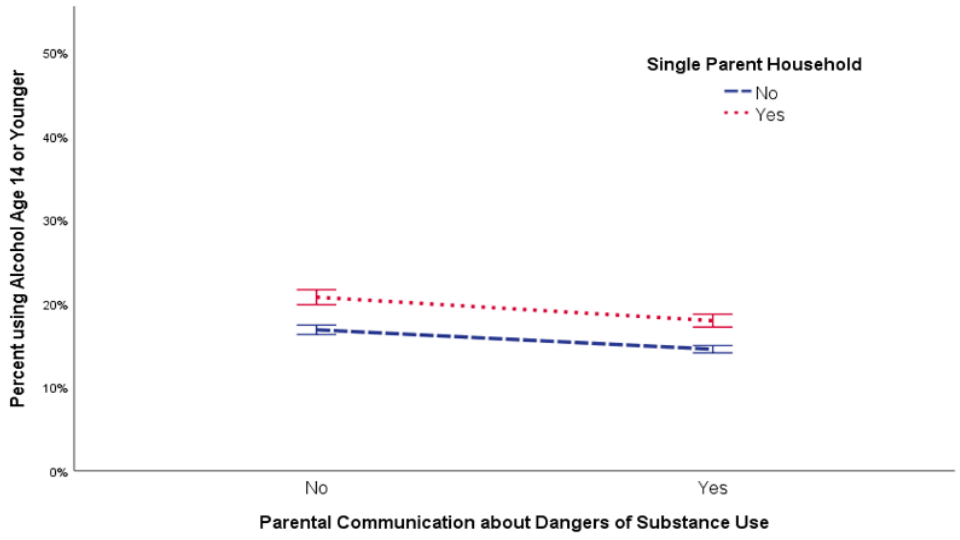


Table 14

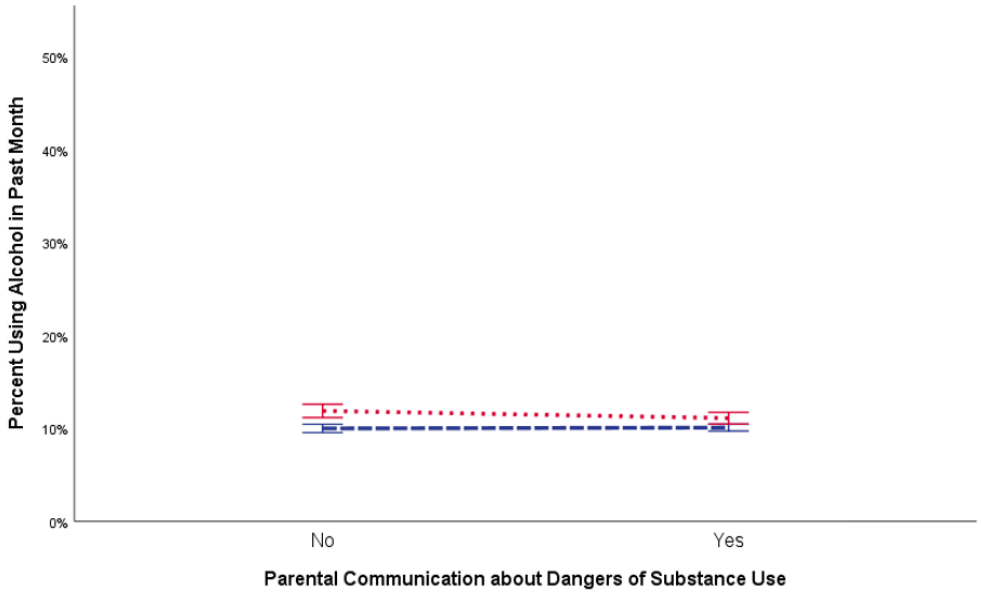
Parental Communication as a Moderator of the Relationship Between Single-Parent Households and Current Alcohol Use

Variables	*OR*	*SE*	*z*	*p*	95% CI for *OR* Lower	Upper
Single parent	1.22	.03	4.49	.000	1.12	1.32
Communication	1.01	.06	.29	.769	.95	1.08
Single parent x communication	.92	.03	1.49	.136	.82	1.03

Note. Overall model $\chi^2(3) = 28.451$ $p < .001$, Nagelkerke $R^2 = .001$.

Figure 11

Change in Current Alcohol Use When Parental Communication is Introduced in Single-Parent Households



Research Question 4

The fourth hypothesis (H4a), strongly disapproving parental attitudes about daily drinking will lessen the impact of family structure on early initiation of alcohol use in adolescents, especially among those in single-parent households, was not supported, *OR* = 1.20, 95% CI [1.06, 1.36]. While strong disapproval was shown to moderate family structure in regard to early initiation of alcohol use, it was not shown to lessen the impact of family structure. As shown in Table 15, increased negative parental attitudes did not significantly lessened the impact of family structure on early initiation of alcohol use, instead revealing that strong disapproval of alcohol use accounted for 3.7% of the variance of the dependent variable.

The significant interaction was further investigated by comparing conditional effects (simple slopes). Because the variables were dichotomous, the levels selected for comparison were 0 and 1, rather than the more common +/ – 1SD deviation approach. Single-parent households was a significant predictor of early alcohol only when attitude toward drinking was strong disapproval. As shown in Table 15 and Table 16, negative attitudes were a significant predictor in both single-parent and two-parent households, but this effect was slightly larger in single-parent households.

