

Social Support as a Moderator for Alcohol-Related Partner Aggression during the
Transition to Parenthood

by

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B.A., University of British Columbia, 2006

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Abstract

Alcohol-related partner aggression is a pervasive social problem throughout various life stages, including the transition to parenthood. Previous research shows that alcohol use is associated with partner aggression perpetration for both men and women; however, not all individuals who consume alcohol act aggressively. In this study, the moderating effects of general social support and partner-specific support on the association between alcohol use and both physical and psychological partner aggression were investigated using a community sample of 98 pregnant couples. For men, high levels of general social support increased alcohol-related physical and psychological aggression whereas partner-specific emotional support served as a buffer for physical aggression. For women, general social support was not a significant moderator, but high levels of partner-specific instrumental support increased alcohol-related physical aggression. These results can be applied to prevention and treatment programs for alcohol-related partner aggression.

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Social Support as a Moderator for Alcohol-Related Partner Aggression during the Transition to Parenthood

Aggression between couples is now widely recognized as a prevalent social concern. Partner aggression is commonly defined as being beaten, choked, kicked, pushed, or slapped by one's partner; or being threatened with a beating, choking, kick, weapon, or with death by one's partner (Wingwood, DiClemente, & Raj, 2000). Although the perpetration of female-to-male partner aggression has received less attention, it is now believed that both men and women perpetrate aggression. Extant research has demonstrated that alcohol use is a risk factor for partner aggression (e.g., Foran & O'Leary, 2008); however, not all individuals who use alcohol act aggressively. There currently is limited research examining factors that moderate the association between alcohol use and partner aggression perpetration. One possible moderator of the alcohol-aggression link is social support. Social support is broadly defined as responsiveness to another's needs, validating behaviours, and the facilitation of adaptive coping (Sullivan, Pasch, Eldridge, & Bradbury, 1998). The goal of this study was to examine the moderating effects of general social support and partner-specific support on alcohol-related physical and psychological aggression during the transition to parenthood.

Prevalence of Partner Aggression

It has been documented that about a third of young married couples engage in mild forms of physical aggression, including pushing or throwing objects toward one's partner, whereas about 4% of young married couples engage in more severe forms of partner aggression, such as choking or strangling one's partner (O'Leary et al., 1989).

Schafer, Caetano, and Clark (1998) estimated that more than 1 in 5 couples in the U.S. experienced at least one episode of partner aggression in their current relationship. Shockingly, in a random sample of 453 families of young children in the U.S., one quarter of respondents reported severe partner aggression (Smith Slep & O'Leary, 2005).

In terms of annual rates, a large representative sample in the U.S. indicated that 12% of women were the victim of at least one act of partner physical aggression (Stets & Straus, 1990). Likewise, 12% of men reported being the victim of at least one act of partner aggression in the past year. Furthermore, 5% of women, but only 1% of men in this study reported being the victim of severe physical aggression. Looking specifically at at-risk young couples, 21% of men and 26% of women reported engaging in physical aggression within their current relationship (Capaldi & Crosby, 1997). When comparing countries, Canadian women and men were more likely than their American counterparts to use severe and minor aggression towards their partner (Grandin & Lupri, 1997). About 45% of Canadian university students reported being the victim of physical aggression in their current or most recent dating relationship (Pedersen & Thomas, 1992). Taken together, these prevalence rates indicate that partner aggression is a serious problem in North America.

Psychological aggression. Although psychological aggression has historically received less notice from researchers, increased attention is now being given to psychological aggression as a distinct form of aggression. Psychological aggression can be defined as coercive or aversive acts that are intended to produce emotional harm or threat of harm (Taft et al., 2006). In a nationally representative sample of 1,461 married

men and 1,909 married women, 75% of men and 80% of women reported perpetrating psychological aggression against their partner (Stets & Straus, 1990). Using a clinical sample of 273 couples who were participating in marital therapy, Simpson and Christensen (2005) found that 96.3% of men and 95.5% of women reported perpetrating psychological aggression against their partner in the past year. Looking specifically at severe psychological aggression, 36.6% of the men and 37.4% of the women reported perpetrating severe psychological aggression against their partner in the past year. These rates indicate that psychological aggression is highly prevalent in clinical samples as well as community-based samples. Given these high prevalence rates, psychological aggression may be a relatively normative method of managing conflict within romantic relationships (Jose & O'Leary, 2009). Unfortunately, past psychological aggression is an important predictor of initial incidents of physical aggression within intimate relationships (Murphy & O'Leary, 1989).

Sexual aggression. Sexual aggression is commonly defined as non-consensual sexual acts that are often obtained by force (Monson, Langhinrichsen-Rohling, & Taft, 2009). Rape is a severe form of sexual aggression that includes the additional requirement of penetration of the victim's orifice. Although physical aggression is not a requirement for sexual aggression, severe forms of sexual aggression rarely occur in the absence of physical aggression. Basile (2002) found that 34% of women 18 years and older were victims of sexual aggression by an intimate partner during their lifetime. Looking specifically at rape, 7.7% of women are raped in their lifetime by an intimate partner (Tjaden & Thoennes, 2000). In a national sample of married and cohabiting White, Black, and Hispanic couples, male-to-female sexual aggression perpetration rates

ranged from 11% to 23% and female-to-male sexual aggression perpetration rates ranged from 5.5% to 13.5% (Ramisetty-Mikler, Caetano, & McGrath, 2007). For all ethnic groups, insisting to have sex without physical force and having sex without a condom were the two types of sexual aggression that were reported most frequently. As expected, clinical samples have higher rates of sexual aggression. For example, 49% of couples in conjoint therapy reported minor sexual aggression (e.g., threats of physical force to make one's partner have sex) whereas 11% of couples reported severe sexual aggression (e.g., physical force to make one's partner have sex) (Simpson & Christensen, 2005). It is increasingly being recognized that women are also the perpetrators of sexual aggression. Krahe, Waizenhöfer, and Möller (2003) reported that 9.3% of women used aggressive strategies to coerce a man to participate in sexual activities. The most common method used was exploitation of an incapacitated state, followed by verbal pressure and physical force.

Course of Partner Aggression

Several researchers have sought to document the course of partner aggression. It has been recognized that male-to-female physical partner aggression increases from age 15 to 25, peaks at around age 25, and then sharply declines until about age 35 (O'Leary, 1999a). Consistently, O'Leary and Woodin (2005) reported that partner aggression is most prevalent in the early to mid-twenties and much less common from then on. Women are more likely than men to initiate physical aggression during late adolescence and young adulthood, but the gender difference is not significant at age 26 and thereafter due to the decrease in women's initiation rate (Capaldi, Kim, & Shortt, 2007). Riggs, O'Leary, and Breslin (1990) reported that in a sample of 408 undergraduate students

with a mean age of 18.5 years, 39% of women and 23% of men reported engaging in physical aggression against their current or most recent romantic partner. In this sample, the most frequent forms of aggression included slapping, pushing, grabbing, and shoving one's partner. In contrast, the more violent forms of aggression, such as threatening one's partner with a gun, were reported less frequently.

It has been documented that partner aggression is quite stable over time, with more severe physical aggression being more stable over the years (Woodin & O'Leary, 2006). Unfortunately, partners who engage in less severe physical aggression are at-risk for more severe aggression over time (Capaldi & Crosby, 1997). A history of past aggressive relationships increases the likelihood of subsequent aggressive relationships and over 76% of men who engaged in violence at pre-marriage were aggressive at one or more post-marriage assessments (Coker, Smith, McKeown, & King, 2000; Lorber & O'Leary, 2004). Because rates of aggression generally decrease after young adulthood, there is some instability in partner aggression. Fritz and O'Leary (2004) indicated that wives reported wife- and husband-perpetrated premarriage physical aggression at rates of 48% and 35%, respectively. Ten years later, these numbers dropped to 13% and 10%, respectively. Moreover, husband- and wife-perpetrated physical aggression decreased at an average of approximately one act of aggression per month, regardless of the severity of the aggression and even after controlling for marital satisfaction. Conversely, Fritz and O'Leary did not find a significant pattern of change for psychological aggression. Therefore, psychological aggression may be a form of aggression that is particularly persistent over time. The previously mentioned gender

difference in partner aggression perpetration highlights the importance of examining perpetration rates by gender.

Gender Difference in Partner Aggression Perpetration

Although female-to-male partner aggression has received less attention, it is now recognized that women are also perpetrators of aggression. Approximately one third of dating college women reported engaging in some physical aggression against their partner (Hettrich & O'Leary, 2007). Importantly, more than half of reported aggression is mutual aggression between both partners (O'Leary, Malone, & Tyree, 1994).

Furthermore, when aggression is only reported by one partner, it is at least as likely to be wife-only as husband-only aggression (O'Leary et al.). In late adolescence and young adulthood, women initiate physical aggression at least two times more often than men (Capaldi et al., 2007). Moreover, Capaldi and Crosby (1997) reported that in a sample of young at-risk mostly unmarried couples, women were about three times more likely to use nonplayful physical aggression than men. Similarly, women consistently report perpetrating more psychological aggression than men (Hines & Saudino, 2003). Importantly, psychological aggression often precedes and predicts the development of physical aggression (O'Leary, 1999b). Moreover, wives' psychological aggression is an important factor in predicting physical aggression continuation for both themselves and their husbands following treatment for partner aggression (Woodin & O'Leary, 2006).

Other researchers have acknowledged that even though women may be more likely to engage in physical and psychological aggression against their partner, men tend to use more severe forms of partner aggression (Hettrich & O'Leary, 2007). Similarly, Schafer et al. (1998) argue that male-to-female aggression has more severe health

consequences, including injury and death of the victim. Overall, male-to-female aggression is more likely to result in psychological and physical injury than female-to-male aggression. However, women are most likely to be injured when partner aggression is mutual or initiated by the female partner (Capaldi et al., 2007). A meta-analysis indicated that women were slightly more likely than men to use physical aggression toward their partner; however, men were more likely than women to have injured their partner and 62% of those injured in partner aggression were women (Archer, 2000). While college women engage in pushing, grabbing, slapping, and kicking more often than college men, men engage in physical restraint and forced oral sex more often than women (Hettrich & O'Leary). Additionally, women are more likely to be repeatedly abused, to be injured, and to die as a result of partner aggression (Schafer et al.). Other researchers believe that the gender difference for partner aggression perpetration is larger in clinical populations where men engage in aggression against their partner much more often than women do (e.g., O'Leary, 2000).

Partner Aggression and the Transition to Parenthood

It is important to explore aggression in the context of parenthood because partner aggression does occur during pregnancy and may have negative consequences for the couple's children. Although some may believe that partner aggression is nonexistent throughout pregnancy, Charles and Perreira (2007) found that 33% of mothers and 40% of fathers of a nationally representative cohort of pregnant women in the U.S. reported being the victim of physical aggression during or just after pregnancy. In this sample, aggression perpetration rates during pregnancy were significantly higher for women than men. Male-to-female partner aggression does decrease during pregnancy, but

aggression levels increase again after the child's birth. Therefore, Charles and Perreira argue that the decrease in aggression during pregnancy should not be considered a permanent decline. Consistent with their argument, other research has shown that about 19% of women report being the victim of moderate or severe partner physical aggression during pregnancy whereas 25% of women report aggression victimization postpartum (Gielen, O'Campo, Faden, Kass, & Xue, 1994). Importantly, 4% of these women prenatally and 6% postpartum reported five or more moderate to severe aggressive episodes during the previous six months.

Burch and Gallup (2004) reported that about one out of seven men who were convicted of spousal abuse reported acting aggressively toward their partner while she was pregnant. In addition, the frequency and severity of the aggression was double that directed toward partners who were not pregnant. These results are inconsistent with other researchers' findings which indicate that aggression decreases during pregnancy (e.g., Charles & Perreira, 2007; Gielen et al., 1994). However, this study is important to consider because most of the men in this sample had already been convicted of abuse and, therefore, may have accurately reported their aggressive behaviour. Some women in abusive relationships may believe that becoming pregnant will result in a decrease in partner aggression victimization. To the contrary, it is possible that sexually jealous men may view their wife's pregnancy as a sign of infidelity and this can increase aggression levels (Burch & Gallup). This study indicates that pregnancy does not always protect women from partner aggression. Another possible explanation for this inconsistent finding is that severely aggressive men could just be more likely to act

aggressively regardless of pregnancy status; therefore, these results may not generalize to the larger population.

Women who are at higher risk for partner physical aggression victimization during pregnancy include less educated women, women who report that their partner uses substances such as alcohol, women who are not married or cohabiting with their partner, and women who report that their pregnancy is unwanted (Charles & Perreira, 2007). Interestingly, women's use of alcohol during pregnancy was associated with aggression victimization during pregnancy but not in the year following the child's birth (Charles & Perreira). It is possible that failed relationships account for the nonsignificant association between women's use of alcohol during pregnancy and victimization during the year after the child's birth. Generally, if partner aggression occurs during pregnancy, there is a 70-80% greater likelihood of partner aggression occurring 1 year after pregnancy than if there was no aggression during pregnancy (Charles & Perreira).

Childhood Exposure to Parental Aggression

Couples who engage in partner aggression are at-risk for engaging in negative parenting practices. About half of men and slightly more than a third of women who are perpetrators of partner physical aggression also report physically abusing their children (Saunders, 1994). Moreover, approximately 60% of youth who were exposed to parental aggression reported being the victim of physical abuse by either their mother or father (Moretti, Obsuth, Odgers, & Reebye, 2006). Partner aggression is also a risk factor for other types of child abuse as mothers who reported being either the victims or perpetrators of partner aggression also reported higher levels of child maltreatment

including neglect, physical, psychological, and sexual abuse than mothers who did not report partner aggression in the household (Smith Slep & O'Leary, 2001; Zolotor, Theodore, Coyne-Beasley, & Runyan, 2007).

Childhood exposure to partner aggression has various negative effects on children including depression, anxiety, behaviour problems, and a proneness to violence perpetration and victimization (Owen et al., 2007). A meta-analysis of 41 studies concluded that childhood exposure to partner aggression was related to emotional and behaviour problems (Wolfe, Crooks, Lee, McIntyre-Smith, & Jaffe, 2003). Specifically, there was a small effect size between childhood exposure to partner aggression and emotional and behavioural problems. The researchers concluded that a wide range of developmental outcomes are compromised by exposure to partner aggression including social, emotional, behavioural, and cognitive functioning as well as general health functioning. Another meta-analysis of 118 studies reported that about 63% of children who witness interparental aggression fare worse than children not exposed to partner aggression in terms of their psychological, behavioural, social, and academic functioning (Kitzmann, Gaylord, Holt, & Kenny, 2003). Similarly, a more recent meta-analysis of 60 studies found a moderate effect between exposure to domestic violence and both internalizing and externalizing childhood symptoms (Evans, Davies, & DiLillo, 2008). Moreover, this meta-analysis revealed that the association between exposure to domestic violence and externalizing symptoms was significantly stronger for boys than for girls.

A wealth of research has been dedicated to the intergenerational transmission of aggression. There appears to be a small-to-moderate effect size between growing up in

an abusive family and becoming involved in an aggressive romantic relationship (Stith et al., 2000). Moretti et al. (2006) reported that adolescent girls who observed their mothers perpetrate physical aggression toward their partners were significantly more aggressive toward their friends. Similarly, adolescent boys who witnessed their fathers perpetrate partner aggression were significantly more aggressive toward their friends. However, aggression towards adolescents' friends was unrelated to exposure to their opposite-sex parent's aggression perpetration. Notably, mothers' perpetration of partner aggression was significantly related to both boys' and girls' use of aggression toward romantic partners, but fathers' aggression perpetration was not. Moretti et al. argue that mothers are more often central attachment figures and, therefore, play a critical role in shaping their children's methods of negotiating conflict in intimate relationships. Given the negative consequences of exposure to partner aggression, it is particularly important to intervene in the early stages of parenthood.

Consequences of Partner Aggression

For both men and women, partner aggression is associated with various negative effects. In terms of physical health, victims are at-risk for chronic pain, broken bones, arthritis, hearing or sight deficits, seizures, frequent headaches, stomach ulcers, spastic colon, diarrhea, and hypertension (Coker, Smith, Bethea, King, & McKeown, 2000). In addition, partner aggression is associated with numerous mental health conditions including depression, anxiety, posttraumatic stress disorder, substance use, and suicide ideation (Coker, Davis, et al., 2002; Coker, Smith, et al., 2002). Aggression also has negative effects on the economy due to lost productivity. Reeves and O'Leary-Kelly (2007) estimated that partner aggression costs corporations in the U.S. 3 to 5 billion

dollars annually. Individuals who were victims of aggression in the past were more likely to be absent at work than nonvictims and current victims. In contrast, current victims had high rates of work attendance but were more distracted while at work. These researchers argue that current victims may have high rates of work attendance due to the need for economic stability or because work may be viewed as a coping mechanism for their victimization. Overall, being a victim of partner aggression has adverse effects in all areas of life.

Contrary to popular belief, women report that being a victim of psychological aggression has negative effects that are as harmful as the effects of physical aggression (O’Leary, 1999b). For men and women, being a victim of psychological aggression is related to greater psychological distress, anxiety, and physical health symptoms after controlling for physical aggression (Taft et al., 2006). Additionally, for women, psychological aggression victimization is associated with higher levels of depression (Taft et al.). Research also indicates that interparental male-to-female psychological aggression is related to children’s externalizing and internalizing behaviour problems over and above the effects of physical aggression (Clarke et al., 2007). Importantly, maternal distress fully mediated the association between interparental psychological aggression and child externalizing behaviour problems whereas it only partially mediated the association between interparental psychological aggression and child internalizing problems.

Risk Factors for Partner Aggression

A well-known model used to explain risk factors associated with partner aggression perpetration is Dutton’s (1995) nested ecological theory of partner violence.

The theory proposes four levels of perpetrator and environmental risk factors for partner aggression. The *ontogenic* level consists of the perpetrator's developmental history that has resulted in dangerous perpetrator characteristics, such as drug use or hostility. The *microsystem* includes characteristics of the setting where the abuse occurs. For example, relationship dynamics as well as antecedents and consequences of the aggression are part of the microsystem. The next level is the *exosystem* which includes social structures that connect the offender to the larger culture. This level includes friendships, work place, and other formal and informal institutions in which the individual is involved. Finally, the *macrosystem* is the broadest level which consists of general cultural values and beliefs. Other researchers have expanded Dutton's model to include a similar framework of risk factors for the victim (e.g., Stith, Smith, Penn, Ward, & Tritt, 2004).

Various characteristics of the perpetrator have been identified that increase the likelihood of engaging in partner aggression. Some of these risk factors include low SES, lack of education, history of child sexual victimization, exposure to parental physical and/or verbal aggression, violent adult models in childhood, non-family aggression by a parent, elevated levels of state and trait anger, as well as various personality disorders (e.g., Anti-social Personality Disorder) and Axis I psychopathology (e.g., depression) (Schumacher, Feldau-Kohn, Smith Slep, & Heyman, 2001). Another important factor that has commonly been shown to influence aggression perpetration is alcohol use.

Alcohol Use and Partner Aggression

A moderate effect size was found between alcohol use and the perpetration of partner physical aggression in a meta-analysis of 22 studies (Stith et al., 2004). The results of a more recent meta-analysis of 50 studies indicated that there is a small-to-moderate effect size for the relationship between alcohol use and male-to-female partner physical aggression and a small effect size for the association between alcohol use and female-to-male partner physical aggression (Foran & O'Leary, 2008). Importantly, this meta-analysis noted that there was not a significant difference in the effect size for different types of relationships, including married, cohabiting, divorced, separated, or dating couples. Pan, Neidig, and O'Leary (1994) found that alcohol problems distinguished mildly and severely aggressive men from nonaggressive men. Further, alcohol problems also distinguished mildly aggressive men from severely aggressive men. In fact, an alcohol or drug problem elevated the risk of severe physical aggression by 70% and the risk of mild physical aggression by 158% compared to individuals without an alcohol or drug problem (Pan et al.).

