Investigating the Unique Effect of Marriage-Related Motives to Limit Drinking on Young Adult Drinking After Marriage

by

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ABSTRACT

The present study aimed to test the effect of role socialization processes on declines in drinking after marriage. Role socialization as it relates to marriage theorizes that after occupying a role, individuals are likely to change their behaviors to conform to role expectations of marriage, such as reductions in drinking (Yamaguchi & Kandel, 1985). Previous literature has examined declines in drinking behaviors after marriage and inferred that role socialization was the underlying process. This study is the first to directly test whether beliefs that alcohol is harmful to the marital role predicted declines in frequency of drunkenness after marriage. Ordered probit regression was used to test the effect of marriage-related motives to limit drinking on declines in frequency of drunkenness from before marriage to after marriage. Analyses revealed that marriage-related motives to limit drinking were not significantly predictive of declines in frequency of drunkenness after marriage. Only partner drinking emerged as a significant predictor of declines in frequency of drunkenness after marriage. These results highlight the need for a reliable and valid measure of role socialization processes as they relate to the marital role. Furthermore, future studies should consider studying participants at different time points after marriage and consider measuring commitment to the marital role as a moderator. Such studies will help to better understand the results of this study as well as better understand the marriage effect on drinking.

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INTRODUCTION

Overview

The study of alcohol consumption across the lifetime is important given the societal costs associated with problematic drinking and alcohol use disorders. Epidemiological findings show that heavy drinking in young adults is linked to negative consequences such as injury, risky sexual behavior, and interpersonal conflict (Wechsler, Lee, Kuo & Lee, 2000). In addition, heavy drinking is linked to long-term consequences, such as alcohol use disorder (O'Neill, Parra, & Sher, 2001) and alcohol involvement in young adulthood has been identified as a risk factor for persistent patterns of long-term drinking and drinking problems (Jackson, O'Neill, & Sher, 2006; O'Neill, Parra, & Sher, 2001).

However, it is important to study alcohol use within a developmental context, as alcohol use appears to shift during the course of development (Sher & Gotham, 1999). Drinking peaks between the ages of eighteen and early twenties (Johnston, O'Malley, & Bachman, 1996), and then declines over the course of young adulthood. This is true both for normative alcohol involvement (i.e., consumption and heavy drinking; Johnston, O'Malley, & Bachman, 1996), and for pathological involvement (i.e., alcohol use disorders; Grant et al., 1994). This phenomenon has been referred to as "maturing out" of alcohol use (Winick, 1962; Littlefield et al., 2009; Jochman & Fromme, 2009).

Maturing out and Role Incompatibility

Maturing out of alcohol use has been linked to the acquisition of social roles in young adulthood and to the phenomenon of "*role incompatibility" (*Yamaguchi & Kandel, 1985a). Role incompatibility, or role strain, refers to the conflicting demands, expectations, and values that emerge from participation in multiple roles or role demands that conflict with particular behaviors (Yamaguchi & Kandel, 1985a). In this

case, the term is used to refer to role demands that are in conflict with alcohol use. As individuals enter young adulthood and take on adult social roles such as becoming employed, getting married, and becoming parents, alcohol use that was not problematic at a younger age may now cause role conflict. A basic assumption is that individuals will act to minimize role conflict or role incompatibility. Thus, if individuals choose roles that are not compatible with their behaviors, the expectation is that they will change their behavior to make it compatible with the role (Burr, 1973; Yamaguchi & Kandel, 1985a). The process of changing behaviors and attitudes to conform to role expectations is known as *role socialization* (Kandel, 1985). Alternatively, another way to reduce role incompatibility is to leave the role.

Role incompatibility can also be avoided through the *role selection* process, which refers to an individual's selective commitment to social roles that are compatible with pre-existing or preferred values and behaviors (Kandel, 1985). In this model, the person simply avoids occupying a role that would not be compatible with their current behaviors, and thus avoids the potential of role incompatibility. Role selection can work through conscious decisions to avoid roles that are contradictory to one's behaviors; however, it is more likely that individuals have limited opportunities to occupy certain roles, due to their behaviors. In reference to drinking, role selection would be not entering adult roles (i.e., marriage or parenthood) if these roles are not compatible with the levels of drinking that the person chooses to engage in.

Of the various role transitions that have been linked to changes in young adult alcohol involvement, this review focuses specifically on marriage. Marriage was chosen because a large body of literature has established the impact of marriage on young adult drinking. Prospective studies have shown that marriage predicts a decline in young adult alcohol involvement, including alcohol consumption (Bachman, O'Malley, & Johnston,

1984; Bachman et al., 2002; Bachman et al., 1997; Bogart et al., 2005; Curran et al., 1998; Temple et al., 1991), binge and heavy drinking (Bachman et al., 1984; Bachman et al., 2002; Bachman et al., 1997; Bogart et al., 2005; Powers, Rodgers & Hope, 1999; Schulenberg et al., 1998), drinking-related consequences (Bogart et al., 2005; Horwitz & White, 1991), and alcohol use disorder diagnoses (Gotham, Sher & Wood, 2003; Sher & Gotham, 1999). Notably, effects of marriage on drinking declines in young adulthood are stronger than are effects of cohabitation, engagement, and divorce. Cohabitation has not been found to lead to reductions in alcohol consumption or heavy drinking (Bachman et al., 1997) and though there is evidence that engagement predicts declines in young adult drinking, the relationship is not as strong as marriage (Bachman et al., 1997).

The Marriage Effect on Drinking

A large body of research has attempted to determine whether or not marriage itself has a causal effect on the reduction of drinking in young adulthood. Despite the consistency of the relation between marriage and drinking, many of the epidemiological studies are cross-sectional in nature. This limitation makes it difficult to distinguish whether the effect of marriage is due to role socialization, or due to role selection. Without studying the longitudinal effects of marriage on drinking, it is difficult to parse apart whether individuals are declining in drinking behaviors due to marriage or due to other reasons that may make them particularly likely to marry. Though longitudinal and prospective studies can assist with this issue, they also have methodological limitations, as there are multiple third variables that are correlated with marriage and may be the actual causes of declines in drinking.

Developmental Period of Emerging Adulthood

Emerging adulthood has been defined as the age period between 18 and 25 (Arnett, 2000). It is during this period that first marriage typically occurs, and that

alcohol consumption peaks and then begins to decline. Accordingly, it is important to understand whether other changes that occur during emerging adulthood could actually be driving what appears to be the effect of marriage on declines in drinking. Importantly, meta-analysis has shown a pattern of normative change in personality that occurs during this period, with individuals becoming more socially dominant, conscientious, and emotionally stable as they age (Roberts et al, 2006; Littlefield et al, 2009). Young adulthood, in particular, is the developmental period that shows the greatest change in personality traits, even more so than adolescence (Roberts, Caspi & Moffitt, 2001; Roberts et al, 2006). Furthermore, this age is also associated with brain changes and changes in cognitive control. In order to understand the brain changes that occur in young adulthood, it is important to understand what occurs in the brain prior to young adulthood, in adolescence. During adolescence, the brain undergoes a myriad of changes, including the increase of hormones, increase in growth of brain regions, increase in connectivity between brain regions, and synaptic pruning (Spear, 2010). Also, the development of the prefrontal cortex, responsible for top down cognitive control—decision-making, emotion regulation, and inhibitory responses will not fully develop until nearly 25 years of age (Steinberg, 2004). Therefore, adolescence is a developmental period marked by substantially increased risky behaviors, such as alcohol abuse, risky sexual behaviors, reckless driving, and driving while intoxicated (Steinberg, 2004). As the prefrontal cortex develops as individuals reach young adulthood, the inhibitory control required to resist risky behaviors increases (Giedd, 2004), thus leading to a potential decrease in risky behaviors.

One possibility is that the marriage effect simply reflects this development, and that married people are less likely than single people to use alcohol because they mature out of their alcohol use at approximately the same time as their first marriage tends to

occur (Kandel, 1980; Maggs & Schulenberg, 2004/2005; Derrick & Leonard, 2014). If this is true, then the same shift in alcohol use should be seen in both married and unmarried people, and the effect of marriage should only hold for those who marry in early adulthood, as the driving factor of this effect would be the developmental period, as opposed to marriage itself (Derrick & Leonard, 2014). However, studies have shown that the decrease in alcohol use and negative consequences for those who get married is stronger than the decrease experienced by those who remain single (Curran, Muthén & Harford, 1998; Horwitz, White & Howell-White, 1996; Derrick & Leonard, 2014).

Marriage Effects Across Developmental Periods

In order to establish that marriage is driving the decline of drinking behaviors in young adults, it is important to establish that marriage effects also occur across different developmental periods and are not limited to young adulthood. Some studies have found that the effect of marriage for young adults is not the same as the effect for older adults. For example, even though marriage is negatively correlated with substance use (including alcohol use) at ages 28 through 30, the correlation between marriage and substance use at ages 21 through 24 is very weak (Labouvie, 1996; Derrick & Leonard, 2014). Also, in a study that compared persistent heavy drinkers with those who reduced their heavy drinking over time, those who reduced their heavy drinking were more likely to be married (at ages 28-30) than those who did not reduce their heavy drinking; a relationship that was only observed at this age and not in an older or younger age group (Bennett et al., 1999). These findings suggest that the timing of marriage may be an important factor in considering its effect on decreases in drinking behaviors. However, the results of many other studies contradict these findings. A prospective study assessing adolescent marriage found that those who married in adolescence (who did not divorce) reported fewer negative consequences and less consumption of alcohol at age 29

than those who did not marry, in addition to being less likely to engage in heavy drinking (Bogart et al., 2005). Additionally, in a meta-analysis of twelve longitudinal studies, getting married was related to decreased alcohol consumption for both those aged 18 through 39 and for those who were 40 and older (Temple et al., 1991; Derrick & Leonard, 2014). This suggests that the marriage effect holds even outside of the developmental period of young adulthood, and thus marriage may have a unique effect on the decline of drinking behaviors. Moreover, research suggests the marriage effect holds even for those who remarry: levels of substance use such as tobacco, alcohol, marijuana, and cocaine decrease after re-marriage (Bachman et al., 1997; Hanna et al., 1993; Liew, 2012; Derrick & Leonard, 2014). Thus, although neurobiological maturation in emerging adulthood may account for some proportion of the decrease in drinking in young adulthood, processes occurring during this developmental period cannot fully account for the effect of marriage on declines in drinking. This suggests that individuals who marry may experience role socialization effects of marriage that lead to declines in drinking.

Marriage-Related Motives to Limit Drinking

The literature has established that the effect of marriage on drinking holds across developmental periods, and therefore cannot be explained by factors of emerging adulthood alone. This suggests that role socialization in the marital role might explain marriage-related declines in drinking in young adults. As noted earlier, the fundamental assumption of role socialization is that conflicts between demands of the marital role, and drinking behaviors cause individuals to reduce their drinking. If so, the actual proximal mediator of the marriage effect would be a belief that drinking alcohol is harming the marriage, thus motivating individuals to limit their drinking. However, this fundamental assumption has not been empirically studied. To date, there are no studies that have specifically tested whether married individuals reduce their drinking because

they believe that it harms their marriage. The current study attempted to fill that gap in the literature by assessing whether perceptions of "marriage-related motives to limit drinking" do, in fact, uniquely predict declines in drinking among married individuals. However, to demonstrate that marriage-related motives to limit drinking are a unique predictor of declines in drinking among married people, it was important to consider potential third variables.

The Effect of Personality Changes on Declines in Drinking

Given that marriage is most likely to occur during the developmental period of emerging adulthood, one possibility was that the effect of marriage on drinking declines is due in part to changes to personality occurring during emerging adulthood. Thus, personality was considered as a potential threat to capturing the unique prediction of marriage-related motives to limit drinking on declines in drinking after marriage. There are few studies that have attempted to assess whether or not personality is the driving force behind the notable decline in drinking in young adulthood. According to Littlefield et al (2009), personality changes occurring between the ages of 18 through 35, specifically shifts in neuroticism and impulsivity, are associated with changes in alcohol involvement during this time period. Results from this study indicated that individuals who displayed sharper declines in neuroticism and impulsivity during this time period were more likely to undergo steeper decreases in alcohol problems (Littlefield et al, 2013). Importantly, results from Littlefield, Sher, and Wood (2009, 2010) showed that declines in drinking during emerging adulthood were uniquely predicted by both marriage and personality change.