Table 15

Parental Attitudes as a Moderator of the Relationship Between Family Structure and Early Initiation of Alcohol Use

Variables	*OR*	*SE*	*z*	*p*	95% CI for *OR* Lower	Upper
Family Structure	1.08	.06	1.23	.218	.96	1.21
Attitudes	.30	.04	30.99	.000	.28	.32
Single-parent x attitudes	1.20	.06	2.82	.005	1.06	1.36

Note. Overall model $\chi^2(3) = 1332.948$, $p < .001$, Nagelkerke $R^2 = .037$.

Table 16

Conditional Effects for Single-Parent Households at Values of the Moderator Attitude

					Slope 95% C.I.	
Attitude	Slope	*SE*	*Z*	*p*	LL	UL
Low (0; *N*=5371)	0.0731	0.0593	1.2323	0.2178	-0.0432	0.1894
High (1; *N*=5,4432)	0.2553	0.0259	9.8598	0.0000	0.2045	0.306

Note. Attitude was dichotomized. 1=strongly disapprove of drinking. 0=somewhat disapprove or indifferent toward drinking.

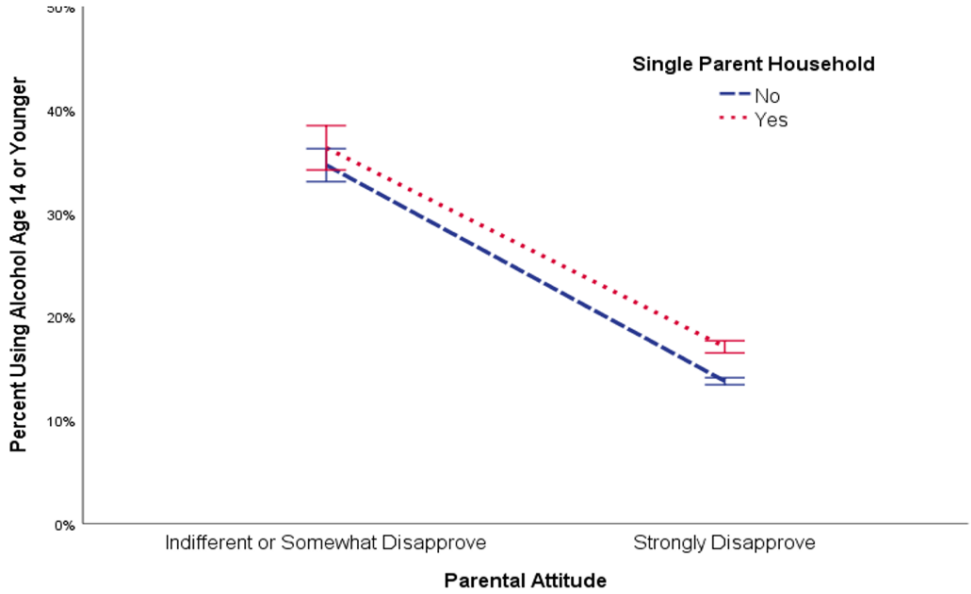
Table 17

Conditional Effects for Attitude at Values of Single-Parent Households

Single-Parent HH	Slope	*SE*	*Z*	*p*	Slope 95% C.I. LL	Slope 95% C.I. UL
No (*N*=42,317)	0.301	0.036	30.995	0.000	0.279	0.325
Yes (*N*=17,486)	0.361	0.047	19.633	0.000	0.326	0.400

Figure 12

Change in Early Initiation of Alcohol Use When Negative Parental Attitudes are Introduced in Single-Parent Households



The fourth hypothesis (H4b) examined the moderating effects of strongly disapproving parental attitudes toward daily drinking on the impact of single-parent households on current alcohol use in adolescents. As shown in Table 18 and Figure 13, this hypothesis

was not supported, *OR* = 1.10, 95% CI [.96, 1.28]. However, parental attitudes did significantly predict current alcohol use and attributed to 4.4% of the variance of the dependent variable.

Table 18

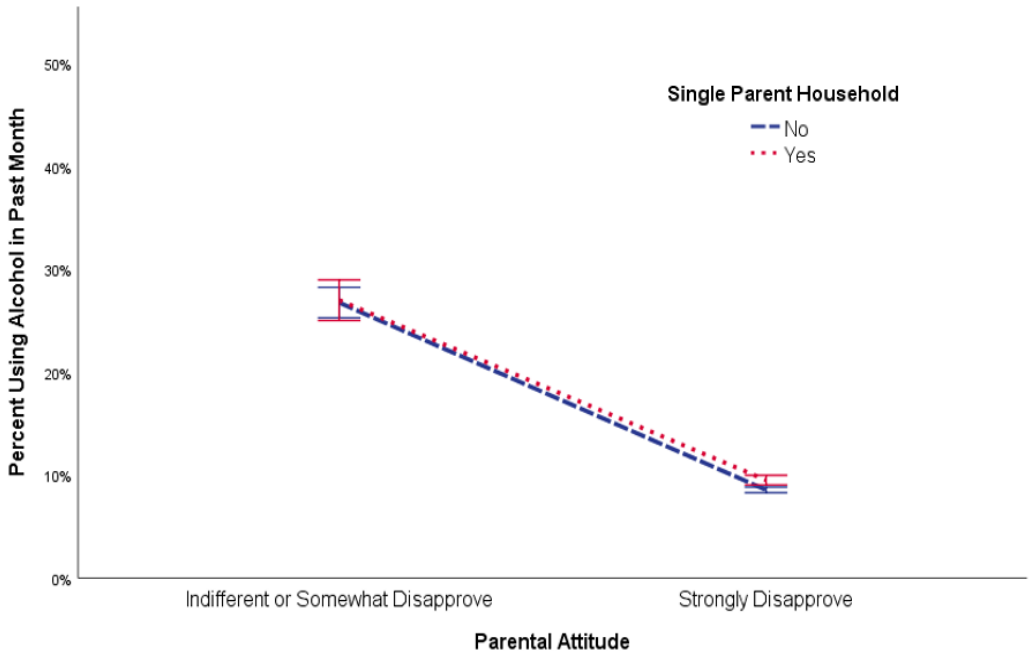
Parental Attitudes as a Moderator of the Relationship Between Single-Parent Households and Current Alcohol Use

