

Pregnancy, Alcohol Intake, and Intimate Partner Violence among Men and Women
Attending Drinking Establishments in a Cape Town, South Africa Township.

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RUNNING HEAD: Pregnancy, Alcohol and Violence

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ABSTRACT

Background: The highest rates of fetal alcohol syndrome worldwide can be found in South Africa. Particularly in impoverished townships in the Western Cape, pregnant women live in environments where alcohol intake during pregnancy has become normalized and interpersonal violence (IPV) is reported at high rates. For the current study we sought to examine how pregnancy, for both men and women, is related to alcohol use behaviors and IPV. **Methods:** We surveyed 2,120 men and women attending drinking establishments in a township located in the Western Cape of South Africa. **Results:** Among women 13% reported being pregnant, and among men 12.2% reported their partner pregnant. For pregnant women, 61% reported attending the bar that evening to drink alcohol and 26% reported both alcohol use and currently experiencing IPV. Daily or almost daily binge drinking was reported twice as often among pregnant women than non-pregnant women (8.4% vs. 4.2%). Men with pregnant partners reported the highest rates of hitting sex partners, forcing a partner to have sex, and being forced to have sex. High rates of alcohol frequency, consumption, binge drinking, and problematic drinking were reported across the entire sample. In general, experiencing and perpetrating IPV were associated with alcohol use among all participants except for men with pregnant partners. **Conclusions:** Alcohol use among pregnant women attending shebeens is alarmingly high. Moreover, alcohol use appears to be an important factor in understanding the relationship between IPV and pregnancy. Intensive, targeted, and effective interventions for both men and women are urgently needed to address high rates of drinking alcohol among pregnant women who attend drinking establishments.

INTRODUCTION

South Africa is affected by rates of fetal alcohol syndrome (FAS) that are among the highest in the world.[1] The Western Cape of South Africa in particular has the highest rates of FAS ranging from 43.8-89.2 per 1,000 persons whereas the US and Canada have rates generally observed at 1 per 1,000 persons.[2-5] FAS is directly linked to a multitude of negative health outcomes including deficiencies in the growth and development of mental and physical capabilities, in particular, damage to the central nervous system. The effects of FAS are life-long with only limited treatment available.[6-8] Furthermore, FAS has had a devastating impact on the Western Cape economy and health care system.[9]

Within many townships in the Western Cape of South Africa, heavy drinking occurs in informal drinking establishments or *shebeens*. [10-16] However, heavy drinking among pregnant women in South Africa can be traced back to a time during apartheid when workers, in particular Coloureds, were paid in the form of alcohol, also known as the 'dop' system. The 'dop' system itself has existed for hundreds of years in the Western Cape as an efficient way to both compensate farmers and dispose of wine considered unfit to drink.[17] Under the 'dop' system, women who became pregnant continued to drink heavily throughout their pregnancies. Many attribute this pattern of drinking behavior as leading to the establishment of informal drinking venues or *shebeens* and, ultimately, the high levels of drinking currently observed in townships across the Western Cape.[18-22] Given the devastating health outcomes associated with FAS, the alarmingly high rates of FAS in South Africa, and the recognition that proper pre-natal health care can entirely prevent FAS, concerted efforts must be made

to prevent the syndrome.[8, 23-25] However, to date, limited data exists to inform our understanding of the contextual factors relating to alcohol intake during pregnancy.

This, in turn, has stymied efforts to intervene and provide prevention options.[26]

Prior research among women residing in South African townships has shown that pregnant women who drink alcohol are more likely to identify as smokers, report greater numbers of sexual partners, and higher levels of partner violence.[27-29] In general, pregnant women who drink alcohol live in overall riskier environments than their non-alcohol drinking counterparts and experience more dire health outcomes. Additionally, yet mostly overlooked, factors concerning alcohol intake among pregnant women are the drinking patterns among expectant fathers. Although alcohol intake among expectant fathers is not routinely assessed, their alcohol use patterns may influence that of their partners. Limited data suggests that substance use among expectant fathers is positively correlated with both substance use among their pregnant partner and relapse of substance use postpartum.[30-33] Partners within a relationship tend to display similar patterns of substance use and partner's cessation of substance use is a strong predictor of one's own cessation of substance use.[34, 35] However, there exists a limited understanding of alcohol use among expectant fathers and no studies have investigated this area of study among South African men with pregnant partners.