Other aspects of personality, such as behavioral undercontrol, have been linked to alcohol use (Sher & Gotham, 1999). Sensation seeking has been linked to changes in alcohol use over time. Longitudinal studies have suggested that individuals who show

elevations in sensation seeking are more likely to demonstrate continued substance use throughout emerging adulthood (Bennett et al., 1999), and are more likely to develop alcohol use disorders (Sher & Gotham, 1999). However, only one study has looked at the relation between sensation seeking and marriage in later declines in drinking. Results from this study suggested that though sensation seeking significantly decreased after marriage, it did not significantly interact with marriage to predict future declines in drinking (Lee, 2013). This evidence supports the finding that personality changes occurring during emerging adulthood have a unique effect on drinking declines and do not interact with the effect of marriage on later drinking declines. Given that the literature supports the theory that personality change does not explain the marriage effect but is instead a unique path to declines in drinking, the current study did not focus on personality changes when assessing the effects of marriage-related motives to limit drinking on declines in drinking among married people.

Selection Into Marriage

As noted earlier, it is possible that drinking declines after marriage are due to role selection, rather than role socialization. One selection factor is pre-marriage drinking, such that those who drink heavily are actually less likely to get married in the first place. Furthermore, it is possible that there are differences in marriage rates based upon personality, conventionality, or maturity that are actually driving the effect of marriage on drinking declines. There is some evidence for the selection effect into marriage. For example, people who drink heavily or use illicit substances are less likely to get married than are nonusers (Fu & Goldman, 1996; Derrick & Leonard, 2014). Also, adults who are married by the age of 24 are less likely to have been heavy drinkers at age 21 than are those who do not marry (Horwitz & White, 1991). There have also been studies showing that illicit drug users are more likely to separate from their partner after marriage, and

more likely to cohabitate with their partner before marriage, than are those who do not use illicit substances (Yamaguchi & Kandel, 1985a).

However, other studies suggest a more complex picture. Some studies demonstrate that the selection effect may only hold for certain populations. For example, alcohol use may delay or prevent marriage for women, but these same results did not hold for men (Blair, 2010). Other studies have shown that for African-American young adults, alcohol use does not affect their choice to marry or not marry; thus the effect may only hold for other racial/ethnicity groups. There are also studies that suggest heavy levels of drinking and substance use may cause earlier marriage, as opposed to decreasing chances of marriage. One study showed that substance use, including alcohol use, along with psychopathology, was associated with an increased chance of an early marriage (Forthofer et al., 1996). Similarly, another study found that heavy drinkers at the age of 16 were the most likely to be married at the age of 22 (Power & Estaugh, 1990). Lastly, there is evidence that the selection effect into marriage doesn't exist at all: a study by Horwitz et al (1996) in the United States found that light drinkers are not more likely to get married than heavy drinkers, and getting and staying married was associated with a decrease in alcohol use.

However, in order to show the effect of role socialization over and above the effects of role selection, it is important to consider methods to rule out effects that could be due to role selection. A study by Lee et al (2010) found that heavy drinkers who do marry decrease their drinking, while heavy drinkers who do not marry increased their drinking. This study effectively controlled for pre-marital drinking by using a change score that assessed the change in drinking from pre-marriage to post-marriage.

Interestingly, there is some evidence that the marriage effect is strongest for those who have higher levels of drinking. Results from a recent study found that young

adult transition into marriage has a stronger effect on subsequent declines in drinking for problem drinkers than for light drinkers (Lee et al., 2015). Based on these findings, the current study considered pre-marriage drinking levels both as a predictor of drinking declines, and also as a potential moderator of the effect of marriage-related motives to limit drinking.

Parenthood, Employment, and the Marriage Effect

Other potential confounders of the marriage effect are alternative or additional roles that individuals may enter into during emerging adulthood. Both parenthood and employment are roles that are likely to occur during emerging adulthood, when marriage also tends to occur. As such, it is important to understand whether the marriage effect is actually being driven by individuals entering other roles, such as parenthood and employment that occur at the same time. A few studies have assessed the parenthood effect as well as the marriage effect. Indeed, pregnancy is associated with decreased substance and alcohol use (Bachman et al., 1997). Bachman et al (1997) assessed for a parenthood effect in conjunction with the marriage effect, and results showed that women decreased their substance and alcohol use over and above previous decreases already explained by the marriage effect, whereas males did not. Other studies have found similar patterns, such that parenthood is associated with decreased alcohol use and binge drinking, but these results are better explained by marriage for both men and women (Bachman et al., 1997; Gotham, Sher, & Wood, 1997; Jochman & Fromme, 2010). Some studies also indicated that alcohol use does not decrease over and above the marriage effect during pregnancy (particularly for men), but rather a further decline in drinking (beyond what is better predicted by the marriage effect) occurs in men after the child is born and they experience an increase in roles and responsibilities associated with parenthood (Bachman et al., 1997; Yamaguchi & Kandel, 1985b). Thus, it seems

parenthood may have a unique effect on a decline in drinking, particularly for women. However, parenthood does not appear to explain the decline in drinking and substance use explicitly related to marriage. Therefore, the current study controlled for parenthood in order to isolate the unique effect of marriage-related motives to limit drinking on declines in drinking in young adulthood.

Interestingly, research on the relationship between employment and declines in young adult drinking does not show clear results. Some studies have indicated that full-time employment is related to a decrease in alcohol use (Gotham et al, 1997), whereas others have shown that it increases alcohol use (Temple et al, 1991). Additionally, other studies have shown that there is no relationship between employment and a decrease in substance use (Bachman et al., 1984; Gotham et al., 2003; Jochman & Fromme, 2010). These mixed findings point to a clear distinction between the marriage effect and the potential of an employment effect. Moreover, full-time employment, though frequently occurring during young adulthood, does not always coincide with marriage. Thus, it is unlikely that role incompatibility related to employment would be responsible for the change in drinking behaviors found to be related to marriage. Based on these findings, the current study did not consider employment when assessing the relation between marriage-related motives to limit drinking and declines in drinking after marriage.

Peer Influences and the Marriage Effect

The relationship between alcohol use and peer groups was also of importance when considering the marriage effect. Ample research has shown that there is a relationship between alcohol use and peer drinking throughout the lifespan. Studies show that time spent with heavy drinking peers is related to more binge drinking for those who are 18 to 24 years old (Schulenberg et al., 1996). Therefore, it is possible that changing peer groups and social networks upon marriage may in fact be responsible for

the changes in substance use seen after marriage. Marriage has been shown to be associated with an increase in married friends and a decrease in substance using friends, along with a decrease in "drinking buddies" (Kearns & Leonard, 2004; Leonard & Mudar, 2003). However, there is also evidence that there is no relationship between peer drinking and couple's drinking in a married sample (Leonard & Mudar, 2003). The lack of consistency in the findings coupled with the consistency of the marriage effect suggest that though peer influences may be related to the marriage effect, these influences cannot fully account for the marriage effect. However, to be exhaustive in considering potential confounders, the current study considered peer influences as a competing predictor in assessing the relation between marriage-related motives to limit drinking and later declines in drinking.

Reasons to Limit Drinking

Developmentally related declines in drinking might also be related to the influence of drinking related cognitions (Bachman et al., 2002). There is a wealth of literature that has shown that cognitive factors prospectively predict individual differences in alcohol consumption and alcohol problems (Baer et al., 2002). This body of research is primarily focused on motives for drinking, alcohol expectancies, and reasons to limit drinking. However, cognitions and expectancies related to drinking most relevant to the proposed study are specifically marriage-related reasons for limiting drinking and marriage-related positive alcohol expectancies. Reasons to limit drinking in particular may be important predictors of declines in drinking that occur after marriage. There have been few studies that have examined beliefs about why people choose to limit their drinking or abstain from alcohol as compared to the wealth of literature that focuses on alcohol expectancies and drinking motives. Despite this, reasons to limit or abstain from drinking have been identified and assessed using a range of self-report

measures (Epler et al., 2009). Although there has been a fair amount of variability in measurement, there is existing evidence that self-reported reasons for limiting or abstaining from drinking are significantly related to drinking behavior (Epler et al., 2009). Domains that have been identified as related to lower levels of drinking include religious/moral considerations, a desire to maintain control, and upbringing (i.e. values against drinking). Conversely, domains that have been related to increased alcohol consumption include a desire to avoid adverse consequences and expense. These differences likely reflect distinct pathways of the formation and development of reasons to abstain or limit drinking. Those who endorse reasons such as religiosity (i.e., "it's against my religion to drink") or upbringing (i.e., I was brought up not to drink) most likely acquired these beliefs at a fairly young age, and it is possible that their subsequent alcohol exposure may be delayed or decreased due to these beliefs (Epler et al., 2009). However, those who endorse a desire to avoid adverse consequences may have already experienced the negative consequences of drinking (Greenfield et al., 1989; Collins, Koutsky & Izzo, 2000; Epler et al., 2009). This would explain why there is a greater endorsement of a desire to avoid consequences related to higher levels of drinking.

As individuals transition out of college and enter young adulthood, research suggests that drinkers begin to limit or abstain from drinking in particular due to beliefs about loss of control and a resurgence of their convictions (i.e., religiosity and upbringing) (Epler et al., 2009). These reasons specifically may be related to the transitions that occur in emerging adulthood, therefore experiencing investment in family related convictions (Epler et al., 2009). These reasons may increase in importance as they become more congruent with the maturity and lifestyle of adulthood. In addition, beliefs about losing control may be seen as less acceptable in emerging adulthood as opposed to in adolescence, and fears around developing a problem may become more

salient at this age as well. Reasons to limit or abstain from drinking specifically shifted in parallel with the effect of maturing out (Epler et al., 2009), and thus were important to consider as predictors of declines in drinking, in addition to the marriage effect. Thus, the current study considered reasons to limit or abstain from drinking as a competing predictor to marriage-related motives to limit drinking on declines in drinking after marriage.

Marital Satisfaction

In order to adequately assess whether marriage-related motives to limit drinking are related to a decline in alcohol use, it was also important to consider the effect of marital satisfaction. Not only does marital status have an effect on substance use, marital functioning can have an impact on alcohol use as well. For example, if there is a large amount of marital conflict and lower marital satisfaction, the marriage may generate stress and higher levels of negative affect, both of which are linked to increased alcohol use (Derrick & Leonard, 2014). Given that stress and negative affect are linked to increases in alcohol use, and both stress and negative affect may be present in a marriage with lower marital satisfaction, it is important to consider that marital satisfaction may have an effect on drinking declines. Most of the current research on this topic has been cross sectional, so the direction of influence and possibility of spurious factors is not fully known. However, there is also longitudinal evidence that marital satisfaction is related to changes in alcohol consumption, such that drinking declines less after marriage for individuals with lower marital satisfaction than for individuals with higher marital satisfaction. One study found that married individuals (with no alcohol use disorders) with lower marital satisfaction at baseline were 3.7 times more likely to have developed an alcohol disorder when reassessed 12 months later as compared to couples with higher marital satisfaction (Whisman, Uebelacker, & Bruce, 2006). Leonard and Homish

(2008) found that after following 600 newlywed couples through their fourth anniversary and after controlling for sociodemographic factors, individual risk factors, peer drinking, and previous alcohol drinking, higher marital satisfaction had a significant protective effect on subsequent alcohol problems as compared to lower marital satisfaction.