Variables	*OR*	*SE*	*z*	*p*	95% CI for *OR* Lower	Upper
Single-parent	1.01	.04	.19	.850	.89	1.15
Attitudes	.26	.07	31.99	.000	.24	.28
Single-parent x attitudes	1.10	.04	1.45	.147	.96	1.28

Note. Overall model $\chi^2(3) = 1303.704$, $p < .001$, Nagelkerke R^2

Figure 13

Change in Current Alcohol Use when Negative Parental Attitudes are Introduced in Single-Parent Households



Research Question 5

The fifth hypotheses (H5a and H5b), as shown in Table 19 and Table 20 respectively, were not supported. Increased parental encouragement did not lessen the impact of single-parent households on early initiation of alcohol use in adolescents (*OR* = 1.02, 95% CI [.96, 1.07], Figure 14) nor did it lessen the impact of single-parent households on current adolescent alcohol use behaviors (*OR* = .98, 95% CI [.92, 1.05], Figure 15) . However, family structure and parental encouragement explained 3.5% of the variance in early initiation, while only accounting for 2.3% of the variance for current alcohol use.

Table 19

Parental Encouragement as a Moderator of the Relationship Between Single-Parent Households and Early Initiation of Alcohol Use

Variables	*OR*	*SE*	*z*	*p*	95% CI for *OR* Lower	Upper
Single-parent	1.21	.09	2.12	.034	1.0	1.5
Encouragement	.63	.02	-28.33	.000	.61	.7
Single-parent x encouragement	1.02	.03	.64	.522	.96	1.1

Note. Overall model $\chi^2(3) = 1262.098$, $p < .001$, Nagelkerke $R^2 = .035$.

Figure 14

Change in Early Initiation of Alcohol Use When Parental Encouragement is Introduced in Single-Parent Households

