

Original Article:

**THE IMPACT OF PARENTAL SOCIALIZATION
METHODS ON YOUNG ADULT MALES' AND FEMALES'
SUBSTANCE USE**

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Abstract

The purpose of this study is to assess the relationship between parental socialization methods, closeness and knowledge, and young adults' substance use patterns. The current study adds to prior research by assessing the impact of gender and residency status on the relationship between parenting and substance use. Participants included 120 undergraduate students between the ages of 18-25, the period of young adulthood. Results revealed that mother's and father's levels of knowledge and closeness have differing impacts on males' and females' substance use frequency. Furthermore, the relationship between parental socialization methods and substance use are impacted by whether the young adult lives with or without one's parents. The following research provides insight on the continuing importance of the parent-child relationship during young adulthood.

Keywords: Parental Socialization Methods, Parental Knowledge, Parental Closeness, Substance Use, Parent-Child Relations, Residence, Gender & Young Adulthood

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INTRODUCTION

According to the 2002 World Population Ageing Report published by the [Department of Economic and Social Affairs](#), Population Division, the aging population is unprecedented, pervasive, enduring, and has profound implications for many facets of human life. One of these facets of life that is immediately and heavily impacted by the expanding life span of people worldwide is of course mental health, in particular cognitive health of older adults. Most people consider aging as a downhill battle, with the perception that cognitive health declines as one's chronological age increases. However, current studies in the psychological literature has shown that although certain types of memory does decline with age, e.g., episodic memory, such as remembering what you had for dinner last night, other types of memory stay rather constant with age, e.g., semantic memory, such as knowing the address of one's childhood home. In the present study, we examined the effects of age and culture on emotional memory, a type of processing that many US researchers have claimed to remain consistent or even to improve with age (Carstensen, 1993, 2006).

National statistics provide evidence that, on the average, substance use tends to increase as individuals make transitions from adolescence to young adulthood, and that substance use rates amongst this age group have increased over the past few years (U.S. Department of Health and Human Services, 2010). According to the National Survey on Drug Use and Health (2010) conducted by the U.S. Department of Health and Human Services, the rate of illicit drug use among young adults between the ages 18 and 25 increased from 19.6 percent in 2008 to 21.5 percent in 2010. Furthermore, the rate of binge alcohol use among the 18-20 age group was 33.3 percent, only second to the peak rate of 45.5 percent among those between 21 and 25 years of age. The same survey reported that, from 2002-2010, those enrolled in college were more likely to use alcohol in the past month and engage in binge drinking than their non-college counterparts. Overall, young adult college students between the ages of 18 and 25 are more likely to engage in both illicit drug use and heavy alcohol use than all other age groups (U.S. Department of Health and Human Services, 2010). Therefore, it is important to explore the factors that may decrease substance use amongst young adult college students.

One factor suggested to have a deterring effect on substance use during adolescence is parenting (Tebes et al., 2010; Connell, 2010). It has been argued that, during adolescence, parenting is a strong social control against deviant substance use behaviors (Blodgett Salafia, Gondoli, & Grundy, 2009; Tebes et al., 2010). However, less is known about this relationship during college and young adulthood when children often move out of their parents' home and direct supervision. In this paper, I investigate this question by examining whether parenting has a continuing impact on substance use during college and whether living with, or away from, parents shapes the relationship between parenting and substance use during this period.

Control Theory, Parental Relationship, and Substance Abuse

Existing literature concerning the relationship between parental socialization methods and substance use proposes that parental knowledge and closeness act as protective factors against substance use during adolescence, but there are conflicting findings regarding the impact of these parental socialization methods on substance use when these adolescents become young independent adults (Blodgett Salafia et al., 2009; Padilla-Walker, Nelson, Madsen, & Barry, 2008; Patock-Peckham, King, Morgan-Lopez, Ulloa, & Moses, 2011; Schwartz et al., 2009; Tebes et al., 2010). Young adulthood most often refers to the ages between 18 and 25, and is characterized as the period in which individuals struggle to become independent while trying to establish an equal relationship with their parents (Badger, Nelson, & Barry, 2006). According to Arnett (2000), the period in which risk-taking peaks has shifted from adolescence to emerging adulthood among today's young population. This is apparent in the significant increase in substance usage over these periods (Arnett, 2000). If risk-taking is at its highest point during young adulthood, then this may be a sign that protective factors may be weakening during this point in the life cycle.