These findings suggested that lower marital satisfaction might lead to higher rates of drinking. Additionally, it was important to consider that role socialization processes may be weaker for individuals with lower marital satisfaction. There are no current studies that assess the relation between marital satisfaction and role socialization as they relate to drinking. However, based on the theory of role socialization, it is possible that individuals with lower marital satisfaction are less fulfilled in their role, and thus less likely to experience role conflict due to drinking behaviors. Thus, marital satisfaction may be a moderator of the effect of marriage on declines in drinking. Therefore, the current study tested marital satisfaction as a moderator of the effect of marriage-related motives to limit drinking on later drinking levels.

Race/Ethnicity

Little is known about how race/ethnicity is related to the marriage effect on decreases in young adult drinking, though there are some studies that assessed differences in drinking trends and differences by ethnicity. However, the findings from these studies are mixed. Some studies have suggested that non-Hispanic Caucasian men are more likely to decrease heavy drinking than are African-American and Hispanic men (Caetano & Kaskutas, 1995). Conversely, other studies have found that non-Hispanic Caucasian men are more likely than men of other ethnic/racial groups to sustain binge-drinking patterns through young adulthood (Schulenberg et al., 1996). Currently, the

dearth of consistent results gleaned from the literature assessing the role of ethnicity in drinking declines has made it difficult to predict how ethnicity may affect the relation between marriage and declines in drinking. There is even less consistent data regarding the relationship between ethnicity and declines in drinking after marriage. One study showed that the marriage effect predicted declines in drinking for both Caucasian and African-Americans, although the effect was stronger for Caucasians (Curran et al., 1998). However, results from another study indicated that there were no significant differences by race/ethnicity on the decline in binge drinking after marriage as compared to before marriage (Duncan, Wilkerson, & England, 2006). Based on the lack of consistency in the literature, the current study assessed race/ethnicity as a predictor of drinking declines among married people but did not make specific predictions about race/ethnicity moderating the effects of marriage-related motives to limit drinking on declines in drinking after marriage.

Gender

There are some studies that have looked specifically at gender differences in the marriage effect on young adult drinking. Among these studies, some results indicated that marriage is associated with declines in alcohol consumption (Temple et al., 1991) and consequences related to alcohol (Horwitz & White, 1991) for females, but not for males. However, other studies have not replicated this effect, and out of three studies that looked specifically at gender as a moderator, two out of three showed no difference between males and females on adult alcohol use (Curran et al., 1998) or heavy drinking (Power et al, 1999). Although one study did find that the marriage effect was significantly stronger for women than men (Schulenberg et al., 1998), this effect was not replicated in a more recent study with the same sample as the current study (see Lee, 2014). Importantly, the marriage effect has shown to be consistent for both males and females

in several studies (Chassin, Flora & King, 2004; Lee et al., 2014; Warner et al., 2007). Given the conflicted findings in the literature, the current study tested gender as a predictor of declines in drinking among married individuals, but did not make specific predictions about gender as a moderator of the effect of marriage-related motives to limit drinking on later declines in drinking.

Parental Alcoholism

Parental alcoholism has been well-established as a risk factor for problematic young adult drinking outcomes, including limited declines in alcohol involvement during young adulthood (Chassin, Pitts & Prost, 2002; Flora & Chassin, 2005; Jackson et al., 2001). However, very few studies have assessed parental alcoholism status and its relationship to the marriage effect and declines in drinking in young adulthood. One study failed to find parental alcoholism effects moderating the marriage effect for drug use (Flora & Chassin, 2005) and another study found no support for differences by parental alcoholism status in overall declines in drinking after accounting for initial drinking status (Lee et al., 2013). Based on these findings, the current study tested parental alcoholism as a predictor of declines in drinking, but did not expect that parental alcohol status would moderate the effect of marriage-related motives to limit drinking on later drinking.

Current Study Goals and Hypotheses

The significant effect of marriage on declines in young adult drinking is well established and this effect remains after considering several additional variables, such as other roles (e.g. parenthood and employment), personality factors, peer influences, and pre-marital drinking behaviors. Moreover, the marriage effect has been demonstrated in multiple developmental stages across the lifespan, and thus the effect of marriage is not simply limited to those in young adulthood. However, despite this knowledge, the

fundamental assumption of role socialization is that individuals choose to reduce their drinking due to perceived negative impact of drinking on their marriage, and this has never been directly tested.

The current study tested the assumption that reduced drinking among married individuals is related to beliefs that drinking is incompatible with the role of marriage. The main goal of this study was to determine whether or not marriage-related motives to limit drinking were a significant predictor of later declines in drinking in married people. To assess the unique effect of marriage-related motives to limit drinking on declines in drinking after marriage; this study considered their effect both simply on the declines in drinking after marriage, and over and above other predictors, including other reasons to limit drinking, gender, race/ethnicity, parenthood, and parental alcoholism. Another goal of the study was to assess whether or not marital satisfaction moderates the relation between marriage-related motives to limit drinking on future declines in drinking; such that those with lower marital satisfaction may not experience the same relation between marriage-related motives to limit drinking and subsequent declines in drinking. Lastly, the study assessed whether or not pre-marital drinking status moderated the relation between marriage-related motives to limit drinking on future declines in drinking, such that those with higher pre-marital levels of drinking may experience a stronger effect of marriage-related motives to limit drinking on drinking declines.

Specific study hypothesis were:

1) Marriage-related motives to limit drinking will predict future declines in drinking over and above other reasons to limit drinking.
2) Marital satisfaction will predict future drinking such that individuals with lower marital satisfaction will be less likely to experience declines in drinking.

3) Marital satisfaction will moderate the relation between marriage-related motives to limit drinking and drinking declines, such that marriage-related motives to limit drinking will not predict drinking declines for those who report lower marital satisfaction (see Figure 1).
4) Consistent with previous literature, the relation between marriage-related motives to limit drinking and declines in drinking will be moderated by pre-marital drinking levels, such that the relationship will be stronger for individuals with heavier pre-marital drinking (see Figure 2).

METHOD

Original Study Participants

Participants for the current study are a subset from a larger, longitudinal study of familial alcoholism (Chassin, Flora, & King, 2004; Chassin, Pillow, Curran, Molina, & Barrera, 1993; Chassin, Pitts, DeLeucia, & Todd, 1999; Chassin, Rogosch, & Barrera, 1991). A total of 454 adolescents and their parents were recruited for the study at Wave 1. In this study, participants are identified by generation, with the adolescents of the original generation identified as G2 while their parents are identified as G1. Fifty four percent of the adolescents recruited for the study had one biological and custodial parent with an alcohol use disorder (defined as either lifetime alcohol abuse or dependence in the DSM-III) and the remaining 46% were demographically matched controls (non-alcoholic parents). Both the G1s and the G2s were interviewed every year for three consecutive years, which comprised of data for Waves 1-3. Long-term follow up interviews began at Wave 4, and continued every five years until Wave 6. At Wave 4, G2s and 327 of their full biological siblings were interviewed. At Wave 5, 50 additional G2 full biological siblings were added. Attrition for the G2s was minimal at each wave. Out of the original 454 G2s, 407 (90%) were subsequently interviewed at Wave 4, and 412

(91%) were interviewed at Wave 5. Of the 327 G2 siblings added at wave 4, 300 (92%) were retained in the study at wave 5. At wave 6, 816 (90%) of the G2s (both targets and added biological siblings) provided interviews at Wave 6.

Original Study Recruitment

Families with children of alcoholics (COAs) were recruited by the identification of potential G1s through court records, health maintenance organization (HMO) wellness questionnaires, and telephone surveys. The inclusion criteria for these families included: having a child who was 11-15 years old, Hispanic or non-Hispanic Caucasian ethnicity, birth dates between 1927 and 1960, and Arizona residency. Additionally, one biological parent must have met DSM-III criteria for lifetime alcohol use disorder.

Families identified as controls were recruited via reverse directories that identified families who lived in the same neighborhoods as the COA families. The families were matched according to demographic characteristics (child age, ethnicity, and socioeconomic status) and family composition (one parent versus two parent households). In order to qualify as a control family, neither biological nor custodial parents could meet DSM-III or FH-RDC criteria for a lifetime diagnosis of alcohol dependence or alcohol abuse. In order to reduce the likelihood of future alcohol use disorder diagnoses in control parents, seventeen families who reported significant but sub-threshold alcohol problems were eliminated.

Original Study Recruitment Biases

There are two main sources of potential recruitment biases; selective contact with COA participants, and subject refusal to participate. To assess the impact of selective contact, available archival records of participants who were and were not contacted were compared. This procedure was done for all participants contact via court records and HMO wellness questionnaire (no archival data were available for other participants).

There were no differences between participants who were contacted and those who were not contacted in terms of blood alcohol level at time of arrest, number of prior alcohol-related arrests, self-labeling as an alcoholic, or MAST scores. Non-contacted potential participants were more likely to be younger (37 versus 39), more likely to be from court sources (90% versus 87%), more likely to be of Hispanic ethnicity (22% versus 18%) and unmarried (64% versus 48%). Lastly, they were also more likely to have a lower SES rating associated with their residence (t-test or chi-square comparisons significant at $p<.05$). Overall, these analyses show that recruitment procedures were less likely to reach Hispanic and lower SES participants; however the overall magnitude of the bias was minimal and the groups did not differ significantly on indicators of alcoholism.

The second potential source of recruitment bias, refusal to participate, was addressed by comparing those who agreed to participate (73% of COAs and 77% of non-COAs) to those who refused to participant. In the COA families, those who agreed to participate did not differ from those who refused to participate on indicators for alcoholism, age, gender, or SES. Yet, those who agreed to participant were less likely to be Hispanic (24% versus 18%) and less likely to be married (69% versus 50%) at the time of their arrest (chi-square comparisons significant at $p<.05$) than those who refused to participate. In the control families, there were no differences found between those who participated and those who refused on family composition or SES. However, those who refused to participate were more likely to be Hispanic (41% versus 18% for mothers and 40% versus 22% for fathers) than those who agreed to participate. For more information on potential bias in the contact and recruitment of samples, see Chassin et al. (1992).

Current Study Participants

The current study's participants were taken from the original study's G2 COA and nonCOA controls, as well as their full-biological siblings who were added to the study at

wave 4. The study focused on G2 participants who reported data at waves 4, 5, and 6. There were 609 participants interviewed at wave 4 who were subsequently interviewed at waves 5 and 6 (Figure 4). First, 196 participants were excluded because they never married. Next, 141 participants were excluded because they did not marry until wave 6, and therefore there was no post-marital data to be used. Additionally, 64 participants were excluded because they reported divorce. This produced a final sample of 208 participants that were used for all analyses. A subsample of the final sample reported being married at all 3 waves (N=76). For these participants, wave 3 data was used for pre-marital data. In this study, wave 4 data referred to pre-marital drinking data, and wave 6 data referred to post-marital drinking data. In the final sample, FIML was used to compensate for any data incompleteness.

The mean age of the participants in the final sample was 20.04 (SD=3.18) at wave 4 and 25.43(SD=2.48) at wave 5, and 31.69 (SD=3.16) at wave 6. Additionally, 60.1% were female, 73.1% were Caucasian. Multiple t-tests and chi-squares were conducted to assess differences between those included in the analyses (N=208) and those excluded due to divorce or not marrying until wave 6 (N=205) on all variables that were utilized in the analyses. Those included in the analyses were not compared to those who never married, as the questions about marriage that were of interest in this study were not relevant to them and therefore responses to questions regarding marriage would not be applicable. There were significant group differences between included and excluded participants on all the variables that the current study used, with the exception of race/ethnicity (see Table 1). Those who were included in the study were significantly younger ($t=-2.08$, $p<.05$), reported significantly less partner drinking ($t=-3.67$, $p<.001$), significantly less peer drinking ($t=-5.24$, $p<.001$) and reported significantly less episodes of drunkenness at both wave 4 (pre-marriage; $t=-3.27$, $p<.001$) and wave 6 (post-

marriage; t=-6.52, p<.001) than excluded participants. Included participants also had significantly higher marital satisfaction (t=5.25, p<.001), reported that other reasons to limit drinking were significantly less important (t=4.83, p<.001), reported that marriage-related motives to limit drinking were significantly less important (t=3.33, p<.001), and reported significantly fewer marriage-related positive alcohol expectancies (t=-3.09, p<.01) than excluded participants. Lastly, there were significantly more females (t=-2.42, p<.01), significantly fewer parents (t=4.50, p<.001), and significantly fewer COAs (t=5.99, p<.01) in the included participants than in the excluded participants.