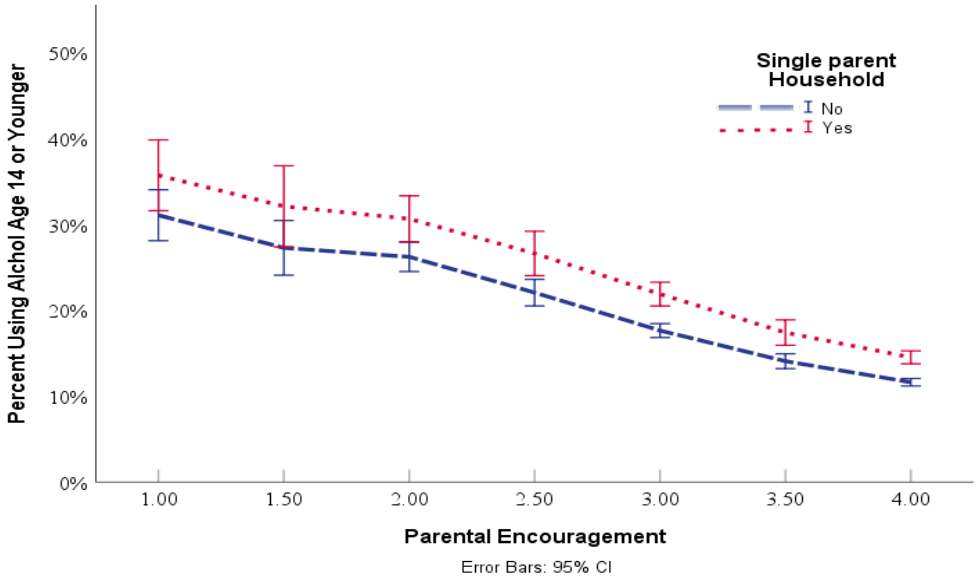


Table 20

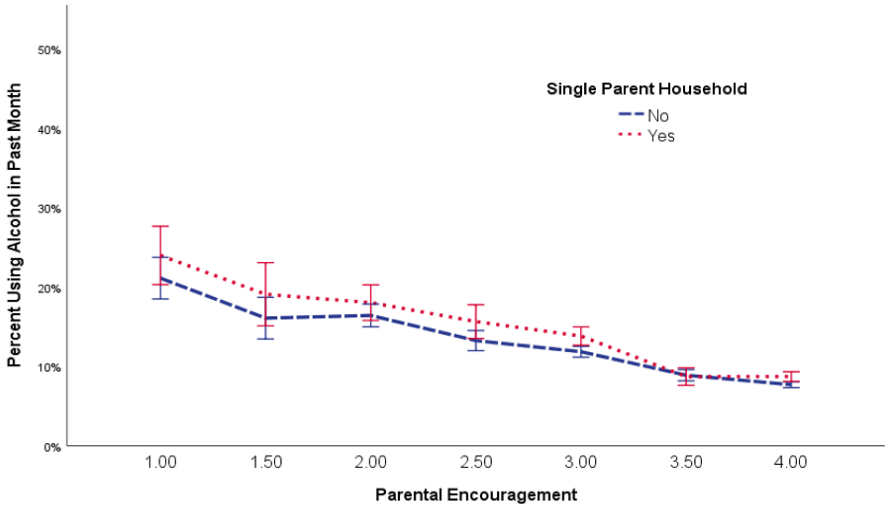
Parental Encouragement as a Moderator of the Relationship Between Single-Parent Households & Current Alcohol Use

Variables	*OR*	*SE*	*z*	*p*	95% CI for *OR* Lower	Upper
		.02	1.69	.091	.97	1.48
Single parent	1.20					
Encouragement	.67	.03	21.12	.000	.65	.70
Single-parent x encouragement	.98	.00	.49	.626	.92	1.05

Note. Overall model $\chi^2(3) = 675.474$ $p < .001$, Nagelkerke $R^2 = .023$.

Figure 15

Change in Current Alcohol Use When Parental Encouragement is Introduced in Single-Parent Households



Summary

The results of this study align with findings in extant literature that suggests adolescents from single-parent households are at increased risk of early alcohol use initiation (Green, 2016; Hemovich et al., 2009; Rutel et al., 2014; Velleman et al., 2005; Zehe et al., 2014). However, this study also revealed that adolescents from single-parent households have current alcohol use rates similar to adolescents from two-parent households. Although past research shows that parental behaviors moderated the impact of risk factors in regard to adolescent alcohol use (Abar et al., 2017; Abar et al., 2008; Barnes et al., 1986; Chartier et al., 2017; DeWit et al., 2000; Hayes et al., 2001; Lawson et al., 1992; Nash et al., 2005; Nebor et al., 1986; Pettigrew et al., 2017), this was not substantiated for parental monitoring, substance-specific communication, or encouragement in regard to the effects of single-parent households on early initiation or current alcohol use during adolescence. Conversely, negative parental attitudes towards daily alcohol use were shown to moderate the effects of single-parent households on early initiation of alcohol use but did not have an impact on current alcohol use.

Chapter 5: Discussion

Among a sample of 59,803 adolescents ages 12-17, this study sought to look at the influence of parental behaviors on adolescent alcohol use in single-parent households. Preliminary analysis of group differences between study variables revealed decreases in alcohol initiation and use from 2014 to 2018 along with minimal fluctuations in parental behaviors. As anticipated and supported by extant literature, alcohol initiation and use showed downward trends from 2014 to 2018. As discussed in chapter one, federal efforts to address underaged alcohol use have intensified since the early 2000s beginning with a country-wide effort to prevent underage drinking by establishing the Interagency Coordinating Committee for the Prevention of Underage Drinking (ICCPUD) (Department of Health and Human Services, 2007; SAMHSA, 2015). ICCPUD, a task force that includes federal, state, and local governments, works to guide policies and programs to tackle underage alcohol use (Harding et al., 2016; Latendresse et al., 2017; SAMHSA, 2015). This downward trend, according to Harding et al. (2016) and Latendresse et al. (2017), began in 2004 after the United States implemented a number of policies (i.e. Sober Truth on Preventing Underage Drinking Act and the Zero Tolerance underage drinking and driving laws) related to underage drinking. However, despite the promising downward trend in alcohol initiation and use during adolescence, alcohol continues to be the most widely used substance during this developmental period and accounts for a host of both short- and long-term consequences (Johnston et al., 2018; Saunders et al., 2011; Zucker et al., 2008). Further, group differences regarding parenting behaviors were mixed. This study's findings revealed both change and stability in parental behavior over time (2014 to 2018). Positive trends in

alcohol-specific communication and in adolescents reporting their parents disapproved of daily alcohol use from 2014 to 2016 were seen, suggesting both greater parental involvement and clear values communication from parents to their children. Conversely, parental monitoring and parental encouragement revealed statistically significant downward trends over the years; however, these fluctuations may not reflect meaningful differences given the similar mean values and may be the result of spurious differences due to the large sample size.

Past studies have shown that parental behaviors and practices tend to fluctuate over time, are situationally dependent, and influenced by the adolescents' development (Boele et al., 2019; Darlin & Steinberg, 1993). Bell (1968) describes a continuous cycle between parents and their children where they both adapt to one another's behaviors. For example, an adolescent may have a decrease in internalizing problems after their parent increases supportive behaviors (i.e. encouragement, communication) toward them. The opposite holds true as well. As internalizing behaviors increase with the adolescent, supportive parental behaviors may momentarily decrease (Boele et al., 2019). This relationship is also seen in a number of studies looking at families of lower SES that have found an increase in parental control behaviors when adolescent delinquent behaviors were higher (Rekker et al., 2017). In fact, extant literature explains that the parent-adolescent dynamic is one that includes numerous fluctuations throughout time and that these changes in parental control (i.e. monitoring, rule setting) are linked to increases and decreases in adolescent adaptation (externalizing and internalizing behaviors) and likely agency and autonomy (Keijsers, 2016).