According to Hirschi's control theory (1969), it is more important to ask why individuals choose to conform, rather than why some would choose to engage in risk-taking behavior. Hirschi (1969) argued that conformity was achieved through the process of socialization, dependent on the individual's bond to society. Attachment, one of the variables that form the bond between the individual and society, is a factor influencing delinquency (Hirschi, 1969). Studies have found that parental attachment in particular has significant and direct effects on delinquency (Wiatrowski, Griswold, & Roberts, 1981). Researchers have questioned whether greater independence during adulthood would cause the attachment to parents to weaken, and thus accounts, in part, for the increased substance use among young adults (Padilla-Walker et al., 2008). However, if parental knowledge and closeness remain high regardless of increased independence, then control theory may help to explain why some young adults choose not to engage in frequent and heavy substance use. Since it has been argued that the parent-child relationship does not become unimportant during young adulthood, even when one moves away from the family home (Bartle-Haring, Bruker, & Hock, 2002; O'Connor, Allen, Bell, & Hauser, 1996), I expect that parenting can still act as a protective factor against substance use during this period.

Parenting has mainly been conceptualized by researchers as the emotional climate of the parent-child relationship influenced by parenting styles, and the parental socialization methods used to define these styles (Blodgett Salafia et al., 2009; Fletcher, Walls, Cook, Madison, & Bridges, 2008). According to Fletcher et al. (2008), there exist four main parenting styles: authoritarian (high in behavioral control, low in warmth), authoritative (high in behavioral control, high in warmth), permissive/indulgent (low in behavioral control, high in warmth), and indifferent (low in behavioral control, low in

warmth). Two aspects of parental socialization methods that have been theorized to have a large impact on adolescence risk-taking behaviors are parental knowledge and parental closeness (Blodgett Salafia et al., 2009; Tebes et al., 2010). Parental knowledge refers to the awareness of one's child's whereabouts, activities, substance usage and friends. Parental closeness refers to the extent to which children feel they can be open with their parents (Blodgett Salafia et al., 2009; Tebes et al., 2010). The method used to gain knowledge--self-disclosure, monitoring or solicitation--is influenced by the level of closeness between parent and child, which in-turn is affected by the warmth of the parent-child relationship. Thus, the method used to gain knowledge also influences the extent to which behavioral control will protect against risk-taking behaviors (Blodgett Salafia et al., 2009). Researchers found that the authoritative parenting style, defined by high levels of knowledge and warmth, is the only approach that is likely to reduce substance use among adolescents and possibly even among young adults (Schaffer, Clark, & Jeglic, 2009; Tebes et al., 2010). In other words, when parental closeness is high, children are more likely to self-disclose information, or provide information when asked because they perceive their parents' pursuit of knowledge as a legitimate concern (Padilla-Walker et al., 2008). Therefore, parents are more likely to be aware of their children's behaviors (high levels of knowledge), providing further protection against substance use (Blodgett Salafia et al., 2009; Tebes et al., 2010).

The few existing studies on young adults' substance use and parental impact show that the patterns of the parent-child relationship formed during adolescence have some enduring consequences on young adults' later behavioral choices. For instance, research by Schwartz et al. (2009)--based on the parental acceptance-rejection theory (Rohner, 2004)--confirms that the participants' perception of their relationship with their parents during adolescence affects their substance use patterns during young adulthood. Similarly, research conducted by Patock-Peckham et al. (2011), states that the use of parental monitoring during adolescence impacts substance-use behaviors during young adulthood. Research by Padilla-Walker et al. (2008) provides insight into how the components of parental socialization continue to have an impact on young adults' substance use. Their study found that, when parental knowledge is high, young adults are less likely to engage in heavy drug and alcohol use. Both maternal and paternal knowledge were found to have a direct impact on substance use in the study, whereas, only maternal closeness was found to have an indirect effect on substance use behaviors via high maternal knowledge. Thus, it will be important to reassess the role of paternal closeness on substance use. Padilla-Walker et al. (2008) also found that maternal knowledge during young adulthood strongly protects against alcohol use, whereas paternal knowledge significantly prevents drug use. Therefore, it may be important to study how the gender of the parent, as well as the gender of the offspring, impacts the strength of parental socialization methods on substance use during young adulthood.

The Effects of Gender

Empirical evidence suggests that if parental closeness remains strong into emerging adulthood, both males' and females' well-being will increase (Kenny, 1987; Samoulis, Layburn, & Schiaffino, 2011). Even though parental socialization methods may similarly impact the overall well-being of both males and females, there still could be different effects on specific aspects of well-being, such as substance use.

There are somewhat conflicting research findings on whether parental socialization methods have a stronger impact on adolescent males' or females' substance use. For example, studies (Svensson, 2003; Tebes et al., 2010) found that during adolescence, parental knowledge is more likely to protect against the substance use behaviors of males than females. Tebes et al. (2010) indicated that, even though high parental knowledge affects both males' and females' substance use behaviors, it has a more significant impact on reducing adolescent males' substance use. Research by Svensson (2003) found that parental monitoring has a direct impact on adolescent males' substance use, but only an indirect impact on females' substance use. On the other hand, research on young adults by Padilla-Walker et al. (2008) suggests that maternal and paternal knowledge have a similar impact on males' and females' substance use during this period. Within the same study, maternal closeness was theorized to have a similar indirect effect on both males and females substance use via maternal knowledge. Furthermore, research by Veal and Ross (2006), suggests that higher parental monitoring is associated with lower drinking quantity amongst females and lower drinking frequency amongst young adult males. In these studies, it was not specified how monitoring was established.

