THE EMOTIONAL PERCEPTION OF PARENTAL DRINKING DURING MIDDLE CHILDHOOD ON ALCOHOL CONSUMPTION OF YOUNG ADULTS

by

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ABSTRACT

Alcohol-related accidents have been recognized as a leading cause of physical health problems, injuries, and lower academic success among young adults. Exposure to parental drinking has a significant influence on offspring's drinking behavior. Parental drinking in childhood forms attitudes and expectancies towards alcohol that have been found to affect drinking behavior later in life. Additionally, the recollection of emotions related to alcohol-related childhood memories has been associated with similar emotions towards alcohol in adulthood. However, the emotional perception of middle childhood memories of parental alcohol use has not been examined in association with later life alcohol consumption. The current study aimed to investigate whether alcohol use in young adults would be associated with a positive or negative emotional perception of memories of parental drinking during middle childhood. Two hundred and one young adults (82.6% females) between the ages of 18 and 33 (M = 19.23) reported their alcohol consumption and retrospectively recalled memories from their childhood (6-12 years old) of their mother's and father's drinking. The study found a trending result of paternal drinking, with participants with positive memories related to their father's drinking reporting drinking more than those with negative memories, $F(1, 172) = 2.991$, $p = .086$, $\eta^2_{partial} = .017$. There was no effect of maternal memory on young adult's drinking. Future research is needed to confirm the study's results with a more diverse and evenly distributed sample.

Introduction

Alcohol consumption has increased in the general adult population, with an estimated 72% of Americans consuming at least one alcoholic beverage per year measured in 2012-2013 compared to 65.4% measured in 2001-2002 (Dawson et al., 2015). Previous research has identified parents as a significant factor in forming attitudes toward alcohol use. For example, children who are regularly exposed to their parents' drinking tend to drink more themselves and have an early onset of drinking behavior (Coombs et al., 1991), while negative attitudes to alcohol at home are associated with less drinking behavior in underaged drinkers (Yu, 1998). Although previous studies explored the effect of parental drinking behavior and parents' attitudes toward alcohol during the early years of life on alcohol consumption in young adulthood, little research has examined the emotional perception of parental drinking in this relationship. Thus, the current study investigates the effect of emotionally negative or positive perceptions of parental drinking episodes from middle childhood on the drinking behavior of young adults.

The college years are often associated with the onset of excessive alcohol consumption, including heavy drinking and binge drinking (Schulenberg & Maggs, 2002). In a recent survey, 52.5% of college students reported drinking in the last month, and 8% of students reported having a recent occurrence of heavy drinking (National Survey, 2019). This is problematic because alcohol use among young adults negatively impacts health and well-being (Reid & Carey, 2015). A cross-cultural study of binge drinking on psychological distress and subjective well-being in young adults found that binge drinking frequency negatively affected perceived well-being (Piumatti et al., 2019). Among 18-24 years old, alcohol-related accidents have been identified as one of the leading causes of health problems and injuries (Hingson et al., 2005). Heavy drinking was also implicated in physical and sexual assaults, car accidents, injuries, and

deaths (Johnston et al., 2011). Drinking behavior in college years can affect individuals beyond graduation. For example, a higher frequency of heavy drinking was associated with a 10% reduction in the odds of postgraduate employment (Bamberger et al., 2018). Overall, drinking behavior in young adults significantly contributes to many aspects of life; therefore, identifying risk and protective factors for drinking behavior can be a vital subject for further exploration.

Factors Shaping Alcohol Behavior

Alcohol consumption is a complex behavioral phenotype that has environmental and hereditary causes. Studies on factors affecting alcohol problems attributed individual differences in alcohol consumption to genetic factors (Agarwal-Kozlowski & Agarwal, 2000). However, a study of genetically identical twins and non-identical siblings found that environmental factors significantly contributed to substance use, including alcohol, independently from genetic kinship (Rende et al., 2005). Although the current body of research cannot identify how much alcohol consumption can be explained by genetic variations versus environmental factors, a recent study examined the interaction between genetic and environmental factors on alcohol use in adult children of alcoholics (Ossola et al., 2021). The study found that having a genotype consistent with dysfunctional dopaminergic neurotransmission was associated with a higher risk of an alcohol use disorder. However, that risk was reduced if the individual had a caring environment in early childhood. Together, this research suggests that environmental factors, such as parenting, may be critical to examine.