Also noted within the extant literature, adolescents experience developmentally appropriate periods of increased autonomy where parents increase supportive behavior and decrease monitoring behaviors with the expectation the adolescent will engage in appropriate, non-deviant behaviors (Dietvorst et al., 2018). These variations in parental behaviors may be in response to developmentally normative increases in self-control on the part of the adolescent which results in decreased need for social support and guidance (Liu et al., 2019). Liu (2019) explained that as a result, parents may not need to implement as many protective behaviors. Though indeterminable in this dataset, potential factor could be related to stress, such as moments of increased parental or adolescent life stress (i.e., divorce, job loss, moving, illness, death), when a family needs to reorganize themselves to meet the needs of the current stressor (Gerson, 1986). This reorganization may lead to a change in both parenting behaviors and adolescent behaviors (Neecem et al., 2012; Rodriguez-Jenkins & Marcenko, 2014).

Alternatively, another explanation for the changes evidenced in parental behaviors in this study may be due to measurement error via discrepancies in adolescent and parent self-report of parental behaviors and the process by which these variables have been constructed (Augenstein et al., 2016; De Los Reyes & Kazdin, 2005; Lippold et al., 2018). Further, De Los Reyes & Kazdin (2005) found that low correspondence between parent and adolescent reports of parental behaviors such as monitoring, may be indicative of increased parent-adolescent conflict and overall dysfunction within a household and not of the actual parental behavior being measured. Extant literature suggests that high levels of parent and adolescent conflict is associated with greater parental control (i.e. monitoring, rule setting), which in turn results in adolescents' perceiving their parents as

less supportive (Goyal et al., 2016; Lau & Cheung, 1987). A study by Augenstein et al (2016) purports that as adolescents get older their view of their parents becomes increasingly negative which may then negatively influence their view of parental behaviors, further contributing to discrepancies with survey responses. Interestingly, a survey of more than 8,000 children and their parents revealed 82% of parents stated they were proud of their adolescent, but only 58% of adolescents reported feeling that their parents were proud of them (kidshealth.org), revealing a disconnect between parent feelings and adolescent perceived encouragement. These kinds of disparities could impact the fluctuation in adolescent self-reports on parental behaviors like encouragement (Fisher et al., 2006; Latendresse, 2017; Metzger et al., 2012).

In keeping with Adolescent Socialization Theory (Kam et al., 2015; Telzer et al., 2018) parents appear to exert some influence on adolescent alcohol use behaviors as evidenced by the significant correlations between individual parenting behaviors and both early initiation and current use of alcohol. Further, parental attitudes while showing moderation of the effects of single-parent households on early initiation of alcohol use, strong disapproval of alcohol use by parents actually increased the number of adolescents engaging in early initiation in both single-parent and two-parent households. These finds suggest that while parental attitudes do influence adolescent alcohol use, they may have the opposite effect of what is intended. Further, despite significant associations, parental monitoring, communication, and encouragement were not shown to have a moderating impact on adolescent alcohol use in single-parent households. These findings suggest that while the variables are related to each other, other factors are influencing the outcome.

As noted in Chapter 1, this study pursued two aims. First, to investigate the relationship between adolescent alcohol use and family structure and second, to then investigate the moderating effects of parental behaviors on adolescent alcohol use in single-parent households.

Primary Aim I: Investigate the relationship between adolescent alcohol use and family structure

First, the primary research question was supported, with statistically significant findings that were consistent with much of the extant literature on the effects of family structure on adolescent alcohol use. One such finding was that early initiation of alcohol use was more prevalent among adolescents in single-parent families when compared to their counterparts in two-parent households. Overall, this finding is consistent with the extant literature (Blum et al., 2000; Cookston, 2009; Eitle, 2006; Ewing et al., 2015; Flewwelling et al., 1990; Griffin et al., 2000; Hemovich et al., 2009; Hoffmann et al.,1998; Patock-Peckham et al., 2011; Usakli, 2013; Vakalahi, 2001). However, the effect size was small suggesting that while adolescents from single-parent households are at an increased risk for early initiation, the relative risk associated with single-parent households is not likely a substantial driver of early initiation for this sample. The magnitude of the associated risk is not supported in extant literature that suggests single-parent households confer significantly increased risk for alcohol use in adolescents. There was also support for the relationship between the increase in the number of adolescents, from single-parent families, who were engaged in current alcohol use when compared to adolescents from two-parent families. While this finding corroborates the findings of similar investigations regarding the increased likelihood of adolescents from single-

parent households to engage in current alcohol use, the effect size was once again small (Blum et al., 2000; Cookston, 2009; Eitle, 2006; Ewing et al., 2015; Griffin et al., 2000; Hemovich et al., 2009; Patock-Peckham et al., 2011; Usakli, 2013; Vakalahi, 2001). These findings highlight that single-parent households may only minimally increase adolescents' risk of early initiation and current alcohol use.

However, other factors may have contributed to this study's findings being inconsistent with much of the extant literature. The effects of single-parent family structure on adolescent alcohol use may be related to a number of factors that this study did not take into account that may have influenced the results. Vanassche (2013) looked at family structure and found that parent-child relationship quality was more indicative of adolescent alcohol use behaviors than family structure alone. In other words, if the parent-child relationship was strong then there was a negative association with engagement in delinquent behaviors such as alcohol use (Crawford & Novak, 2008; Kuntsche & Kuendog, 2006). The quality of the parent-child relationship, for example, was not examined in this study but could be a factor that influenced adolescent alcohol use. Another potential factor could be genders of the parent-child dyad in single-parent households. Eitle (2006) found that drug use for daughters living with single-fathers was significantly higher than daughters living with single-mothers, suggesting that single-parent households are less likely to cause heightened risk when the parent and child are of the same gender. The current study did not examine the influence of gender in single-parent households (i.e. single-mother and daughter or son, single-father and son or daughter).