Additional research has corroborated the importance of examining alcohol consumption in the context of partner aggression. Across different measures, men with risky alcohol use are more likely to engage in marital aggression (Leonard & Roberts, 1998) and 40-60% of couples report episodes of partner aggression in the year prior to substance abuse treatment (Fals-Stewart, 2003). Further, alcohol consumption significantly increased the likelihood of any and severe male-to-female physical aggression while opiate-based drugs and cannabis use was not associated with an increase in male-perpetrated aggression (Fals-Stewart, Golden, & Schumacher, 2003).

The well-documented relationship between alcohol use and partner aggression has encouraged numerous researchers to explain how alcohol influences the perpetration of aggression. Three theoretical models have been proposed to explain the relationship between alcohol use and partner aggression: spurious effects model, indirect effects model, and proximal effects model (Leonard & Quigley, 1999).

First, the spurious effects model states that there is not a causal link between alcohol and aggression. Instead, the association between alcohol and aggression is due to other factors that covary with these two variables, such as Anti-Social Personality Disorder (ASPD). For example, proponents of this view believe that individuals with ASPD are more likely to engage in alcohol use and aggression than individuals without ASPD. In other words, there is an illusory correlation between alcohol use and aggression because other variables, such as ASPD, are mutually related to both alcohol use and aggression and, therefore, are responsible for the correlation. However, there is little support for the spurious effects model because the relationship between alcohol use and partner aggression still exists once potential third variables are statistically removed from the relationship. For instance, research has shown that there is still a significant association between men's substance use and partner aggression even after controlling for ASPD. Fals-Stewart et al. (2003) reported that in a sample of men entering a drug abuse treatment program, male-to-female physical partner aggression was higher on days of alcohol use after statistically controlling for ASPD. Specifically, after controlling for ASPD, there was a fourfold increase of partner aggression on days of drinking than on days without drinking.

Second, the indirect effects model states that there is a causal relationship between alcohol use and aggression but this relationship is mediated by other variables, such as relationship distress or dissatisfaction. For example, alcohol consumption may lead to relationship distress and this distress creates a context for partner aggression. However, there is also a lack of support for this model because the alcohol-aggression link still remains after controlling for the mediator variables. For example, after controlling for relationship distress, there was still a significant correlation between men's substance use and male-to-female partner aggression (Fals-Stewart et al., 2003). Additionally, marital dissatisfaction does not predict first instances of physical aggression in couples which indicates that marital dissatisfaction is not causing aggression (Murphy & O'Leary, 1989). Instead, marital dissatisfaction early in marriage is believed to be a result of aggressive responses which then establishes a context for repeated aggression (Murphy & O'Leary).

Third, the proximal effects model attempts to explain the link between alcohol use and aggression by stating that alcohol use directly facilitates aggression due to its psychopharmacological effects on cognitive functioning or one's expectations of intoxication. Specifically, alcohol intoxication leads to distorted perceptions, lowered inhibitions, or violent expectations which then results in aggression. According to this model, there should be a temporal relationship between substance use and aggression. In other words, episodes of aggression would most likely occur within a brief time period following alcohol consumption. Many studies looking at the link between alcohol use and partner aggression provide support for the proximal effects model. Supporting the influence of alcohol on cognitive functioning, Bartholow and Heinz

(2006) reported that individuals made faster lexical decisions concerning aggressive words if they were first exposed to alcohol-related primes. Furthermore, the individuals rated the behaviour of a target person as more hostile if they first viewed an alcohol advertisement rather than a neutral advertisement. To provide evidence for alcohol's temporal relationship with aggression, Fals-Stewart (2003) collected daily diaries of male partners with a history of partner aggression who were entering an alcoholism or domestic violence treatment program. The information these men included in the diaries allowed for the examination of the temporal relationship between alcohol consumption and male-to-female aggression. The results demonstrated that physical aggression was more likely on days when the male perpetrator had been drinking than on days without any drinking. Specifically, male-to-female physical aggression was 8 times more likely on days when the men drank alcohol than on days when they did not consume alcohol. Furthermore, the men were 11 times more likely to engage in severe partner aggression on days of drinking than on days without drinking. In support of the temporal role of alcohol, over 60% of all aggressive episodes occurred within two hours of drinking by the male partner and 80% of all aggressive episodes occurred within four hours following alcohol consumption by the male partner.

Despite the well-documented support for the proximal effects model, the literature concerning the expectancy component of this perspective is mixed. The expectancy perspective suggests that alcohol-related aggression is a consequence of the consumer's beliefs regarding the consumption of alcohol. Several researchers have argued and provided empirical evidence either for or against this perspective. For instance, Chermack and Taylor (1995) reported that individuals who received a high

dose of alcohol were significantly more aggressive toward a fictitious opponent than individuals who received an active-placebo dose. Importantly, this difference remained significant regardless of the individual's expectations of alcohol consumption. In contrast, other findings support the expectancy perspective. For example, Field, Caetano, and Nelson (2004) suggested that an expectation of aggressive behaviour after alcohol consumption is the strongest predictor of partner aggression. Looking at White, Black, and Hispanic couples, they found that after controlling for ethnicity, education, income, age, gender, and impulsivity, individuals who had strong or very strong expectations of their own aggressive behaviour following alcohol consumption were significantly more likely to perpetrate aggression than individuals who did not hold this expectation.

Due to ethical concerns, researchers have been unable to utilize an experimental design to demonstrate a causal relationship between alcohol use and partner aggression. However, some experimental studies have been conducted with the hope of being able to generalize the results to partner aggression. For example, men who were assigned to an alcohol consumption condition rather than a placebo condition acted more aggressively as measured by shock intensity delivered to a fictitious opponent (Bushman, 1997). Similarly, Leonard (1984) randomly assigned male undergraduate students to an intoxicated, sober, or mixed dyad condition. The intoxicated dyads selected higher shock levels for their opponents to receive than did the sober or mixed dyads. Furthermore, the intoxicated dyads escalated aggression over trials whereas the sober and mixed dyads did not. Another study found that low alcohol doses that were orally administered to male mice significantly heightened aggressive behaviour towards an

intruder mouse in 27% of the mice (Miczek, Barros, Sakoda, & Weerts, 1998). Despite the unnatural environment and unnatural aggressive response of laboratory studies, some researchers believe that these studies are able to detect relations among variables that are correlated with aggression and, therefore, they argue that the external validity of these studies should not be underestimated (e.g., Anderson & Bushman, 1997).

O'Farrell, Fals-Stewart, Murphy and Murphy (2003) tried to establish a causal relationship between alcohol and aggression by conducting a study with more natural responses in a more natural environment. In a sample of men entering alcoholism treatment, partner aggression decreased after the program, but was still higher than a demographically matched non-alcoholic comparison sample. Aggression levels were similar to the comparison sample for men whose alcoholism remitted after treatment. Conversely, men with alcoholism who relapsed after treatment had higher levels of aggression than both the comparison sample and the men who remitted. The authors argued that these results demonstrate the seemingly causal relationship between alcohol and partner aggression.

Also trying to establish a causal relationship, Leonard and Roberts (1998) conducted a study to test the possible expectancy effect of alcohol on aggression. In this study, aggressive and nonaggressive men were randomly assigned to an alcohol, no alcohol, or placebo condition. The results revealed that the placebo did not produce behavioural changes in men when compared to the no-alcohol condition. However, the alcohol condition was associated with comparable behavioural changes for both the aggressive and nonaggressive men. Specifically, men who received alcohol were higher in negativity than both the no-alcohol and the placebo conditions. Importantly, men in

the alcohol condition and the placebo condition did not differ in their estimates of the amount of alcohol they consumed. This study provides support for a possible causal link between alcohol consumption and aggression because expectancy effects were not responsible for the increase in negativity. Although alcohol could play a causal role in the occurrence of partner aggression, a noncausal explanation cannot be eliminated. For example, it is possible that some men decide to act aggressively toward their partner and subsequently use alcohol to overcome aggressive inhibitions (Fals-Stewart et al., 2003).

Regardless of the theoretical explanation for the alcohol-aggression link, alcohol clearly plays an important role in partner aggression. Approximately 46% of reported aggressive episodes involved alcohol use by either the perpetrator and/or the victim (Verboek-Oftedahl, Pearlman, & Babcock, 2000). Alcohol also influences the severity of aggression towards women as women whose partners had been drinking were more likely to be injured during an aggressive episode than women whose partners had not been drinking (Thompson & Kingree, 2006). Interestingly, men's injuries were unrelated to their wives' drinking behaviour (Thompson & Kingree). Men's alcohol problems are associated with a higher occurrence and recurrence of male-to-female partner aggression (Caetano, McGrath, Ramisetty-Mikler, & Field, 2005). Similarly, couples in which the female partner had an alcohol problem were six times more likely to experience female-to-male aggression than couples in which the woman did not have alcohol problems (Cunradi, Caetano, Clark, & Schafer, 1999). The recurrence of female-to-male partner aggression is about four times higher among women with an alcohol problem than women without an alcohol problem (Caetano et al.). In addition, partners' alcohol use is associated with current victimization for men and women even

after controlling for two possible third variables, childhood physical and sexual abuse (Coker, Davis, et al., 2002).

Importantly, it is the amount of alcohol that one consumes on an occasion, rather than the frequency of drinking, that is an important factor in the alcohol-aggression relationship. For instance, in a sample of men with alcoholism, alcohol was consumed prior to the majority of both aggressive and nonaggressive relationship conflicts; however, the quantity of alcohol consumption was greater prior to aggressive conflicts (Murphy, Winters, Fals-Stewart, O'Farrell, & Murphy, 2005). Although there is limited research on the link between alcohol use and psychological aggression, alcohol use is believed to be an important predictor of the perpetration of psychological aggression by both men and women (Hammock & O'Hearn, 2002). Given that psychological aggression is closely linked to physical aggression, further investigation into the link between alcohol use and psychological partner aggression should be pursued.

Contrary to the widely recognized belief that alcohol influences partner aggression, some researchers state that there is not strong evidence for this relationship. For example, a meta-analysis of 11 studies demonstrated that studies with large sample sizes have derived weak associations whereas studies with small sample sizes have yielded stronger associations between alcohol use and partner aggression (Gil-Gonzalez, Vives-Cases, Alvarez-Dardet, & Latour-Perez, 2006). Therefore, these researchers argue against partner aggression treatment programs that focus on reducing alcohol consumption as they believe that there is not enough empirical evidence to support these programs. A possible explanation for the inconsistencies in extant research could be related to empirical support for the threshold conceptualization rather than a linear

conceptualization. O'Leary and Schumacher (2003) argued for the threshold conceptualization that suggests that one needs to drink a certain amount of alcohol before there is a risk for aggression rather than the linear conceptualization which suggests that the more alcohol one drinks, the greater the risk for aggression. To support this claim, their results indicated that men from a community sample who consumed five or more drinks per drinking day were more likely to report partner aggression than men who consumed fewer drinks per drinking day.

Other researchers have argued for a multiple threshold model that can help explain the inconsistent findings for alcohol-related aggression. This model suggests that aggression occurs when the strength of a provocation exceeds the inhibitions against aggression. There is believed to be multiple thresholds because inhibitions are stronger for severe aggression than for nonsevere aggression. Alcohol consumption is suggested to lower inhibitions against aggression thereby increasing the likelihood of aggression. Fals-Stewart, Leonard, and Birchler (2005) suggest that the degree to which men are considered antisocial defines different thresholds for aggression when intoxicated. For nonsevere aggression, men with ASPD are already above the threshold when sober because of their high aggressive motivation and lower inhibitions. Alcohol normally lowers the threshold for nonsevere aggression, but because ASPD men are already above the threshold when sober, alcohol will not increase nonsevere aggression for these men. In contrast, non-ASPD men are normally below the nonsevere aggressive threshold. When intoxicated, the nonsevere aggression threshold is lowered and non-ASPD men exceed the threshold with provocation. Therefore, these researchers

suggested that alcohol consumption should increase nonsevere aggression for non-ASPD men, but not for ASPD men. The results of their study supported this hypothesis.

Fals-Stewart et al. (2005) used the multiple threshold model to predict a different outcome for severe aggression. ASPD men are generally close to, but under the severe aggression threshold. Alcohol consumption lowers the severe aggression threshold leading even low provocation to result in severe aggression. In contrast, non-ASPD men who are expected to have greater inhibitions toward severe aggression should be very unlikely to engage in severe aggression even when intoxicated. Although alcohol lowers the severe aggression threshold, non-ASPD men are normally quite far from the threshold so alcohol consumption will not put them over the threshold. The researchers found support for alcohol consumption increasing the likelihood of severe aggression for men with ASPD. However, alcohol use was also associated with an increased likelihood of severe aggression for the non-ASPD men although the relationship was weaker than the one found for ASPD men. These results are important in terms of treatment implications. For heavy-drinking individuals in treatment for nonsevere aggression, reducing drinking is likely to reduce aggression. Conversely, for highly aggressive men, reducing alcohol problems will not eliminate all aggression, but it might reduce severe aggression.

Similarly, Foran and O'Leary (2007) reported evidence for a multiple threshold model focusing on other perpetrator characteristics. In a sample of community couples, men who lacked both anger control problems and jealousy problems were unlikely to show an increased risk for severe physical aggression as a function of problem drinking. Similarly, men with both anger control problems and jealousy problems were already

above the threshold for severe aggression so problem drinking did not change their likelihood of acting aggressively. Furthermore, men with anger control problems, but not jealousy problems, were unlikely to have problem drinking influence their aggression patterns. However, men with jealousy problems, but not anger control problems, were more likely to engage in severe aggression as a function of problem drinking. From these results, Foran and O'Leary argued that when men with jealousy but not anger control problems are sober, their high anger control allows them to inhibit aggressive responses to their jealousy; however, when intoxicated, inhibitions are reduced and it becomes more difficult to control these aggressive responses. The researchers concluded that jealousy and anger control are non-equivalent risk factors for threshold levels of severe physical aggression. Gender is another variable that can influence how the effects of alcohol are observed in an individual.

Gender Differences in Displays of Alcohol-Related Aggression

Some researchers have explored gender differences in the link between alcohol use and aggression as aggression may be displayed differently by men and women. Giancola and Zeichner (1995) had men and women engage in a competitive task against fictitious opponents. Participants had to administer electric shocks to the opponent during the task. Alcohol consumption increased both shock intensity and duration in men, but only increased shock duration in women. The researchers concluded that men express alcohol-related aggression both directly and indirectly, whereas women are more likely to use indirect forms of aggression. Norlander, Nordmarker, and Archer (1998) also provided evidence for women's indirect forms of aggression. After consuming alcohol, women performed graffiti-scrawling to a greater extent and more

elaborately than men. This finding could be interpreted as evidence for women's greater likelihood of using indirect methods to express their alcohol-related aggression.

Similarly, a study conducted by Hess and Hagen (2006) can be used as evidence for women's tendency for indirect aggression. In this study, undergraduate students were presented with an aggression-evoking scenario in which a classmate is overheard telling a teaching assistant that the participant has not been contributing to a group project. The participant is then asked how they would respond to this false accusation. Women were more likely than men to retaliate with gossip even after controlling for perceptions of social norms and approval.

Moderators of the Alcohol-Aggression Link

Despite the consistent link between alcohol use and partner aggression, not all individuals who consume alcohol become aggressive with their partners. Various researchers have proposed different moderators in the link between alcohol use and partner aggression. A moderator can be defined as a variable that affects the direction and/or strength of the relationship between an independent variable and a dependent variable (Baron & Kenny, 1986). More specifically, a moderator is a third variable that influences the zero-order correlation between the independent and dependent variables. A significant moderator indicates that the relationship between two variables varies as a function of the moderator variable. As mentioned previously, Foran and O'Leary (2007) found that jealousy and anger control problems serve as moderators. Similarly, alcohol expectancy may be a possible moderator of the relationship between alcohol consumption and partner aggression (Dermen & George, 1989).

Other researchers suggest that factors such as hostility, coping, and daily hassles may serve as important moderators. During the first four years of marriage in a sample of 634 couples, hostility and avoidance coping predicted the alcohol-aggression link for men (Schumacher, Homish, Leonard, Quigley, & Kearns-Bodkin, 2008). Heavy drinking did not predict partner aggression perpetration for men with low levels of both hostility and avoidance coping. Men who use poor coping methods, such as avoidance coping, may be at-risk for partner aggression perpetration because of their inability to regulate their emotions. Consistent with this idea, Giancola (2004) reported that executive cognitive functioning serves as a significant moderator for the alcohol-aggression link. Using a laboratory paradigm, alcohol increased aggression only for men who displayed lower levels of executive cognitive functioning. Although men with these characteristics are at-risk for partner aggression perpetration, other moderating variables may serve as buffers, thereby, making the risk for partner aggression less likely. Given the known benefits of social support (e.g., Owen et al., 2007), it is believed that social support may be a moderating variable that serves as a buffer for individuals who may otherwise be at-risk for alcohol-related partner aggression.

Social Support as a Moderator

Social support consists of responsiveness to another's needs; acts that communicate caring; validation of other's words, feelings, or actions; or the facilitation of adaptive coping with problems through information, assistance, or tangible resources (Sullivan et al., 1998). Regardless of the support provider, perceived social support seems to be more important than received social support in predicting adjustment to stressful life events (Helgeson, 1993). In other words, the extent to which individuals

believe social support is available to them is more important in predicting adjustment than the actual specific supportive acts that have occurred.

The positive effects of social support have been documented among diverse populations. For instance, Turner-Cobb et al. (2002) reported that social support is related to less mood disturbances among HIV-positive men. Additionally, being satisfied with one's relationship and securely engaged with others is associated with positive adjustment as well as better psychological and physical health for both HIV-positive men and women. Owen et al. (2007) reported that lower levels of perceived social support in the context of exposure to intimate partner conflict is a risk factor for psychological problems among children from low-income African American families. Children's perceived social support served a mediating role between interparental conflict and internalizing and externalizing problems where a low level of social support was a risk factor for these problems. Moreover, mothers' perceived social support played a protective meditational role for children's internalizing but not externalizing problems. In a sample of individuals with depression, higher levels of perceived social support predicted lower levels of subsequent depressive symptoms as well as the recovery from depression, even after controlling for symptom severity, dysthymia, number of prior episodes, and neuroticism (Lara, Leader, & Klein, 1997). Conversely, low levels of social support have been linked to greater job dissatisfaction and school failure in nonclinical populations (McCann, Russo, & Benjamin, 1997; Richman, Rosenfeld, & Bowen, 1998).

The effects of social support may vary depending on the role of the social support provider. For instance, in a sample of individuals with schizophrenia, social

support from nonfamily members predicted 5-year adaptive functioning whereas social support from family members did not serve as a significant predictor of functioning (Erickson, Beiser, & Iacono, 1998). Denker (1999) highlighted the difference between social support that is provided by one's partner, social network, and more distant community. In a sample of victims of crime, the most important source of social support was the victim's partner followed by their social network and then the more distant community.

Partner-Specific Social Support

Intimate partners are particularly important sources of social support. Research has found that support provided outside of a marriage does not compensate for a lack of spousal support (Coyne & DeLongis, 1986). Barry, Bunde, Brock, and Lawrence (2009) found that four specific types of partner support (esteem/emotional, physical comfort, informational, and tangible) were each uniquely associated with better marital adjustment. Similarly, using a college sample of 177 married individuals, perceived partner support served as a unique predictor of marital quality, depressive symptomatology, and perceived stress, even after controlling for social desirability (Dehle, Larsen, & Landers, 2001). The importance of partner support may vary by gender as perceptions of social support within marriage are more strongly related to general well-being for wives than husbands (Acitelli & Antonucci, 1994). This result is consistent across the lifespan as perceptions of partner support were also more strongly related to marital satisfaction and general well-being for elderly women than elderly men (Gagnon, Hersen, Kabacoff, & Van Hasselt, 1999).