Thus, while existing research provides information about parental closeness, knowledge, gender, and adolescent substance use, far less is known about whether parental socialization methods have a differing impact on the substance use of young adults, such as college students who often live outside direct parental supervision.

The Current Study

The small number of studies reviewed above provides some useful knowledge on the impact of parental socialization methods on young adults' substance use; however, there are still some questions to be investigated further. For example, it is uncertain whether parents' levels of knowledge and closeness during young adulthood, and not just during adolescence, continue to have an impact on young adults' substance use. In addition, existing studies have not compared the impact of parental socialization methods on the substance use of young adults who live at home and those who live away from their parents. Similarly, past research has presented conflicting results regarding the impact of parental socialization methods on the substance use patterns of males and females. This study will measure whether parental knowledge and closeness are associated with the frequency and quantity of drug and alcohol use among college students, and how this relationship varies

by the gender of the child and the gender of the parent. It will also examine whether relationships between these variables differ between college students who live with their parents and those who do not.

METHOD

Participants

The original sample included 120 undergraduate students between the ages of 18 and 25 attending a mid-sized four-year public university in New Jersey. The university has a substantial number of both resident and commuter students, as well as a wide range of ethnic groups from which a heterogeneous sample could be taken. Data for this study was collected through the use of in-person surveys administered in and after classes. The study was approved by the university's Institutional Review Board prior to the administration of the survey. Students were selected through cluster sampling of general education courses and additional convenience sampling. Surveys were conducted in five general education classes whose instructors gave permission for the access. In addition, students were recruited at the University's Student Center to answer surveys. Participants were informed of the nature of the study by way of the passive informed consent statement attached to the survey instrument. The response rate was 98%. Only two students, when asked, opted to not complete the survey. Five surveys were invalid due to the participants' age falling outside of the target range.

My sample consisted of 52 males and 67 females (one participant did not specify gender). 49.2 percent of the sample lived with their parents, and 50.8 percent did not live with their parents. Those living independently included students living in an on-campus dorm or apartment, off-campus by themselves, with a roommate(s), or off-campus with their own family (spouse and/or children). 65.8 percent of the sample was Caucasian, and 34.8 percent consisted of all other races. Even though the sample is not representative of the university's total population, the sample has a balanced proportion of gender and residence type, which are two main controlling variables in the study.

Measures

The survey consisted of seven demographic questions including, age, gender, race, class status, residential status, distance from one's parents' house, and which parent/parental figure(s) plays a more important role in their daily life.

The independent variables were the parental socialization methods defined as knowledge and closeness. All questions concerning parents' parenting methods were answered based on either the participants' biological parents or guardians--if the guardians have assumed the role of father or mother figure in one's life. Participants were asked to record their parent's level of knowledge and feelings of closeness on scale questions, and

this was measured separately for both mothers/mother figures and father/father figures. In order to measure the first independent variable, parental knowledge, questions from Tebes et al. (2010) research, such as “Does your mother/father know where you are on the weekends/week nights?” were used. Answers were coded using a four-point scale for both mothers and fathers, ranging from “often” to “never.” The scale measures for parental closeness were borrowed from Padilla-Walker et al. (2008). Questions include, “How openly do you talk with your mother/father?” and “How well does your mother/father know what you are really like?” Again, participants answered each question for mothers and fathers separately. Answers were coded using a four-point scale, in which four was coded as “very” and one was coded as “little.” The results of each question for mothers and fathers were later added to produce an overall score for students’ levels of closeness with both parental figures.

The dependent variables were alcohol, marijuana, and illicit drug use patterns. Questions for measuring substance use were adopted from the 2006 Substance Abuse and Mental Health Services Administration’s Adult Baseline Questionnaire. Some answer choices were modified to assess participants’ frequency of use in a given week within the past 30 days. Alcohol use was measured based on the following questions, “On the average, how many times in a given week do you drink?” and “In the past 30 days, how often have you binge drank?” Answers for weekly alcohol use were coded using a five-point scale, with one as “I don’t drink” and five as “I drink four or more days a week.” Binge drinking within the past 30 days was also coded using a five point scale, in which one corresponded to “never” and five corresponded to “more than seven times.” Drug use was measured by the types of drugs used by the participant within the past 30 days, and the following questions: “In the past 30 days, on the average, how many times in a given week do you use marijuana?” and “In the past 30 days, how many times in a given week do you use drugs other than marijuana?” Answers were coded using a five-point scale, in which one was coded as “I have never used marijuana/ illicit drugs” and five was coded as “four or more times in a given week”.