Parental Influence

The environment plays a vital role in forming differences in alcohol drinking among individuals, especially psychological factors such as social influence, perceived drinking norms,

and outcome expectancies of drinking affect alcohol use (Epstein et al., 2008). A growing body of research shows that the family strongly predicts prevention and risk associated with drinking behavior. For example, previous research shows that the strongest social predictor of young adults' drinking behavior is their perception of parental and peers' drinking and attitudes toward alcohol (Velleman, Templeton & Copello, 2005). The frequency of interactions and closeness of a relationship with a parent also plays a vital role in young adult alcohol consumption. The more time children spent with a drinking parent, the more likely they were to use alcohol and have an early onset of alcohol drinking (Yu, 2003). In addition, exposure to parental drinking was found to be a stronger predictor of adolescent drinking than parental alcohol use (Smit et al., 2019). Often research highlights the importance of parental alcohol consumption on early teen drinking behavior, but this association becomes weaker in later years, where peer influence plays a more significant role (Aseltin, 1995; Forney et al., 1989; Forster, 1984; Kandel, 1985). However, a longitudinal study in Norway found a long-term effect of parental substance use on young adult use. Specifically, although adolescent substance use was strongly associated with peer use, their alcohol consumption measured ten years later showed maternal use was the highest predictor of substance use (Øygard et al., 1995). Furthermore, parental monitoring, permissiveness, and attitudes to alcohol in late adolescence was associated with adolescent drinking in studies of heavy drinking episodes (Wood et al., 2004). Children were most likely to get alcohol from their house; thus, the higher level of parental monitoring of alcoholic beverages in the house was associated with less use and the older onset of drinking behavior (Yu, 2002). The higher perceived parental monitoring in college students was associated with lower occurrences of drinking behavior (Hummer et al., 2013). Parental drinking behavior plays a significant role in

developing attitudes toward alcohol, but drinking outcomes can differ depending on the sex of a parent and a child.

Previous research investigated the significance of parental sex and child sex in relation to alcohol use. When examining a child's biological sex, male adolescents tend to drink more frequently, with amounts increasing with age (Van Der Vorst et al., 2009). However, some research did not find sex differences in young adults drinking behavior when examining alcohol-related memory associations (Palfai & Wood, 2001). Parental sex impacts children differently, but research on alcohol consumption somewhat contradicts this. For example, Zhang et al. (1999) found that paternal drinking increased male adolescent drinking, but maternal drinking had no effect. Other research found that paternal drinking problems more strongly predicted female and male adolescent drinking problems than maternal drinking (Chassin et al., 1999). On the contrary, male adolescences with mothers with alcohol use disorder had less alcohol consumption than other males in the study (Haugland et al., 2013). Some research showed that females could be more sensitive to their environment as paternal drinking problems had a stronger positive association with female adolescents' alcohol use than males' (Coffelt et al., 2006; Haugland et al., 2013). According to the social learning theory, children are more likely to imitate the behavior of same-sex adults (Bussey & Bandura, 1984), which is consistent with previous research on alcohol use. Maternal alcohol misuse was associated with higher alcohol use in female adult offspring, and paternal alcohol use disorder was related to more drinking in adult male children (Harburg et al., 1982). Due to conflicting results of the previous research and a lack of research on recreational alcohol use, with most of the studies examining parents with alcoholic problems, there is a need for more exploration of the effect of the sex of parents and offspring on alcohol use.