Partner-specific support is believed to contribute to the stability of intimate relationships (Sullivan et al., 1998). In a sample of newly married couples, Pasch and Bradbury (1998) found that wives' support solicitation and provision behaviours predicted marital outcomes two years later independent of negative behaviours displayed during discussions between partners. Specifically, wives of couples that were later classified as distressed were about half as likely to display positive behaviour and twice as likely to display negative behaviour when offering support as well as twice as likely to engage in negative behaviour when receiving partner support compared to wives of couples that were later classified as satisfied or highly satisfied. Importantly, changes over time in the amount of received partner support can have a negative effect on relationship satisfaction. Looking at newlywed couples, Brock and Lawrence (2009) found that increases in underprovision and overprovision of partner support were each uniquely associated with declines in marital satisfaction during a five-year period. Moreover, although couples reported more underprovision than overprovision of partner support, overprovision was more strongly related to marital decline for both husbands and wives. Taken together, regardless of the source, adequate levels of social support are believed to be beneficial.

Social Support and Alcohol-Related Partner Aggression

In general, the advantages of social support have been reported for protection against the negative effects of partner aggression victimization. Specifically, social support reduces the adverse psychological outcomes of partner aggression victimization by about half, including depression, anxiety, PTSD, and suicidal ideation (Coker, Smith, et al, 2002). Although many researchers have focused on the positive effects of social

support for the victim of partner aggression, few researchers have examined how social support affects the potential perpetrator.

Two contradictory predictions have been proposed for how perceived social support influences perpetrators of partner aggression. First, *control theory* states that individuals who have strong attachments to others fear negative sanctions from their loved ones and, therefore, are less likely to act aggressively (Loseke, 2005). Lackey and Williams (1995) have supported this theory with evidence that men with strong social supports are less likely to engage in partner aggression. Importantly, the relationship was still significant even if these men came from violent families, a context previously demonstrated to be an important risk factor for partner aggression. A related theory that would predict the same outcome is the *stress-buffering theory* which suggests that social support protects individuals from acting aggressively because they feel both less distressed and alone than individuals with lower levels of social support (Cohen & Wills, 1985). In a sample of African American youth living in an impoverished community with high levels of violence, Benhorin and McMahon (2008) found that more perceived support from parents, teachers, and close friends was associated with lower levels of aggressive behaviour.

In contrast, *deviant peer theory* suggests that individuals are drawn to others whose approval or disapproval of partner aggression matches their own. Therefore, aggressive individuals who have a large support network that supports their aggression will be more likely to engage in physical aggression than similar individuals with smaller support networks. In support of this theory, O'Leary, Smith Slep, and O'Leary (2007) reported that perceived social support served as a unique predictor of men's

partner aggression in a random sample of 453 couples. In this sample, men who had more social support were more likely to engage in physical aggression after controlling for a number of variables including age, anger expression, marital adjustment, aggression in the family of origin, partner responsibility attributions, perceived power imbalance, and dominance/jealousy.

Other research indicates that social support could be a vulnerability factor or a protective factor depending on the context of the aggression. For instance, Levendosky, Huth-Bocks, and Semel (2002) reported that social support was a vulnerability factor for adolescents witnessing a high frequency of domestic violence in their families of origin as it was associated with more adverse adolescent romantic relationships. However, social support was a protective factor for adolescents witnessing a low frequency of domestic violence as these individuals were less likely to be involved in abusive adolescent romantic relationships. These researchers suggested that adolescents living in environments with high levels of domestic violence have social networks that consist of more aggressive adolescents who support aggressive dating experiences. Alternatively, adolescents in families that have lower levels of domestic violence may have social networks of nonviolent adolescents who in turn support nonaggressive methods of solving relationship conflicts. These results are important to consider because male adolescents' antisocial behaviour is a significant predictor of later aggressive behaviour toward romantic partners (Capaldi & Clark, 1998).

In addition to the lack of research on female-to-male partner aggression, there is also a gap in the literature examining a potential gender difference in the influence social support has on alcohol-related partner aggression. Traditionally feminine

qualities prepare people to seek, receive, and provide social support more than do masculine qualities (Reevy, 2001). Furthermore, it is more common for women to hold an interpersonal orientation than men (Feingold, 1994). In other words, women form strong emotional attachments to others and these relationships are important to their self-concept. In support of this gender difference, women score significantly higher on interpersonal scales that consist of empathy, social responsibility, and interpersonal relationship measures (Burton, Hafetz, & Henninger, 2007). Therefore, socializing individuals with feminine qualities prepares both women and men for seeking and receiving emotional support. Given the value women place on interpersonal relationships, social support may serve as a more important moderator in the alcohol-aggression link for women than men. Consistent with this hypothesis, Lindorff (2000) reported that in a sample of managers, perceived social support was associated with reduced strain for men and women, but the relationship was stronger for the women.

Four types of social support have been proposed: (1) *appraisal social support* is the perceived availability of someone to talk to about one's problems, (2) *self-esteem social support* is the perceived availability of a positive comparison when comparing one's self to others, (3) *belonging social support* is the perceived availability of people one can do things with, and (4) *tangible social support* is the perceived availability of material aid (Cohen & Hoberman, 1983). All four types have been negatively correlated with depression; however, tangible social support holds a weaker association to depression than the other three forms (Cohen & Hoberman). Further, femininity is associated with seeking and receiving the more emotional forms of social support (i.e., appraisal, self-esteem, and belonging) whereas masculinity is associated with receiving

higher levels of tangible social support (Reevy, 2001). In fact, receiving emotional support may even be harmful to men. Lindorff (2000) found that emotional support was associated with increased strain for male managers, but not for female managers. From these results she concluded that receiving emotional support may place men outside the boundaries of acceptable male behaviour thus resulting in strain. Due to the added stress that typically accompanies pregnancy, tangible social support may become particularly important for fathers while emotional forms of social support (appraisal, self-esteem, and belonging) may increase in importance for mothers during the transition to parenthood.

The Current Study

The goal of this study was to determine if social support serves as a moderator for the association between alcohol use and partner aggression perpetration, using a sample of pregnant couples expecting their first biological child. First, consistent with current research, it was hypothesized that there would be a correlation between alcohol use and partner physical aggression perpetration and this correlation would be stronger for men than women. Second, it was hypothesized that social support (both general social support and partner-specific support) would serve as a moderator for the relation between alcohol use and partner physical aggression whereby high levels of support would result in less alcohol-related aggression. Given the community sample used in this study (Woodin, Caldeira, & Mueller, 2009), individuals are likely to receive prosocial support rather than deviant social support thus arguing for social support serving a protective factor. Moreover, it was expected that social support should remain a significant moderator even after controlling for various relationship and demographic

variables. Third, it was anticipated that social support would serve as a more significant moderator for women than men because women have been socialized to value social support, therefore, social support is likely to protect them from engaging in alcohol-related aggression. Fourth, it was expected that different forms of general social support would serve as important moderators for the alcohol-aggression link for each gender. Specifically, appraisal, self-esteem, and belonging forms of social support were believed to be important forms for women whereas tangible social support was believed to be an important form of support for men. Due to the limited extant research on partner-specific support, no specific hypotheses were generated for which forms of support were more important for each gender but this was considered on an exploratory basis.

Given the lack of research focusing on psychological aggression in the context of alcohol use, we also explored the extent to which social support moderates the relation between alcohol use and psychological aggression perpetration. Two hypotheses were derived that are specific to psychological aggression. First, the gender difference that was expected for the alcohol-physical aggression link would be nonexistent for the alcohol-psychological aggression link. Given that women are more likely than men to be the perpetrators of psychological aggression and to display alcohol-related aggression in indirect forms, we expected women to be equally as likely as men to show an association between alcohol use and psychological aggression. Second, because psychological aggression is more socially accepted than physical aggression, social support would be a less significant moderator for the alcohol-psychological aggression link than for the alcohol-physical aggression link for both men and women. More specifically, control theory (i.e., individuals with strong attachments to others are less

likely to act aggressively as they fear negative sanctions from their loved ones) will not be as applicable because engaging in psychological aggression carries less stigmatization than physical aggression.

In sum, the current study tested the following hypotheses: (1) there would be an association between alcohol use and partner physical aggression perpetration for both men and women, but the association would be stronger for men, (2) general and partner-specific support would buffer alcohol-related physical aggression, (3) social support would be a more significant moderator of alcohol-related physical aggression for women than men, (4) appraisal, self-esteem, and belonging social support would be important moderators for women and tangible social support would be an important moderator for men, (5) there would be an association between alcohol use and partner psychological aggression perpetration for both men and women, and (6) social support would be a less significant moderator for the alcohol-psychological aggression link than for the alcohol-physical aggression link for both men and women.

Method

Participants

Participants were recruited through brochures distributed to maternity physicians' offices, midwives, doulas, and prenatal classes as well as through advertisements on local university and college campuses, pregnancy-related websites, maternity-related stores, and local baby fairs (see Appendix A). Interested couples were given a brief interview by telephone in order to determine if they were eligible to participate. A research assistant described the project in more detail to eligible couples and scheduled interested couples for an appointment to participate in the study. To be

eligible to participate, couples were required (1) to be living together, (2) to be able to speak and read in the English language, and (3) to be in the third trimester of pregnancy with their first biological child.

One hundred couples participated in the study. Due to the nature of the research questions, two same-sex couples that participated in the study were excluded from the analyses, resulting in a final sample of 98 heterosexual couples. The average ages of participant men and women were 32.03 (SD = 5.51) and 29.98 (SD = 5.49) years, respectively. The average levels of education were 14.77 (SD = 2.38) years for men and 15.28 (SD = 2.31) years for women. Approximately 64% of men and 59% of women were employed full-time and their average annual incomes were \$51,716 (SD = \$35,254) and \$35,019 (SD = \$24,825), respectively. Sixty-eight out of the 98 couples were legally married (69.4%) and the average time couples reported living together was 4.55 (SD = 3.15) years. The average length of pregnancy was 30.52 (SD = 3.65) weeks. Of the 98 men, approximately 6% identified with an aboriginal group and another 7% identified with other ethnic minority groups. Of the 98 women, approximately 4% identified with an aboriginal group and another 10% identified with other ethnic minority groups. Ethnic minority participants self-identified as Asian-Canadian, Indo-Canadian, African-Canadian, and Latin American. These participants are a fairly good representation of the greater Victoria metropolitan area, as reflected by the 2006 Canadian census figures. The sample demographics are detailed in Table 1.

Table 1

Participant Characteristics

Variable	%		<i>M</i>		SD		Range	
	M	W	M	W	M	W	M	W
Age (years)			32.03	29.98	5.51	5.49	18-47	17-43
Education (years)			14.77	15.28	2.38	2.31	9-18	8-18
Employed Full Time	64.3	59.2						
Income			51,716	35,019	35,254	24,825	0-300,000	0-150,00
Minority	13.3	14.3						
Married		69.4						
Time living together (years)				4.55		3.15		.70-18
Pregnancy (weeks)				30.52		3.65		25-39

Note. M = Men; W = Women.

Procedures

Data for this study was taken from a larger Partners to Parents Study conducted at the University of Victoria (Woodin et al., 2009). Couples came to the University of Victoria for a 3.5 hour session. Participants were told that the study was designed to learn about how couples adjust to the transition to parenthood. Anonymity and confidentiality procedures were carefully explained to both members of each couple verbally and through written consent forms. After consent was obtained, participants were seated in separate, non-adjoining rooms to complete a series of computerized questionnaires that measure demographic information, individual functioning, relationship functioning, and attitudes towards pregnancy and parenting.

Following the computerized questionnaires, couples engaged in two 10-minute videotaped interaction tasks used to measure their ability to provide support to each other. To complete this task, each partner identified an important personal characteristic, problem, or issue that he or she wanted to change, with the restriction that the topic cannot be a source of tension in their relationship. Specifically, each partner rated a list of possible topics in terms of importance and the most important topic was selected for the task unless the issue caused conflict. Commonly chosen topics included losing weight, being more assertive, being more organized, and making a career change. Couples were unaware of the purpose of the interactions and were instructed to communicate with each other as they normally would at home. Each interaction was used to assess behaviours when soliciting and offering social support. Each individual served as the “helpee” (i.e., talking about their chosen area of change with their partner) and as the “helper” (i.e., talking about their partner’s chosen area of change with their

partner), using random assignment to determine which partner engaged in each role first. The helper's behaviour during the interaction provided an estimate of the quality of partner-specific support the helpee generally receives. At the conclusion of the session, couples were debriefed regarding their participation and received a community resource list, an infant t-shirt, and a \$100 honorarium for their time.

Measures

Conflict Tactics Scales Revised (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996; See Appendix B). The CTS2 is a 78-item scale that assesses the extent of negotiation, psychological aggression, and physical aggression used to deal with conflicts in romantic relationships. The CTS2 is based on conflict theory which suggests that conflict is inevitable in relationships, but the use of violence to deal with conflict is not. Items are arranged in 39-item pairs. Each item pair assesses a specific behaviour and asks the respondent to report on their behaviour and their partner's behaviour (e.g., "Have you pushed or shoved your partner?" is arranged with "Has your partner pushed or shoved you?"). Although interpartner agreement on the CTS2 has been documented (O'Leary & Williams, 2006), it is best to have both partners complete the measure whenever possible. In this study, the highest score between self-reports and partner-reports for the same aggressive act was used to compute each individual's perpetration rate as was done in other similar studies (e.g., Foran & O'Leary, 2007; Smith Slep & O'Leary, 2005). In this study, the CTS2 appeared in the relationship functioning section of the computerized questionnaires. The CTS2 has five subscales used to measure negotiation, psychological aggression, physical aggression, sexual aggression, and injury. For the purpose of this study, the physical, psychological, and

sexual aggression subscales were used as measures of each form of aggression. The physical aggression subscale is further divided into mild and severe forms of physical aggression in order to measure the severity of aggression. Moreover, the injury subscale was used as an additional measure of aggression severity. Respondents were asked to indicate how many times the event occurred during the last 12 months on a scale of 1 to 8 (1=1 time, 2=2 times, 3=3-5 times, 4=6-10 times, 5=11-20 times, 6=more than 20 times, 7=not in the last year but has happened in the past, 8=never). The CTS2 requires only a 6th-grade reading level, can be completed in 10-15 minutes, and can be utilized with many cultural groups (Straus et al.). There are many advantages of using the CTS2 rather than the original version including the increased number of items, increased clarity, simplified format, and the inclusion of the sexual coercion and physical injury scales (Straus et al.). Internal reliability of the CTS2 ranges from .79 to .95 (Straus et al.). To assess the internal reliability of the CTS2 in the present study, Chronbach's alphas were calculated for each subscale (Henson, 2001). The physical, psychological, sexual, and injury subscales had internal reliabilities of .72, .60, .45, and .53 for men and .76, .64, .22, and .60 for women, respectively. Given the especially low reliabilities for sexual aggression, these data were presented descriptively rather than including this subscale in the main analyses. The original version of the CTS has well-documented validity; therefore, there is reason to be confident in the validity of the CTS2 (Straus et al.). There is preliminary evidence of construct validity and discriminant validity (Straus et al.).

Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993; See Appendix C). The AUDIT is a 10-item questionnaire

that assesses alcohol consumption, drinking behaviour, and alcohol-related problems. The AUDIT aims to detect less severe problem drinkers rather than individuals with alcoholism and it focuses on hazardous consumption and frequency of consumption rather than consequences of drinking behaviour (Saunders et al.). Importantly, the AUDIT measures alcohol consumption during the past year as well as lifetime exposure. The respondent is asked to indicate the frequency of experiences on a scale of 0 to 4 ranging from 0=never to 4=daily. A total score greater than 7 on the complete AUDIT is believed to be indicative of harmful alcohol use defined as having any of the following: a hazardous daily consumption, recurrent intoxication, abnormal drinking behaviour, an alcohol-related problem in the previous year, an alcohol-related disease, or a perceived drinking problem. This is believed to be a reliable cut-off since 92% of individuals who engage in harmful alcohol use obtained a score greater than 7 (Saunders et al.). Moreover, this cut-off score reliably predicts alcohol-related social and medical problems over a three year period (Conigrave, Hall, & Saunders, 1995). The instrument includes three questions on consumption, four on alcohol-related problems and consequences, and three on drinking behaviour. For the purpose of the study, participants completed the full AUDIT regarding their alcohol use during the year prior to pregnancy as a measure of typical usage, and also completed the three consumption items to assess their alcohol use during the current pregnancy. The AUDIT is the first instrument on alcohol consumption to be derived on the basis of a cross-national study (Saunders et al.). Therefore, only items that could be translated into multiple languages were included in the measure. The AUDIT is often used for early detection of harmful alcohol use in primary health care settings and has well-documented reliability and

validity (Saunders et al.). The AUDIT had an internal reliability of .87 for men and .80 for women in the current study.

Interpersonal Support Evaluation List (ISEL; Cohen & Hoberman, 1983; See Appendix D). The ISEL is a 48-item questionnaire that assesses perceived availability of social support. The items were originally developed to cover experiences of college students. The measure provides an overall support measure as well as four separate functions of social support: appraisal support, self-esteem support, belonging support, and tangible support. Therefore, there are four 12-item subscales. The appraisal subscale measures the perceived availability of individuals to talk to about one's problems; the self-esteem subscale targets the perceived availability of a positive comparison when comparing one's self to others; the belonging subscale aims to measure the perceived availability of people one can do things with; and the tangible subscale measures perceived availability of material aid. Although the belonging subscale is moderately correlated with both the tangible and appraisal subscales, all subscales are reasonably independent from one another (Cohen & Hoberman). The items are counterbalanced so that half the items are positive statements (e.g., "There is someone who takes pride in my accomplishments.") and half are negative statements (e.g., "Most of my friends are more interesting than I am."). Respondents are asked to respond on a scale of 1 to 4 (1=definitely true, 2=probably true, 3=probably false, 4=definitely false). The ISEL is a reliable measure of social support and is moderately correlated ($r = .46$) with a validated measure of social support, the Inventory of Socially Supportive Behaviors (Cohen & Hoberman). The ISEL has demonstrated very good internal consistency and good test-retest reliability (Delistamati et al., 2006). In the

current study, the appraisal, self-esteem, belonging, and tangible support subscales had internal reliabilities of .73, .62, .80, and .75 for men and .84, .71, .86, and .81 for women, respectively.

Dyadic Adjustment Scale (DAS; Spanier, 1976; See Appendix E). The DAS is a 32-item questionnaire designed to measure perceptions of relationship adjustment for either married or unmarried cohabiting couples. Factor analysis has identified four factors that are conceptually and empirically related to dyadic adjustment: dyadic satisfaction, dyadic cohesion, dyadic consensus, and affectional expression (Spanier). Although the 32 items can be completed in a few minutes, researchers can choose to use only one of the subscales without compromising reliability or validity (Spanier). Content, criterion-related, and construct validity has been well-documented (Spanier). The DAS has excellent convergent validity with two measures of marital satisfaction, the Quality of Marriage Index and the Relationship Satisfaction Questionnaire (Heyman, Sayers, & Bellack, 1994). In addition, high internal reliability has been determined for the total scale as well as each subscale with the total scale having a Cronbach's Coefficient Alpha of .96 (Spanier). The complete DAS had an internal reliability of .94 for men and .91 for women in the present study. The total score of the DAS was used to control for relationship adjustment in the analyses.

Partner Support Rating System (PSRS; Caldeira, Owen, & Woodin, 2009). A 5-point rating system was created in order to assess couples' behaviours during the social support interactions. Each helper was rated on various items that were combined to form total scores for various partner support dimensions, including positive nonverbal behaviours, negative nonverbal behaviours, negative affect, negative communication

skills, positive instrumental communication skills, and positive emotional communication skills. The positive dimensions served as measures of partner-specific support whereas the negative dimensions were used to control for non-constructive partner support in the analyses. Details of the rating system are provided in Table 2.

The interactions were coded by graduate and undergraduate students. The raters independently coded the interactions after receiving extensive training on the rating system. Meetings were held regularly in order to provide raters with feedback and to discuss rating disagreements. Approximately 67% of the interactions were double-coded and interrater reliability was established using Intraclass Correlation Coefficients (ICCs). This method evaluates interrater reliability by calculating the proportional differences between raters' scores. ICCs achieved for each dimension ranged from .75 to .88 ($M = .83$) for positive support behaviours and from .79 to .89 ($M = .85$) for negative support behaviours, which all exceed the acceptable level of reliability.