Based on the dire need for addressing high rates of FAS in the Western Cape, attention has been called to "better understand the many social and psychological processes that contribute to risky drinking and sexual activities in these environments." [17] One potentially informative factor in understanding the context of alcohol intake among pregnant women is that of intimate partner violence (IPV).[36]

Reports of IPV demonstrate its remarkably high prevalence with around 40% of men in townships surrounding South Africa reporting this behavior.[37-39] A majority of the research examining IPV has demonstrated that it is related to multiple risk factors, including greater numbers of sex partners, increased sex risk behaviors, and relationship power inequality.[40] Research has also demonstrated that pregnancy can be a time of increased risk for IPV and negatively impact maternal and fetal health outcomes.[41] Some research has highlighted alcohol use among expectant fathers as a factor that is associated with a greater likelihood of perpetrating IPV against pregnant women[42], and that alcohol use among pregnant women is associated with greater likelihood of experiencing IPV.[43-45] Although IPV has been investigated in regards to sexual risk taking, less is known about how IPV and IPV beliefs are related to alcohol use and pregnancy among both women and men. Thus, the relationships between alcohol use and IPV are understudied and potentially critical factors to understand when assessing the general health and well-being of pregnant women and men with pregnant partners.

This study is part of a larger, multi-level prospective analysis of alcohol-related risks among men and women attending various alcohol serving establishments in Cape Town, South Africa. For the current study we used cross sectional surveys to assess pregnancy status, alcohol intake, and IPV (perpetrating and experiencing) among men and women attending shebeens. We chose shebeens, in part, as a venue to survey individuals as these persons likely represent those who are at highest risk for exposing their offspring to alcohol. Given the documented high rates of FAS in Cape Town, we predicted that alcohol use among pregnant women and men with pregnant partners

would be elevated and consistent with their non-pregnant counterparts. We hypothesized that alcohol use would be associated with experiencing and perpetrating IPV and a greater likelihood of agreeing with IPV supportive beliefs among both men and women. Finally, we hypothesized that rates of IPV and IPV beliefs would be elevated among pregnant women and men with pregnant partners.

METHODS

Participants and Setting

Participants were men and women attending shebeens in a peri-urban township in Cape Town, South Africa. The township is located within 20 kilometers of Cape Town's central business district and consists of both people of mixed race (i.e., Coloureds) and Black Africans. A relatively new township, the community was established in 1990 and is one of the first townships in South Africa to racially integrate. Large numbers of indigenous Black Africans started settling in and around the township during the 1990's after government policies of racial segregation during Apartheid ended. The township sampled for this study, therefore, offers the opportunity to survey men and women of varying cultures residing within one South African community.

Venue selection

Using an adaptation of the Priorities for Local AIDS Control Efforts (PLACE) community mapping methodology[46], we located and defined alcohol serving establishments in the township for the current study. Alcohol serving venues were systematically identified by approaching a total of 210 members of the community at public places such as bus stands and markets, and asking them to identify places where people go to drink alcohol. Venues were eligible if they had space for patrons to

sit and drink, reported >50 unique patrons per week, had >10% female patrons, and were willing to have the research team visit over the course of a year. Because venues attracted customers who were primarily either Black African (Xhosa speaking) or Coloured (Afrikaans speaking), three of each type were selected.

Study procedures

With permission of owners, anonymous surveys were collected between October 2009 and February 2010 from a total of six alcohol-serving venues. Individuals inside the venue were approached by field workers to complete the 9-page survey questionnaire, which took on average 10-15 minutes to complete.[47] Care was taken to approach people as soon as they entered the venue in order to complete the assessment process before they became intoxicated. The field workers consisted of six staff members matched based on ethnicity to the majority of patrons in a given venue. Black African field workers spoke Xhosa and English, and Coloured field workers spoke Afrikaans and English. Surveys were administered in participants' preferred language. Field workers obtained verbal consent and allowed participants to complete the survey on their own, offering assistance with reading and understanding survey items when needed. Only 7% of participants required field staff assistance to complete the survey. Participants were given a small token of appreciation for completing surveys, such as a keychain or coffee mug. Surveys were repeated four times over a one-year period. A total of 3,107 individuals were approached to participate, and 2,815 (91%) agreed. Surveys were scanned into a database using Remark Office OMR Version 6 (Gravic, Inc., Malvern, PA) and manual checks were done to identify errors. All study procedures

were approved by the ethical review boards of Stellenbosch University, the University of Connecticut, and Duke University.