Bivariate analyses using cross-tabulation and chi-square tests were performed to examine whether a statistically significant relationship exists between measures of parental knowledge and closeness and different types of substance use. Since there are conflicting findings amidst existing research on the impact of gender and the possible effect of residential status on the relationship between parental socialization methods and substance use, these two variables were used as control variables in the multivariate cross-tabulation analysis.

RESULTS

Parental Closeness & Substance Use

The survey revealed that a large percentage of students mainly have a close relationship with their parents/parental figures. The answers to the questions about participants' feelings of closeness with their mother and father were combined in order to assess a general sense of parental closeness. 48.3 percent feel they mainly have a close relationship with their parents and 36.7 percent feel that they have a somewhat close relationship with their parents. Interestingly, only 5.8 percent perceive themselves to have a very close relationship with their parents and 4.2 percent feel that they have little to no relationship with their parents. When combining parents' levels of knowledge of the participants' weekend/weeknight activities, it was found that the highest percentage of participants, 37.5 percent, believe their parents to be sometimes knowledgeable of their weekend/weeknight activities. 22.5 percent feel their parents are often knowledgeable, but a slightly higher percentage, 26.7 percent, perceive their parents to be rarely knowledgeable. Only 10 percent of participants believe their parents are never knowledgeable of their weekend/weeknight activities. With regard to various types of substance use, 40 percent of the participants drink less than once a week, 27 percent drink 1-2 days a week, 9.2 percent drink 3 days a week, and 2.5 percent drink 4 or more times a week. Similarly, 64.2 percent of the respondents have not used drugs, including marijuana, within the past 30 days or more, whereas 31.7 percent have.

Table 1-1. Multivariate Chi-Square Test between Parental Closeness, Gender, and Substance Use¹

(Males)

	Closeness to Mother	Closeness to Father
Illicit drugs	11.479	5.126
Marijuana	4.818	4.015
Weekly alcohol use	21.425*	18.094
Binge drinking	12.904	8.512

(Females)

	Closeness to Mother	Closeness to Father
Illicit drugs	13.759*	9.797
Marijuana	16.500	5.492
Weekly alcohol use	8.954	13.244
Binge drinking	13.458	15.896

* $p < .05$

Chi-square tests were performed to examine the relationship between closeness with one's mother and father and various types of substance use. I recoded the independent and the dependent variables to avoid cells with very small frequencies. Results revealed that there is a statistically significant association between maternal closeness and the number of times one uses illicit drugs, not including marijuana, within a given week (Sig. =.014). However, when controlled for gender, there was a statistically significant relationship between maternal closeness and only *females'* drug use (Sig. =.032. See Table 1-1), and not males' drug use (Sig. = .244. See Table 1-1).

Table 1-2. Multivariate Cross Tabulations: Maternal Closeness and Substance Use Controlled for Gender

(Males) N=51

Frequency of Alcohol Use in Given Week (Recoded)	Level of Closeness to Mother (Recoded)	
	<i>Low Closeness ("little" and "somewhat")</i>	<i>High Closeness ("mainly" and "very")</i>
<i>Less Than Once a Week</i>	50% (5)	56.1% (23)
<i>1-2 Days a Week</i>	20% (2)	31.7% (13)
<i>3+ Days a Week</i>	30% (3)	12.2% (5)
Total	100.0% (10)	100.0% (41)

(Females) N=60

Frequency of Illicit Drug Use in Given Week (Recoded)	Level of Closeness to Mother (Recoded)	
	<i>Low Closeness ("little" and "somewhat")</i>	<i>High Closeness ("mainly" and "very")</i>
<i>Never or Less Than Once a Week</i>	86.7% (13)	100% (45)
<i>1-2 Times a Week</i>	13.3% (2)	0% (0)
Total	100.0% (15)	100% (45)

The analysis found no statistically significant relationship between maternal closeness and weekly alcohol use (Sig = .055). However, a three-variable cross-tabulation, controlling for gender, revealed a significant association between maternal closeness and *males'* alcohol use (Sig=.044. See Table 1-1). There was no statistical association between maternal closeness and female respondents' weekly alcohol use. No statistical significance existed between closeness to father and any form of substance use, even when controlling for gender. The impact of maternal closeness on males' alcohol use and females' illicit drug use is also portrayed through a multivariate cross-tabulation (See Table 1-2) using recoded categories. Table 1-2 provides evidence that males with higher level of closeness to their mothers are likely to drink less, and females with higher level of closeness to their mothers are less likely to use illicit drugs (See Table 1-2). Therefore, the analysis suggests that closeness to mother may affect different types of substance abuse for male and female students.