Current Study Measures

Marriage. At waves 4, 5, and 6 participants were asked, "What is your current marital status?" At time 4, possible response options were (1) unmarried, (2) separated, (3) widow or widower, and (4) married. At wave 5 and 6, engaged was added to these options. Among the current subsample, 63.5% of participants reported that they were unmarried at wave 4 and that they were married at wave 5 and 6. The remaining participants reported that they were married at all three waves and pre-marital data for these participants was taken from wave 3.

Marriage-Related Motives to Limit Drinking. A single item was utilized to assess this construct. This item was taken from the Reasons for Limiting Drinking Scale (Greenfield et al., 1989) that assessed impairment in marriage related to drinking (See Appendix C), stating "I limit my drinking (or choose not to drink) because it interferes with my relationship with my spouse." Response options for this item range from (1) "Very important reason" to (4) "Not at all important reason." Higher scores indicated that this reason was a less important reason for limiting drinking. This variable was used as a continuous variable. This sample had little variability, and most participants

reported that marriage was not at all an important reason to limit drinking. The mean of the sample was 3.52, skewness was -1.89 and kurtosis was 2.4.

Two additional items were modified from Sher's assessment of positive alcohol expectancies (Mann, Chassin, & Sher, 1987), originally adapted from Alcohol Expectancies Questionnaire-Abbreviated (Christiansen, Goldman, & Inn, 1982). These items assessed the degree to which participants believed that alcohol helped them get along with their partner (see Appendix D). The first item was "Alcohol helps me get along better with my spouse," and the second item was "Alcohol helps me feel closer to my spouse." Response options for these items range from (1) "Strongly Agree" to (5) "Strongly Disagree." As these two items were highly correlated in the current sample at .86, an average of the two items was used in all analyses. In the current study, these items were rescored such that higher scores indicate stronger beliefs that drinking alcohol helps their marriage, and it was utilized as a continuous variable.

This variable effectively creates "Marriage-related positive alcohol expectancies." Marriage-related positive alcohol expectancies and marriage-related motives to limit drinking did not form one factor, however it was important to test both variables to fully understand marriage-related reasons to reduce drinking. Lower scores on marriage-related positive alcohol expectancies (i.e., disagreement that drinking helps the marriage) could have been predictive of decreased drinking, and therefore was theoretically still a marriage-related belief regarding the effects of drinking. This variable was also used as a continuous variable, and had little variability in the sample, with a mean of 1.18, suggesting that the majority of the sample did not believe that alcohol benefits their marriage. Skewness of this variable was 3.70, and kurtosis was 18.03.

Reasons to Limit Drinking. All participants reported on their reasons for limiting drinking or choosing not to drink. The measure had ten items taken from the Reasons for Limiting Drinking Scale (Greenfield et al., 1989), which belonged to three subscales: performance hindrance, upbringing, and self-control (See Appendix A). Two additional items were taken from the pilot study on the Reasons for Drinking Scale (see Appendix A). Lastly, two items were written by project staff (see Appendix A). Response options for all items were (1) "Not at all important reason" to (4) "Very important reason," with higher scores indicating lower likelihood of limiting drinking due to those reasons. Summary scores were created to indicate the continuous variable for other total reasons to limit drinking, and internal consistency for this measure in the subsample was .85 at wave 5. The mean of this summary score was 2.90, with relatively low skew at -.05 and low kurtosis at -.94.

Marital Satisfaction. Participants reported on their satisfaction in their marriage over the past year using three items adapted from Caplan et al.'s Preventative Interventions for the Unemployed (See Appendix B). The first question was "How satisfied were you in your relationship over the past year," with response options ranging from (1) "Very dissatisfied" to (5) "Very satisfied," with higher scores indicating higher levels of satisfaction. The other two items were "How often have you regretted being involved with your partner in the past year," and "How often have you discussed or considered ending the relationship in the past year." Response options for these two items ranged from (1) "Almost never" to (5) "Almost always," and were rescored for this study such that higher scores indicate higher levels of satisfaction. For the purposes of this study, marital satisfaction was included as a proposed moderator. A summary score of these items was used as a continuous variable in analyses, and in the current subsample, the internal consistency for this measure was .74 at wave 5. This summary

score also had very little variability in the current sample, with a mean of 4.80, and was highly kurtotic (14.43) and somewhat skewed (-3.49).

Frequency of Drunkenness. A single item assessed drunkenness at waves 4, 5 and 6. It asked participants how often they had been drunk in the past year (not just light-headed). Response options for this question were (1) never, (2) 1-2 times, (3) 3-5 times, (4) more than 5 times to less than once a month (5) 1-3 times a month (6) 1-2 times a week, (7) 3-5 times a week, and (8) every day. For the current study, the outcome was an ordinal latent change variable from wave 4 frequency of drunkenness to wave 6 frequency of drunkenness. Due to zero inflation in these variables, adjusted means are explained in the Table 2 note to reflect the mean of individuals who report being drunk. In the current subsample, the mean of participants who report being drunk in the past year at wave 4 was 3.43, and 50.5% of the sample report never drinking. At wave 6, 76% of the participants reported never being drunk in the past year, and the mean of the participants who did report being drunk was 2.87. Skewness of frequency of drunkenness was less at wave 4 than wave 6 (1.87 at wave 4 and 2.92 at wave 6). The data was more kurtotic at wave 6 than wave 4 (9.55 at wave 6 and 2.40 at wave 4).

Parenthood. All participants indicated whether or not they had children according to an item collected at wave 5, "Do you have children?" Responses were (1) "no" or (2) "yes." The wave 5 report on this item was used as a dichotomous variable to control for decreases in drinking at wave 6 (after marriage) that occurred due to parenthood at wave 5 as opposed to motives to limit drinking at wave 5.

Gender. Gender was used as dichotomous variable, and was based on reports of gender at wave 5.

Age. Age was calculated at each wave based on the birthday reported to the interviewer and date of interview. Of importance to the current study was age at wave 6,

which was a continuous variable correlated with the outcome variable of drunkenness at wave 6. Age was fairly normally distributed, with very low skewness (.19) and kurtosis (.098).

Ethnicity. Ethnicity was determined using the participant's report of their ethnicity at wave 5. Initial responses for ethnicity included Caucasian, Hispanic, Pacific Islander, American Indian, African American, or Other. These items were recoded in the sample as Non-Hispanic/Caucasian, and all other ethnicities, and was used as a dichotomous variable. In this subsample, 75% of participants identify as Non-Hispanic/Caucasian, and 25% identify as all other ethnicities.

Parental Alcoholism. The parents of the participants had their lifetime DSM-III diagnosis of alcoholism (abuse or dependence) obtained via a computerized version of the DIS, version III (Robins et al., 1981), which was administered by interviewers at Wave 1 (except for those not willing to be interviewed). For parents unavailable to be interviewed, the Family-History Research Diagnostic Criteria (FH-RDC) was reported by the spouse and this was used to assess the spouse's alcoholism. The majority of parents diagnosed with alcohol abuse or dependence were diagnosed via the DIS, with only 17.91% not reporting their own symptoms (Chassin et al., 1992). The participants identified as COAs had at least one biological parent who was an alcoholic at wave 1, while nonCOAs were identified as those with no biological or custodial parents who were alcoholic at wave 1. In this study, COA status was a dichotomous variable, and in the current subsample, 36.1% were COAs.

Partner Drinking. Partner drinking was assessed only at wave 6. The current study used one item to assess partner drinking, "How frequently did your partner drink in the past year?" Response items for this question were (1) never, (2) 1-2 times, (3) 3-5 times, (4) more than 5 times to less than once a month (5) 1-3 times a month (6) 1-2

times a week, (7) 3-5 times a week, and (8) every day. Importantly, for participants who reported being married at all three waves (4,5 and 6), wave 6 partner drinking was not used. The amount of time that passed between each wave of data collection was 5 years. Therefore, for participants who were married at all 3 waves, partner drinking at wave 6 was collected 10 years after marriage, as opposed to 5 years after marriage. Partner drinking assessed at 10 years after marriage instead of 5 years may be related to the outcome of change in frequency of drunkenness from pre to post marriage and the predictor of marriage-related motives to limit drinking differently due to its later measurement. Therefore, these participants' report of partner drinking was not included. Partner drinking was used as an ordinal categorical variable. Due to zero inflation, the adjusted means were explained in Table 2 notes to reflect participants who do report drinking. In the current subsample, the mean of participants who report drinking in the past year was 4.58, while 20.7% of the sample reported never drinking in the past year.

Peer Drinking. Peer drinking was assessed as reported at wave 5. Questions regarding peer drinking were adapted from the Monitoring the Future Study (Johnston et al., 1988). For all items, response options were (1) "None," (2) "A few," (3) "Some," (4) "Many," (5) "Most," and (6) "All", with higher responses indicating more peers who regularly use alcohol. This variable was used as an ordinal categorical variable. In the current sample, 37.9% reported having no peers who drink, while about 50% of the sample reported having either few, some, or many peers who drink. Very few participants reported that most or all of their peers are drinkers (11.4%).

DATA ANALYTIC PLAN

Overview

The proposed hypotheses were tested using an ordered probit regression model, as this model incorporated the ordinal nature of the dependent variable. The first

hypothesis was that marriage-related motives to limit drinking would predict future declines in drinking after marriage. Additionally, two hypothesized moderators of this effect were tested. These moderators are marital satisfaction and pre-marital drinking levels. Lastly, the hypothesis that marriage-related motives to limit drinking would predict future declines in drinking over and above other reasons to limit drinking was tested. To reduce nonessential multicollinearity, continuous variables were centered, and dichotomous predictors were dummy coded (Cohen, Cohen, West & Aiken, 2003).

Covariates

Parenthood at wave 5, race/ethnicity, partner drinking, peer drinking, age at wave 6, and COA status were all considered covariates, as they theoretically have an impact on wave 6 frequency of drunkenness. The purpose of including these covariates is to increase the power and sensitivity of the statistical tests. Because the covariates might have been related to wave 6 frequency of drunkenness, their main effects and interactions with marriage-related motives to limit drinking were tested in a series of preliminary regression analyses that predict the dependent variable (wave 6 frequency of drunkenness) specifically to assess if there was a significant effect of the interaction term. Non-significant main effects of covariates were included in all final models as they were theoretically selected to potentially relate to the outcome variable. However, if an interaction term was non-significant, it was not included in the final models. If there were significant covariate by predictor interaction terms, the covariate was tested as a moderator.

Regression Analyses

The first hypothesis was that marriage-related motives to limit drinking would predict decreased drunkenness at wave 6 (post-marriage) from wave 4 (pre-marriage). Potential predictors other than marriage-related motives to limit drinking were all

covariates listed above. As ordinal probit regression was used, the outcome variable was a latent variable that modeled participant's propensity to obtain a score on the frequency of drunkenness scale. To adequately predict the change in frequency of drunkenness from wave 4 to wave 6, a difference model was written that shows the change in propensity to receive scores on the frequency of drunkenness scale from wave 4 to wave 6. This latent variable modeling change in propensity to obtain a certain score on the frequency of drunkenness scale from wave 4 to wave 6 was used as the outcome variable for all regression analyses. Marriage-related motives to limit drinking predicted this change in frequency of drunkenness from wave 4 to wave 6 in Model 1.

A separate model, Model 2, was estimated to test marriage-related positive alcohol expectancies, the variable described above as "drinking helps my marriage." This model was tested with all covariates retained from preliminary analyses, again using the model that depicts the change in frequency of drunkenness from wave 4 to wave 6.