Statistical Analyses

Data were analyzed using SPSS 18.0. In order to measure the degree of association between alcohol use and partner aggression, effect sizes are reported as r values (point-biserial correlations) for both men and women. To test whether social support moderates the association between alcohol use and partner aggression a hierarchical multiple regression analysis was conducted for each form of social support while controlling for confounding variables, such as relationship satisfaction and several demographic variables (Aiken & West, 1991). In order to increase interpretability, all predictor variables were centered (i.e., the mean value of each variable was subtracted from the individual scores) and the interaction term was computed from the centered

Table 2

Description of Codes from the Partner Support Rating System (PSRS)

Actor	Dimension	Examples of items
Helper	Nonverbal Positive	Engagement in conversation (i.e., head nods, eye contact), smiling, supportive touching
Helper	Nonverbal Negative	Disinterest/boredom, frowning, stonewalling (i.e., disengagement accompanied by negative affect)
Helper	Negative Affect	Criticism, defensiveness, sarcasm, domineering, pessimism/doubt
Helper	Negative Communication Skills	Self-directed conversation, change of subject, demanding, misses opportunities to support partner, interrupts partner
Helper	Positive Instrumental	Suggests plan of action/new way of handling situation, willingness to help, offers constructive feedback, demonstrates interest, refocuses conversation when off-task
Helper	Positive Emotional	Clarifies feelings, bolsters self-esteem, reassures partner, affection, validation, expresses concern, encourages optimism, joins in expressing feelings, mutual laughter

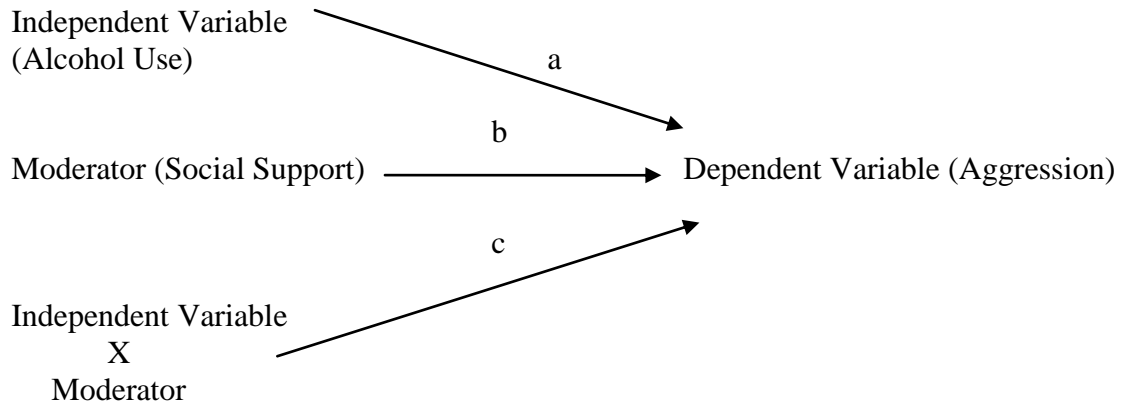
variables by multiplying the values of the independent and moderating variable (Judd, 2000). The hierarchical multiple regressions were conducted as follows: the covariates were entered in the first block, the independent variable and the moderator were entered simultaneously in the second block, and the interaction term was entered in the third block. The same procedure was used for the analyses for physical aggression and psychological aggression as the dependent variable. As documented in Figure 1, there are three pathways to the dependent variable (aggression): alcohol use as the independent variable (path a), social support as a moderator (path b), and the interaction or product of the independent variable and the moderator (path c) (Baron & Kenny, 1986). The moderator hypothesis is supported if the interaction (path c) is significant.

Results

Prevalence of Alcohol Use and Partner Aggression

During the year prior to pregnancy, 90.8% of men and women endorsed any alcohol use whereas 30.6% of men and 15.3% of women reported harmful alcohol use as indicated by scores greater than 7 on the AUDIT. In contrast, 84.7% of men and 11.2% of women reported alcohol use during the pregnancy period. Additionally, the frequency of binge drinking as defined by six or more drinks on one occasion decreased for both men and women during pregnancy. Specifically, whereas 66.3% of men and 54.1% of women consumed six or more drinks on one occasion prior to pregnancy, 48.5% of men and none of the women consumed this much alcohol during pregnancy. Average levels of alcohol consumption significantly decreased during pregnancy for both men and women ($t = -5.30, p < 0.01$ and $t = -63.19, p < 0.01$, respectively). Since

Figure 1. Moderator Model for the Proposed Moderating Effect of Social Support for the Association between Alcohol Use and Partner Aggression Perpetration.



there was a significant decrease in alcohol consumption during pregnancy, subsequent analyses used pre-pregnancy alcohol use as a measure of typical alcohol usage.

To illustrate the extent of partner aggression during the previous year, 18.4% of men and 30.6% of women reported perpetrating at least one incident of physical aggression against their partner. Considering mild and severe forms of physical aggression at an individual level, 17.3% of men and 20.6% of women perpetrated mild physical aggression whereas 5.1% of men and 15.3% of women perpetrated severe physical aggression against their partner. Despite the relatively high rates of physical aggression, the rates of reported injury were lower. Specifically, 10.2% of men and 5.1% of women were physically injured due to partner aggression during the past year. Couples reported higher rates of psychological aggression wherein 83.7% of men and 89.8% of women perpetrated at least one act of psychological aggression against their partner. Rates of sexual aggression perpetration were 21.4% and 18.4% for men and women, respectively. The means and standard deviations of these behaviours are presented in Table 3.

Zero-Order Correlations

The bivariate correlations among alcohol use and specific forms of partner aggression perpetration are presented in Table 3. Consistent with hypotheses, alcohol use was significantly correlated with physical aggression perpetration for men ($r = 0.24$, $p < 0.05$), but this was not the case for women ($r = 0.14$, $p > 0.05$). Looking separately at mild and severe forms of physical aggression, analyses indicated that alcohol use was significantly correlated with both mild and severe forms of physical aggression for men ($r = 0.20$, $p < 0.05$ and $r = 0.28$, $p < 0.01$, respectively) whereas neither form of physical

Table 3

Descriptives and Correlations among Alcohol Use, Partner Aggression, and Demographic Variables

	1	2	3	4	5	6	7	8	Mean	SD
<i>Alcohol</i>										
1. Pre-pregnancy Use	–	.24*	.34**	-.32**	-.08	-.24**	-.29**	-.16	6.56	6.31
<i>Aggression</i>										
2. Physical Aggression	.14	–	.44**	-.18	-.20*	-.07	-.14	-.14	1.47	6.04
3. Psychological Aggression	.30**	.44**	–	-.09	-.17	-.15	-.18	-.25*	16.42	17.22
<i>Demographics</i>										
4. Age	-.15	-.26**	-.03	–	.12	.29**	.05	-.05	32.03	5.51
5. Yearly Income	.05	-.24**	-.26*	.27**	–	.05	.16	.12	51,716	35,254
6. Level of Education	-.19	-.23**	-.18	.31**	.42**	–	.26**	-.11	14.77	2.38
7. Marital Status ^a	-.36**	-.17	-.21*	.17	.09	.28**	–	.02	.69	.46
8. Relationship Adjustment	-.24*	-.24*	-.41**	-.02	.10	.30**	.21*	–	118.32	17.03
Mean	4.21	2.92	19.52	29.98	35,019	15.28	.69	123.46		
SD	3.98	8.88	20.30	5.49	24,825	2.31	.46	12.37		

Note. $N = 98$ couples. Coefficients printed above the diagonal are for men, coefficients below the diagonal are for women.

^a 0 = unmarried 1 = legally married

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

aggression was significantly correlated with alcohol use for women ($r = 0.14, p > 0.05$ and $r = 0.13, p > 0.05$, respectively).¹ As expected, alcohol use was significantly associated with psychological aggression perpetration for both men and women ($r = 0.34, p < 0.01$ and $r = 0.30, p < 0.01$, respectively). Consistent with hypotheses, Fisher's r to z transformation indicated that men were not significantly more likely to perpetrate alcohol-related psychological aggression than were women ($z = 0.26, p > 0.05$).

The zero-order correlations between the subscales of each support measure were examined in order to determine whether these subscales are distinct enough to be used as individual moderators. The zero-order correlations between subscales of the ISEL indicate that each subscale is a distinct but related component of perceived social support. Specifically, these correlations ranged from $r = 0.43$ to 0.66 for men and $r = 0.42$ to 0.71 for women (see Table 4). As expected, some of these subscales were moderately related; however, singularity was not a concern. Similarly, correlations between the subscales of the PSRS provide evidence for distinct but related aspects of positive partner support as these bivariate correlations ranged from $r = 0.27$ to 0.52 for men and $r = 0.16$ and 0.45 for women (see Table 4). Given that the zero-order correlations between the subscales of each support measure were only moderate, each subscale was used as a separate moderator for alcohol-related partner aggression.

The bivariate correlations of social support with alcohol use and partner aggression are presented in Table 4. None of the four social support subscales of the ISEL were significantly correlated with alcohol use for men or women. For men, the only subscale that was correlated with aggression perpetration was tangible support.

Table 4

Descriptives and Correlations among Alcohol Use, Partner Aggression, Social Support, and Partner-Specific Support

	1	2	3	4	5	6	7	8	9	10	Mean	SD
<i>Alcohol</i>												
1. Pre-pregnancy Use	–	.24*	.34**	-.16	-.12	.03	-.09	-.14	.28**	-.11	6.56	6.31
<i>Aggression</i>												
2. Physical Aggression	.14	–	.44**	-.07	-.11	-.06	-.15	-.09	-.04	-.18	1.47	6.04
3. Psychological Aggression	.30**	.44**	–	-.05	.05	.06	-.20*	-.22*	-.15	-.30**	16.42	17.22
<i>Social Support</i>												
4. Appraisal Support	-.12	-.35**	-.35**	–	.49**	.62**	.57**	-.03	-.01	-.10	25.69	3.62
5. Esteem Support	.03	-.16	-.14	.55**	–	.63**	.43**	.07	-.08	-.07	22.84	3.19
6. Belonging Support	.10	-.17	-.29**	.71**	.65**	–	.66**	.04	-.16	-.20*	24.02	4.41
7. Tangible Support	.01	-.28**	-.36**	.65**	.42**	.70**	–	.05	-.05	-.08	26.0	3.49
<i>Partner-specific Support</i>												
8. Partner Nonverbal	-.06	-.03	-.03	.14	.16	.15	.13	–	.27**	.52**	7.79	1.60
9. Partner Instrumental	-.17	-.03	-.26**	.17	.13	.13	.03	.16	–	.52**	13.97	3.08
10. Partner Emotional	-.09	-.03	-.17	.06	-.09	.06	.07	.40**	.45**	–	17.94	4.26
Mean	4.21	2.92	19.52	26.35	22.95	24.28	26.19	7.35	13.18	16.83		
SD	3.98	8.88	20.30	4.17	3.30	4.84	4.10	1.57	3.09	3.89		

Note. $N = 98$ couples. Coefficients printed above the diagonal are for men, coefficients below the diagonal are for women.

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

Specifically, higher levels of tangible support were associated with less psychological aggression for men ($r = -0.20, p < 0.05$). For women, both appraisal and tangible social support were negatively correlated with physical aggression ($r = -0.35, p < 0.01$ and $r = -0.28, p < 0.01$, respectively). Additionally, appraisal, belonging, and tangible social support were all significantly correlated with women's perpetration of psychological aggression (appraisal, $r = -0.35, p < 0.01$; belonging, $r = -0.29, p < 0.01$; tangible, $r = -0.36, p < 0.01$). Regarding partner-specific support, only instrumental support was negatively correlated with alcohol use for men ($r = -0.28, p < 0.01$) whereas none of the partner-specific support subscales correlated significantly with women's pre-pregnancy alcohol use. A negative association between psychological aggression perpetration and both positive nonverbal partner support and emotional partner support was found for men ($r = -0.22, p < 0.05$ and $r = -0.30, p < 0.01$). In contrast, the only significant correlation between aggression perpetration and partner-specific support for women was the correlation between psychological aggression perpetration and partner instrumental support ($r = -0.26, p < 0.01$).

In order to control for confounding variables in the analyses, the zero-order correlations between partner aggression perpetration and various demographic variables were examined. Analyses indicated that both physical and psychological aggression perpetration were significantly associated with several demographic variables. For men, physical aggression perpetration was negatively correlated with individual yearly income ($r = -0.20, p < 0.05$). For women, physical aggression perpetration was negatively associated with age ($r = -0.26, p < 0.01$), level of education ($r = -0.23, p < 0.05$), individual yearly income ($r = -0.24, p < 0.05$), and relationship adjustment ($r = -$

0.24, $p < 0.05$). Specific to psychological aggression, relationship adjustment was significantly associated with psychological aggression perpetration for men ($r = -0.25$, $p < 0.05$). Similarly, relationship adjustment was also negatively correlated with psychological aggression perpetration for women ($r = -0.41$, $p < 0.01$), along with individual yearly income ($r = -0.26$, $p < 0.05$) and marital status ($r = -0.22$, $p < 0.05$). Given the relationship these variables share with physical and psychological aggression, all regression analyses presented below were conducted controlling for all significant demographic associations.

Moderating Effects of General Social Support on Physical Aggression

A series of hierarchical multiple regressions were conducted with the demographic control variables entered in the first block, the independent variable and the moderator variable entered in the second block, and the interaction term entered in the third block. Given the important distinction between the four subtypes of general social support, analyses examined each subtype separately while controlling for distinct demographic variables for men and women. After controlling for individual yearly income, appraisal social support was found to moderate alcohol-related physical aggression for men ($\beta = 0.31$, $p < 0.01$). In this analysis, alcohol use interacted with appraisal social support to predict unique variance of physical aggression perpetration (see Table 5). Since the main effect of appraisal social support did not uniquely contribute to the prediction of physical aggression ($\beta = -0.01$, $p > 0.05$), the significant interaction in this analysis indicates that the combination of alcohol use and perceived appraisal support is particularly important rather than appraisal support alone. The other three subtypes of social support (i.e., self-esteem, belonging, and tangible social

Table 5

Summary of Hierarchical Regression Analysis Regressing Physical Aggression on Appraisal Social Support (N=196)

Variables	<i>B</i>	SE <i>B</i>	β	Adj. R^2	ΔR^2
Men (n=98)					
<i>Block 1</i>				.03	.04*
Income	-.35 ^a	.00	-.20*		
<i>Block 2</i>				.06	.09*
Alcohol Use	.21	.10	.22*		
Appraisal Social Support	-.02	.17	-.01		
<i>Block 3</i>				.14	.18**
Alcohol Use X Appraisal Social Support	.08	.03	.31**		
Women (n=98)					
<i>Block 1</i>				.11	.15**
Age	-.35	.17	-.22*		
Education	-.18	.44	-.05		
Income	-.49 ^a	.00	-.14		
Relationship Adjustment	-.15	.07	-.21*		
<i>Block 2</i>				.18	.23**
Alcohol Use	.14	.22	.06		
Appraisal Social Support	-.68	.23	-.32*		
<i>Block 3</i>				.18	.24**
Alcohol Use X Appraisal Social Support	-.05	.05	-.11		

^a Yearly income was divided by 10,000 in order to derive an interpretable *B*

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

support) did not serve as significant moderators for alcohol-related physical partner aggression for men (see Tables 6, 7, and 8). The significant interaction of alcohol use and appraisal social support was probed according to procedures outlined by Aiken and West (1991). The data were segmented into three groups of men who reported levels of appraisal social support that were: (a) at least half a standard deviation below the mean, (b) one standard deviation around the mean, and (c) at least half a standard deviation above the mean in order to reflect low, average, and high levels of appraisal social support, respectively. Inconsistent with the hypotheses, men who consumed alcohol demonstrated significantly higher levels of physical aggression perpetration if they also had high levels of appraisal support ($\beta = 0.69, p < 0.01$; see Fig. 2). In contrast, alcohol use and partner physical aggression perpetration were uncorrelated for men with moderate or low levels of appraisal support ($\beta = 0.26, p > 0.05$ and $\beta = -0.34, p > 0.05$, respectively).

Contrary to expectations, none of the general social support subscales significantly moderated alcohol-related physical aggression perpetration for women after controlling for potentially confounding variables (see Tables 5, 6, 7, and 8). Specifically, although belonging and tangible social support were trending towards significance ($\beta = 0.24, p = 0.08$ and $\beta = -0.21, p = 0.05$, respectively), appraisal and self-esteem social support were not significant moderators ($\beta = -0.11, p > 0.05$ and $\beta = 0.00, p > 0.05$, respectively). Even though none of the subtypes of general social support served as significant moderators for women, there were significant main effects for appraisal and tangible social support ($\beta = -0.32, p < 0.05$ and $\beta = -0.26, p < 0.05$, respectively).

Table 6

Summary of Hierarchical Regression Analysis Regressing Physical Aggression on Self-esteem Social Support (N=196)

Variables	<i>B</i>	SE <i>B</i>	β	Adj. R^2	ΔR^2
Men (n=98)					
<i>Block 1</i>				.03	.04*
Income	-.35 ^a	.00	-.20*		
<i>Block 2</i>				.07	.09*
Alcohol Use	.20	.10	.21*		
Self-esteem Social Support	-.13	.19	-.07		
<i>Block 3</i>				.06	.10
Alcohol Use X Self-esteem Social Support	-.01	.03	-.04		
Women (n=98)					
<i>Block 1</i>				.11	.15**
Age	-.35	.17	-.22*		
Education	-.18	.44	-.05		
Income	-.49 ^a	.00	-.14		
Relationship Adjustment	-.15	.07	-.21*		
<i>Block 2</i>				.10	.16*
Alcohol Use	.17	.23	.08		
Self-esteem Social Support	-.20	.28	-.07		
<i>Block 3</i>				.09	.16*
Alcohol Use X Self-esteem Social Support	.00	.08	.00		

^a Yearly income was divided by 10,000 in order to derive an interpretable *B*

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

Table 7

Summary of Hierarchical Regression Analysis Regressing Physical Aggression on Belonging Social Support (N=196)

Variables	<i>B</i>	SE <i>B</i>	β	Adj. R^2	ΔR^2
Men (n=98)					
<i>Block 1</i>				.03	.04*
Income	-.35 ^a	.00	-.20*		
<i>Block 2</i>				.06	.09*
Alcohol Use	.21	.09	.22*		
Belonging Social Support	-.06	.14	-.05		
<i>Block 3</i>				.08	.12*
Alcohol Use X Belonging Social Support	.04	.03	.16		
Women (n=98)					
<i>Block 1</i>				.11	.15**
Age	-.35	.17	-.22*		
Education	-.18	.44	-.05		
Income	-.49 ^a	.00	-.14		
Relationship Adjustment	-.15	.07	-.21*		
<i>Block 2</i>				.12	.17**
Alcohol Use	.20	.23	.09		
Belonging Social Support	-.26	.20	-.14		
<i>Block 3</i>				.14	.20**
Alcohol Use X Belonging Social Support	.12	.07	.24		

^a Yearly income was divided by 10,000 in order to derive an interpretable *B*

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

Table 8

Summary of Hierarchical Regression Analysis Regressing Physical Aggression on Tangible Social Support (N=196)