Table 2-1. Multivariate Chi-square test between Parental Closeness, Residency Status, and Substance Use

(Live With Parents)

	Closeness to Mother	Closeness to Father
Illicit drugs	10.608*	4.520
Marijuana	11.317	9.119
Weekly alcohol use	17.690	11.854
Binge drinking	11.073	12.665

(Do Not Live with Parents) N=54

	Closeness to Mother	Closeness to Father
Illicit drugs	20.633*	16.065
Marijuana	15.863	6.752
Weekly alcohol use	15.307	15.819
Binge drinking	12.578	15.990

* $p < .05$

When controlling for residency status with parents, maternal closeness had a statistically significant association with drug use, regardless of whether the respondents lived with their parents or lived independently (See Table 2). It did not, however, have any statistical relationships with any other forms of substance use. As Table 2-1 shows, maternal closeness was correlated with the drug use among those who live with their parents (Sig. = .014. See Table 2-1) and among those who do not live with their parents (Sig. = .014). See Table 2-1). A statistical significance did not exist between paternal closeness and any form of substance use after controlling for residency status (See Table

2-1). Similarly, the multivariate cross tabulation portrayed in Table 2-2, shows that those with higher level of closeness to their mothers, regardless of their residential status, are more likely to not use illicit drugs, whereas those with lower level of closeness to their mothers, regardless of residential status, are more likely to use illicit drugs one to two times a week.

Table 2-2. Multivariate Cross Tabulations: Maternal Closeness and Illicit Drug Use controlled for Residency Status

(Live with Parents) N=55

Frequency of Illicit Drug Use In Given Week (Recoded)	Level of Closeness to Mother (Recoded)	
	<i>Low Closeness ("little" and "somewhat")</i>	<i>High Closeness ("mainly" and "very")</i>
<i>Never or Less than Once a Week</i>	81.8% (9)	100% (44)
<i>1-2 Times a Week</i>	18.2% (2)	0% (0)
Total	100% (11)	100% (44)

(Do Not Live with Parents) N=54

Frequency of Illicit Drug Use In Given Week (Recoded)	Level of Closeness to Mother (Recoded)	
	<i>Low Closeness ("little" and "somewhat")</i>	<i>High Closeness ("mainly" and "very")</i>
<i>Don't Use Illicit Drugs</i>	60% (9)	93.3% (37)
<i>Less Than Once a week</i>	26.7% (4)	3.3% (2)
<i>1-2 Times a Week</i>	13.3% (2)	3.4% (1)
Total	100% (15)	100% (40)

These sets of multivariate analysis indicate that a close relationship with one's mother may have a deterring impact on substance use regardless of residency status, but there seems to be an effect of gender on the relationship between closeness to mother and some forms of substance use.

Table 3-1. Multivariate Chi-Square Test between Parental knowledge, Gender, and Substance Use*(Males)*

	Maternal knowledge	Paternal knowledge
Illicit drugs	14.093	8.426
Marijuana	16.678	10.846
Weekly alcohol use	12.059	6.907
Binge drinking	6.215	11.316

(Females)

	Maternal knowledge	Paternal knowledge
Illicit drugs	11.962	7.426
Marijuana	29.162*	9.350
Weekly alcohol use	20.004*	12.265
Binge drinking	49.816**	15.007

* $p < .05$ ** $p < .01$ **Parental Knowledge and Substance Use**

Chi-square tests were performed between independent variables, maternal knowledge and paternal knowledge, and the dependent variables that represent different forms of substance use. The results indicate that maternal knowledge is more likely to be related to substance abuse than paternal knowledge. For instance, a mother's knowledge of the whereabouts of the respondent had a statistically significant relationship with alcohol and marijuana use. Maternal knowledge of weekend/week night activities was negatively correlated with the number of times young adults drank per week (Sig. = .028), binge drank in the past month (Sig. = .035), maintained weekly marijuana use within the past 30 days (Sig. = .001) and maintained weekly illicit drug use within the past 30 days (Sig=.041).