Expectancies and Attitudes Toward Alcohol

Parental drinking behavior influences young adults directly through social reinforcement and punishment and indirectly through the formation of attitudes, expectations, and perceptions of norms toward alcohol. Already in early childhood, parental drinking creates models of attitudes and expectancies toward alcohol consumption that were shown to promote drinking behavior later in life (Van Der Vorst et al., 2013). Early drinking experiences generally occur within the family environment, introducing norms and acceptable behavior toward alcohol and becoming a part of children's behavior patterns at an early age (Foxcroft & Lowe, 1991). Parents often have injunctive norms regarding alcohol based on personal history, culture, or social norms, which directly affect what rules about alcohol they convey to their children (Van Der Vorst et al., 2006). Parents with more conservative attitudes about drinking had more strict rules than more liberal parents, which was negatively associated with adolescent drinking. Van Der Vorst et al. (2006) noted that parental norms about their children's drinking did not always represent their own alcohol use. However, parents with liberal attitudes tend to consume more alcoholic beverages. The role of parental drinking behavior significantly influences young adults drinking, but less attention has been given to investigating the effect of children's perception of alcohol-related events.

Another line of research looked at parental influence on alcohol consumption through the lens of alcohol expectancies. Alcohol expectancies, which are the expectations of the outcome of alcohol use, are a predictor of alcohol consumption (Brown et al., 1980). Most childhood-formed expectancies come from parental drinking behavior (Cameron et al., 2003). Alcohol-related expectancies of benefits and consequences of drinking were identified as a mediator between the social influence of alcohol use and alcohol consumption (Fleming et al., 2004). Children are

known to form positive or negative expectancies toward alcohol due to their parent's alcohol consumption (Cameron et al., 2003). Social influence may create alcohol-related expectancies, which becomes an underlying motivation for drinking behavior (Ouellette et al., 1999). Later research found that positive expectancies were a stronger predictor of alcohol consumption than negative (Aarons et al., 2003). In addition, a study of perceived family and peer drinking found that the perception of others' drinking is associated with more positive social expectancies of drinking (e.g., "Kids who drink are cool and have more friends") through social learning (Wood et al., 2001). A study of social influence on adolescent drinking found that teens most likely observed or knew when one of their family members was drinking; the availability of alcohol in the house formed expectations of the benefits of drinking and, subsequently, positively affected drinking (Epstein et al., 2008). Higher positive alcohol expectancies in childhood were linked with early onset alcohol use and alcohol use problems (Jester et al., 2015). This body of research suggests that expectations for alcohol formed in childhood had an influence on drinking later in life. However, less is known about how alcohol-associated memories impact young adults' alcohol consumption.

Alcohol-Associated Memories

Children form alcohol-associated memories by observing alcohol drinking in their environment. Memory associations, such as perceived environmental cues of alcohol, are formed concepts about alcohol use that are spontaneously activated in memory and become a pattern of behavior later in life (Stacy & Newcomb, 1998). Children form memory associations with alcohol consumption long before they try any alcoholic beverage (Van Der Vorst et al., 2013). Exposure to alcohol in early childhood creates negative or positive alcohol-related memories, guiding drinking behavior later in life. A recent study found that adolescents who reported

greater perceiving alcohol use by their parents had more memory association related to alcohol and began drinking at a younger age (Van Der Vorst et al., 2013). Additionally, the same study found that late male adolescents had more alcohol-related memory associations, which predicted alcohol drinking a year later. Furthermore, individuals with more memory associations of alcohol drinking were found to drink more often and have more alcohol-related problems (Erblich et al., 2001). In turn, alcohol consumption formed more memory associations, which increased alcohol use (Stacy & Newcomb, 1998). However, some studies did not find a significant relationship between memory associations of parental drinking and alcohol use in young adults (Krank et al., 2010). Researchers speculated that peers have a greater influence on drinking behavior during young adulthood. Nonetheless, the conflicting results suggest a need to further explore how memories associated with parent drinking influence young adult drinking behavior.