Measures

Measures were adapted from previous research conducted in South Africa and were administered in the three languages spoken throughout the township; English, Xhosa and Afrikaans. All of the measures were translated and back-translated to produce parallel forms.

Demographics and pregnancy status. Participants were asked to report gender, age, education, ethnicity, marriage, HIV testing and diagnosis, employment, whether their house has electricity or running water, whether they have children, if they came to the bar to find a new sex partner, and if they or their partner was currently pregnant.

IPV and IPV beliefs. Participants were asked to report on whether they had experienced or perpetrated partner violence in the past four months. Items were focused on assessing physical (hitting a sex partner or being hit by a sex partner) and sexual (forcing sex or being forced to have sex) violence. These items consisted of four questions addressing their experiences with violence and participants gave a dichotomous yes/no response. Furthermore, participants were also asked to answer four questions regarding intimate partner violence beliefs. Example items included, "Hitting a women is sometimes necessary to keep her in line", "It is understandable that a man will hit his women if she is disrespectful of him", "A man is expected to discipline his woman", and "There are time when a man should hit his women because of the things she has done". Responses consisted of a dichotomous yes/no. For multivariate logistic regression analyses both partner violence items and partner violence beliefs

items were added together to form two separate composite scores each ranging from 0-4.

Alcohol Use. Alcohol use was assessed using various measures each capturing unique components of alcohol intake.[48] Alcohol frequency: Participants were asked to report how often they have a drink containing alcohol; responses ranged from 'never' to 'more than 4 times a week'. Alcohol consumption: Participants reported how many drinks containing alcohol they have on a typical day when they are drinking; responses ranged from 'I don't drink' to '10 or more'. Binge drinking: Participants reported how often they have six or more drinks in a single occasion; responses ranged from 'never' to 'daily or almost daily'. Current drinking: Participants were asked if they planned on drinking at the bar that evening; responses were a dichotomous yes/no.

Data analyses

We conducted descriptive analyses of sample demographic characteristics, IPV and IPV beliefs, and substance use. Chi-square analyses for categorical variables and t-tests for continuous variables were conducted to assess for similarities and differences between gender and pregnancy status within gender. Next, we used generalized linear modeling to assess the relationships between pregnancy, alcohol, IPV and IPV beliefs. For continuous outcome variables (alcohol frequency, alcohol consumption, and binge drinking) we specified a linear model as these variables demonstrated normality, and for dichotomous outcome variables (current drinking) we specified a binary logistic model. Results are reported as relative rates (RR) for continuous variables and odds ratios (OR) for dichotomous variables. There were less than 5% missing data for any given

variable. For all analyses, we used $p < .05$ to define statistical significance. PASW Statistics version 18.0 (SPSS Inc., Chicago, IL) was used for all analyses.

RESULTS

Participants were approached at six different shebeens and 2,815 agreed to fill out a survey assessment. Of these participants, 690 (24.5%) had previously filled out a survey on a prior occasion. Duplicate responses were removed leaving 2,120 participants (1,210 men and 910 women) in all further analyses. Thirteen percent of the sample reported being pregnant (13.3% [$n=110$] of women) or partner pregnant (12.0% [$n=144$] of men). On average women were older than men but there were no differences in regards to age between pregnant and non-pregnant participants (see Table 1). Men reported higher levels of education than women and non-pregnant women reported higher levels of education than pregnant women. Coloured women were most likely to be pregnant. Pregnant women were twice as likely to report having received an HIV diagnosis compared to non-pregnant women. In a subsequent analysis, there was a slight trend towards pregnant women having been more likely to have tested for HIV, $\chi^2=3.08(1)$, $p=.08$. Men were about twice as likely to be employed compared to women. Pregnant women and men with pregnant partners more often reported being married. Men with pregnant partners were more likely to report that they were at the bar looking for a new sex partner; this relationship was marginally significant among pregnant women as well ($p=.06$). On the whole, more men than women reported going to the bar to meet a new sex partner.