Table 3-2. Multivariate Cross Tabulations: Maternal Knowledge and Substance Use controlled for Females*(Females) N=67*

Frequency of Alcohol Use in Given Week (Recoded)	Mothers' Level of Knowledge (Recoded)	
	<i>Sometimes or Less than Sometimes</i>	<i>Often</i>
<i>Don't Drink</i>	6.5% (2)	27.8% (10)
<i>Less Than Once a Week</i>	38.7% (12)	52.8% (19)
<i>1-2 Days a Week</i>	41.9% (13)	13.9% (5)
<i>3+ Days a Week</i>	12.9% (4)	5.6% (2)
Total	100.0% (31)	100.0% (36)

(Females) N=67

Frequency of Binge Drinking in Past 30 Days	Mothers' Level of Knowledge (Recoded)	
	<i>Sometimes or less than sometimes</i>	<i>Often</i>
<i>Never</i>	33.3% (11)	72.2% (26)
<i>Once</i>	14.3% (4)	19.4% (7)
<i>2-3 Times</i>	38.1% (9)	5.6% (2)
<i>4+ Times</i>	14.3% (7)	2.8% (1)
Total	100.0% (31)	100.0% (36)

(Females) N=62

Frequency of Marijuana Use in Given Week	Mothers' Level of Knowledge (Recoded)	
	<i>Sometimes or less than sometimes</i>	<i>Often</i>
<i>Never Used</i>	63.4% (19)	78.1% (25)
<i>Less Than Once a Week</i>	13.3% (4)	18.8% (6)
<i>1-2 Times a Week</i>	20.0% (6)	3.1% (1)
<i>3+ Times a Week</i>	13.3% (4)	0% (0)
Total	100.0% (30)	100.0% (32)

When controlling for gender, an interesting pattern emerged: maternal knowledge seemed to have different relationship with substance use of males and females. For example, a statistically significant association was found between maternal knowledge and females' marijuana use (Sig. = .001. See Table 3-1), but there was no significant relationship between maternal knowledge and males' marijuana use (Sig. = .054. See Table 3-1). With regard to alcohol use, the results show that maternal knowledge is again only negatively associated with females' weekly drinking patterns (Sig=.018. See Table 3-1) and not with males' alcohol consumption (Sig. = .441. See Table 3-1). Furthermore, the relationship between maternal knowledge and binge drinking was highly significant for females (Sig. = .000. See Table 3-1), but not significant for males (Sig=.905. See Table 3-1). With regard to illicit drug use, the results portray that the relationship between maternal knowledge and illicit drug use was not highly significant for males (Sig. =.119, See Table 3-1) or females (Sig. = .063). Similarly, multivariate cross-tabulations portray that the females who have mothers that are often knowledgeable of their weekend/weeknight activities are less likely to consume alcohol, binge drink or use marijuana (See Table 3-2). The significance between maternal knowledge and females' alcohol use behaviors cannot be explained by residency status because only a slightly larger amount of females live with their parents (29.4 percent) compared to males (20.2 percent). However, this may be explained by the general pattern that women are less likely to drink frequently than men; 42.4 percent of females in my sample reported to consume alcohol less than once a week or not at all.

Table 4-1. Multivariate Chi-Square Test between Parental Knowledge, Residential Status, and Substance Use

(Live with Parents)

	Maternal knowledge	Paternal knowledge
Illicit drugs	4.148	2.791
Marijuana	10.921	8.703
Weekly alcohol use	21.974*	13.288
Binge drinking	11.396	11.654

(Do Not Live with Parents)

	Maternal knowledge	Paternal knowledge
Illicit drugs	12.688	5.274
Marijuana	23.171*	12.646
Weekly Alcohol Use	10.216	11.308
Binge Drinking	15.742	9.434

* $p < .05$

Controlling for residency status revealed more complex relationships between maternal knowledge and various substance uses. As indicated above, maternal knowledge had a negative association to weekly drinking patterns, as well as binge drinking and marijuana use within the past month. When a multivariate chi-square test was performed using residency status as a control variable, a negative statistical association between maternal knowledge and weekly drinking habits was found only among those who live with their parents (Sig=. 038. See Table 4-1). Multivariate cross tabulations portray that among those who live with their parents, a larger percentage are likely to drink less if their mothers are often knowledgeable of their weekend/weeknight activities (See Table 4-2). In contrast, maternal knowledge had an association with the marijuana use patterns among only those who do not live with their parents (Sig. = .026. See Table 4-1). The multivariate cross-tabulation shows that among the students that do not live with their parents, those with mothers who are sometimes or less than sometimes knowledgeable tend to use marijuana more frequently, than those who have mothers that are often knowledgeable of their weekend/weeknight activities. The only contradictory statistics in this table is that 62.2 percent of students whose mothers are only sometimes or less than sometimes knowledgeable of their whereabouts never used marijuana, compared to the 57.1 percent whose mothers are often knowledgeable of their whereabouts. These results appear to be contradictory, but they may have been affected by the extremely small sample size, especially the small number of people in the group with mothers that are often knowledgeable (n=14) (See Table 4-2 “Do Not Live with Parents”).