The emotional background of alcohol-related memory associations plays an essential role in developing positive and negative expectancies of drinking and drinking motivation (Salemink & Wiers, 2014; Palfai & Wood, 2001). A study examining college students' reactions to various adjectives that were related to positive and negative drinking outcomes (e.g., jolly, woozy) predicted drinking behavior, such that heavy drinkers more frequently choose positive adjectives about their drinking (Rather et al., 1992). In addition, this study showed that the recollection of alcohol-related childhood experiences (safe vs. unsafe) was associated with similar emotions they developed toward alcohol during childhood (Törrönen & Rolando, 2018). In contrast, some research suggests that perceptions of the negative consequences of drinking form negative expectancies toward alcohol, which are associated negatively with alcohol use (Kuther & Higgins-D'Alessandro, 2003). The previous research has examined explicit and implicit emotions that people developed toward alcohol and their alcohol use; however, the

emotional perception of parental alcohol consumption in childhood in relation to later alcohol use was overlooked in scientific studies.

By exploring retrospective stories from childhood, we can learn about how someone processed the past and related to that experience (Benwell & Stokoe, 2006). The recent cross-culture study of retrospective alcohol-related stories found that different cultures had noticeable differences in emotional perception of parental drinking in childhood based on the character of the drinking situation, which may explain disparities in drinking behavior between Scandinavian countries (Törrönen, 2019). Childhood memories provided an indirect source for forming expectancies of the consequences of alcohol. Additionally, Törrönen and Rolando (2018) investigated how people responded to alcohol based on their emotional perception of their family members alcohol use in childhood. Sharing the childhood recollected stories participants from meal-oriented cultures showed more neutral and positive emotions to alcohol, when participants from rather intoxication-oriented cultures developed ambivalent emotions to alcohol, more or less negative and positive emotions in adulthood. Moreover, Törrönen (2019) found that despite cultural differences, negative emotions, such as fear and shame, were more strongly linked with paternal drinking than with maternal. Childhood stories can expand our understanding of how attitudes, norms, and behaviors were developed.

Current Study

Although there is a body of research on how parental drinking forms memory associations and attitudes toward alcohol use in adolescents and young adults, there is a lack of research on the emotional component of this relationship. The research that examined emotional factors related to observed parental drinking in childhood has not examined associations with the

outcome of current drinking. The current research investigates the retrospective childhood stories of parental drinking and the emotional perception of the drinking situations in middle childhood on the current drinking behavior of young adults. In addition, I explored whether parent and child gender were related to this relationship. I hypothesized that more positively perceived alcohol-related memory of parental drinking in middle childhood would be associated with a higher level of alcohol use in young adulthood. Finally, according to previous research, I expected to find that the negative emotions about maternal drinking would be associated with less alcohol use in males (Haugland et al., 2013) and negative memories of paternal drinking will be linked with more drinking in females and males (Chassin et al., 1999). Positive memories of drinking for both females and males were expected to be associated with more alcohol consumption, regardless of a parental gender.

Methods

Participants

Participants were 201 undergraduate students (15.4% males, 82.6% females, 2% transgender) between the ages 18 and 33 (M = 19.23, SD = 1.65) with most participants being from high income households (61.8% = $80,000 - > $500,000, 24.9% unknown). Participants were recruited through a psychology subject pool at a university in the southwest USA in 2022-2023. Students received 1 hour of course credit for their participation. The students reported their racial/ethnic background as 76.6% European American, 11.9% Hispanic/Latino, 7.5% Asian, 3.0% Black).

Measures

Demographic questionnaire. Participants provided information regarding age and gender, ethnicity, GPA, relationship status, and their parents' household income.

Alcohol use. Participants' alcohol consumption was measured using the self-reported, 10-item version of The Alcohol Use Disorders Identification Test (AUDIT; Saunders et al., 1993). The participants reported the frequency of events that occurred related to alcohol use (e.g., "How often do you have six or more drinks on one occasion?") on 5-point scale (1 = Never, 2 = Monthly or less, 3 = 2-4 times a month, 4 = 2-3 times a week, 5 = 4 or more times a week). A higher score on the scale indicates higher alcohol use. Cronbach's alpha in the current study was .807.