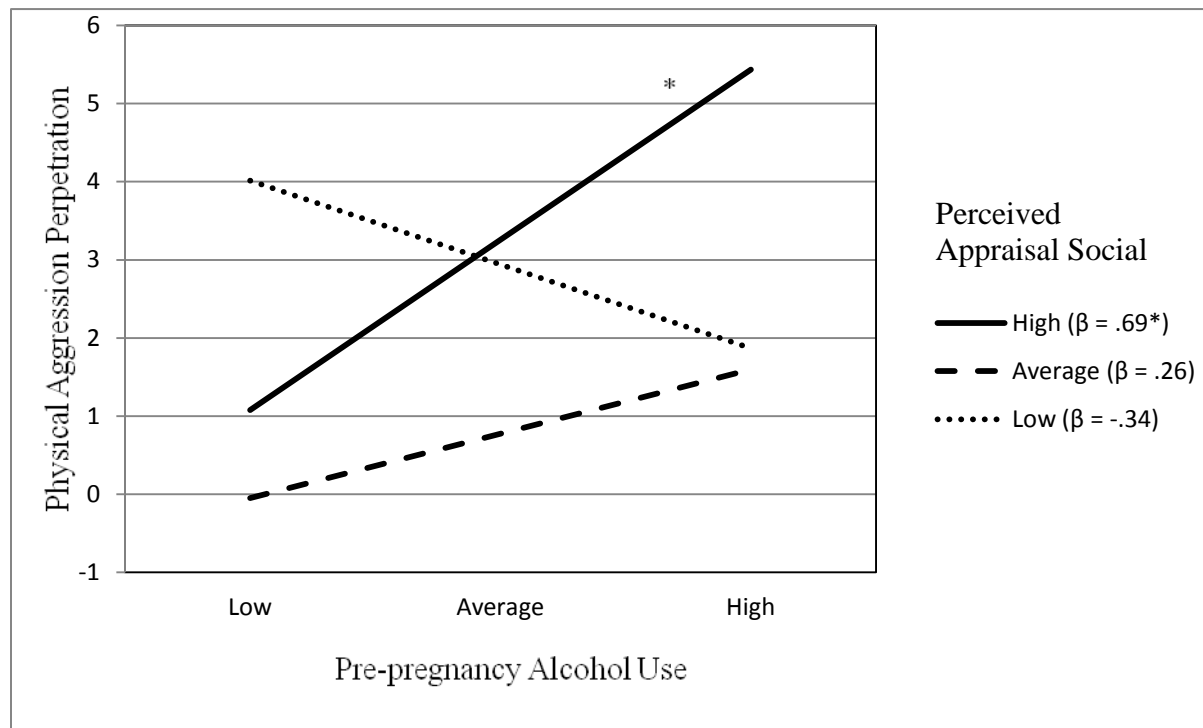
Variables	<i>B</i>	<i>SE B</i>	β	Adj. R^2	ΔR^2
Men (n=98)					
<i>Block 1</i>				.03	.04*
Income	-.35 ^a	.00	-.20*		
<i>Block 2</i>				.07	.10*
Alcohol Use	.20	.09	.21*		
Tangible Social Support	-.19	.17	-.07		
<i>Block 3</i>				.09	.12*
Alcohol Use X Tangible Social Support	.03	.02	.15		
Women (n=98)					
<i>Block 1</i>				.11	.15**
Age	-.35	.17	-.22*		
Education	-.18	.44	-.05		
Income	-.49 ^a	.00	-.14		
Relationship Adjustment	-.15	.07	-.21*		
<i>Block 2</i>				.15	.20**
Alcohol Use	.20	.22	.09		
Tangible Social Support	-.57	.24	-.26*		
<i>Block 3</i>				.18	.24**
Alcohol Use X Tangible Social Support	-.11	.05	-.21		

^a Yearly income was divided by 10,000 in order to derive an interpretable *B*

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

Figure 2

Graphical Depiction of the Moderating Effects of Perceived Appraisal Social Support on the Association between Alcohol Use and Partner Physical Aggression Perpetration for Men.



Note. Categories of average, low, and high perceived appraisal support reflect men who reported mean, half a standard deviation below, and half a standard deviation above the mean of perceived appraisal support, respectively.

Moderating Effects of Partner-Specific Support on Physical Aggression

Because partner-specific support is believed to be a unique form of social support, analyses were conducted separately for this type of support. Each individual's partner's provision of support during the social support interactions was used as an indication of the amount of partner-specific support that individual typically receives. Since the three subtypes of partner-specific support are believed to be distinct components of partner support, analyses examined each subtype separately while controlling for the same demographic variables as the previous analyses for physical aggression. Receiving positive nonverbal support and positive emotional support from one's partner significantly moderated alcohol-related physical aggression perpetration for men after controlling for income ($\beta = -0.23, p < 0.05$ and $\beta = -0.35, p < 0.01$, respectively). Although receiving positive instrumental support did not serve as a significant moderator for men, the moderating influence was trending towards significance ($\beta = -0.19, p = 0.07$). Interestingly, when negative partner support behaviours (i.e., negative nonverbal behaviours, negative affect, and negative communication skills) were entered into the model as additional control variables in order to control for non-constructive forms of support, only emotional partner support remained a significant moderator ($\beta = -0.35, p < 0.01$; see Tables 9, 10, and 11). This suggests that positive emotional support significantly moderates alcohol-related physical aggression perpetration for men over and above the effects of non-constructive support whereas this is not true for positive nonverbal support. Exploration of the significant interaction between alcohol use and emotional partner support indicated that men who received low levels of emotional support from their partner perpetrated higher levels of

Table 9

Summary of Hierarchical Regression Analysis Regressing Physical Aggression on Positive Nonverbal Partner Support (N=191)

Variables	<i>B</i>	SE <i>B</i>	β	Adj. R^2	ΔR^2
Men (n=95)					
<i>Block 1</i>				.03	.04*
Income	-.36 ^a	.00	-.21*		
<i>Block 2</i>				.03	.08
Negative Nonverbal Partner Support	.19	.69	.03		
Negative Affect Partner Support	.40	.37	.14		
Negative Communication Partner Support	.10	.35	.03		
<i>Block 3</i>				.06	.12
Alcohol Use	.24	.11	.24*		
Positive Nonverbal Partner Support	-.05	.44	-.01		
<i>Block 4</i>				.09	.16*
Alcohol Use X Positive Nonverbal Partner Support	-.15	.08	-.22		
Women (n=96)					
<i>Block 1</i>				.12	.16**
Age	-.35	.17	-.21*		
Education	-.23	.44	-.06		
Income	-.52 ^a	.00	-.14		
Relationship Adjustment	-.15	.07	-.21*		
<i>Block 2</i>				.16	.22**
Negative Nonverbal Partner Support	-.15	.91	-.02		
Negative Affect Partner Support	1.15	.47	.32*		
Negative Communication Partner Support	-1.42	.56	-.33*		
<i>Block 3</i>				.16	.24**
Alcohol Use	.34	.23	.15		
Positive Nonverbal Partner Support	-.08	.57	-.01		
<i>Block 4</i>				.16	.24**
Alcohol Use X Positive Nonverbal Partner Support	.08	.16	.05		

^a Yearly income was divided by 10,000 in order to derive an interpretable *B*

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

Table 10

Summary of Hierarchical Regression Analysis Regressing Physical Aggression on Positive Instrumental Partner Support (N=191)

Variables	<i>B</i>	SE <i>B</i>	β	Adj. R^2	ΔR^2
Men (n=95)					
<i>Block 1</i>				.03	.04*
Income	-.36 ^a	.00	-.21*		
<i>Block 2</i>				.03	.08
Negative Nonverbal Partner Support	.19	.69	.03		
Negative Affect Partner Support	.40	.37	.14		
Negative Communication Partner Support	.10	.35	.03		
<i>Block 3</i>				.07	.13
Alcohol Use	.25	.11	.25*		
Positive Instrumental Partner Support	.15	.23	.08		
<i>Block 4</i>				.08	.15*
Alcohol Use X Positive Instrumental Partner Support	-.06	.04	-.16		
Women (n=96)					
<i>Block 1</i>				.12	.16**
Age	-.35	.17	-.21*		
Education	-.23	.44	-.06		
Income	-.52 ^a	.00	-.14		
Relationship Adjustment	-.15	.07	-.21*		
<i>Block 2</i>				.16	.22**
Negative Nonverbal Partner Support	-.15	.91	-.02		
Negative Affect Partner Support	1.15	.47	.32*		
Negative Communication Partner Support	-1.42	.56	-.33*		
<i>Block 3</i>				.16	.24**
Alcohol Use	.33	.23	.15		
Positive Instrumental Support	-.07	.31	-.02		
<i>Block 4</i>				.20	.28**
Alcohol Use X Positive Instrumental Partner Support	.20	.10	.27*		

^a Yearly income was divided by 10,000 in order to derive an interpretable *B*

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

Table 11

Summary of Hierarchical Regression Analysis Regressing Physical Aggression on Positive Emotional Partner Support (N=191)

Variables	<i>B</i>	SE <i>B</i>	β	Adj. R^2	ΔR^2
Men (n=95)					
<i>Block 1</i>				.03	.04*
Income	-.36 ^a	.00	-.21*		
<i>Block 2</i>				.03	.08
Negative Nonverbal Partner Support	.19	.69	.03		
Negative Affect Partner Support	.40	.37	.14		
Negative Communication Partner Support	.10	.35	.03		
<i>Block 3</i>				.07	.13
Alcohol Use	.25	.11	.24*		
Positive Emotional Partner Support	-.14	.17	-.09		
<i>Block 4</i>				.18	.24**
Alcohol Use X Positive Emotional Partner Support	-.09	.03	-.35*		
Women (n=96)					
<i>Block 1</i>				.12	.16**
Age	-.35	.17	-.21*		
Education	-.23	.44	-.06		
Income	-.52 ^a	.00	-.14		
Relationship Adjustment	-.15	.07	-.21*		
<i>Block 2</i>				.16	.22**
Negative Nonverbal Partner Support	-.15	.91	-.02		
Negative Affect Partner Support	1.15	.47	.32*		
Negative Communication Partner Support	-1.42	.56	-.33*		
<i>Block 3</i>				.16	.24**
Alcohol Use	.34	.23	.15		
Positive Emotional Support	-.07	.24	-.03		
<i>Block 4</i>				.19	.28**
Alcohol Use X Positive Emotional Partner Support	.14	.07	.22		

^a Yearly income was divided by 10,000 in order to derive an interpretable *B*

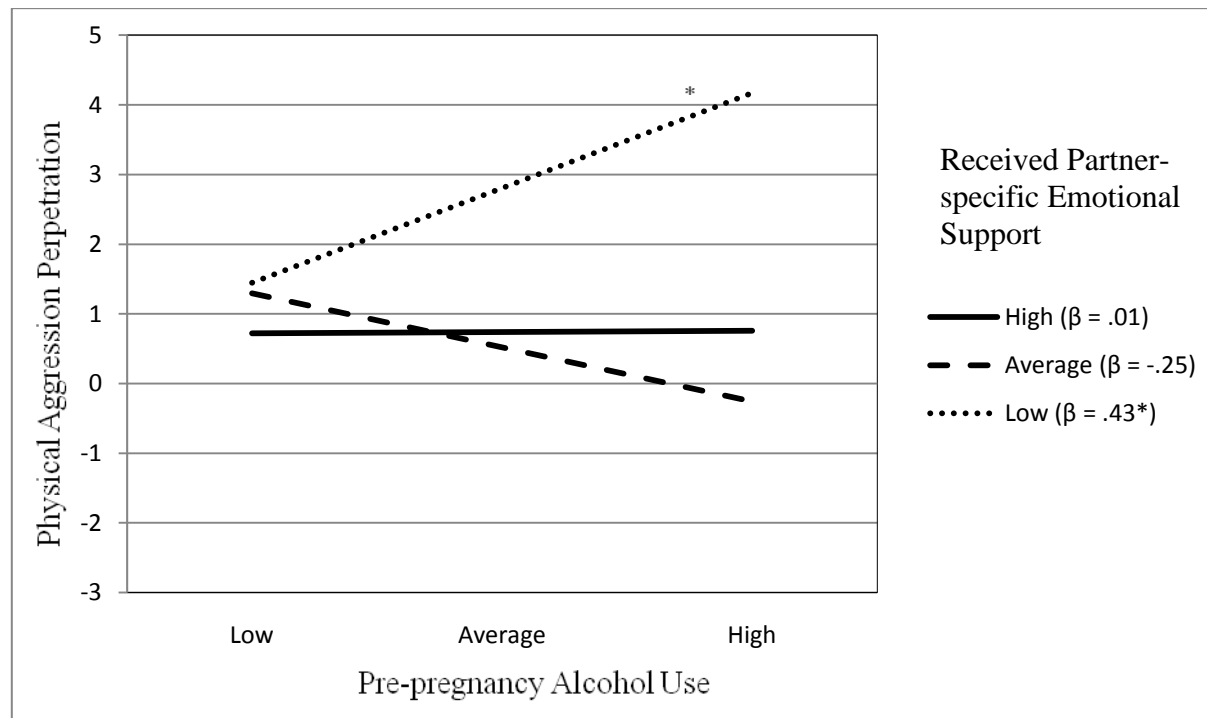
* $p < .05$ ** $p < .01$

alcohol-related physical aggression ($\beta = 0.43, p < 0.05$; see Fig. 3). In contrast, alcohol use and physical aggression perpetration were not significantly correlated for men with average or high levels of emotional partner support ($\beta = -0.25, p > 0.05$ and $\beta = 0.01, p > 0.05$).

For women, receiving instrumental partner-specific support significantly moderated alcohol-related physical aggression after controlling for age, level of education, individual yearly income, and relationship adjustment ($\beta = 0.31, p < 0.05$), but nonverbal positive behaviours and positive emotional support did not ($\beta = 0.06, p > 0.05$ and $\beta = 0.15, p > 0.05$, respectively). The moderating effect of instrumental support remained significant after controlling for negative partner support in the analysis ($\beta = 0.27, p < 0.05$; see Table 10). Contrary to expectations, probing the interaction indicated that women with low levels of instrumental partner support reported less physical aggression in the context of alcohol use ($\beta = -0.10, p > 0.05$), whereas women with average or high levels of instrumental partner support perpetrated more alcohol-related physical partner aggression ($\beta = 0.26, p > 0.05$ and $\beta = 0.16, p > 0.05$, respectively; see Fig. 4). Although the reported simple regressions are not significant, the significant interaction indicates that the difference between the slopes is significant. A loss of statistical power due to data segmentation may be accounting for these nonsignificant betas. Importantly, while high levels of partner-specific support decreased alcohol-related partner physical aggression for men, it strengthened the association between these behaviours for women. In other words, men who consumed high levels of alcohol prior to pregnancy and have high levels of emotional partner support perpetrated less physical aggression than similar men with lower levels of this

Figure 3

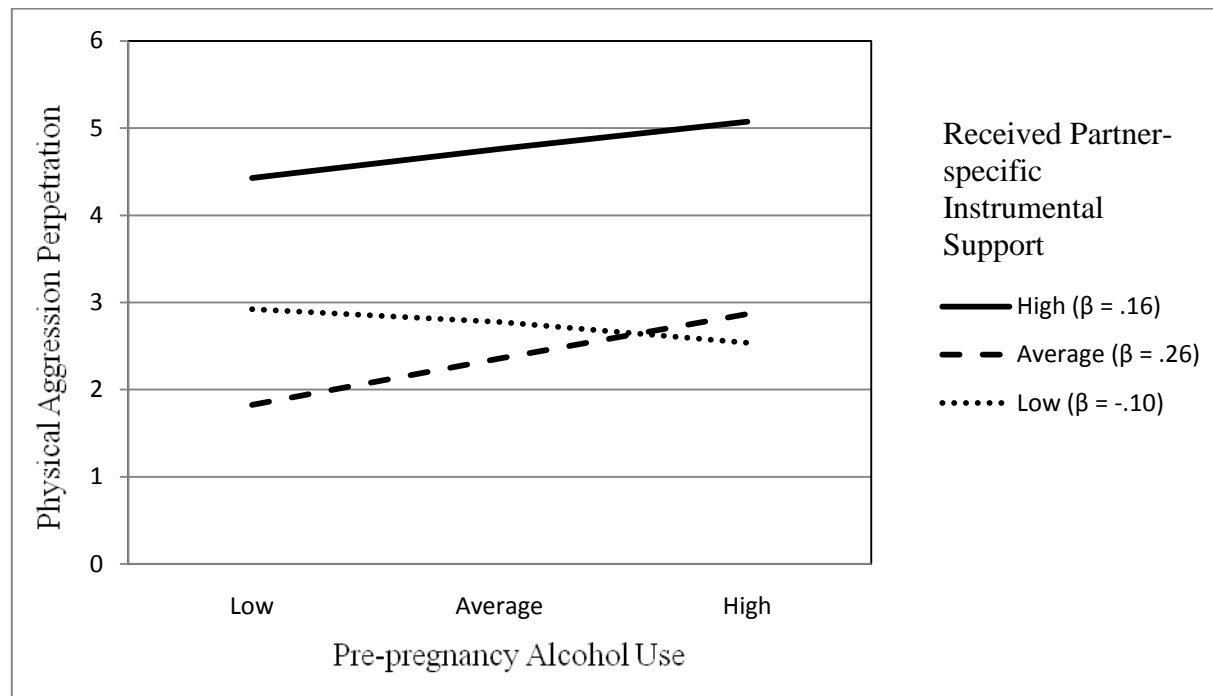
Graphical Depiction of the Moderating Effects of Received Emotional Partner Support on the Association between Alcohol Use and Partner Physical Aggression Perpetration for Men.



Note. Categories of average, low, and high received partner-specific emotional support reflect men who received mean, half a standard deviation below, and half a standard deviation above the mean levels of received partner-specific emotional support, respectively.

Figure 4

Graphical Depiction of the Moderating Effects of Received Instrumental Partner Support on the Association between Alcohol Use and Partner Physical Aggression Perpetration for Women.