IPV and IPV beliefs. Agreement with IPV beliefs was high among the sample, with 73.6% of participants endorsing at least one item, 43.8% at least two items, 24.4%

at least three items, and 10% endorsed all four items. Pregnant women were more likely than non-pregnant women to report agreeing with IPV beliefs. Likewise, higher rates of agreement with IPV beliefs among men with pregnant partners compared to men without pregnant partners were observed (see Table 2). In regards to experiencing or perpetrating IPV, 24.8% of the sample reported at least one type of IPV, 13.2% at least two types, 5.2% at least three types, 1.3% reported all four types of IPV in the past four months. Pregnant women were more likely than non-pregnant women to report having been hit by a sex partner, and men with a pregnant partner were more likely than men without a pregnant partner to report having been hit by a sex partner. Men with pregnant partners were most likely to report hitting a sex partner in the past four months. Moreover, men with pregnant partners were most likely to report having been forced to have sex in the past four months, with one in five men reporting this form of IPV. Overall, men with pregnant partners reported the highest prevalence of IPV.

Alcohol use. Among both women and men alcohol use was reported at exceedingly high levels; this finding was true for pregnant women and men with pregnant partners as well. There were no differences in alcohol frequency, consumption, binge drinking, or current drinking between pregnant and non-pregnant women (see Table 3). For pregnant women in particular, only 10% reported not drinking, while 41% reported drinking at least twice per week or more often, 65% reported having at least 3 drinks during a typical drinking session, and 61% reported drinking that evening. Pregnant women were twice as likely as non-pregnant women to report binge drinking daily or almost daily (8.4% vs. 4.2%). Men with pregnant partners reported similar alcohol intake as men without pregnant partners. On the whole, men

were more likely to report higher levels of alcohol use than women; in particular, drinking alcohol 4 or more times per week, higher alcohol consumption, greater frequency of binge drinking, and more likely to report drinking that night.

Relationships between IPV beliefs, IPV and alcohol use. We assessed the association between the two IPV scales (reporting IPV and endorsing IPV beliefs) and alcohol use for each of the alcohol measures (see Table 4). Analyzing the relationship between IPV and alcohol use, and IPV beliefs and alcohol use showed that, overall, as alcohol use increased so did reporting IPV and IPV beliefs among non-pregnant women and men without pregnant partners. Among pregnant women, increased prevalence of IPV was associated with increased alcohol consumption and binge drinking but not alcohol frequency or current drinking. Alcohol use was not associated with IPV or IPV beliefs among men with pregnant partners.

DISCUSSION

Consistent with what is known regarding the high rates of FAS, we found high levels of drinking among pregnant women in shebeens. Given that participants were recruited from alcohol serving venues, elevated rates of alcohol intake are to be expected. However, these rates are alarmingly high and we likely gained information about alcohol use among pregnant women who are most in need of intervention. Rates of current drinking, frequency of drinking, and binge drinking suggest that substantial numbers of pregnant women in our study continue to drink often and heavily during pregnancy.

Based on findings from the current study, IPV and IPV beliefs are important factors in understanding the context of alcohol use for both pregnant women and men with pregnant partners. Among participants attending alcohol serving environments in the Cape Town area, pregnancy is associated with IPV. Not only are experiences of violence more common among pregnant women but there is also increased endorsement among pregnant women and men with pregnant partners in terms of agreeing with IPV beliefs. Of particular note are the overall high rates of IPV in the past four months among men with pregnant partners compared to men without pregnant partners. We observed an association between having a pregnant partner and hitting a sex partner, being hit by a sex partner, and having been forced into sex. These findings warrant further investigation into whether pregnancy is more likely to occur among men and women who experience IPV or whether pregnancy increases the likelihood of IPV.

To our knowledge this study is the first to examine alcohol intake behaviors, IPV and pregnancy among samples attending alcohol serving venues. Overall, we found drinking behaviors were related to IPV under certain circumstances. For example, it appears that for individuals who are not pregnant/partner pregnant, partner violence is associated with all five alcohol intake measures. Longitudinal analyses are needed to confirm this relationship. However, for pregnant/partner pregnant individuals, higher rates of experiencing and perpetrating IPV are observed across various levels of drinking; with the exception of a positive correlation between alcohol consumption, binge drinking, and partner violence among pregnant women. These findings suggest that pregnancy itself, regardless of drinking behaviors, is associated with IPV and increased drinking for both men and women in this sample.