Parental Alcohol Use. Alcohol use of parents was measured through the 30-item Children of Alcoholics Screening Test (CAST; Jones, 1983). Participants answered yes or no to questions about feelings, behavior, and experiences related to parents' alcohol use for a father and a mother separately (e.g., "Have you ever lost sleep because of a parent's drinking?", "Have you ever heard your parents fight when one of them was drunk?"). The score of 2-5 "yes" responses indicated problem drinking in one of the parents, more than 5 positive responses identified that a participant is more than likely the child of an alcoholic. The measure has a good internal consistency and a high test-retest reliability (k = .83; Charland & Côté, 1998). In the current sample, the internal consistency was good (Cronbach's alpha = .947).

Participants also retrospectively reported parental alcohol consumption by recalling a memorable or a typical episode from middle childhood (6-12 years) when one of the parents was consuming alcohol, as well as what they were feeling at that time (e.g., "Who was present?", "Would you describe the memory as emotionally positive or negative?"). Each participant

recalled an episode for a mother and a father separately. I used modified questions from semi-structured interviews used in a previous study (e.g., “Would you describe the memory as emotionally positive or negative?”; Wells et al., 2014).

Results

Preliminary Data Analysis

Before the primary data analysis, I performed preliminary data analyses to ensure compliance with statistical assumptions. The normality test using Shapiro-Wilk showed that results on participants’ alcohol drinking with a positive memory of maternal drinking violated normality, $p = .000$. Outliers were dropped for data three standard deviations (*SD*) above and below the mean; however, normality was still not met. Since there were more than 100 participants in the study I continued with the primary analysis of the data justifying it by the central limit theorem. In the negative condition, the assumption of normality was met, $p = .501$. Normality for paternal memory was assesed using Shapiro-Wilk. In the positive memory condition normality was not met, $p = .000$, but I continued with the data analysis due to the central limit theorem. In the negative paternal memory condition normality was not met, $p = .038$. Attempting to meet the normality I dropped the outliers for data three SD above and below the mean.

Primary Data Analysis

The data were analyzed using SPSS 27.0.1. A descriptive analysis was conducted to analyze parental drinking problems. The results revealed that the majority of parents had no drinking problems, 71% of fathers ($M = 1.54$, $SD = 4.1$), and 62.7% of mothers ($M = 2.47$, $SD = 5.56$) scored 0 on CAST.

A 2 (childhood memory of father's drinking: positive vs. negative) by 2 (sex: males vs. females) between-subjects analysis of variance (ANOVA) was performed on participants' drinking. Homogeneity of variance for paternal memory is assumed using Levene's test, $F(3, 172) = .665$, $p = .574$. The analysis revealed that the effect of paternal memory trends toward statistical significance, $F(1, 172) = 2.991$, $p = .086$, $\eta^2_{partial} = .017$, with participants with positive memories related to their father's drinking reported drinking more than participants with negative memories (for descriptive statistics see Table 1). There was no significant difference between alcohol consumption and the sex of the participants, $p = .848$. The effect was also non-significant for the two-way interaction, $F(1, 172) = 2.991$, $p = .306$, $\eta^2_{partial} = .006$. Overall, these results suggest that the emotional perception of a childhood memory of paternal alcohol drinking during 6- to 12-years old period does not significantly impact the current drinking behaviors of young adults.

A 2 (childhood memory of mother's drinking: positive vs. negative) by 2 (sex: males vs. females) between-subjects analysis of variance (ANOVA) was performed on participants' drinking. The equal variance was assumed for memories of maternal drinking using Levene Statistics, $F(3, 157) = .345$, $p = .793$. The results revealed no significant main effect of sex, $p = .535$, or memory type, $p = .176$ (for descriptive statistics see Table 2). The effect was not qualified by the two-way interaction, $F(1, 157) = .554$, $p = .458$, $\eta^2_{partial} = .004$. Overall, these results show that the memory of maternal drinking behavior in middle childhood has no significant effect on drinking behavior in young adults.