Another model, Model 3, was estimated to test whether marriage-related motives to limit drinking predicted the change between wave 4 drunkenness and wave 6 drunkenness over and above other reasons to limit drinking. Potential predictors in this model aside from marriage-related motives to limit drinking and other reasons to limit drinking included all covariates listed above. Again, to adequately predict the change in frequency of drunkenness from wave 4 to wave 6, this change was modeled and predicted from marriage-related motives to limit drinking and other reasons to limit drinking.

Two moderational models were run. According to Baron and Kenny (1986), a moderator affects the direction and/or strength of the relationship between the predictor and the outcome. In order for the moderational hypothesis to be supported, the interaction between the predictor and the moderator needed to be significant. The

proposed moderator and main effect of marital satisfaction were tested in an additional model, Model 4.

To test for the moderation of marital satisfaction, the change between wave 4 drunkenness and wave 6 drunkenness was regressed on marriage-related motives to limit drinking, marital satisfaction, and the interaction between marital satisfaction and marriage-related motives to limit drinking (see Figure 1). Included in this model were covariates from preliminary analyses stated above. The interaction term was non-significant, so the interaction coefficient was dropped and marital satisfaction was tested for main effects on wave 6 drunkenness.

Additionally, the proposed moderator of wave 4 drunkenness was tested in Model 5. To test for the moderation of pre-marital drinking levels, the change between wave 4 drunkenness and wave 6 drunkenness was regressed marriage-related motives to limit drinking, wave 4 drunkenness, and the interaction between wave 4 drunkenness and marriage-related motives to limit drinking (see Figure 2). Also included in this model were all covariates retained from preliminary analyses states above. To proceed with moderational analyses, the interaction term must be found to be significant. The interaction term was non-significant, so the interaction coefficient was dropped and wave 4 drunkenness was tested for main effects on the change between wave 4 drunkenness and wave 6 drunkenness. Post hoc probing of all moderator by predictor interactions were not conducted as there were no significant interaction terms in either moderation model.

Post-Regression Diagnostics

Multi-collinearity is indicated when zero order correlation coefficients among predictors exceed r=.50 for moderately reliable measures or r=.70 for perfectly reliable measures (single-item predictors). According to these guidelines, no correlations among

the predictors suggested problems with multicollinearity (see Table 3). Additional post regression diagnostics were not performed, as they were not possible to do using this model.

Power

Power analyses were performed to determine the effect sizes that the analyses will have the ability to detect. The power analyses were conducted using G*Power 3.1 (Faul & Erdfelder, 1992). All analyses were run using a sample size of 208 and an alpha level of .05. For the model testing the hypothesis that marriage-related motives to limit drinking will predict future declines in drinking, with all covariates and predictors included to provide a conservative estimate, there was sufficient power (>.95) to detect both medium (f^2 =.15) and large (f^2 =.35) effects. However, the power to detect a small effect (f^2 =.02) was well below the minimum power value of .80 suggested by Cohen (1988). Thus, power to detect an interaction and effects of moderation was even lower (Aiken & West, 1991). As power analyses were not run specifically for an ordinal probit regression model, these power analyses are an estimate.

RESULTS

Descriptive Statistics and Correlations

Descriptive statistics and correlations for the current study are displayed in Tables 2 and 3, respectively. As many of the variables utilized in the analyses were highly skewed and had little variability, analyses were conducted with variables both transformed and non-transformed. Results did not differ after transformation of variables. Therefore, results reported were computed with non-transformed variables. It is important to note that Pearson correlations were computed in order to understand how variables related to one another prior to analysis. However, as many variables in the analysis were categorical, these correlations cannot be fully interpreted. There was a

significant correlation between frequency of drunkenness at wave 4 and wave 6, indicating rank order stability of the variable frequency of drunkenness. There was also a significant correlation between marriage-related motives to limit drinking and other reasons to limit drinking.

There were significant correlations between marriage-related positive alcohol expectancies and frequency of drunkenness at wave 4 and wave 6. However, marriage-related motives to limit drinking was not significantly correlated to either variable involved in the latent change outcome variable of change in frequency of drunkenness. To further explore this lack of correlation, a histogram was computed to show the distribution of frequency of drunkenness at every level of the predictor, marriage-related motives to limit drinking (see Figure 3). Results of this histogram indicated that nearly every participant endorsed that marriage-related motives to limit drinking were "not at all important." Additionally, within this category that marriage-related motives to limit drinking were "not at all important," there was a larger number of participants who reported no occasions of drunkenness. However, it was also true that among participants who reported that marriage-related motives to limit drinking were important (categories 1 and 2), there were no reports of frequency of drunkenness above category 4, whereas for those who report that marriage-related motives to limit drinking are "not at all important" did report frequency of drunkenness at or above a category of 4. Lastly, COA status, gender, partner drinking, and peer drinking, correlated significantly with frequency of drunkenness at wave 4 and wave 6.

Difference Model

The difference model was written to demonstrate the change in frequency of drunkenness from wave 4 to wave 6, and frequency of drunkenness at wave 4 was allowed to correlate with the predictors. Model fit was not reported for this difference

model or any of the models run in the current study, as the model fit statistics calculated by Mplus were not accurate and did not use the correct baseline model for comparison. In each category of the outcome variable, there was the following predicted proportion of people in each category (percentage of participants in each category): At Wave 4, Frequency of Drunkenness Category 1=0.67, Category 2=0.15, Category 3=0.06, Category 4=0.03, Category 5=0.04, and Category 6=0.05. At Wave 6, Category 1=0.76, Category 2=0.13, Category 3=0.06, Category 4=0.02, Category 5=0.01, Category 6=0.01, and Category 7=0.01. The mean of the change variable was -0.66, $p<.01$, indicating that on average, participants were decreasing their frequency of drunkenness.

Covariate and Covariate-by-Predictor Interactions

Preliminary analyses were conducted in order to determine which covariate-by-predictor interaction terms would be included in the final models. All continuous variables were centered. Peer use and partner use both significantly predicted the change in frequency of drunkenness from wave 4 to wave 6. No covariate-by-predictor interactions were significant and therefore none of them were included in the final models. Parenthood[1], age, ethnicity, COA status, and gender did not significantly predict the change in frequency of drunkenness from wave 4 to wave 6. All covariates were retained in the final model, as all were theoretically significant to the model.

Main Effect of Marriage-Related Motives to Limit Drinking

The main effect of marriage-related motives to limit drinking on the change between wave 4 frequency of drunkenness and wave 6 frequency of drunkenness was tested using ordinal probit regression. Included in this model were all proposed covariates, as all covariates are theoretically related to the outcome variable. Frequency

[1] Importantly, the beta coefficient for parenthood predicting the change in frequency of drunkenness from wave 4 to wave 6 was positive while the beta coefficient for age predicting the change in frequency of drunkenness from wave 4 to wave 6 was negative. In this married sample, parenthood and age were not correlated, and the majority of the sample consists of non-parents.

of drunkenness at wave 4 significantly predicted the change in frequency of drunkenness from wave 4 to wave 6 ($p<.01$), such that participants who indicated higher levels of frequency of drunkenness at wave 4 indicated larger change in a negative direction from wave 4 frequency of drunkenness to wave 6 frequency of drunkenness. Partner use in the past year at wave 6 also significantly predicted the change in frequency of drunkenness ($p<.05$), such that lower levels of partner drinking predicted change in a negative direction from wave 4 to wave 6 frequency of drunkenness. There was no significant effect of marriage-related motives to limit drinking on the change in frequency of drunkenness from wave 4 to wave 6 (see Table 4).

Main Effect of Marriage-Related Positive Alcohol Expectancies

The main effect of marriage-related positive alcohol expectancies on the change between wave 4 frequency of drunkenness and wave 6 frequency of drunkenness was tested using ordinal probit regression. Again, also included in this model were all proposed covariates, as all covariates are theoretically related to the outcome variable. Wave 4 frequency of drunkenness and partner use were the only covariates to significantly predict the change in frequency of drunkenness from wave 4 to wave 6, again such that higher levels of frequency of drunkenness at wave 4 predicted change in frequency of drunkenness from wave 4 to wave 6 in a negative direction ($p<.01$) and lower levels of partner use predicted a negative change in frequency of drunkenness from wave 4 to wave 6 ($p<.05$). There was no significant effect of marriage-related positive alcohol expectancies on the change in frequency of drunkenness from wave 4 to wave 6 (see Table 5).

Effect of Marriage-Related Motives to Limit Drinking Over and Above Other Reasons to Limit Drinking

As there was no main effect of marriage-related motives to limit drinking, it was not necessary to test of the effects of marriage-related motives to limit drinking over and above the effect of other reasons to limit drinking on the change between wave 4 frequency of drunkenness and wave 6 frequency of drunkenness. However, this model was estimated to test the effect of other reasons to limit drinking on the change in frequency of drunkenness from wave 4 to wave 6, and was tested using ordinal probit regression. Again, also included in this model were all proposed covariates, as all covariates are theoretically related to the outcome variable. There was no main effect of other reasons to limit drinking on the change in frequency of drunkenness from wave 4 to wave 6. In this model, frequency of drunkenness at wave 4 and partner drinking at wave 6 were the only covariates to significantly predict the difference in frequency of drunkenness from wave 4 to wave 6 ($p<.01$, $p<.05$ respectively) (see Table 6). As described above, higher levels of frequency of drunkenness at wave 4 predicted negative change in frequency of drunkenness from wave 4 to wave 6, and lower levels of partner use predicted a negative change in frequency of drunkenness from wave 4 to wave 6.

Moderational Models

To test for the moderation of pre-marital drinking levels and marital satisfaction on marriage-related motives to limit drinking on frequency of drunkenness, two separate models were run. In the first model, the change between wave 4 frequency of drunkenness and wave 6 frequency of drunkenness was regressed on marriage-related motives to limit drinking, wave 4 frequency drunkenness, and the interaction between wave 4 frequency of drunkenness and marriage-related motives to limit drinking. In the second model, the change between wave 4 frequency of drunkenness and wave 6

frequency of drunkenness was regressed on marriage-related motives to limit drinking, marital satisfaction, and the interaction between marital satisfaction and marriage-related motives to limit drinking. For both models, neither interaction term was significant, which suggests that there is no support for a moderational hypothesis. There was also no significant main effect of marital satisfaction on the change in frequency of drunkenness from wave 4 to wave 6. As expected, there was a significant main effect of wave 4 frequency of drunkenness on the change in frequency of drunkenness from wave 4 to wave 6, as wave 4 frequency of drunkenness is included in the latent change outcome variable. The main effect indicates that higher levels of frequency of drunkenness at wave 4 indicate a higher likelihood of change in a negative direction from wave 4 frequency of drunkenness to wave 6 frequency of drunkenness.

DISCUSSION

This study adds to the literature by investigating the cognitions underlying the role socialization effect of marriage on drinking behavior. Indeed, this study is the only study that has attempted to directly assess whether perceptions that alcohol would have a negative effect on marriage will affect drinking after marriage. The main goal of the study was to test a central assumption of role socialization theory, namely that individuals choose to reduce their drinking after marriage due to the perceived negative impact of drinking on their marriage. However, results showed that beliefs that alcohol would harm or help a marriage were not related to declines in frequency of drunkenness among married individuals. These results are not consistent with a role socialization explanation for drinking declines after marriage, which suggests that individuals reduce drinking to make their behaviors more compatible with the role of marriage (Yamaguchi & Kandel, 1985). This study also tested marital satisfaction as a moderator of the relation between marriage-related motives to limit drinking and drinking declines, with the

hypothesis that marriage-related motives to limit drinking would not predict drinking declines for individuals who report lower marital satisfaction. Results showed no support for this moderational hypothesis. Lastly, results suggested that partner drinking was the only significant predictor of declines in frequency of drunkenness from pre-marriage to post-marriage. The results suggest the importance of future studies to better understand the role of cognitions as they relate to role socialization. To better understand why the hypothesized results were not found, it is important to consider multiple explanations.