Note. Categories of average, low, and high received partner-specific instrumental support reflect women who received mean, half a standard deviation below, and half a standard deviation above the mean levels of received partner-specific instrumental support, respectively.

form of social support. In contrast, women who consumed high levels of alcohol prior to pregnancy and receive high levels of instrumental partner support were more likely to use physical aggression against their partner than women who receive less instrumental partner support.²

Moderating Effects of General Social Support on Psychological Aggression

Similar to the regression analyses for physical aggression, a series of hierarchical multiple regressions were conducted for psychological aggression. Given the significant correlations between psychological aggression perpetration and various demographic variables, these demographic variables were entered in the first block of the analyses for each gender in order to control for potential confounding factors. These variables included relationship adjustment for both genders as well as individual yearly income and marital status for women. As was conducted for the physical aggression analyses, the moderating influence of each subscale of general social support was examined individually in the analyses. For each hierarchical regression, the individual subtype of social support was entered into the second block along with alcohol use and the interaction term was entered into the third block. For men, appraisal ($\beta = 0.29, p < 0.01$), belonging ($\beta = 0.26, p < 0.01$), and tangible ($\beta = 0.20, p < 0.05$) social support moderated the relationship between pre-pregnancy alcohol use and partner psychological aggression perpetration (see Tables 12, 13, and 14). Self-esteem social support was not a significant moderator for men ($\beta = 0.06, p > 0.05$), but had a direct effect on psychological aggression ($\beta = 0.23, p < 0.05$; see Table 15). Similar to the results for physical aggression, probing the significant interactions made it clear that higher levels of these three forms of social support increased the likelihood of alcohol-

Table 12

Summary of Hierarchical Regression Analysis Regressing Psychological Aggression on Appraisal Social Support (N=196)

Variables	<i>B</i>	SE <i>B</i>	β	Adj. R^2	ΔR^2
Men (n=98)					
<i>Block 1</i>					
Relationship Adjustment	-.25	.10	-.25*	.05	.06*
<i>Block 2</i>					
Alcohol Use	.86	.26	.32**	.13	.16**
Appraisal Social Support	.34	.48	.07		
<i>Block 3</i>					
Alcohol Use X Appraisal Social Support	.21	.07	.29**	.20	.23**
Women (n=98)					
<i>Block 1</i>					
Income	.00	.00	-.21*	.20	.22**
Relationship Status	-5.26	4.09	-.12		
Relationship Adjustment	-.59	.15	-.36**		
<i>Block 2</i>					
Alcohol Use	1.13	.49	.22*	.25	.29**
Appraisal Social Support	-.92	.49	-.19		
<i>Block 3</i>					
Alcohol Use X Appraisal Social Support	-.08	.10	-.08	.25	.30**

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

Table 13

Summary of Hierarchical Regression Analysis Regressing Psychological Aggression on Belonging Social Support (N=196)

Variables	<i>B</i>	SE <i>B</i>	β	Adj. R^2	ΔR^2
Men (n=98)					
<i>Block 1</i>					
Relationship Adjustment	-.25	.10	-.25*	.05	.06*
<i>Block 2</i>					
Alcohol Use	.81	.26	.30**	.14	.17**
Belonging Social Support	.44	.38	.11		
<i>Block 3</i>					
Alcohol Use X Belonging Social Support	.18	.07	.26**	.20	.23**
Women (n=98)					
<i>Block 1</i>					
Income	.00	.00	-.21*	.20	.22**
Relationship Status	-5.26	4.09	-.12		
Relationship Adjustment	-.59	.15	-.36**		
<i>Block 2</i>					
Alcohol Use	1.34	.50	.26**	.26	.30**
Belonging Social Support	-.82	.41	-.20*		
<i>Block 3</i>					
Alcohol Use X Belonging Social Support	-.20	.14	-.18	.27	.31**

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

Table 14

Summary of Hierarchical Regression Analysis Regressing Psychological Aggression on Tangible Social Support (N=196)

Variables	<i>B</i>	SE <i>B</i>	β	Adj. R^2	ΔR^2
Men (n=98)					
<i>Block 1</i>					
Relationship Adjustment	-.25	.10	-.25*	.05	.06*
<i>Block 2</i>					
Alcohol Use	.83	.26	.30**	.14	.17**
Tangible Social Support	-.58	.49	-.12		
<i>Block 3</i>					
Alcohol Use X Tangible Social Support	.13	.06	.20*	.17	.20**
Women (n=98)					
<i>Block 1</i>					
Income	.00	.00	-.21*	.20	.22**
Relationship Status	-5.26	4.09	-.12		
Relationship Adjustment	-.59	.15	-.36**		
<i>Block 2</i>					
Alcohol Use	1.28	.49	.25*	.26	.30**
Tangible Social Support	-1.12	.50	-.23*		
<i>Block 3</i>					
Alcohol Use X Tangible Social Support	-.15	.12	-.13	.27	.32**

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

Table 15

Summary of Hierarchical Regression Analysis Regressing Psychological Aggression on Self-esteem Social Support (N=196)

Variables	<i>B</i>	<i>SE B</i>	β	Adj. R^2	ΔR^2
Men (n=98)					
<i>Block 1</i>					
Relationship Adjustment	-.25	.10	-.25*	.05	.06*
<i>Block 2</i>					
Alcohol Use	.87	.26	.32**	.17	.20**
Self-esteem Social Support	1.23	.56	.23*		
<i>Block 3</i>					
Alcohol Use X Self-esteem Social Support	.05	.08	.06	.16	.20**
Women (n=98)					
<i>Block 1</i>					
Income	.00	.00	-.21*	.20	.22**
Relationship Status	-5.26	4.09	-.12		
Relationship Adjustment	-.59	.15	-.36**		
<i>Block 2</i>					
Alcohol Use	1.14	.50	.22*	.23	.27**
Self-esteem Social Support	.06	.59	.01		
<i>Block 3</i>					
Alcohol Use X Self-esteem Social Support	-.10	.16	-.06	.22	.27**

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

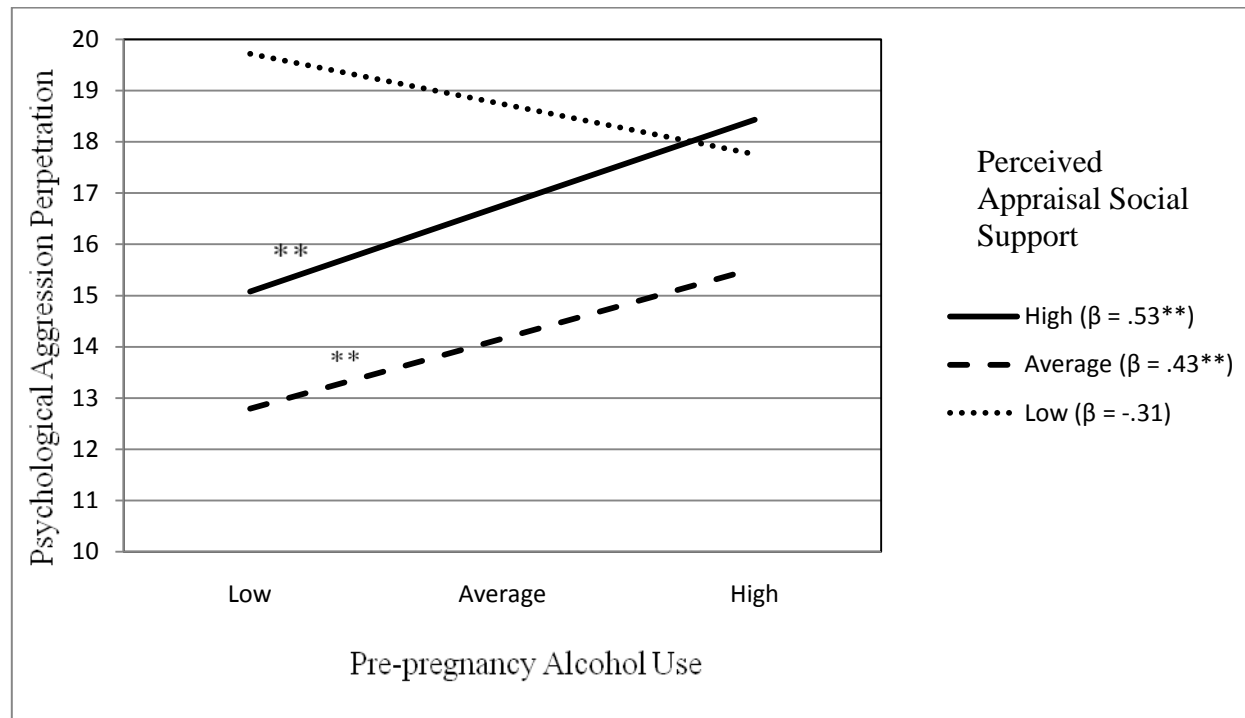
related psychological aggression for men. Specifically, average and high levels of appraisal ($\beta = 0.43, p < 0.01$ and $\beta = 0.53, p < 0.01$, respectively), belonging ($\beta = 0.38, p < 0.05$ and $\beta = 0.58, p < 0.01$, respectively), and tangible ($\beta = 0.37, p < 0.05$ and $\beta = 0.38, p < 0.05$, respectively) support were associated with a significant positive correlation between alcohol use and psychological aggression perpetration for men (see Fig. 5, 6, and 7). In contrast, low levels of these forms of social support did not significantly predict alcohol-related psychological aggression (appraisal, $\beta = -0.31, p > 0.05$; belonging, $\beta = 0.02, p > 0.05$; and tangible, $\beta = 0.11, p > 0.05$). The influence of social support on alcohol-related psychological aggression differed considerably for men and women. After controlling for income, marital status, and relationship adjustment, none of the four subtypes of social support were significant moderators for women (appraisal, $\beta = -0.08, p > 0.05$; esteem, $\beta = -0.06, p > 0.05$; belonging, $\beta = -0.18, p > 0.05$; and tangible, $\beta = -0.13, p > 0.05$; see Tables 12, 13, 14, and 15). There were, however, significant main effects for belonging and tangible social support predicting female-to-male partner psychological aggression ($\beta = -0.20, p < 0.05$ and $\beta = -0.23, p < 0.05$, respectively). Taken together, while the moderating influence of general social support may be unimportant for women's perpetration of alcohol-related psychological aggression, moderate to high levels of appraisal, belonging, and tangible social support are related to higher levels of alcohol-related psychological aggression perpetration for men.

Moderating Effects of Partner-Specific Support on Psychological Aggression

Analyses examining the moderating influence of the individual subscales of partner-specific support demonstrated that receiving positive instrumental support

Figure 5

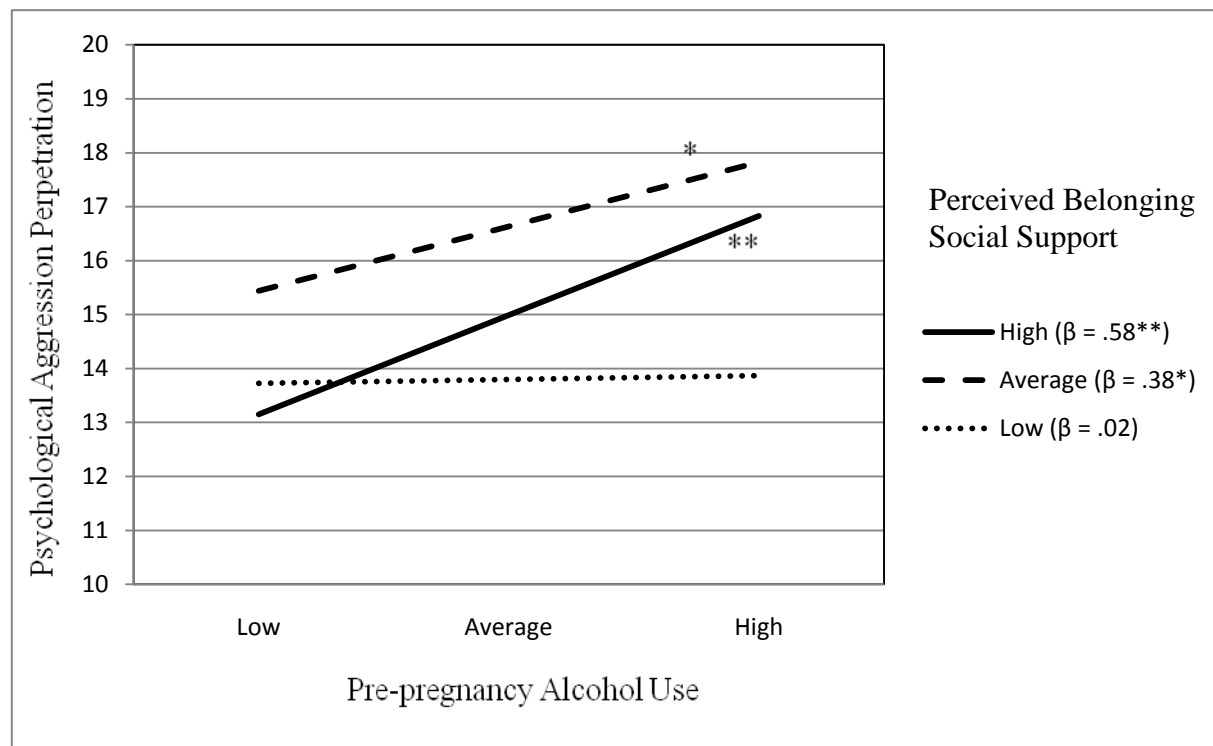
Graphical Depiction of the Moderating Effects of Perceived Appraisal Social Support on the Association between Alcohol Use and Partner Psychological Aggression Perpetration for Men.



Note. Categories of average, low, and high perceived appraisal social support reflect men who reported mean, half a standard deviation below, and half a standard deviation above the mean of perceived appraisal support, respectively.

Figure 6

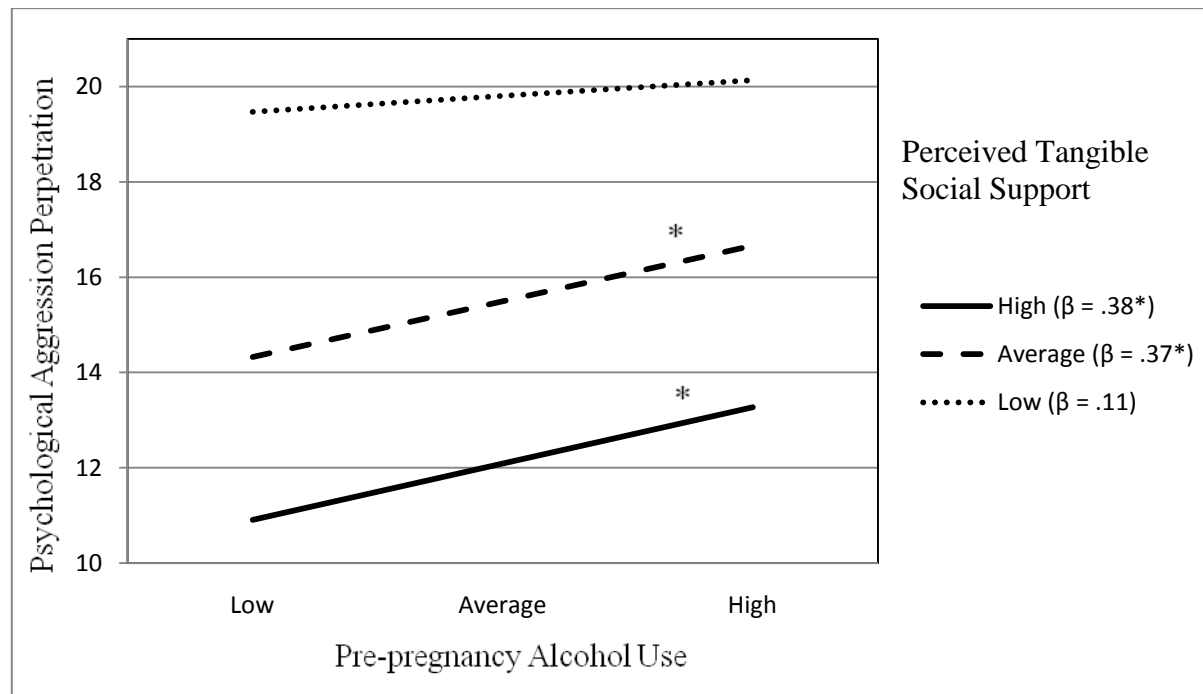
Graphical Depiction of the Moderating Effects of Perceived Belonging Social Support on the Association between Alcohol Use and Partner Psychological Aggression Perpetration for Men.



Note. Categories of average, low, and high perceived belonging social support reflect men who reported mean, half a standard deviation below, and half a standard deviation above the mean of perceived belonging support, respectively.

Figure 7

Graphical Depiction of the Moderating Effects of Perceived Tangible Social Support on the Association between Alcohol Use and Partner Psychological Aggression Perpetration for Men.



Note. Categories of average, low, and high perceived tangible social support reflect men who reported mean, half a standard deviation below, and half a standard deviation above the mean of perceived tangible support, respectively.

significantly moderated alcohol-related psychological aggression for men after controlling for relationship adjustment ($\beta = -0.23, p < 0.05$). Whereas partner nonverbal support was trending towards significance ($\beta = -0.17, p = 0.09$), positive emotional support was not a significant moderator of alcohol-related psychological aggression for men ($\beta = -0.11, p > 0.05$). Interestingly, when negative partner support behaviours were added to the model as additional control variables, none of the positive support behaviours served as significant moderators for the association between alcohol use and psychological aggression perpetration for men (nonverbal, $\beta = -0.11, p > 0.05$, instrumental, $\beta = -0.14, p > 0.05$, emotional, $\beta = -0.07, p > 0.05$; see Tables 16, 17, and 18). Similarly, none of the three subscales of partner support significantly moderated the relation between alcohol use and partner psychological aggression perpetration for women (nonverbal, $\beta = 0.04, p > 0.05$; instrumental, $\beta = -0.05, p > 0.05$; emotional, $\beta = 0.07, p > 0.05$) even before controlling for negative partner support behaviours (see Tables 16, 17, and 18).

Summary

In summary, pre-pregnancy alcohol use was significantly correlated with physical aggression perpetration for men, but not women. In terms of psychological aggression, there was a significant association between prior alcohol use and psychological aggression perpetration for both men and women. Moreover, the results demonstrated that high levels of particular forms of general social support may increase the likelihood of alcohol-related aggression for men. Specifically, higher levels of appraisal social support were associated with increased alcohol-related physical and

Table 16

Summary of Hierarchical Regression Analysis Regressing Psychological Aggression on Positive Nonverbal Partner Support (N=191)

Variables	<i>B</i>	<i>SE B</i>	β	Adj. R^2	ΔR^2
Men (n=95)					
<i>Block 1</i>					
Relationship Adjustment	-.24	.10	-.25*	.05	.06*
<i>Block 2</i>					
Negative Nonverbal Partner Support	2.55	1.72	.17	.18	.22**
Negative Affect Partner Support	.98	.90	.13		
Negative Communication Partner Support	1.61	.88	.20		
<i>Block 3</i>					
Alcohol Use	.66	.28	.24*	.21	.26**
Positive Nonverbal Partner Support	-.04	1.13	.00		
<i>Block 4</i>					
Alcohol Use X Positive Nonverbal Partner Support	-.20	.19	-.11	.22	.27**
Women (n=96)					
<i>Block 1</i>					
Income	.00	.00	-.22*	.20	.23**
Marital Status	-6.66	4.12	-.15		
Relationship Adjustment	-.55	.15	-.34**		
<i>Block 2</i>					
Negative Nonverbal Partner Support	-.42	2.04	-.02	.20	.25**
Negative Affect Partner Support	-.77	1.04	-.09		
Negative Communication Partner Support	1.84	1.24	.19		
<i>Block 3</i>					
Alcohol Use	1.03	.52	.20	.21	.28**
Positive Nonverbal Support	-.12	1.23	-.01		
<i>Block 4</i>					
Alcohol Use X Positive Nonverbal Partner Support	.18	.34	.06	.21	.28**

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

Table 17

Summary of Hierarchical Regression Analysis Regressing Psychological Aggression on Positive Instrumental Partner Support (N=191)

Variables	<i>B</i>	<i>SE B</i>	β	Adj. R^2	ΔR^2
Men (n=95)					
<i>Block 1</i>				.05	.06*
Relationship Adjustment	-.24	.10	-.25*		
<i>Block 2</i>				.18	.22**
Negative Nonverbal Partner Support	2.55	1.72	.17		
Negative Affect Partner Support	.98	.90	.13		
Negative Communication Partner Support	1.61	.88	.20		
<i>Block 3</i>				.22	.27**
Alcohol Use	.68	.28	.25*		
Positive Instrumental Partner Support	.36	.56	.07		
<i>Block 4</i>				.23	.28**
Alcohol Use X Positive Instrumental Partner Support	-.15	.11	-.14		
Women (n=96)					
<i>Block 1</i>				.20	.23**
Income	.00	.00	-.22*		
Marital Status	-6.66	4.12	-.15		
Relationship Adjustment	-.55	.15	-.34**		
<i>Block 2</i>				.20	.25**
Negative Nonverbal Partner Support	-.42	2.04	-.02		
Negative Affect Partner Support	-.77	1.04	-.09		
Negative Communication Partner Support	1.84	1.24	.19		
<i>Block 3</i>				.24	.30**
Alcohol Use	1.02	.51	.20		
Positive Instrumental Support	-1.03	.66	-.16		
<i>Block 4</i>				.23	.30**
Alcohol Use X Positive Instrumental Partner Support	-.07	.21	-.04		

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

Table 18

Summary of Hierarchical Regression Analysis Regressing Psychological Aggression on Positive Emotional Partner Support (N=191)

Variables	<i>B</i>	<i>SE B</i>	β	Adj. R^2	ΔR^2
Men (n=95)					
<i>Block 1</i>					
Relationship Adjustment	-.24	.10	-.25*	.05	.06*
<i>Block 2</i>					
Negative Nonverbal Partner Support	2.55	1.72	.17	.18	.22**
Negative Affect Partner Support	.98	.90	.13		
Negative Communication Partner Support	1.61	.88	.20		
<i>Block 3</i>					
Alcohol Use	.67	.27	.24*	.23	.28**
Positive Emotional Partner Support	-.60	.42	-.15		
<i>Block 4</i>					
Alcohol Use X Positive Emotional Partner Support	-.05	.07	-.07	.23	.29**
Women (n=96)					
<i>Block 1</i>					
Income	.00	.00	-.22*	.20	.23**
Marital Status	-6.66	4.12	-.15		
Relationship Adjustment	-.55	.15	-.34**		
<i>Block 2</i>					
Negative Nonverbal Partner Support	-.42	2.04	-.02	.20	.25**
Negative Affect Partner Support	-.77	1.04	-.09		
Negative Communication Partner Support	1.84	1.24	.19		
<i>Block 3</i>					
Alcohol Use	1.01	.51	.20	.25	.31**
Positive Emotional Support	-.96	.50	-.19		
<i>Block 4</i>					
Alcohol Use X Positive Emotional Partner Support	.05	.16	.04	.24	.31**

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

psychological aggression and higher levels of belonging and tangible support were associated with increased alcohol-related psychological aggression. A lack of partner-specific emotional support may serve as a risk factor for alcohol-related physical aggression for men. In contrast, general social support did not significantly moderate alcohol-related physical or psychological aggression for women. However, partner-specific support was important for the relation between alcohol use and physical aggression perpetration for women since higher levels of instrumental partner support were associated with increased physical aggression for women that used alcohol.