Due to a null-findings I performed an exploratory analysis to identify possible variables that could affect the results and would need to be controlled for. Analysis of variance (ANOVA) was performed on participants' alcohol use as a function of participants' race/ethnicity,

household income, and parents drinking problems. The results did not reveal any significant associations, *p*s ≥ .534.

Additionally, I decided to explore whether the memory of the mother's drinking would affect the perception of the father's memory condition and subsequently affecting the outcomes by controlling for the mother's memory. A one-way between-subjects analysis of covariance (ANCOVA) was conducted on participants' alcohol use as a function of memory paternal drinking (positive vs. negative) while controlling for maternal drinking memory. Homogeneity of variance for paternal memory is assumed using Levene's test, $F(1, 142) = .663$, $p = .417$. The results revealed no main effect of paternal drinking memory on participant's drinking, $F(1, 141) = .017$, $p = .898$, $\eta^2_{partial} = .000$. There was also no effect of the memory after controlling for the memory of mother's drinking, $F(1, 141) = .017$, $p = .898$, $\eta^2_{partial} = .000$. Overall, these results suggest no significant effect of memory of paternal drinking in middle childhood on alcohol use in young adults.

To explore whether the memory of the father's drinking would affect the memory of the mother's alcohol use and subsequently affecting the outcomes by controlling for father's memory. A one-way between-subjects analysis of covariance (ANCOVA) was conducted on participants' alcohol use as a function of memory maternal drinking (positive vs. negative) while controlling for the memory of father's drinking. Equal variance is assumed using Levene's test, $F(1, 142) = .261$, $p = .610$. The results revealed that the memory of maternal drinking had no effect on participants' drinking, $F(1, 141) = .017$, $p = .898$, $\eta^2_{partial} = .000$. There was also no significant effect of the memory after controlling for the father's memory condition, $F(1, 141) = .799$, $p = .373$, $\eta^2_{partial} = .006$. Overall, these findings illustrate no significant effect of childhood memories of maternal drinking on young adults' drinking behavior.

Discussion

Accidents related to alcohol drinking among young adults were identified as one of the leading causes of physical health problems (Hingson et al., 2005). However, it is not yet clear what factors affect alcohol behavior among youg adults. Previous research showed that parents have an influence on the drinking behavior of their offspring (Coombs et al., 1991; Yu, 1998). Parents impact children by forming attitudes toward alcohol through perceived drinking norms, parenting styles, and forming expectancies of drinking outcomes (Epstein et al., 2008). However, the review of the literature revealed the lack of studies examining the emotional perception of parental drinking as a factor in these relationships. Additionally, the sex of the parent and child plays a role in the child's later alcohol use but research showed inconsistent results that needed further investigation (Coffelt et al., 2006; Haugland et al., 2013). Consequently, the current study aimed to investigate whether the emotional perception of memories of parental drinking in middle childhood and the sex of a parent and a child would be associated with alcohol use in young adults. The results of the study did not find a link between retrospective emotional perceptions of parental drinking and alcohol behavior in young adults.

The effect of memories of paternal drinking with trending significance showed that participants who had negative memories reported drinking less than young adults who had positive memories. However, previous research showed that individuals with fathers who had problem drinking were using more alcohol in adulthood (Chassin et al., 1999); however, we do not know if the experience of paternal alcohol abuse is similar to the negative emotional experience of alcohol use occurrences. Considering that the majority of fathers did not have drinking problems, the results can suggest that negative memories have a different effect on

children as compared with problematic parental drinking. Furthermore, if we do not account for the sex of the parent this trend is consistent with my first hypothesis that people with negative experiences of their parents drinking are expected to drink less. These findings can be used for educational purposes to inform parents of the risks of a child's exposure to parental drinking even if the situation is generally safe for children.