Measurement Issues

First, it is imperative to fully understand the theory of role socialization, and how it is typically tested throughout the literature. Prior to experiencing role socialization, an individual must actually enter or occupy a role. An individual's progression through life is marked by participation in differing social roles at different ages and developmental periods (Yamaguchi & Kandel, 1985). This participation in social roles is known as role occupancy. Once an individual occupies a role, the theory of role socialization suggests that individuals conform their behaviors to fit social norms about role performance, as dictated by social cognitive theory (Dijkstra et al., 2001). However, research studying the effect of role socialization examines the change in behaviors of interest before and after role occupancy. That is, previous studies of marriage-related role socialization measure drinking levels prior to marriage, and again after marriage. Though this method demonstrates that marriage has an effect on drinking levels, the effect of role socialization is inferred rather than directly tested. In order to directly test whether role socialization is the mechanism that is underlying the change in drinking from pre-marriage to post-marriage, a measure of role socialization processes would need to be created for the marital role. The current study is the first to directly test the assumption that role socialization processes are predictive of the shift in drinking that occurs after

marriage. Role socialization was measured in this study utilizing items tapping into marriage-related motives to limit drinking. These reasons did not significantly predict decreases in the frequency of drunkenness from pre-marriage to post-marriage. However, it is possible that this is due to the difficulty in measuring role socialization processes and the lack of a robust measure. A well-developed scale assessing role socialization cognitions may yield different results, and the lack of a well-developed scale could explain the null findings in this study. These results highlight the need for a better defined construct of "marriage-related motives to limit drinking" in order to understand the reasons that drive the well-established decline in drinking and drinking behaviors after marriage (Derrick & Leonard, 2014). Based on the social cognitive theory, this construct would include questions that assess the individual's belief about the societal role of marriage and about their own marriage. It would be important for the scale to include both injunctive norms, which are people's perception of what behaviors are approved/disapproved of by others, and descriptive norms, which are people's perception of how others behave (Aronson, Wilson, & Akert, 2010). Additionally, to better understand how personality and individual differences affect these cognitions, it would be important to include questions regarding values and beliefs about one's own marriage, as their behaviors may differ from their perception of societal norms and others' behavior. Thus, a well-developed measure of role socialization behaviors should take into account both cognitions related to the individual's marriage, and cognitions around the societal role of marriage.

A consideration for the current study is that it is possible that "marriage-related motives to limit drinking and marriage-related positive alcohol expectancies" may not truly have captured role socialization. The theory of role socialization does not state that behavior change stems specifically from cognitions that the behavior is *harmful* to the

role, rather that the behaviors are incompatible with the role. Therefore, it is possible that the construct of "marriage-related motives to limit drinking and marriage-related positive alcohol expectancies" did not successfully capture cognitions regarding societal beliefs about drinking after marriage, and rather captured cognitions on a more personal level. Indeed, if drinking declines are related to societal beliefs regarding a "good marriage," this construct is slightly different than the construct that is defined in the current study. Though this distinction may not explain the null findings in this study, it is notable to consider that the current measure did not strictly test role socialization processes in terms of social norms regarding the marital role.

Another potential future direction is to assess the effect of role socialization by measuring role responsibilities. Perhaps the mechanism underlying role socialization is that individuals change their responsibilities after selecting into the role of marriage, and a measure could assess the compatibility of these role-related responsibilities with drinking behaviors. Yet another direction would be to consider contextual mediators of the marriage effect, such as nights spent out drinking with friends, and partying. Current literature has shown a relation between these behaviors and the decline in drinking after marriage (Lee, 2015). It is possible that the decline in these behaviors after marriage is related to role socialization, such that these behaviors do not fit with social norms concerning the marital role. Further investigation of the construct of role socialization and potential ways to measure it will be an important direction for research.

Finally, though future research should focus on better identifying these constructs, it is important to consider the possibility that beliefs regarding role socialization in particular may also occur outside of conscious awareness, and it may be difficult to fully capture these constructs. Since role socialization is currently inferred indirectly through measuring behavior before and after role occupancy, it may be

pertinent to consider that the cognitions regarding societal norms about roles are not within conscious awareness and may be very difficult to measure.

Another limitation of the current study is the failure to include a measure of role commitment, or commitment to the marriage. Theoretically, individuals who are less committed to their role may not experience role socialization pressures in the same way. These individuals may be more likely to resolve role incompatibility by leaving the role (e.g., divorce) as opposed to modifying their behaviors through role socialization (Burr, 1973; Yamaguchi & Kandel, 1985a). The current study did not measure role commitment. However, the sample of married participants did not include individuals who left their role (e.g., divorced). As the sample utilized in this study consisted only of married individuals who did not divorce and leave their role, it is possible that marital commitment in the sample overall was high with relatively little variability.

Although commitment to the marital role was not assessed in the current study, the potential moderating effects of marital satisfaction were examined. Lower marital satisfaction has been shown to be predictive of higher drinking levels and higher levels of marital satisfaction have been shown to be protective of alcohol problems over and above many other risk factors (Derrick & Leonard, 2014). Thus, marital satisfaction was selected in this study as it is theoretically related to the effect of marriage on declines in drinking. However, the hypothesis that marital satisfaction moderated the effects of marriage-related motives to limit drinking and marriage-related positive alcohol expectancies on frequency of drunkenness was not supported. As described earlier, this may be due to the difficulty in measuring role socialization, but it could also be that marital commitment would be a better moderator of the role socialization effects on declines in drinking. Finally, there was a limitation in the outcome variable, which was frequency of drunkenness. This outcome measure was chosen specifically because it

indicates impairment, given that role socialization hypothesizes change in behavior due to impairment in abilities to fulfill the role (Yamaguchi & Kandel, 1985a). However, this outcome variable, though of theoretical importance in the consideration of drinking reductions, relies on the perception of the participants. For the purposes of future studies, it may be beneficial to consider other methods of measurement for drinking, such as more objective measures (i.e., quantity of drinks, frequency of drinks). Future studies may consider utilizing an objective rather than subjective measure.

Alcohol Related Cognitions and Motives to Drink

In the current study, marriage-related motives to limit drinking or marriage-related positive alcohol expectancies did not predict declines in frequency of drunkenness after marriage. However, this does not mean that cognitions regarding alcohol use are not strong predictors of declines in drinking. Many studies have demonstrated that cognitions about alcohol use are predictive of individual differences in alcohol consumption (Bachman et al, 2002; Baer et al., 2002). Other studies have shown that self-reported reasons for limiting drinking are significantly related to drinking behavior (Epler et al., 2009). Though the results of the current study did not replicate these findings, it is possible that cognitions that measure reasons to reduce drinking are counteracted and outweighed by motives for drinking and positive alcohol expectancies, which have been well-documented as predictors of drinking behaviors (Epler et al., 2009). Future studies might consider marriage-related motives to limit drinking within a broader context of motives for drinking and positive alcohol expectancies.

Peer Drinking and Partner Drinking

In the current analyses, partner drinking remained consistently and significantly predictive of declines in frequency of drunkenness after marriage. This finding is not surprising given the results of previous studies that examine drinking trajectories in

conjunction with partner drinking, as current literature has demonstrated the importance of partner drinking for an individual's drinking levels. For example, alcoholics are more likely to be married to other alcoholics than is expected by random pairing (Jacob & Bremer, 1986; Leonard & Eiden, 2007), a phenomenon known as assortive mating. Partners' similarities in drinking habits have been studied and documented prior to marriage (Leonard & Eiden, 1999), and additional studies have shown that individuals who marry others with similar drinking patterns tend to have had similar drinking trajectories through adolescence (Yamaguchi & Kandel, 1993). Studies have also demonstrated the predictive ability of one partner's drinking on the other partner's drinking: respondents' alcohol use at age 21 through 24 was predictive of spouses' alcohol use seven years later (Labouvie, 1996). These results indicate that spousal drinking has a clear influence on an individual's drinking, and results from the current study suggest that partner drinking is a very significant predictor of drinking habits within a population of married individuals. Indeed, partner drinking was uniquely predictive of the decline in frequency of drunkenness after marriage, over and above the effect of many other predictors that were included in the models.

Although the current study replicated significant effects of partner drinking on drinking trajectories, results did not replicate previous findings in the literature that peer drinking is predictive of drinking trajectories. However, research on peer drinking effects within a married sample shows a nuanced pattern of results. For example, the current study did replicate previous findings that peer drinking does not influence drinking levels in later years after marriage (Leonard & Mudar, 2003). When individuals get married, the overlap between peer groups of the spouses increase over time, and socializing and therefore drinking with one's partner's peers also increases (Leonard & Homish, 2008). During the first four years of marriage, when married couples begin to

combine their peer groups, higher levels of peer drinking are predictive of the couple having higher combined drinking levels (Leonard & Homish, 2008). However, after these initial years of marriage, after a couple redefines their peer groups together, it is possible that peer influences do not remain as strong. This is demonstrated by studies that show that peer drinking does not influence drinking patterns in later years after marriage (Leonard & Mudar, 2003). Given the change in influences on drinking patterns over the course of marriage, it is possible that after marriage and merging of social groups, partner drinking has a larger effect on drinking patterns than does peer drinking. As partner drinking has been shown to become more influential than peer drinking after the first few years of marriage, it is important to note that partner drinking in the current study was measured at minimum five years after marriage for most participants. Therefore, the findings in this study that partner drinking was significantly predictive of the decline in frequency of drunkenness after marriage while peer drinking is not, supports the theory that partner drinking eventually becomes more important than peer drinking within a married sample.

Data Analytic Issues

Another consideration in understanding the lack of expected findings may be the type of analyses utilized in this study. The current study specifically assessed the decline in frequency of drunkenness from pre-marriage to post-marriage. This analysis tested only one overall drinking trajectory within a group of married individuals. However, there may be different classes within the sample, such as individuals who do not change in their drinking habits over time, individuals that increase drinking over time, and a class with the expected findings of decreasing drinking over time. Modeling using a latent class approach may yield the expected findings for particular subgroups within the overall group of married individuals. Further, examining latent classes over time may

yield additional findings that could better describe the sample and could assist in understanding differential drinking trajectories after marriage.

Sampling Issues

This study was a particularly rigorous test of role socialization effects on declines in drinking after marriage because the sample consisted of all married individuals and therefore removed all selection effects into marriage. As discussed earlier, when role incompatibility occurs, there are three potential options to change behaviors to reduce role conflict (Burr, 1973; Yamaguchi & Kandel, 1985a). One option is through role selection, defined as selectively committing to roles that are compatible with pre-existing values (Kandel, 1985). Another option is through role socialization, or changing current behaviors and attitudes to conform to the role (Kandel, 1985). Lastly, one could reduce role incompatibility by leaving the role. In order to directly test role socialization effects on drinking, it is important to remove both the effects of role selection and the effects of leaving the role. In this case, the sample consisted of all married individuals who did not divorce over the course of the study, therefore removing alternative methods to reducing role incompatibility.

However, though selecting only married individuals created a rigorous test of role socialization effects, a limitation to this design is that there was little overall variability in the predictors (marriage-related motives to limit drinking and marriage-related positive alcohol expectancies), the moderator (marital satisfaction), and in the outcome variable (frequency of drunkenness). As demonstrated by the histogram (see Figure 3) comparing the distribution of frequency of drunkenness after marriage at all levels of marriage-related motives to limit drinking, nearly all participants endorsed that marriage-related motives to limit drinking were "not at all important." However, participants who endorsed that marriage-related motives were not at all important to

them also demonstrated the highest and lowest levels of frequency of drunkenness after marriage. This suggests that some individuals perhaps report that marriage is not an important reason to limit drinking because they do not report any episodes of frequency of drunkenness. Conversely, others who endorse that marriage is not an important reason to limit drinking actually report high levels of frequency of drunkenness. According to a role socialization perspective, these individuals do not limit their drinking, as they do not believe that their drinking harms their marital role. The pattern seen in Figure 3 and these two opposite directions of effect suggest that perhaps the relation between marriage-related motives to limit drinking and frequency of drunkenness is masked in this sample due to the minimal variability in marriage-related motives to limit drinking and the large number of participants who report no episodes of drunkenness. Future studies may want to sample a broad selection of married individuals, to encompass all ranges of drinking. The inclusion of increased variability in alcohol use, increased variability in marital satisfaction, along with increased variability in cognitions related to alcohol use, may lead to different findings.