Discussion

Past research has demonstrated a significant association between alcohol use and partner aggression perpetration, especially for men (e.g., Foran & O'Leary, 2008; Stith et al., 2004). Less is known about the occurrence and the association of these risky behaviours during the transition to parenthood. Moreover, there is limited research examining factors that increase the likelihood of alcohol-related aggression as well as factors that buffer individuals from the negative effects of alcohol use. The current study addresses this gap in the literature by studying a potential moderator of the alcohol-aggression link, social support, using a community sample of couples who were transitioning to parenthood. Furthermore, the present study is unique in that it examines general social support as well as partner-specific support in order to determine whether the two forms of support have differential moderating effects. The findings of this study relate to the transition to parenthood and may not generalize to other developmental periods.

In the year prior to pregnancy, 90.8% of men and women reported any alcohol use. In contrast, 84.7% of men and 11.2% of women reported any alcohol use during the pregnancy period. For both men and women, average levels of alcohol use decreased during pregnancy, but not surprisingly the decrease was most substantial for women. The extent of women's alcohol use during the pregnancy period is consistent with rates reported in a related study which found that 10% of women used alcohol during pregnancy (Charles & Perreira, 2007). However, men's rates of alcohol use during pregnancy are higher in the current study as Charles and Perreira reported that only 64% of the men in their sample used alcohol during the three months prior to childbirth. Given the large decrease in women's rates of alcohol use during pregnancy, analyses used pre-pregnancy usage as a measure of typical alcohol use for both men and women.

In this study, approximately 18.4% of men and 30.6% of women perpetrated at least one incident of physical aggression against their partner during the previous year. These figures are high compared to a study using a large representative sample of individuals from various developmental periods which found that 12% of men and 12% of women are the victims of partner physical aggression (Stets & Straus, 1990). Moreover, the female rate of physical aggression perpetration in the current study is higher than the estimated rate of 26% among at-risk young couples (Capaldi & Crosby, 1997). Compared to a newlywed sample, however, the rates reported in the present study may be relatively low. Specifically, Lawrence and Bradbury (2001) reported that 29% of newlywed husbands and 46% of newlywed wives are physically aggressive towards their partner.

In the present study, 17.3% of men and 20.6% of women perpetrated mild physical aggression against their partner, whereas 5.1% of men and 15.3% of women perpetrated severe physical aggression. While these rates of severe aggression in particular are lower than the rates reported in some studies (e.g., Smith Slep & O'Leary, 2005), they are higher than the rates reported in other studies, particularly the female perpetration rate (e.g., Stets & Straus, 1990). Specifically, Smith Slep and O'Leary found that one quarter of couples reported engaging in severe partner aggression whereas Stets and Straus found that 5% of women and 1% of men were the victims of severe physical aggression. The differing rates of severe physical aggression in each study may be the result of different samples. Specifically, the Smith Slep and O'Leary study sampled a representative group of couples with young children whereas the Stets and Straus study used a much larger, developmentally heterogeneous representative sample of couples in the U.S. Moreover, the latter study may not be an ideal comparison given that it used an earlier, less comprehensive version of the Conflict Tactics Scales (Straus, 1979).

Of particular importance is the fact that women's physical aggression perpetration rates were higher than men's rates in this study which is consistent with the recent literature arguing that women may be more likely than men to engage in partner physical aggression (e.g., Archer, 2000; Capaldi et al., 2007; O'Leary, 2007). Although some research with non-pregnant couples suggests that women are more likely than men to be injured due to partner aggression (Archer, 2000), more men than women were injured as a result of partner aggression in this study. Specifically, 10.2% of men and 5.1% of women were physically injured by their partner during the past year. One

explanation for this discrepant finding is that some men may have decreased the severity of their aggression because their partner was pregnant, but this may not be the case for women's aggressiveness. This explanation is consistent with research indicating that male-to-female partner aggression temporarily decreases during pregnancy (Charles & Perreira, 2007).

In addition to physical aggression, the prevalence of partner psychological aggression perpetration was examined. Psychological aggression appears to be a common method of conflict management for couples in this study as 83.7% of men and 89.8% of women perpetrated psychological aggression against their partner during the previous year. These rates are somewhat higher than the rates reported in a study with developmentally heterogeneous couples using an earlier version of the CTS which found that 75% of men and 80% of women perpetrate psychological aggression (Stets & Straus, 1990). There is very limited research examining rates of partner psychological aggression during the transition to parenthood; therefore, this study contributes to the existing literature by examining various distinct forms of aggression during this specific developmental period.

The prevalence of sexual aggression was also explored in this study. Rates of sexual aggression perpetration for men and women were 21.4% and 18.4%, respectively. Once again, these rates are at the higher end of the ranges reported in other studies using non-pregnant couples, especially for women (e.g., Ramisetty-Mikler et al., 2007). Importantly, for all three forms of partner aggression, women had comparable or higher perpetration rates than men which provides support for the growing idea that women are also perpetrators of partner aggression.

In general, the rates of physical, psychological, and sexual aggression in this study tend to be higher than studies with non-pregnant couples. There are three possible explanations for this finding. First, this study included individual reports and partner reports of aggression perpetration. Therefore, other studies that only include self-reports may be underestimating the prevalence of aggression as individuals tend to minimize their own aggressive behaviours (O'Leary & Williams, 2006). The inclusion of both individual reports and partner reports yields a more reliable estimate of aggressive behaviour. Second, this study focused on couples that were transitioning to parenthood. Therefore, the stress that is associated with having a first child could partially account for the higher prevalence rates reported in this study. Finally, partner aggression is more prevalent during early adulthood and rates tend to decline with age (Capaldi et al., 2007). The current study may have relatively high rates of aggression because the sample was predominantly comprised of couples at a younger developmental period rather than examining couples throughout the lifespan.

Association between Alcohol Use and Partner Aggression Perpetration

Although it was expected that alcohol use would be significantly correlated with physical aggression perpetration for both men and women, the correlation was only significant for men. Consistent with this finding, there currently is some uncertainty in the literature regarding the link between alcohol use and physical aggression perpetration for women, even though the association has been well-established for men (e.g., Fals-Stewart, 2003; Fals-Stewart et al., 2003; Foran & O'Leary, 2008; Leonard & Roberts, 1998). Therefore, the association between alcohol use and physical aggression perpetration for men may hold true at various life stages, including the transition to

parenthood. In contrast, the association between alcohol use and physical aggression perpetration for women may be limited to specific life stages or specific high-risk groups and, therefore, may not apply to women transitioning to parenthood.

There was a significant correlation between alcohol use and both mild and severe forms of physical aggression perpetration for men, but not women. Moreover, the strength of the relation between alcohol use and aggression was stronger for severe physical aggression than mild physical aggression for men. It is possible that a threshold conceptualization of alcohol use can help explain this finding. Specifically, rather than there being a linear relationship between alcohol use and physical aggression, an individual may need to drink a large amount of alcohol before there is a risk for severe aggression (O'Leary & Schumacher, 2003). Men in this study who consumed large amounts of alcohol may have been at a greater risk for severe aggression and severe aggression may have rarely occurred in the absence of alcohol use. In contrast, more mild forms of aggression may have occurred in conjunction with lower levels of alcohol use but also regardless of alcohol use.

As hypothesized, there was a significant association between alcohol use and psychological aggression perpetration for men and women, and, as expected, the gender difference was not significant indicating that women are just as likely as men to engage in alcohol-related psychological aggression. Very few existing studies have examined the association between alcohol use and psychological aggression; therefore, this study is an important contribution to the existing literature. Given the known consequences of psychological aggression (Taft et al., 2006), potential moderators of this relationship are important to consider.

Moderating Effects of General Social Support for Physical Aggression

Although it was hypothesized that general social support would serve as a moderator for the alcohol-physical aggression link whereby high levels of social support would serve as a protective buffer, the results were not so clear-cut. Appraisal social support interacted with alcohol use to predict physical aggression perpetration for men. Contrary to hypotheses, men who reported alcohol use showed higher rates of physical aggression perpetration if they also reported high levels of appraisal social support (i.e., a high availability of individuals to speak to about their problems). A possible explanation for this finding is the deviant peer theory.

The deviant peer theory suggests that individuals choose social groups whose values and beliefs match their own. Therefore, according to this theory, aggressive individuals are likely to befriend individuals who are also aggressive and support aggressive behaviour. Although men with high appraisal support may believe that they have a support group to speak to about their problems, the support they receive may be of negative quality. Importantly, it has been shown that not only are deviant individuals drawn to each other, but one's peer group continues to shape an individual's involvement in antisocial activities, which can lead to more serious delinquent acts (Ellis & Zarbatany, 2007). One avenue through which a peer group shapes an individual's propensity towards partner aggression is through hostile talk about partners, thus reinforcing patterns of aggression (Williams, Craig, Connolly, Pepler, & Laporte, 2008). Consistent with this explanation, in a sample of 601 early adolescents, a deviant peer group was a significant predictor of cross-gender aggression perpetration for both men and women (Windle & Mrug, 2009). Therefore, the deviant peer theory may

explain the unexpected finding of high levels of appraisal support correlating with increased alcohol-related partner physical aggression for men.

In the present study, it was hypothesized that general social support would be a more significant moderator for women than men since women are socialized to value social support. Contrary to this hypothesis, although general social support was a significant harmful moderator for men, none of the subscales of general social support significantly interacted with alcohol use to predict physical aggression perpetration for women. Although the moderating effects of general social support were not significant for women, the significant main effects of appraisal and tangible social support in predicting physical aggression perpetration illustrate the protective influence of support.

Moderating Effects of Partner-Specific Support for Physical Aggression

As hypothesized, partner-specific support (i.e., positive support behaviours provided by one's intimate partner) interacted with alcohol use to predict physical aggression perpetration for men and women; however, the moderating effect differed between the genders. For men, a lack of partner support served as a risk factor for alcohol-related physical aggression. Specifically, receiving low levels of partner nonverbal positive behaviours and emotional support increased the likelihood of alcohol-related physical aggression perpetration for men. Therefore, it appears that having a partner who shows positive nonverbal support and communicates emotional support (e.g., bolsters self-esteem, provides reassurance, displays affection towards partner etc.) is valuable for men. Moreover, emotional support appears to have far reaching effects as its relationship to alcohol-related physical aggression remained significant after controlling for negative partner support, whereas the significant

moderating effect of nonverbal support disappeared. It is possible, therefore, that receiving emotional partner support can counteract the negative effects of non-constructive support whereas this is untrue for nonverbal partner support. One explanation for the beneficial effect of partner emotional support for men is the enabling hypothesis. According to this hypothesis, partner support may enhance one's self-efficacy thereby allowing the individual to pursue challenging goals despite unexpected obstacles (e.g., Bandura, 1997; Benight & Bandura, 2004; Knoll et al., 2009). Receiving emotional support from one's partner may increase men's self-efficacy by encouraging socially acceptable behaviours that can be used instead of resorting to physical partner aggression.

The detrimental impact of a lack of partner support for men has previously been demonstrated in the literature. Pasch and Bradbury (1998) found that married couples who were later classified as distressed had wives that were half as likely to demonstrate positive behaviours and twice as likely to display negative behaviour when offering support to their husbands than couples who were later classified as satisfied or highly satisfied. Similarly, Brock and Lawrence (2009) reported that a low level of esteem partner support (an element of emotional partner support in the present study) was a greater risk factor for men's marital decline than women's decline. In the present study, emotional support may be particularly important for men because it is less acceptable in Western society for men to seek this form of support from other social relationships. In sum, whereas appraisal social support appears to increase alcohol-related physical aggression for men, emotional partner-specific support may buffer men against alcohol-

related physical aggression as men with low levels of this form of partner support are more likely to perpetrate physical aggression in the context of alcohol use.

Consistent with men's results, partner support moderated alcohol-related physical aggression perpetration for women. Therefore, it appears that partner-specific support is more important than general social support in moderating alcohol-related physical aggression for women. Surprisingly, though, women who consumed alcohol and had high levels of partner-specific support were more likely to perpetrate physical aggression against their partner than women with lower levels of partner-specific support. The form of partner support that accounted for this moderating effect was instrumental support (e.g., suggesting a plan of action, offering constructive feedback, demonstrating interest in partner's problem etc). This unexpected finding may be explained by the theory of overprovision of support. Brock and Lawrence (2009) define the overprovision of support as receiving a greater amount of support than an individual desires. Moreover, these researchers suggest that overprovision occurs when the recipient: (a) prefers a smaller quantity of the type of support provided, (b) may not desire any of the type of support provided, (c) may wish to receive a different type of support, or (d) may not want to receive any support altogether. Reactance theory helps explain why the overprovision of instrumental support may be associated with increased alcohol-related physical aggression perpetration for women.

Reactance theory argues that when someone dictates how a person should behave, the individual enters a motivational state known as psychological reactance as a means of regaining their behavioural freedom (Brehm, 1966). High levels of some instrumentally supportive behaviours (e.g., offering advice) could be interpreted as

patronizing and controlling. Therefore, physical aggression may be one method that these women use to regain control of their lives. Importantly, while some research argues that the harmful effects of low levels of partner support can be buffered by receiving support from sources outside of the individual's romantic relationship, the negative effects of overprovision of partner support cannot be reversed by additional outside support (Brock & Lawrence, 2009). Consistent with the idea that the overprovision of instrumental partner support may be harmful for women, Brock and Lawrence found that receiving more informational (i.e., advice or guidance) or tangible (i.e., indirect or direct assistance) support than wives' desired had a negative effect on marital satisfaction. This study also found that the overprovision of emotional support (i.e., comfort or security) was also detrimental for wives' marital satisfaction. In the present study, the amount and type of partner support that women desired was not examined; therefore, this would be an important avenue for future research. Nonetheless, reactance theory could be used as an explanation for the significant interaction between alcohol use and partner instrumental support predicting physical aggression perpetration for women.

Moderating Effects of General Social Support for Psychological Aggression

Similar to the results seen for physical aggression, general social support moderated the link between alcohol use and psychological aggression perpetration for men. Men who consumed alcohol and had average or high levels of social support engaged in higher rates of psychological aggression than men with low levels of social support. This moderating effect was true for three of the four subtypes of social support (i.e., appraisal, belonging, and tangible social support). The subtype of social support

that was not a significant moderator for alcohol-related psychological aggression was self-esteem support (i.e., the availability of a positive comparison which results in the individual feeling esteemed and accepted). However, there was a main effect of self-esteem social support in predicting men's psychological aggression whereby higher levels of self-esteem support were associated with increased psychological aggression. Once again, deviant peer theory can help explain the unexpected moderating effects of general social support. Aggressive men are more likely to befriend individuals who approve of their aggression and this support network increases the likelihood of alcohol-related partner aggression.

An example of the deviant peer theory applied to both physical and psychological aggression is a study conducted by Levendosky and colleagues (2002) using a sample of adolescents. These researchers found that although social support was positively related to best friend satisfaction both for individuals who were exposed to low levels of domestic violence and individuals exposed to high levels of domestic violence, this social support did not necessarily buffer the adolescent from abusive romantic relationships. Specifically, greater social support was associated with more abusive behaviours (self to partner), more negative communication (self to partner), and more abuse experiences (partner to self) for individuals exposed to high rates of domestic violence. Conversely, greater social support was related to less abusive behaviours, less negative communication, and less abuse experiences for individuals exposed to low levels of domestic violence. The authors argue that adolescents exposed to high rates of domestic violence were more likely to befriend individuals who support aggressive behaviour whereas adolescents exposed to low rates of domestic violence

were more likely to befriend individuals with negative attitudes towards aggression. Therefore, the composition of each groups' support network drastically influenced adolescents' aggressiveness. The results of this study can be applied to the current study in the sense that men who frequently use alcohol and engage in partner psychological aggression may befriend individuals with similar behavioural patterns.

Therefore, having a large support network may increase alcohol-related psychological aggression for these men despite receiving high levels of appraisal, belonging, and tangible social support. In other words, these men may have someone to talk to about their problems (i.e., appraisal support), people to socialize with (i.e., belonging support), and accessible material aid (i.e., tangible support); however, the quality of the support (e.g., activities and advice) may be of negative quality. Consistent with the moderating effects, the main effect of self-esteem support (i.e., the perceived availability of a positive comparison when comparing one's self to others) indicated that high levels of self-esteem support were associated with increased psychological aggression perpetration for men. Unfortunately, the present study only examined the perceived availability of social support rather than also considering the quality of the perceived support.

The increased likelihood of men's psychological aggression perpetration can have additional negative consequences given that men's use of psychological aggression is a predictor of physical aggression perpetration for women (Baker & Stith, 2008). Interestingly, this same study found that women's use of psychological aggression was not a significant predictor of physical aggression perpetration for men. The researchers suggest that this gender difference could be related to societal views of what is

acceptable behaviour for each gender. For instance, society is more accepting of a woman using physical aggression in response to her male partner belittling her compared to a man using physical aggression as a response to his female partner's negative comments.

Although the hypothesis that social support would be less likely to be a significant moderator for psychological aggression than for physical aggression was untrue for men, this hypothesis was partially true for women. Whereas the moderating effects of belonging and tangible social support were trending towards significance for women's alcohol-related physical aggression, none of the individual social support subscales significantly moderated alcohol-related psychological aggression for women. Since psychological aggression is so prevalent, some consider it to be a normative method of conflict management within romantic relationships (Jose & O'Leary, 2009). Therefore, as hypothesized, the women in this study may have perpetrated alcohol-related psychological aggression against their partner without fearing disapproval from their support network.

Moderating Effects of Partner-Specific Support for Psychological Aggression

Instrumental partner support served a buffering role for alcohol-related psychological aggression for men while this was the form of partner support that was unimportant in the physical aggression analysis for men. Similarly though, a lack of partner instrumental support was a risk factor for men whereby men who drank alcohol engaged in more psychological aggression if they also received low or moderate levels of instrumental support from their partner. In contrast, men who received high levels of instrumental partner support were less likely to perpetrate alcohol-related psychological

aggression. Although partner instrumental support was a risk factor for women's alcohol-related physical aggression, it was a protective factor for men's alcohol-related psychological aggression. However, after controlling for the negative partner support that men received, the moderating effect of instrumental partner support on alcohol-related psychological aggression disappeared. In other words, when negative partner support was entered into the model, the shared variance between negative support and instrumental support was ascribed to negative support and the moderating effect of instrumental support no longer predicted men's psychological aggression perpetration. Therefore, the benefits of receiving instrumental support for men are eliminated when negative support behaviours are also considered.

In contrast to the results for men, partner-specific support did not moderate alcohol-related psychological aggression for women. Similar to the hypothesis for women's general social support, partner-specific support would not be expected to moderate the association between alcohol use and partner psychological aggression due to the widespread acceptability of psychological aggression within romantic relationships. Given the high rates of psychological aggression in this study, it is likely that women engage in psychological aggression regardless of their partner's support behaviours.