Table 4-2. Multivariate Cross Tabulation: Maternal Knowledge and Substance Use controlled for Residency Status

(Lives with Parents) N=59

Frequency of Alcohol Use in Given Week	Mothers' Level of Knowledge (Recoded)	
	<i>Sometimes or less than sometimes</i>	<i>Often</i>
<i>Don't Drink</i>	25.0% (6)	37.1% (13)
<i>Less Than Once a Week</i>	25.0% (6)	48.6% (17)
<i>1-2 Days a Week</i>	26.7% (8)	8.6% (3)
<i>3+ Days a Week</i>	13.3% (4)	5.7% (2)
Total	100.0% (24)	100.0% (35)

(Do Not Live With Parents) N=59

Frequency of Marijuana Use in Given Week	Mothers' Level of Knowledge (Recoded)	
	Sometimes or less than sometimes	Often
Never Used	62.2% (28)	57.1% (8)
Less Than Once a Week	11.1% (5)	28.6% (4)
1-2 Times a Week	17.8% (8)	7.1% (1)
3+ Times a Week	8.9% (4)	7.1% (1)
Total	100.0% (45)	100.0% (14)

DISCUSSION

Using Hirsch's control theory as the framework for this study, the analysis examined the relationship between parents' levels of knowledge and closeness during young adulthood and young adults' substance use patterns. The results suggest that the gender of the parent may influence the role of parental socialization methods on reducing certain forms of substance use. This study suggests that the knowledge and closeness of mothers, rather than of fathers, has negative associations with several forms of substance abuse. The impact of parenting on substance abuse also seems to vary by the gender of the respondents. Parental knowledge and closeness also have differing impacts on the substance use patterns of young adult males and females. In addition, the findings indicate that parental socialization methods have differing impacts on preventing substance use amongst those who live with their parents and those who do not.

Based on previous research by Padilla-Walker et al. (2008), it was expected that the gender of the parent would impact the strength of the relationship between parental socialization methods and substance use. Padilla-Walker et al. (2008) research reported that maternal knowledge had a greater impact on alcohol use, whereas paternal knowledge had a stronger effect on drug use. The research surrounding this current study, however, suggests that maternal knowledge not only has a significant impact on females' weekly alcohol use and binge drinking patterns but female's marijuana use as well. On the other hand, my analysis suggests that paternal knowledge may not have a significant impact on young adults' drug use, or any other form of substance use. The findings of this current study are somewhat inconsistent with those of Padilla-Walker et al. (2008). The discrepancy may come from the use of different measures. In their study, parental

knowledge was based on a combination of eight questions, whereas this study only measured parental knowledge as knowledge of weekend/week night activities. In addition, the research of this study suggests that maternal closeness may play a role in lessening illicit drug use, not including marijuana use, and alcohol use. Overall, the research provides evidence that parental knowledge, especially maternal knowledge, as well as maternal closeness, may help to protect against heavy and frequent substance use.

Adding gender as a controlling variable, the findings further suggest that maternal closeness may play a role in lessening females' illicit drug use, and lessening males' alcohol use. The majority of the respondents, both males and females, stated that they had either a mainly or very close relationship with their mothers. However, these high levels of maternal closeness were shown to protect against different forms of substance use based on the gender of the child. Further research would be required to determine why maternal closeness, which was previously not found to have a direct impact on any form of substance use for both males and females (Padilla-Walker et al., 2008), is shown to have a differing impact on males and females substance use.

The findings of this study also show that maternal knowledge is more likely to prevent against females' substance use. Maternal knowledge was shown to have a negative statistical association with females' frequency of weekly alcohol use, binge drinking and marijuana use, but not females' illicit drug use. It was not shown to have an impact on preventing any form of substance use amongst males. However, with further research, it may be found that maternal knowledge has an impact on males' marijuana use since there was a 0.054 significance between maternal knowledge and males' marijuana use, just slightly above the 0.05 statistical significance level used within the study. In addition, the analysis had suggested that maternal knowledge has a significant impact on young adults' drug use, but when controlled for gender, the relationship disappeared. Therefore, the initial relationship was spurious possibly because 64.2 percent of participants did not use drugs within the past 30 days. Based on these findings, I can only theorize that maternal knowledge has a greater impact on females' substance use because females' mothers were more knowledgeable of females' weekend/week night activities. Another factor may be that females' frequency of alcohol use, binge drinking, and marijuana use were less than that of males to begin with.

When controlling for residency status, the findings suggest that maternal closeness, regardless of residency status, may still protect against behaviors considered more deviant during young adulthood, such as illicit drug use. Furthermore, the results suggest that maternal knowledge may have a preventive effect against the alcohol use of those who do live with their parents. It was hypothesized by Roche, Ahmend, and Blum (2008) that parental knowledge has a smaller amount of an influence on behaviors considered as less severe deviance by young adults and their parents during this period. Alcohol use, for example, is generally considered less deviant than marijuana and other illicit drug use. It is reasonable to assume that alcohol use is also socially more accepted in a college campus

environment than at home. This may explain why the study found that maternal knowledge has an impact on the alcohol use (a behavior considered as generally less severe) of students living at home. Mothers and young adults who live at home may still view alcohol use as deviant, thus their attachment protects them against these behaviors. It is unclear why maternal knowledge had a statistical association with the marijuana use of those who live away from their parents, rather than those who live with their parents. However, the very small cell counts could have affected the chi-square statistics for those that do not live with their parents.