Paradoxically, we found that a desire to meet a new sex partner was associated with being pregnant among women or partner being pregnant among men. Although the nature of the relationship between pregnancy and seeking out new sex partners is unclear (i.e., data preclude us from making causal conclusions), pregnancy appears to either occur more often among partners who lack relationship fidelity or pregnancy engenders upheaval in relationships and a greater likelihood of seeking out new sex partners. Future research in these areas is needed to investigate these relationships.

Findings from the current study should be viewed in light of their limitations. Results are limited to men and women attending shebeens and can't be generalized to the larger population. Findings related to drinking are likely to vary between people who do and do not attend shebeens. Data were cross sectional, which prevents reporting on causal findings. We also relied on self-report of potentially stigmatizing information, which could potentially bias responses. Our measure of IPV was limited to physical and sexual violence, which does not encompass other forms of violence such as verbal and emotional abuse or neglect. Further information on the pregnancy, contraceptive practices, knowledge of FAS, and general prenatal health among pregnant/partner pregnant men and women were not included in the current assessment and, therefore, we are unable to assess how these factors may inform our findings. Participants with partners were not linked in the study, which precludes us from the ability to draw dyadic level conclusions with the current data. Future research would benefit from an understanding of at what gestational time point these women typically learn of pregnancy and what immediate and long term changes, if any, are made in regards to alcohol intake.

Data from the current study support the need for interventions and informational campaigns to address drinking and IPV among men and women of child-bearing ages attending drinking establishments. Although there are efforts being made to intervene with HIV positive pregnant women[49] in South Africa, it appears that the need for intervention is much greater and that men should be an integral part of prevention. Furthermore, shebeens may serve as an ideal environment for targeted interventions as well as for identifying and intervening with expectant men and women. Greater emphasis on substance abuse treatment as part of prenatal health care must be made a priority. Women in the current sample likely represent those who are at highest risk, *worldwide*, for delivering newborns affected by FAS. Efforts to change the course of the FAS epidemic among these men and women are, therefore, urgently needed.

Table 1. Demographics of women and men separated by pregnancy status.

| | Women Pregnant | | | | <i>T</i> | Men Partner Pregnant | | | | <i>t</i> | Differences by Gender <i>t</i> |
|---|-------------------|----------|-------------|----------|----------------------------|-------------------------|----------|--------------|----------|----------------------------|--------------------------------------|
| | Yes n=119 | | No n=774 | | | Yes n=144 | | No n=1053 | | | |
| | M | SD | M | SD | | M | SD | M | SD | | |
| Age | 33.3 | 10.1 | 32.1 | 11.9 | 1.04 | 32.0 | 9.3 | 31.0 | 9.7 | 1.18 | -2.60* |
| Education | 1.9 | 0.9 | 2.2 | 0.9 | 3.46** | 2.54 | 1.0 | 2.7 | 0.9 | 1.60 | 11.93*** |
| | n | % | n | % | χ^2 | n | % | n | % | χ^2 | χ^2 |
| Ethnicity | | | | | | | | | | | |
| Black | 41 | 34.5 | 353 | 45.6 | 5.46 | 87 | 60.8 | 683 | 65.0 | 1.03 | 88.22*** |
| Coloured | 75 | 63.0 | 409 | 52.8 | | 54 | 37.8 | 356 | 33.9 | | |
| Other | 3 | 2.5 | 12 | 1.6 | | 2 | 1.4 | 11 | 1.0 | | |
| HIV status | | | | | | | | | | | |
| Positive | 13 | 11.2 | 44 | 5.9 | 4.56* | 8 | 6.0 | 58 | 5.8 | .01 | .78 |
| Negative/Unknown | 103 | 88.8 | 701 | 94.1 | | 126 | 94.0 | 940 | 94.2 | | |
| Employed | | | | | | | | | | | |
| Yes | 37 | 31.1 | 199 | 25.9 | 1.44 | 90 | 62.5 | 648 | 61.8 | 0.03 | 257.52*** |
| House has electricity? | | | | | | | | | | | |
| Yes | 115 | 97.5 | 726 | 94.2 | 2.17 | 129 | 90.8 | 981 | 93.5 | 1.41 | 1.99 |
| House has indoor water? | | | | | | | | | | | |
| Yes | 109 | 91.6 | 696 | 90.2 | .25 | 126 | 88.1 | 935 | 89.0 | .11 | 1.34 |
| Married | | | | | | | | | | | |
| Yes | 40 | 34.2 | 181 | 23.6 | 6.11* | 44 | 31.0 | 217 | 20.8 | 7.50** | 2.06 |
| Do you have any children? | | | | | | | | | | | |
| Yes | 73 | 62.4 | 535 | 69.7 | 2.49 | 90 | 62.9 | 667 | 63.5 | .02 | 5.77* |
| Did you come to the bar tonight looking for a new sex partner? | | | | | | | | | | | |
| Yes | 10 | 8.4 | 34 | 4.5 | 3.371 ^a | 28 | 19.7 | 131 | 12.8 | 5.12* | 41.43*** |