Further, the current study did have a more prominent number of single-mother households than single-father households, which may have impacted the effects of family structure on adolescent alcohol use. Lastly, much of the research on the effects of family structure on adolescent alcohol use is from two decades ago when single-parent households were not as common. Perhaps, as single-parent households have become more common among family structures in the United States, the negative impact has lessened. Further, the role of extended family and family friends cannot be overlooked as important influences in adolescent behavior which may be of significant importance on risky behavior outcomes, especially those from single-parent households.

Primary Aim II: Investigate the moderating effects of parental behaviors on adolescent alcohol use in single-parent households

In pursuit of aim two, only one parental behavior, negative parental attitudes towards alcohol use, was shown to moderate the effects of single-parent households on adolescent alcohol use. More specifically, negative parental attitudes towards adolescent alcohol use moderated the effects of single-parent households on early initiation of alcohol use but not current alcohol use. Interestingly, the moderation seen was that strong disapproval of adolescent alcohol use increased the likelihood of early initiation, for adolescents in both two-parent and single-parent households, however; this effect was more prominent in adolescents from single-parent households.

These findings were unexpected given the amount of research stating that parental disapproval was protective against early initiation and use of alcohol (Goyal, 2016; Karlsson et al., 2016; O'Donohue et al., 2013; Poelen et al., 2008; Willamson et al., 2007). However, research has found that while parental disapproval is protective against

adolescent engagement in alcohol use, the effects depend more on how adolescents perceive their parents' attitudes and not necessarily whether their parent disapproves or not (Ryan et al., 2010). There are a few factors that may have contributed to the effects seen in regard to attitude and alcohol use. This study looked at whether the adolescent felt that their parents would disapprove of their use of alcohol, not how the parent expressed disapproval. For instance, a parent may have tried to instill fear as motivation to not consume alcohol. Research is mixed on how the use of fear mitigates engagement in high risk behavior. For example, some research states that fear-based interventions are an ineffective means of prevention (Liu & Bailey, 2019; Silverman, 2010; Tannenbaum et al., 2015). A study by Lynam et al. (1999), looked at the outcomes of a 10-year follow up for Project D.A.R.E. (a substance abuse prevention program) and found that students who were engaged in the program were more likely to drink alcohol or smoke cigarettes than their counterparts who were not involved in the program. Further, Lynam et al. (1999) surmised that this effect could be a result of merely telling the students that drugs and alcohol are dangerous and to "just say no" without providing any interpersonal skills or practice. Further, Lynam and colleagues also found that programs that unfold over the course of many sessions have stronger outcomes than programs with fear-based messages over the course of a couple sessions. Owen and Werch (2002) evaluated prevention programs and found that the most common negative outcome was increased consumption of alcohol use and concluded that these outcomes were in part due to the fear-based approaches. However, due to the number of studies which confirm parental disapproval as an effective means of prevention, and the literature showing that fear-based prevention is positively associated with adolescent alcohol use, along with the results from this

study, further investigation is necessary to understand the elements that are effective versus the elements that are harmful.

While the other parental behaviors (monitoring, communication, and encouragement) were negatively correlated with early initiation and current use of alcohol, they were not shown to have moderating effects on alcohol use in single-parent families, on either early initiation or current alcohol use. It has been theorized that this increased risk of adolescent alcohol use behavior is due to a lack of specific certain parental behaviors (i.e. monitoring, communication, encouragement) (Lippold, 2018; Shek et al., 2015). This study highlights that adolescents from single-parent households are not necessarily at an increased risk due to a lack of certain parenting behaviors (i.e. monitoring, communication, encouragement), as these behaviors do not show moderation, but perhaps are responding to a more complex set of parenting behaviors or circumstances that are beyond the scope of this study.

Rather than a focus on the ways single-parents can help protect their children from this increased risk, the majority of studies focus on the deficits of parenting behaviors (i.e. monitoring, communication) and concluded that adolescents from this family structure are at an increased risk due to a lack of parenting behaviors (Blum et al., 2000; Cookston, 2009; Eitle, 2006; Ewing et al., 2015; Flewwelling et al., 1990; Griffin et al., 2000; Hemovich et al., 2009; Hoffmann et al., 1998; Patock-Peckham et al., 2011; Usakli, 2013; Vakalahi, 2001). Given the short- and long-term effects of adolescent alcohol initiation and use, along with the increasingly common family structure, this study makes a meaningful contribution to the literature by being one of few known studies to look at the moderating impact of these particular sets of parenting behaviors in

adolescent alcohol use, especially in single-parent families, in hopes to uncover ways to enhance prevention and intervention measures and guide single-parents in ways to moderate associated risk related to this family structure.