Another possibility for the null findings is that role socialization effects can only be detected at particular times, such as only at the beginning of marriage. Though this study focused on individuals before and after marriage, data collection did not occur immediately prior to and immediately after marriage, therefore creating a time lag between marriage and data collection that was not consistent across participants. Thus, it is possible that the study design minimized variability and maximized stability by not measuring immediately before and immediately after marriage. If role socialization effects can be best detected at the time of role acquisition, then the current study might be unable to capture the direct effects of role socialization using such a broad window of time. Future studies should consider whether cognitions regarding marriage-related

motives to limit drinking shift over the course of marriage. Perhaps more clearly defined time points would elucidate the results of this study and suggest additional future directions.

Summary and Conclusions

In conclusion, this study confirmed findings from previous research that partner drinking is an important, unique predictor of declines in frequency of drunkenness after marriage in a sample of married individuals. This study also extends previous research by considering the role of cognitions underlying role socialization as it relates to declines in drinking behaviors after marriage. However, the cognitions underlying role socialization are difficult to capture and require the creation of new measures. Therefore, further research will need to focus on defining this construct to better understand the reasons underlying the marriage effect on drinking in young adulthood.

Table 1.

Comparing Included Participants to Excluded Participants on All Variables

Variables	Included			Excluded		
	N	Mean	Std. Dev.	N	Mean	Std. Dev.
Frequency of Drunkenness at Wave 4 (Pre-Marriage)	158	0.80**	1.43	205	1.32	1.56
Frequency of Drunkenness at Wave 6 (Post-Marriage)	208	0.45**	1.00	205	1.30	1.58
Marriage-related motives to limit drinking (Wave 5)	181	3.52**	0.89	155	3.16	1.07
Marital Satisfaction (Wave 5)	197	4.81**	0.47	170	4.40	0.95
Other Reasons to Limit Drinking (Wave 5)	181	2.90**	0.66	173	2.55	0.70
Marriage-Related Positive Alcohol Expectancies (Wave 5)	201	1.18**	0.51	170	1.38	0.66
Partner's Drinking at Wave 6	131	3.40**	2.22	178	4.29	2.01
Age at Wave 6	208	31.69*	3.16	205	32.36	3.37
Peer Use at Wave 5	208	2.37**	1.43	205	3.13	1.53
	N	%		N	%	
Parenthood	208	37.5%** (N=78) Has Children		205	65.8% (N=135) Has Children	
Parental Alcoholism	208	36.1%** (N=75) COAs		205	54.6% (N=112) COAs	
Gender	208	60.1%* (N=125) Female		205	48.2% (N=99) Female	
Ethnicity	208	75% (N=156) Caucasian		184	73% (N=135) Caucasian	

Note. **p<.001, *p<.05

Table 2.

Descriptive Statistics for All Variables

	N	Min	Max	Mean	SD	Skewness	Kurtosis
Age at Wave 6	208	23	39	31.69	3.16	0.19	0.10
Frequency of Drunkenness at Wave 4	158	0	5	0.80	1.42	1.87	2.40
Frequency of Drunkenness at Wave 6	208	0	6	0.45	1.00	2.92	9.55
Marriage-related motives to limit drinking at Wave 5	181	1	4	3.52	0.89	-1.89	2.44
Marital Satisfaction at Wave 5	197	1	5	4.80	0.48	-3.49	14.43
Marriage-related Positive Alcohol Expectancies at Wave 5	201	1	5	1.18	0.51	3.70	18.03
Other Reasons to Limit Drinking at Wave 5	181	1	4	2.90	0.66	-0.05	-0.94
	N	%					
Gender	208	60.1% (N=125) Female					
Ethnicity	208	75% (N=156) Caucasian					
Parental Alcoholism	208	36.1% (N=75) COAs					
Partner Drinking (Past Year) at Wave 6	131	20.7% (N=43) Never Drank 20.2% (N=42) Drink Less than Monthly 22.1% (N=47) Drink More than Monthly					
Parenthood at Wave 5	208	37.5% (N=78) Has Children					
Peer Drinking at Wave 5	132	24.0% (N=50) No Peers Drink 15.6% (N=33) Few Peers Drink 16.3% (N=34) Some/Many Peers Drink 7.2% (N=15) Most/All Peers Drink					

Note: For Partner Drinking at Wave 6, the mean of those who do drink was 4.58, which converts roughly to drinking more than approximately 5 times per year and less than 1-3 times per month.

Note: For Frequency of Drunkenness at Wave 4 (pre-marriage), 50.5% of participants report never being drunk in the past year, and the mean of participants who report getting drunk is 3.43, which converts roughly to between less than monthly and 1-3 times per month.

Note: For Frequency of Drunkenness at Wave 6 (post-marriage), 76.5% of participants report never being drunk in the past year, and the mean of participants who report getting drunk is 2.87, which converts roughly to between 3-5 times per year.

Table 3.
Zero Order Correlations Among Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.
1. Age at Wave 6	--												
2. Freq. of Drunkenness at Wave 4 (Pre-Marriage)	-.04	--											
3. Freq. of Drunkenness at Wave 6 (Post-Marriage)	-.03	.44 **	--										
4. Marriage-Related Motives to Limit Drinking at Wave 5	.05	-.02	-.07	--									
5. Marital Satisfaction at Wave 5	-.07	-.08	-.08	.07	--								
6. Other Reasons to Limit Drinking at Wave 5	-.06	-.24 **	-.30 **	.50 **	.02	--							
7. Marriage-Related Positive Alcohol Expectancies at Wave 5	-.04	.12 *	.25 **	-.08	-.08	-.13 *	--						
8. Partner Drinking (Past Year) at Wave 6	-.04	.16 **	.30 **	-.08	.02	-.13 *	.03	--					
9. Gender	.09	.19 **	.20 **	-.01	.07	-.13 *	.08	-.21 **	--				
10. Race/Ethnicity	.02	-.06	-.04	.01	-.11 *	.03	.13 *	.01	-.06	--			
11. COA Status	.03	-.15 **	-.17 **	.01	.02	.08	-.15 **	-.09	.05	-.15 **	--		
12. Parenthood at Wave 5	.09	-.08	-.09	.32 **	-.02	.17 **	-.04	-.15 **	-.09	.11 *	-.01	--	
13. Peer Drinking at Wave 5	.10	.41 **	.39 **	-.29 **	.01	-.31 **	.21 *	.38 **	.01	.07	-.08	-.21 *	--

Note. 1=Has Children and 2 = Does Not Have Children; 1 = female and 2 = male; 1 = Caucasian and 2 = Hispanic 1 = COA and 2 = nonCOA
Note. **p<.01, *p<.05

Table 4.
Ordinal Probit Regression Analysis Predicting Latent Change In Frequency of Drunkenness from Wave 4 to Wave 6 from Marriage-Related Motives to Limit Drinking and Covariates

Variable	*B(SE)*	p
Frequency of Drunkenness at Wave 4 (Pre-Marriage)	-.751(.089)	.004**
Marriage-Related Motives to Limit Drinking at Wave 5	.238(.239)	.320
Peer Drinking at Wave 5 (Past Year)	.359(.278)	.196
Parental Alcoholism	-.206(.201)	.306
Gender	.167(.183)	.360
Age at Wave 6	-.295(.171)	.084
Parenthood at Wave 5	.300(.197)	.127
Partner Drinking at Wave 6 (Past Year)	.613(.268)	.022*
Race/Ethnicity	.157(.209)	.451

*$p<.05$, **$p<.01$

Table 5.
Ordinal Probit Regression Analysis Predicting Latent Change In Frequency of Drunkenness from Wave 4 to Wave 6 from Marriage-Related Positive Alcohol Expectancies and Covariates

Variable	*B(SE)*	p
Frequency of Drunkenness at Wave 4 (Pre-Marriage)	-.794(.256)	.002**
Marriage-Related Positive Alcohol Expectancies at Wave 5	.071(.152)	.637
Peer Drinking at Wave 5 (Past Year)	.312(.294)	.289
Parental Alcoholism	-.207(.202)	.306
Gender	.196(.185)	.290
Age at Wave 6	-.295(.178)	.096
Parenthood at Wave 5	.349(.193)	.071
Partner Drinking at Wave 6 (Past Year)	.637(.273)	.020*
Race/Ethnicity	.161(.214)	.453

**p<.05, **p<.01*

Table 6.
Ordinal Probit Regression Analysis Predicting Latent Change In Frequency of Drunkenness from Wave 4 to Wave 6 from Marriage Related Motives to Limit Drinking Over and Above Other Reasons to Limit Drinking and Covariates

Variable	*B(SE)*	p
Frequency of Drunkenness at Wave 4 (Pre-Marriage)	-.766(.266)	.004**
Marriage-Related Motives to Limit Drinking at Wave 5	.258(.251)	.304
Other Reasons to Limit Drinking	-.283(.086)	.787
Peer Drinking at Wave 5 (Past Year)	.352(.283)	.214
Parental Alcoholism	-.204(.200)	.309
Gender	.174(.186)	.348
Age at Wave 6	-.302(.170)	.075
Parenthood at Wave 5	.302(.197)	.126
Partner Drinking at Wave 6 (Past Year)	.623(.279	.025*
Race/Ethnicity	.156(.212)	.462

*$p<.05$, **$p<.01$

Figure 1. *Graph of proposed interaction between marital satisfaction and marriage-related motives to limit drinking on frequency of drunkenness.*

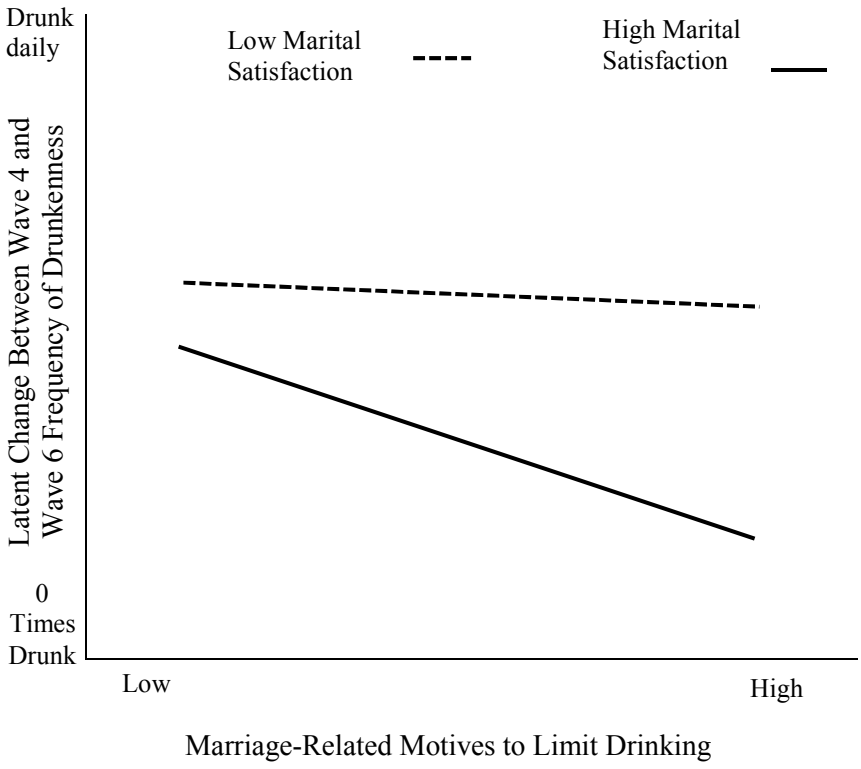


Figure 2. *Graph of proposed interaction between pre-marital frequency of drunkenness and marriage-related motives to limit drinking on frequency of drunkenness.*