* $p < .05$, ** $p < .01$, *** $p < .001$, ^a $p = .06$

Table 2. Psychosocial and current partner violence items of women and men separated by pregnancy status.

| | Women | | | | | Men | | | | | Differences by Gender | |
|---|--------------|-------------|------------------|--------------|----------|----------|------|-----|----------|----------|--------------------------|----------|
| | Pregnant | | Partner Pregnant | | | χ^2 | Yes | | No | | | χ^2 |
| | Yes n=119 | No n=774 | Yes n=144 | No n=1053 | n | | % | n | % | | | |
| n | % | n | % | χ^2 | n | % | n | % | χ^2 | χ^2 | | |
| Intimate Partner Violence Beliefs | | | | | | | | | | | | |
| Hitting a woman is sometimes necessary to keep her in line. | | | | | | | | | | | | |
| Yes | 53 | 45.7 | 169 | 22.0 | 30.06*** | 53 | 37.6 | 294 | 28.4 | 5.06* | 4.91* | |
| It is understandable that a man will hit his women if she is disrespectful of him. | | | | | | | | | | | | |
| Yes | 31 | 26.1 | 268 | 34.9 | 3.57 | 51 | 36.2 | 329 | 31.8 | 1.09 | .46 | |
| A man is expected to discipline his woman. | | | | | | | | | | | | |
| Yes | 52 | 43.7 | 395 | 51.8 | 2.73 | 77 | 54.2 | 622 | 60.3 | 1.93 | 13.14*** | |
| There are times when a man should hit his woman because of the things she has done. | | | | | | | | | | | | |
| Yes | 55 | 46.2 | 259 | 33.9 | 6.87** | 71 | 51.1 | 388 | 37.5 | 9.45** | 1.89 | |
| Intimate Partner Violence | | | | | | | | | | | | |
| In the past 4 months: | | | | | | | | | | | | |
| has a sex partner hit you? | | | | | | | | | | | | |
| Yes | 27 | 22.7 | 118 | 15.5 | 3.91* | 20 | 14.2 | 92 | 9.0 | 3.86* | 22.5*** | |
| have you hit a sex partner? | | | | | | | | | | | | |
| Yes | 13 | 10.9 | 81 | 10.7 | .01 | 26 | 18.4 | 107 | 10.4 | 7.83** | .08 | |
| has someone forced you to have sex when you didn't want to? | | | | | | | | | | | | |
| Yes | 15 | 12.6 | 81 | 10.6 | .43 | 27 | 19.1 | 94 | 9.2 | 13.23*** | .16 | |
| have you forced someone to have sex when they didn't want to? | | | | | | | | | | | | |
| Yes | 6 | 5.0 | 39 | 5.1 | .01 | 18 | 12.9 | 94 | 9.2 | 1.94 | 14.33*** | |

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 3. Alcohol use and sexual behaviors among women and men separated by pregnancy status.