The differences in this study's findings and previous research may be attributed to a number of factors. First, much of the extant literature that shows parental encouragement as protective for at-risk adolescents, does not consider parental encouragement independent of parenting style (i.e. authoritative, permissive, etc.) which may function as a proxy for clusters of parenting behaviors, thus accounting for more of the variability that is then captured in the analyses in extant literature. Further, single-parent households may contribute to a more complex set of risks that are not able to be moderated by the parental behaviors examined in this study alone (Grant et al., 2015). For example, while this study did not take into account the circumstances that lead to the single-parent family structure (i.e. choice, divorce, death, adoption), according to Grant et al (2015), adolescents could be responding to outside circumstances by engaging in alcohol use, which could explain why parenting behaviors did not show moderating effects. Also, important to take into account is the impact of parental behavior on adolescents' stress responses. For instance, extant literature does recognize the modeling effects of parental stress responses as an influential factor in how adolescents respond to stressors (Barnes et al., 2006; Grant et al., 2015; Mistry et al., 2002; Wadley, 2017). Barnes et al (2006) explained that if a parent models alcohol use in times of high stress, adolescents may replicate this behavior during times of stress, which could impact alcohol initiation and use.

Further, while this study did not examine the impact of extended family and peer support networks, the influence of these outside supports should be considered. These outside influences have been shown to not only influence adolescent behaviors but have a buffering effect on the stressors that can accompany single-family households such as, financial, career, and childcare stress (Conger et al., 2010). Bynum and Brody (2005) found that social support helped single mothers to maintain more positive relationships with their children which in turn enhanced the children's self-regulation skills and resulted in healthier emotional and behavioral outcomes. While the current study did not find moderating effects of parental monitoring, encouragement, or communication on alcohol initiation or use by adolescents from single-parent households, these behaviors may have been implemented by extended family in times when a parent was not available thus mitigating any potential adverse behaviors.

Implications

The current study expands on the extant literature that examines the influence of not only single-parent households, but parental behaviors on adolescent alcohol use as well. First, this study provides some support for previous research which has found that adolescents from single-parent households are at an increased risk for early initiation and current use of alcohol when compared to their counterparts from two-parent households. However, this study also revealed that this increased risk is negligible when adolescents from single-parent households are compared to their counterparts from two-parent households; suggesting that family structure may not be the driving force in heightened risk of alcohol use engagement. Further, it could be argued that many single-parent

households are implementing effective strategies to prevent earlier initiation and current use of alcohol.

These results may support prevention efforts in delaying initiation as long as possible for all adolescents instead of focusing primarily on adolescents from single-parent households. Clinically, by knowing that adolescents from single-parent households do not experience heightened risk of engaging in current alcohol use than their peers from two-parent households, the assessment of current alcohol use among all adolescents should be employed. Clinicians working with adolescents should take steps to thoroughly evaluate alcohol use in order to intervene as early as possible; early intervention has been shown to aid in decreasing both short- and long-term problematic alcohol use behaviors (SAMSHA, 2016).

As suggested by Adolescent Socialization Theory (Brody et al., 2000), findings have highlighted parents' beliefs influence their adolescents' beliefs about alcohol use which in turn, impacts alcohol use behaviors (Ennett et al., 2012; Kam & Miller-Day, 2017; van der Vorst et al., 2006; Zehe & Colder, 2014). However, this study also revealed that parental beliefs do not always influence adolescents positively. Strong disapproval by parents was shown to contribute to an increase in alcohol initiation and use, suggesting that there may be a host of other factors that are coming into play. Similarly, literature points to the importance of adolescents' perception of their parents' disapproval as a factor in how attitudes impact adolescent alcohol use behavior (Goldscheider et al., 2006; Ryan et al., 2010). Adolescent perception of parental disapproval is an important factor to take into account clinically. Prevention and intervention efforts should include assisting parents in understanding the value of early

anti-alcohol use (both initiation and use) conversations, clear communication of family values and expectations, and honest representation of the harmful consequences of alcohol use with their adolescents. Further, findings point to specific areas of possible intervention for individual and family therapists. Clinicians working with adolescents, or their families, can use this knowledge to further assess parental beliefs about adolescent alcohol use and provide parents with important psychoeducation about how to best share their beliefs with their children to maximize the benefits.

Additionally, this study only examined two measures of adolescent alcohol use, early initiation and current use, and was unable to consider frequency or quantity of alcohol consumption. Frequency and quantity could be of importance in gauging the advancement of alcohol use behaviors along with assessing the impact of parenting behaviors on alcohol use (Zucco et al., 2017). By gaining insight into the effects of parenting behaviors on the quantity and frequency of use, further knowledge may be obtained to see how individual parenting behaviors influence alcohol use. For instance, communication about the effects of alcohol use may be associated with lower frequency or quantity of alcohol use even among early initiators, whereas more frequent communication could potentially extinguish underage alcohol use all together. By examining the frequency and quantity of adolescent alcohol use, we can further assess what kinds of parental intervention drive frequency or quantity of alcohol use in adolescents which in turn aid the development of more tailored prevention and intervention techniques.

Limitations and Future Directions

This study is not without limitations. There are several methodological limitations that are worth noting due in large part to the scope of the data set used in this study. First, this study used several measured variables (parents check homework, parents limit time with friends, parents limit time watching television) to form the latent construct, parental monitoring, based on support from extant literature that suggests these types of behaviors represent typical monitoring strategies employed by parents for the adolescent age group (Cookston, 2009; Gilligan & Kypri, 2012; Hoskins, 2014). Even still, this measure had a reliability coefficient of .50, less than would be considered adequate (i.e., > .70) (Webb et al., 1999). Despite the measure not performing well in this study, the measure was retained for use in this study given the strong theoretical support found in the literature that suggests that there parental monitoring behaviors are protective against alcohol use (Cookston, 2009; Gilligan & Kypri, 2012; Hoskins, 2014).