With respect to outcomes involving the memory of a mother's drinking, the study did not find an effect on young adults' drinking. There have been no studies that examined how the emotional perception of the memory would affect current behavior; therefore, there was no previous data to compare the results with. Additionally, it was previously shown that paternal drinking has a greater influence on offspring alcohol use; thus, the memories related to mother's drinking could have less of an influence on young adults' drinking behavior (Zhang et al., 1999). Törrönen (2019) also found that negative emotions about drinking, such as fear and shame, were more strongly linked with paternal drinking than with maternal drinking, which may reduce the impact on adult children's drinking.

There are a few possibilities that may explain the lack of significant findings related to the effect of the memory of parental alcohol use. The studied effect could not have been captured due to an uneven sample size distribution between the negative and positive memory conditions. Only 29 participants reported negative memories of paternal drinking while 147 participants reported positive memories, which may decrease the statistical power and impact the significance of the results. Additionally, the small number of male participants (4 males reported negative memories of paternal drinking and 2 reported negative memories of maternal drinking) may have affected the ability to investigate sex as a factor in these relationships. Additionally, the power analysis revealed that the study did not have enough power and required a bigger

sample size (over 1000 participants) to achieve confident results. Further research on this topic with a better sample distribution and a larger sample is needed to replicate the results. Another aspect that may affect the results is the weaker importance of parental influence on offspring development during adolescence and young adulthood with higher influence from peers but the parental behavior becomes more influential in adulthood (Øygard et al., 1995). Thus, the higher effect of the memory of parental drinking may be found when looking at older adults' behavior.

Limitations and Future Directions

The current study had some limitations that warrant discussion and inform ideas for future research. First, the study used a convenience sample which mostly consisted of White females from higher socioeconomic backgrounds. A more diverse sample is needed to generalize the data to the larger population of college-aged adults. Additionally, we do not know whether the sample primarily from higher socio-economic status can affect the disproportionality of memories with positive emotions of parental alcohol consumption in the study. Future research with a bigger sample and equal distribution of participants in every condition is needed to eliminate the earlier-mentioned limitations.

Another aspect that contributes to the limitation of the study is the use of only self-reported measures that can be less reliable due to generally lower introspective abilities, response bias, and conscious or subconscious alteration of answers for social acceptance (Althubaiti, 2016). The study may benefit from collecting data from parents and others close to the participant which will improve the credibility of the data. Another limitation of the study is the retrospective nature of the reported memory. Participants reported episodic or autobiographical memory which is flawed due to perceptional changes and cognitive flexibility of memories

during the retrieval process (Sutin & Robins, 2008). Future studies may benefit from a longitudinal design beginning in middle childhood to reduce the unreliability of memory retrieval. Furthermore, in the current study, I could not assess the number of instances that a child had observed the parent's drinking, which is known to affect the relationship (Coombs et al., 1991). A longitudinal design would also overcome this limitation. Finally, another limitation that merits attention is the lack of assessment of the quality of parent-child relationships in this study. Previous studies on the parent-child dyad found that the close relationships with drinking parents tends to increase alcohol use by the child (Mathijssen et al., 2014). Without looking at these relationships we do not know if it has an effect on our results.

Table 1. Descriptive Statistics of Memory of Father's Drinking

Dependent Variable: AUDIT Score

Emotional perception of the memory	Participant Sex	*M*	*SD*	*N*
Positive	Male	7.35	4.68	23
	Female	5.76	4.54	124
	Total	6.00	4.58	147
Negative	Male	3.75	2.63	4
	Female	4.84	4.10	25
	Total	4.70	3.90	29
Total	Male	6.81	4.58	27
	Female	5.60	4.46	149
	Total	5.80	4.50	176

Table 2. Descriptive Statistics for Memory of Mother's Drinking

Dependent Variable: AUDIT Score

Emotional perception of the memory	Participant Sex	*M*	*SD*	*N*
Positive	Male	5.48	4.10	27
	Female	5.68	4.20	118
	Total	5.65	4.17	145
Negative	Male	9.00	7.07	2
	Female	6.71	4.81	14
	Total	7.00	4.90	16
Total	Male	5.72	4.27	29
	Female	5.80	4.26	132
	Total	5.80	4.25	161

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