Clinical Implications

Couples transitioning to parenthood represent an important target group for prevention and treatment programs as these couples may be more open to change than couples at other life stages. For men who consume alcohol, modifying their support network by substituting deviant peers with more prosocial peers may be a means of

reducing both physical and psychological aggression perpetration. Men in prevention or treatment programs for alcohol-related aggression may benefit from interactions with positive male mentors. Additionally, the awareness that men who receive low levels of partner-specific emotional support may be at-risk for perpetrating alcohol-related physical aggression is useful information to implement into prevention and treatment programs. Although treatment programs should not blame the victim, couples may benefit from training in effective communication skills which may include increasing emotional partner support. In contrast, the social support network of women who use alcohol may not need to be modified as different levels of support from this group does not influence partner aggression perpetration. However, it may be beneficial to educate their male partners about the concept of overprovision of support and for women to discuss their desired levels of instrumentally supportive behaviours with their partner.

It is especially important to try to eliminate or decrease alcohol-related partner aggression before the transition to parenthood as previous research has consistently documented various negative consequences for children exposed to these behaviours. With respect to alcohol use, exposure to parental alcoholism during childhood was correlated with adulthood alcohol use, alcoholism, time in jail, and sociopathy for men (Beardslee, Son, & Vaillant, 1986). Regarding parental aggression, not only is exposure to partner aggression related to childhood depression, anxiety, behaviour problems and violence victimization (Owen et al., 2007), but there is evidence that exposure to aggression plays a key role in the intergenerational transmission of aggression. For instance, there is a small-to-moderate effect size between growing up in an abusive household and being involved in an aggressive romantic relationship (Stith et al., 2000).

Similarly, Jouriles, Pfiffner, and O'Leary (1988) found that marital conflict was positively associated with toddler deviance and conduct problems. Since child aggression appears to be stable as early as two years of age, exposure to aggression between parents should be eliminated as early in development as possible (Olweus, 1979).

According to some researchers, children learn to be aggressive by imitating the aggressive behaviours they are exposed to (Skoler, Bandura, Ross, Ross, & Baron, 1994). For example, Bandura, Ross, and Ross (1961) found that nursery school children who were exposed to aggressive models imitated these aggressive behaviours, especially if the model was the same sex as the child. These results are consistent with a study conducted by Moretti and colleagues (2006). Specifically, these researchers found that adolescent females who witnessed their mother perpetrate partner aggression and adolescent males who witnessed their father perpetrate partner aggression were more aggressive towards their friends, whereas exposure to their opposite-sex parent's aggression perpetration was unrelated to their aggression towards their friends. Specific to partner aggression perpetration, this study found that mothers' perpetration of partner aggression was significantly related to both genders' use of partner aggression during adolescence, but fathers' aggression perpetration was not. This finding is concerning given the higher rates of physical and psychological aggression perpetration by women in the current study. Prevention and treatment programs that focus on terminating the intergenerational transmission of childhood aggression need to provide greater attention to mothers' perpetration rates and incorporate the current knowledge on the significance of mothers' aggression into these programs.

Strengths and Limitations

Several considerable strengths of the current study are noteworthy. First, the study used a fairly large representative community sample of pregnant couples. Couples were recruited through brochures and advertisements distributed throughout the city in order to acquire a sample that represented the socioeconomic and ethnic diversity of the greater Victoria metropolitan area. Second, various forms of aggression were examined, including physical, psychological, and sexual aggression. Further, the perpetration rates of these forms of aggression were measured by individual reports and partner reports in order to obtain a more reliable estimate of aggressive behaviour. Finally, the study examined different dimensions of both general social support and partner-specific support in order to determine whether the various types of support differentially moderate alcohol-related aggression. Moreover, the development of an observational rating system used to measure partner-specific support allowed for the examination of verbal and nonverbal partner support behaviours.

Despite these important strengths, the results of this study should be interpreted in light of several limitations. First, previous research has demonstrated that there is an important distinction between perceived and received social support (e.g., Knoll, Scholz, Burkert, Roigas, & Gralla, 2009; Schwarzer & Knoll, 2007). Perceived support is a fairly stable belief that individuals will be available if needed, is intertwined with optimism, and only moderately reflects actual support interactions. Consistent with this definition, perceived support is generally measured prospectively. In contrast, received support is assessed retrospective of support interactions and reflects the actual amount of support received within a given time period. This is an important distinction because

the ISEL measures general perceived social support whereas the PSRS measures received partner support during a 10-minute videotaped interaction that is assessed by a rater. With respect to the ISEL, individuals may underreport or overreport the amount of support they actually receive. Moreover, individuals with certain personality traits, such as depressive tendencies, may drastically misperceive their availability of social support. With respect to the PSRS, although an objective coder rated the quality and amount of support provided by the helper, this does not necessarily indicate that an equivalent amount of support was actually received by the helpee. According to the cognitive attribution theory, aggressive individuals may interpret both positive and negative partner behaviours in a negative light (e.g., Gordon, Friedman, Miller, & Gaertner, 2005; Miller & Rempel, 2004). Therefore, an individual's partner may provide positive partner support, but the individual may not recognize the support. The dissimilar findings for general social support and partner-specific support are likely influenced by the methods used to assess perceived versus received support. An example of how the two disparate measures can influence the results is research showing that perceived support correlates more strongly with mental and physical health outcomes than does received support (Wethington & Kessler, 1986).

Second, because both women and men decrease their alcohol use during the pregnancy period, alcohol use was measured during the year prior to pregnancy while current partner aggression was measured during the last year. Since women were, on average, 30 weeks pregnant, there is only a modest overlap between measurements of the two behaviours. It is important to consider this time lag when interpreting the results. Because of this time lag as well as the correlational nature of this study,

directional causality cannot be determined between the variables. For instance, it is possible that aggressive individuals are simply more likely to use alcohol or that aggression perpetration and alcohol use may be two common methods of coping with stress rather than there being a causal relationship between the two variables (Frye & Karney, 2006; Keller, El-Sheikh, Keiley, & Liao, 2009). These interpretations are unlikely, however, given the extensive amount of experimental and daily diary research that provides support for a causal relationship between alcohol use and partner aggression perpetration (e.g., Bushman, 1997; Chermack & Taylor, 1995; Fals-Stewart, 2003; Leonard, 1984). Directional causality also cannot be determined for the moderator analyses. For instance, it is possible that men's alcohol-related physical aggression results in women withdrawing their partner-specific emotional support. Similarly, women's alcohol-related physical aggression may cause men to provide additional instrumental support in an attempt to appease their partner.

Third, the findings of this study cannot be generalized to other populations, such as couples from other cultures or same-sex couples. For example, although the rates of partner aggression perpetration are fairly similar for men and women in Western nations, this pattern does not generalize to all nations. Research shows that as gender equality and individualism increase in a particular country, aggression rates consist of less male perpetration and greater female perpetration (Archer, 2006). Specific to same-sex relationships, approximately 55% of women and 44% of men report that physical aggression occurred in a past or present relationship (Turell, 2000). These figures demonstrate that partner aggression is also an important issue among same-sex couples. Given the lack of research on diverse cultures and same-sex couples, future research

should explore the link between alcohol use and partner aggression perpetration among these populations as well as the potential moderating effects of social support.

Future Directions

Despite these limitations, the findings of the present study provide several important advances to what is known about the association between alcohol use and partner aggression perpetration during the transition to parenthood. This study highlights the importance of exploring other moderators of alcohol-related aggression in addition to social support, particularly for women given that support generally was not a significant moderator for this gender. As an example, Borders, Barnwell, and Earleywine (2007) found that rumination moderated alcohol-related aggression for men and women. More specifically, individuals who engaged in high levels of rumination were more likely to commit aggressive acts after heavy drinking than individuals who used low levels of rumination. The researchers suggest that the interaction of heavy alcohol use and rumination create a state of disinhibited aggression and hostility. Given that women are more likely to ruminate than men (e.g., Knobloch-Westerwick, 2007), it is possible that rumination may be playing a role in the unexpected finding of instrumental partner support increasing alcohol-related physical aggression for women. In other words, it may be the case that women ruminate about the advice and feedback their partner provide, thereby creating negative affect, hostility, and alcohol-related aggression.

An additional moderator that may be important for men is jealousy (Foran & O'Leary, 2007). This study found that men who are jealous, but do not have anger control problems, were more likely to perpetrate alcohol-related severe physical

aggression than men with anger control problems, but not jealousy problems. Jealousy may help explain why men with high levels of certain subtypes of general social support are more likely to perpetrate alcohol-related aggression. Since couples tend to have shared social support networks, large support networks may provide greater opportunities for male jealousy. Rumination and jealousy are just two examples of potential moderating variables that should be examined in order to obtain a clear picture of the association between alcohol use and partner aggression.

Future research should also explore the concept of discrepant drinking within the context of alcohol-related partner aggression. Using a sample of 634 newly married couples, Homish and Leonard (2007) found that discrepancies in husbands' and wives' drinking predicted decreased marital satisfaction over a two year period while controlling for heavy drinking. Importantly, the significant association between discrepant drinking and changes in marital satisfaction was observed for both men and women, regardless of who the heavier drinker was. Given that women decreased their alcohol consumption to a greater extent than men during pregnancy, discrepant drinking may play a role in partner aggression during the transition to parenthood. Moreover, the moderating influence of social support on the link between discrepant drinking and partner aggression may differ from what was observed in the current study.

In conclusion, this study contributes to a better understanding of the prevalence of alcohol use and partner aggression as well as the association between these behaviours for men and women transitioning to parenthood. Importantly, this research considers the implications of both physical and psychological alcohol-related aggression. By examining the moderating influence of individual components of

support, it is clear that the various forms of support differentially interact with alcohol use to affect aggression perpetration. Moreover, the results of this study indicate that partner-specific support is a distinct form of social support that has unique effects on alcohol-related aggression. The findings of this study can be applied to prevention and treatment programs focused on curtailing alcohol-related partner aggression and the intergenerational transmission of aggression.

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Footnotes

¹Fisher's r to z transformation was employed in order to assess whether there was a gender difference for the relation between alcohol use and physical aggression perpetration. Results indicated that there was not a significant gender difference in terms of the size of the correlations between alcohol use and physical aggression perpetration ($z = 0.46, p > 0.05$). Similarly, there was not a significant gender difference for the association between alcohol use and both mild and severe forms of physical aggression ($z = 0.26, p > 0.05$ and $z = 0.28, p > 0.05$, respectively).

²The reported hierarchical multiple regressions were replicated using injury perpetration as a dependent variable. Results indicated that only positive instrumental partner support served as a moderator for alcohol-related injury perpetration for women ($\beta = 0.25, p < 0.05$) and none of the support variables served as significant moderators for men. Given the lower prevalence of injury perpetration than physical aggression perpetration, these results are expected.

Appendix A



Expectant Parents



PAID RESEARCH STUDY

The **Partners to Parents Study** is seeking couples who are *expecting their first baby* to help us learn how partners become parents.

To Get Involved...

- ❖ Answer a few questions by phone to see if you and your partner qualify
- ❖ Come to UVic with your partner for a 3½ hour visit during your third trimester
- ❖ Fill out a one-hour survey a year later

Benefits of Participating...

Couples receive **\$150 cash** for your time

- \$100 for the campus visit
- \$50 for the follow-up survey

Help us understand what becoming a parent is like for you and your new family!



To find out more...

250-472-4571 or Couples@UVic.ca

Appendix B

Conflict Tactics Scales Revised (CTS2; Straus, Hamby, Boney-McCoy, & Sugarman, 1996)

Physical Aggression

1. Have you thrown something at your partner that could hurt?
2. Has your partner thrown something at you that could hurt?
3. Have you twisted your partner's arm or hair?
4. Has your partner twisted your arm or hair?
5. Have you pushed or shoved your partner?
6. Has your partner pushed or shoved you?
7. Have you used a knife or gun on your partner?
8. Has your partner used a knife or gun on you?
9. Have you punched or hit your partner with something that could hurt?
10. Has your partner punched or hit you with something that could hurt?
11. Have you choked your partner?
12. Has your partner choked you?
13. Have you slammed your partner against a wall?
14. Has your partner slammed you against a wall?
15. Have you beat up your partner?
16. Has your partner beat you up?
17. Have you grabbed your partner?
18. Has your partner grabbed you?
19. Have you slapped your partner?
20. Has your partner slapped you?
21. Have you burned or scalded your partner on purpose?
22. Has your partner burned or scalded you on purpose?
23. Have you kicked your partner?
24. Has your partner kicked you?

Psychological Aggression

1. Have you insulted or sworn at your partner?
2. Has your partner insulted or sworn at you?
3. Have you called your partner fat or ugly?
4. Has your partner called you fat or ugly?
5. Have you destroyed something belonging to your partner?
6. Has your partner destroyed something belonging to you?
7. Have you shouted or yelled at your partner?
8. Has your partner shouted or yelled at you?
9. Have you stomped out of the room or house or yard during a disagreement?
10. Has your partner stomped out of the room or house or yard during a disagreement?
11. Have you accused your partner of being a lousy lover?

12. Has your partner accused you of being a lousy lover?
13. Have you done something to spite your partner?
14. Has your partner done something to spite you?
15. Have you threatened to hit or throw something at your partner?
16. Has your partner threatened to hit or throw something at you?

Sexual Aggression

1. Have you used force (like hitting, holding down, or using a weapon) to make your partner have anal or oral sex?
2. Has your partner used force (like hitting, holding down, or using a weapon) to make you have oral or anal sex?
3. Have you used force (like hitting, holding down, or using a weapon) to make your partner have sex?
4. Has your partner used force (like hitting, holding down, or using a weapon) to make you have sex?
5. Have you insisted on sex when your partner did not want to (but did not use physical force)?
6. Has your partner insisted on sex when you did not want to (but did not use physical force)?
7. Have you used threats to make your partner have oral or anal sex?
8. Has your partner used threats to make you have oral or anal sex?
9. Have you insisted on oral or anal sex when your partner did not want to (but did not use physical force)?
10. Has your partner insisted on oral or anal sex when you did not want to (but did not use physical force)?
11. Have you used threats to make your partner have sex?
12. Has your partner used threats to make you have sex?

Injury

1. Have you had a sprain, bruise or small cut because of a fight with your partner?
2. Has your partner had a sprain, bruise or small cut because of a fight with you?
3. Have you passed out from being hit on the head by your partner in a fight?
4. Has your partner passed out from being hit on the head by you in a fight?
5. Have you gone to the doctor because of a fight with your partner?
6. Has your partner gone to the doctor because of a fight with you?
7. Have you needed to see a doctor because of a fight with your partner, but didn't?
8. Has your partner needed to see a doctor because of a fight with you, but didn't?
9. Have you had a broken bone from a fight with your partner?
10. Has your partner had a broken bone from a fight with you?
11. Have you felt a physical pain that still hurt the next day because of a fight with your partner?
12. Has your partner felt a physical pain that still hurt the next day because of a fight with you?

Appendix C

Items assessing Alcohol Use Disorders Identification Test (AUDIT; Saunders, Aasland, Babor, De La Fuente, & Grant, 1993)

Alcohol use in the year before the current pregnancy

1. How often did you have a drink containing alcohol?
2. How many drinks containing alcohol did you have on a typical day when you were drinking?
3. How often did you have six or more drinks on one occasion?
4. How often did you find that you were not able to stop drinking once you had started?
5. How often did you fail to do what was normally expected from you because of drinking?
6. How often did you need to first drink in the morning to get yourself going after a heavy drinking session?
7. How often did you have a feeling of guilt or remorse after drinking?
8. How often were you unable to remember what happened the night before because you had been drinking?
9. Had you or someone else been injured as a result of your drinking?
10. Had a relative or friend, or doctor or other health working been concerned about your drinking or suggested you cut down?

Alcohol use during the current pregnancy

1. How often do you have a drink containing alcohol?
2. How many drinks containing alcohol do you have on a typical day when you are drinking?
3. How often do you have six or more drinks on one occasion?

Appendix D

Interpersonal Support Evaluation List (ISEL; Cohen & Hoberman, 1983)

1. There are several people that I trust to help solve my problems
2. If I need help fixing an appliance or repairing my car, there is something who would help me
3. Most of my friends are more interesting than I am
4. There is someone who takes pride in my accomplishments
5. When I feel lonely, there are several people I can talk to
6. There is no one that I feel comfortable to talking about intimate personal problems
7. I often meet or talk with family or friends
8. Most people I know think highly of me
9. If I need a ride to the airport very early in the morning, I would have a hard time finding someone to take me
10. I feel like I'm not always included in my circle of friends
11. There really is no one who can give me an objective view of how I'm handling my problems
12. There are several different people I enjoy spending time with
13. I think that my friends feel that I'm not very good at helping them solve their problems
14. If I were sick and needed someone (friend, family member, or acquaintance) to take me to the doctor, I would have trouble finding someone
15. If I wanted to go on a trip for a day (e.g., to the mountains, beach, or country), I would have a hard time finding someone to go with me
16. If I needed a place to stay for a week because of an emergency (for example, water or electricity out in my apartment or house), I could easily find someone who would put me up
17. I feel that there is no one I can share my most private worries and fears with
18. If I were sick, I could easily find someone to help me with my daily chores
19. There is someone I can turn to for advice about handling problems with my family
20. I am as good at doing things as most other people are
21. If I decide one afternoon that I would like to go to a movie that evening, I could easily find someone to go with me
22. When I need suggestions on how to deal with a personal problem, I know someone I can turn to
23. If I needed an emergency loan of \$100, there is someone (friend, relative, or acquaintance) I could get it from
24. In general, people do not have much confidence in me
25. Most people I know do not enjoy the same things that I do
26. There is someone I could turn to for advice about making career plans or changing my job
27. I don't often get invited to do things with others
28. Most of my friends are more successful at making changes in their lives than I am

29. If I had to go out of town for a few weeks, it would be difficult to find someone who would look after my house or apartment (the plants, pets, garden, etc.).
30. There really is no one I can trust to give me good financial advice
31. If I wanted to have lunch with someone, I could easily find someone to join me
32. I am more satisfied with my life than most people are with theirs
33. If I was stranded 10 miles from home, there is someone I could call who would come and get me
34. No one I know would throw a birthday party for me
35. It would be difficult to find someone who would lend me their car for a few hours
36. If a family crisis arose, it would be difficult to find someone who could give me good advice about how to handle it
37. I am closer to my friends than most other people are to theirs
38. There is at least one person I know whose advice I really trust
39. If I needed some help in moving to a new house or apartment, I would have a hard time finding someone to help me
40. I have a hard time keeping pace with my friends

Appendix E

Dyadic Adjustment Scale (DAS; Spanier, 1976)

Most people have disagreements in their relationships. Please indicate below the approximate extent of agreement or disagreement between you and your partner for each item on the following list:

1. Handling finances
2. Matters of recreation
3. Religious matters
4. Demonstrations of affection
5. Friends
6. Sexual relations
7. Conventionality (correct or proper behaviour)
8. Philosophy of life
9. Ways of dealing with parents
10. Aims, goals, and things believed important
11. Amount of time spent together
12. Making major decisions
13. Household tasks
14. Leisure time and interests and activities
15. Career decisions

16. How often do you discuss or have you considered terminating your relationship?
17. How often do you or your partner leave each other after a fight?
18. In general, how often do you think that things between you and your partner are going well?
19. Do you confide in your partner?
20. Do you ever regret that you are together?
21. How often do you and your partner quarrel?
22. How often do you and your partner “get on each other’s nerves”?

23. Do you kiss your partner?
24. Do you and your partner engage in outside activities together?

- How often would you say the following events occur between you and your partner?
25. Have a stimulating exchange of ideas
26. Laugh together
27. Calmly discuss something
28. Work together on a project

These are some of the things about which couples sometimes agree and sometimes disagree. Indicate if either item below caused differences of opinions or were problems in your relationship during the past few weeks:

29. Being too tired for sex

30. Not showing love

31. Please indicate the degree of happiness, all things considered, of your relationship?

32. Which of the following statements best describes how you feel about the future of your relationship?

I want desperately for my relationship to succeed, and would go to almost any length to see that it does

I want very much for my relationship to succeed, and will do all I can to see that it does

I want very much for my relationship to succeed, and will do my fair share to see that it does

It would be very nice for my relationship to succeed, but I cannot do much more than I am doing now to help it succeed

It would be nice if it succeeded, but I refuse to do any more than I am doing now to keep the relationship going

My relationship can never succeed, and there is no more that I can do to keep the relationship going