This study closely supports Bartle-Haring et al. (2002) and O'Connor et al. (1996) argument that the parent-child relationship does not become unimportant during young adulthood, even when one moves away from the family home. The study's findings suggest that maternal knowledge and closeness have an impact on the substance use of both those who live at and away from home, even though the result differs based on the type of substance. According to Hirschi's control theory (1969), conformity is attained through the process of socialization. The research supports that, when maternal socialization methods, knowledge and closeness, are maintained, despite increased independence and separate residence from the parents, young adults are more likely to conform by choosing not to engage in risk-taking behavior. Furthermore, the research provides additional insight to the parental acceptance-rejection theory. The findings suggest that young adults' perceptions of their relationship with their mothers during young adulthood, not only during adolescence, have an impact on their substance use patterns, though the impact may vary by the type of substance. Still, young adults, who indicated that they have a close relationship with their mothers and that their mothers are knowledgeable of their whereabouts, are less likely to use substances. Parents who are knowledgeable and have a close relationship with their young adults are those who most likely use an authoritative parenting approach. This study supports that mothers who continue to use the authoritative parenting approach, even when their young adults no longer live with them, can better protect against their adult children's risk taking behaviors, such as their frequencies of marijuana and illicit drug use.

Conclusion

This study adds to the field of research concerning the impact of parental socialization methods on young adults' substance use by providing further evidence that parental knowledge and closeness, especially those of mothers, may help protect against substance use behaviors during young adulthood. In addition, the study adds insight to this area of research by exploring the impact that the residency status of the child, the gender of the child, and gender of the parent has on this relationship. Finally, this research suggests that parental socialization methods, especially maternal socialization methods, have an impact on the substance use of young adults, especially females, and those who live with or without their parents.

The research also uncovered a significant limitation in adapting the results for a broader audience due to the small size non-probability sample used. Assessing a larger population of students from several colleges across the United States would provide more information on whether parental socialization methods have a significant impact on young adults regardless of a campus' demographics and environment. This study also only assessed participants' illicit drug use within the past 30 days. As a result, it cannot be determined whether those who selected "I have never used drugs/ marijuana" were referring to the past 30 days or their use throughout college. However, it can be estimated that a percentage of these students have actually never used drugs, assuming that those who have not used illicit drugs within the past 30 days are not frequent/heavy users. Therefore, there is some validity in the statistical relationship between maternal closeness and illicit drug use this study found.

Future research should assess why maternal knowledge and closeness were shown to prevent substance use, whereas paternal knowledge and closeness were not. It would be interesting to see if this finding remains the same within a larger non-college sample. Additional future research should also determine why maternal closeness is more likely to prevent against alcohol use for males and illicit drug use for females, as well as whether these findings remain the same within a larger sample drawn from the general population.

Research that measures how parents' gain their knowledge, which may help to explain why maternal knowledge more strongly prevents against frequent/heavy substance use amongst females, would also be significant. According to Blodgett Salafia et al. (2009), mothers' knowledge strongly protects against substance use when it is gained through child-self disclosure. If females are more likely to self-disclose, this may explain why the mother-daughter bond strongly protects against substance use. Examining how parents gain their knowledge may also help to explain why the father-son bond does not similarly protect against substance use. A qualitative study would allow participants to explain how their parents gain their knowledge, whether it differs between the genders, and whether it impacts the relationship that parental knowledge has on preventing substance use.

The current study draws a link to control theory and provides additional evidence that high levels of maternal knowledge and closeness during young adulthood may be one explanation as to why some young adults choose not to deviate through frequent and heavy substance use.

The goal of this study was to examine whether parental socialization methods still have an impact on reducing substance use amongst young adults during the period in which children become increasingly independent. Even though the current study is exploratory, it does provide insight that parents, especially mothers, still play an important role beyond adolescence when their children enter the adulthood and begin to live apart from them. Therefore, it is important that parents realize their potential impact and the methods they can use to help protect their young adults from frequent and heavy substance use.

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Footnotes:

1. The variables discussed in this article have a different number of valid answers. The number of valid responses (N) for the variables are the following: Gender (N=119); Closeness to Mother (N=117); Closeness to Father (N=114); Live With or Without Parents (N=120); Maternal Knowledge (N=120); Paternal Knowledge (N=116); Illicit Drug Use (N=113); Marijuana Use (N=114); Weekly Alcohol Use (N=120); Binge Drinking (N=120)

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