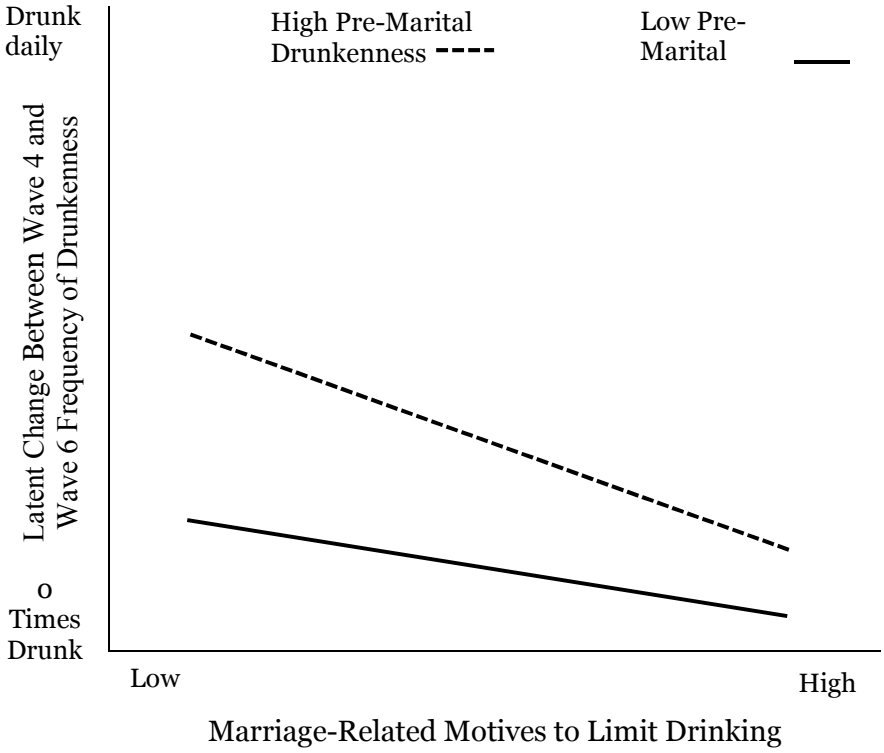


Figure 3. *Histogram representing distribution of frequency of drunkenness at wave 6 (post-marriage) at every level of marriage-related motives to limit drinking*.

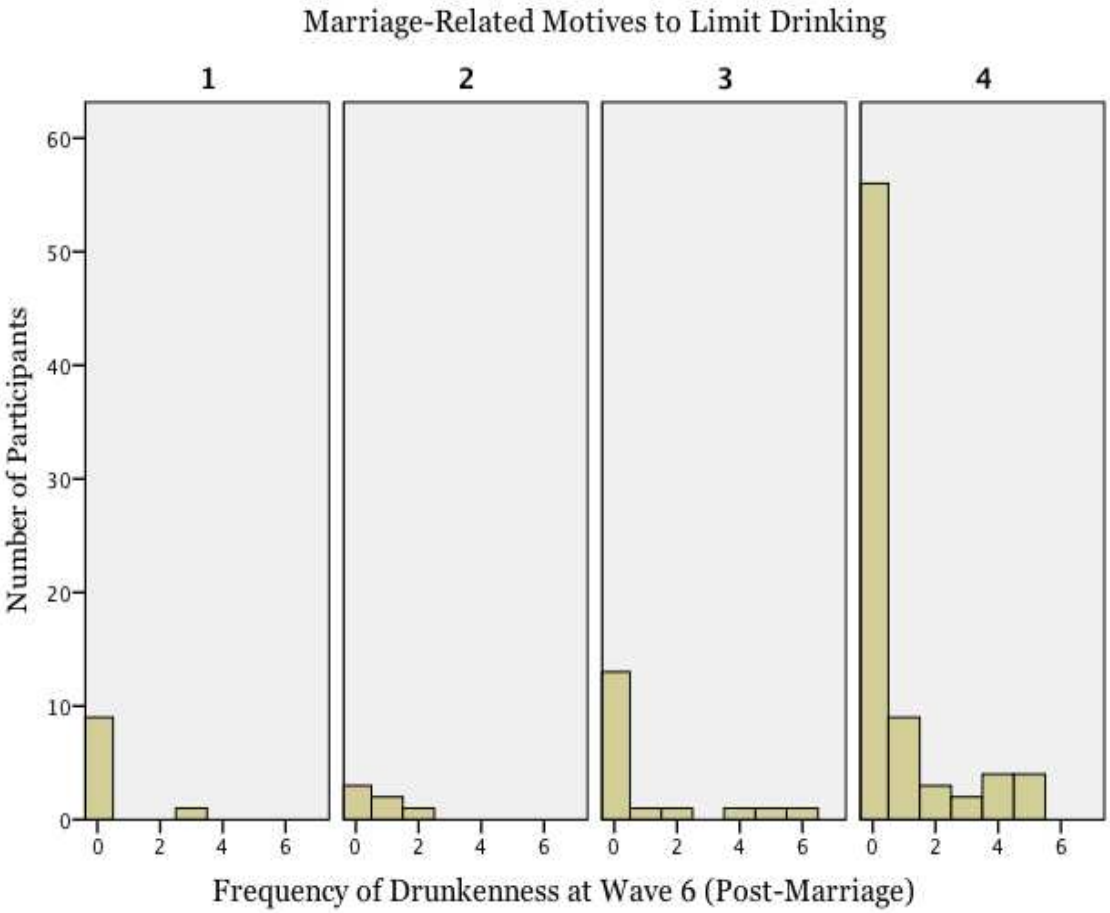
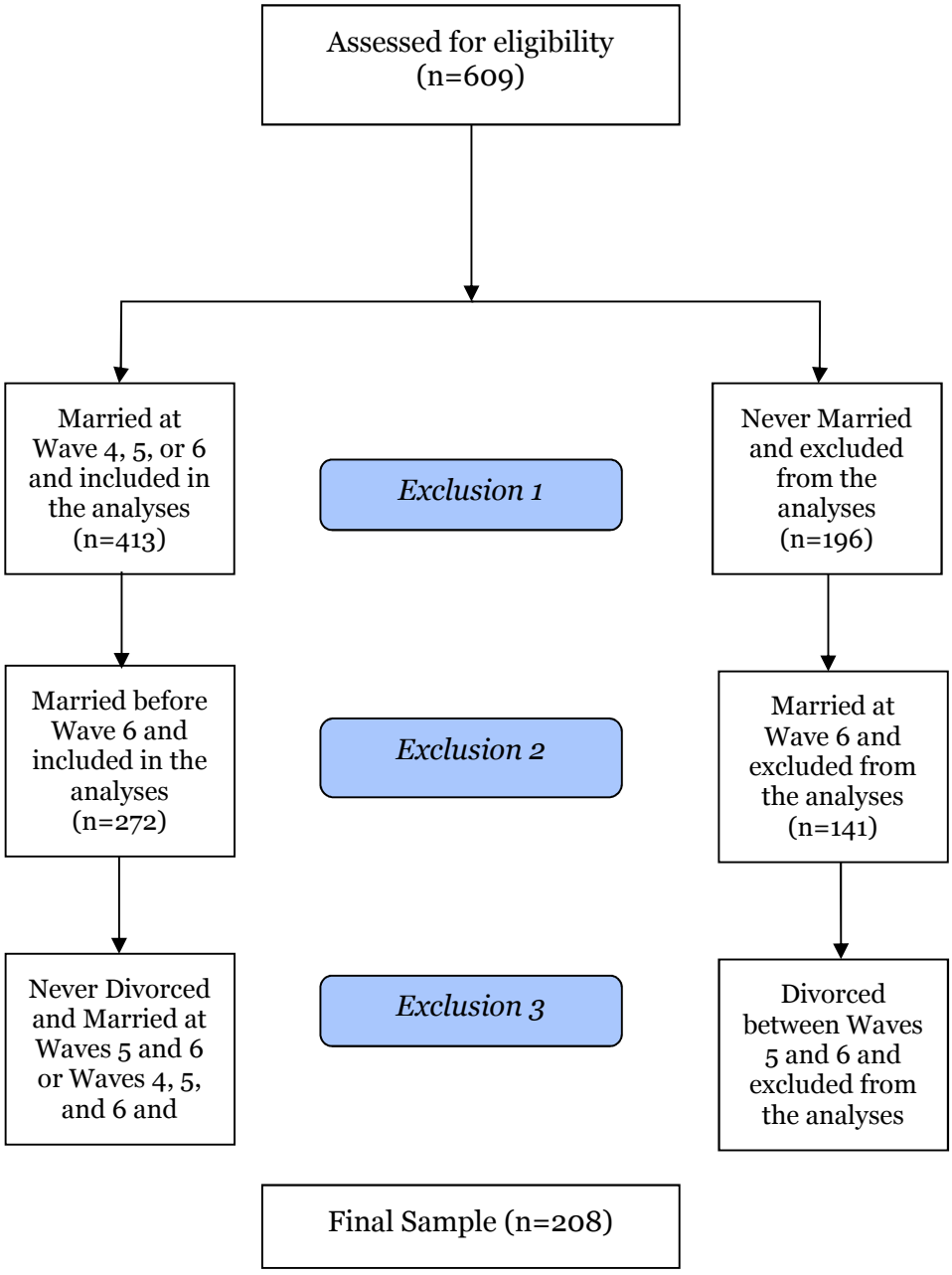


Figure 4. *Consort Flow Diagram for Inclusion and Exclusion from the Study*



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APPENDIX A

REASONS FOR LIMITING DRINKING

Participant Instructions

Sometimes people limit how much wine, beer or liquor they drink or they may choose not to drink at all even when others around them are drinking. Here are some statements people have made about why they limit their drinking. How important would you say each of the following is to you as a reason for limiting your drinking or choosing not to drink.

Response Options
Very important reason 1
Fairly important reason.....2
A little important reason.....3
Not at all important reason.....4

I limit my drinking (or choose not to drink) because...

1. Drinking reduces my performance in sports
2. I wouldn't want to disappoint my parents
3. I was brought up not to drink
4. My religion discourages or is against drinking
5. I'm part of a group that doesn't drink much
6. I've seen the negative effects of someone else's drinking
7. I like to feel in control of myself
8. Drinking heavily is a sign of personal weakness
9. I don't want to get drunk
10. I don't want to develop a drinking habit
11. If I didn't limit my drinking, I would develop a drinking habit that I couldn't break
12. I'm afraid that I will become an alcoholic
13. I don't like the way that drinking makes me feel

APPENDIX B

MARITAL SATISFACTION

These questions refer to your relationship with your spouse or romantic partner.

1. In the past year, how satisfied were you with this relationship?

Very dissatisfied 1
Somewhat dissatisfied..... 2
Neutral 3
Somewhat satisfied.....4
Very satisfied 5

2. In the past year, how often did you regret becoming involved with him/her?

Almost never 1
Occasionally 2
Some of the time.....3
Much of the time.....4
Almost always.....5

3. In the past year, how often have you discussed or considered ending your relationship with him/her?

Almost never.....1
Occasionally 2
Some of the time 3
Much of the time 4
Almost always 5

APPENDIX C

MARRIAGE-RELATED MOTIVES TO LIMIT DRINKING

1. I limit my drinking (or choose not to drink) because it interferes with my relationship with my spouse.

Very important reason 1
Fairly important reason.....2
A little important reason.....3
Not at all important reason 4

APPENDIX D

MARRIAGE-RELATED POSITIVE ALCOHOL EXPECTANCIES

1. Alcohol helps me get along better with my spouse.

Response Options
Strongly agree.....1
Agree.....2
Neither agree nor disagree....3
Disagree.....4
Strongly disagree.....5

2. Alcohol helps me get along better with my spouse.

Response Options
Strongly agree.....1
Agree.....2
Neither agree nor disagree....3
Disagree.....4
Strongly disagree.....5