Additionally, the same measure may more accurately reflect the adolescents' perceptions of parental monitoring rather than an actual report of the frequency or salience of parental monitoring behaviors. According to Goldscheider et al. (2006), adolescent perceptions of parental behaviors compared to parent perception of parental behaviors tend to differ rather than correspond with one another. This could have contributed to the poor performance of the parental monitoring variable in this study. Second, this study utilized single-item indicator variables to measure two out of four moderator variables (parental attitude and parental communication) and the dependent variables. Single-item indicators have been shown to not fully capture the complexities of a theoretical concept, nor do they provide enough points of data to see the diversity of a

concept, however; this can be avoided by the use of a large sample as has been done in the current study (Sauro, 2009). Sauro further states that single-item indicators are unable to be assessed for reliability as Cronbach's alpha requires at least two items limiting the ability to know whether the indicator had good internal validity. Future investigations would benefit from using validated instruments to assess these variables to ensure the validity of the conclusions drawn as a result.

The cross-sectional nature of this study prohibits the ability to look at adolescent alcohol use and parental behaviors longitudinally. Longitudinal investigations would enable researchers to take into account fluctuations throughout the developmental period and investigate how relationships between adolescent alcohol use and parental behaviors change over time. As is the case with cross-sectional data, issues related to temporality are also worth noting. This study was unable to consider possible dynamics that may have contributed to the single-parent structure due to the limited information provided with the dataset. It can be argued that prior dynamics may have caused significant disruption within the family, which could have increased or decreased the risk for adolescent alcohol initiation and engagement.

In addition, this study relied on adolescent self-report of alcohol use and while there is some support that adolescent self-reporting of substance use has adequate validity and reliability (McGillicuddy et al., 2007; Nash et al., 2005), other research suggests that adolescent self-report may lead to an inaccurate depiction of substance use and of parental behaviors (Augenstein et al., 2016). Self-report surveys, although many are anonymous, may reflect response bias when answering sensitive survey questions such as those regarding alcohol use (Jann et al., 2019). Although parent self-reports are subject to

response biases as well, a combination of parent and adolescent reports may provide a more complete assessment of both parenting and adolescent variables than would either adolescent or parent report, alone.

Moreover, this study defined single-parent households as either having a mother and no father, or a father and no mother in the household; living with a stepparent or additional family members who serve in parenting capacities were not included. The diversity among family structures within the United States makes it increasingly difficult to adequately account for all structures and distinguish between single-parents and cohabiting or multi-generational family structures.

Furthermore, through the use of mediation, future research could examine the process in which family structure influences adolescent alcohol use. By examining how single-parent households influence adolescent alcohol use, a greater understanding could be gained, and interventions could be trailered accordingly. For instance, by looking at individual parenting behaviors and their potential mediating effects, future research may find specific ways in which single-parent households both positively or negatively influence adolescent alcohol use, which could be applied to preventative measures to decrease the number of adolescents who engage in earlier and more frequent alcohol use. Further, by gaining insight into the exact mechanisms that heighten and lower the risk associated with this particular family structure, more single parents could be educated on ways to insulate their children.

Lastly, this study points to the need for further research on other factors that may influence alcohol use by adolescents from single-parent households. Due to the lack of moderation seen with specific parental behaviors (communication, monitoring,

encouragement) on adolescent alcohol use in this family structure, it is evident that other factors, both positively and negatively, are impacting these behavioral outcomes. Further, this study focused solely on parental behaviors due to parents being the primary and most influential relationship on development and socialization for adolescents (Barnes et al., 2006; Ennett et al., 2012; Longmore, 2012; van der Vorst et al., 2006). However, there is ample support for role extended support networks play in single-parent households (Bolland et al., 2016; Eitle, 2006; Reiss et al., 2019). According to Ennett and colleagues (2012), these additional supports (family friends, extended family, church, after-school programs) undoubtedly play a role in shaping adolescent values, beliefs, and behaviors and may account for the similar outcomes between adolescents from single-parent and their counterparts from two-parent households. By furthering the knowledge surrounding the influence of extended support networks and peers, along with the effects of parental behaviors, researchers can promote strengths-based approaches to curbing adolescent alcohol use.

Conclusions

This study sought to investigate whether alcohol initiation and use differed between adolescents from single-parent households and their counterparts from two-parent households, along with the potential moderating effects of certain parental behaviors. This study concludes that adolescents from single-parent households are at only a minimally increased risk for earlier initiation and current alcohol use when compared to their counterparts from two-parent households. Further, this study suggests that single-parent households are engaging in parenting techniques that seem to close the divide between alcohol use and initiation by adolescents from single-parent households

and their counterparts from two-parent households. In addition, this study showed that of all parental behaviors examined, parental negative attitudes towards adolescent alcohol use was the only variable that moderated the relationship between single-parent households and the early initiation of alcohol use. However, strong disapproving attitudes were shown to increase early initiation of alcohol use for adolescents in both single and two-parent households. These findings suggest that further research is needed to gain a better and more complete understanding of how parental attitudes influence adolescent alcohol use along with the techniques single-parent households are implementing to help decrease adolescent initiation and current use of alcohol.

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