| | Women Pregnant | | | | χ^2 | Men Partner Pregnant | | | | χ^2 | Differences by Gender χ^2 |
|--|-------------------|------|-------------|------|----------|-------------------------|------|--------------|------|----------|--------------------------------------|
| | Yes n=119 | | No n=774 | | | Yes n=144 | | No n=1053 | | | |
| | n | % | n | % | | n | % | n | % | | |
| Alcohol Frequency | | | | | | | | | | | |
| How often do you have a drink containing alcohol? | | | | | | | | | | | |
| Never | 15 | 12.6 | 95 | 12.4 | 1.19 | 10 | 7.1 | 53 | 5.1 | 3.15 | 52.73*** |
| Monthly or less | 28 | 23.6 | 196 | 25.5 | | 28 | 19.9 | 222 | 21.5 | | |
| 2-4 times a month | 27 | 22.7 | 197 | 25.7 | | 29 | 20.6 | 262 | 25.4 | | |
| 2-3 times a week | 35 | 29.4 | 204 | 26.6 | | 44 | 31.2 | 312 | 30.3 | | |
| More than 4 times a week | 14 | 11.8 | 76 | 9.9 | | 30 | 21.3 | 182 | 17.7 | | |
| Alcohol Consumption | | | | | | | | | | | |
| How many drinks containing alcohol do you have on a typical day when you are drinking? | | | | | | | | | | | |
| I don't drink | 12 | 10.2 | 86 | 11.2 | 6.31 | 7 | 5.0 | 46 | 4.5 | 2.55 | 72.36*** |
| 1-2 | 29 | 24.6 | 203 | 26.4 | | 26 | 18.6 | 227 | 22.0 | | |
| 3-4 | 23 | 19.5 | 196 | 25.5 | | 38 | 27.1 | 246 | 23.9 | | |
| 5-6 | 28 | 23.7 | 125 | 16.3 | | 26 | 18.6 | 161 | 15.6 | | |
| 7-9 | 6 | 5.1 | 53 | 6.9 | | 10 | 7.1 | 71 | 6.9 | | |
| 10 or more | 20 | 16.9 | 105 | 13.7 | | 33 | 23.6 | 279 | 27.1 | | |
| Binge Drinking | | | | | | | | | | | |
| How often do you have 6 or more drinks on one occasion? | | | | | | | | | | | |
| Never | 20 | 16.8 | 126 | 16.4 | 6.24 | 13 | 9.2 | 107 | 10.4 | .74 | 30.93** |
| Less than monthly | 24 | 20.2 | 172 | 22.4 | | 28 | 19.9 | 223 | 21.7 | | |
| Monthly | 18 | 15.1 | 161 | 21.0 | | 28 | 19.9 | 212 | 20.6 | | |
| Weekly | 47 | 39.5 | 276 | 36.0 | | 58 | 41.1 | 392 | 38.1 | | |
| Daily or almost daily | 10 | 8.4 | 32 | 4.2 | | 14 | 9.9 | 96 | 9.3 | | |
| Current Drinking | | | | | | | | | | | |
| Came to bar to drink tonight? | | | | | | | | | | | |
| Yes | 72 | 60.5 | 497 | 64.8 | .83 | 111 | 78.7 | 829 | 79.8 | .09 | 64.08*** |

* $p < .05$, ** $p < .01$, *** $p < .001$

Table 4. IPV beliefs and IPV as predictors of alcohol frequency, consumption, binge drinking, and current drinking stratified by pregnant/non-pregnant men and women.

| | Women's Alcohol Use Pregnant | | Men's Alcohol Use Partner Pregnant | |
|--|---|--------------------------------------|---------------------------------------|--------------------------------------|
| | Yes n=119 <i>RR</i> ^a (95%CI) | No n=774 <i>RR</i> (95%CI) | Yes n=144 <i>RR</i> (95%CI) | No n=1053 <i>RR</i> (95%CI) |
| Alcohol Frequency | | | | |
| <i>Intimate Partner Violence Beliefs</i> | 1.11 (.93-1.31) | 1.12 (1.05-1.12)** | 1.09 (.94-1.26) | .97 (.91-1.02) |
| <i>Intimate Partner Violence</i> | 1.09 (.86-1.38) | 1.31 (1.19-1.45)*** | 1.02 (.89-1.24) | 1.13 (1.04-1.23)* |
| Alcohol Consumption | | | | |
| <i>Intimate Partner Violence Beliefs</i> | 1.14 (.92-1.42) | 1.01 (.93-1.10) | 1.09 (.90-1.32) | .98 (.90-1.05) |
| <i>Intimate Partner Violence</i> | 1.65 (1.23-2.21)*** | 1.45 (1.28-1.65)*** | .94 (.73-1.18) | 1.14 (1.01-1.29)* |
| Binge Drinking | | | | |
| <i>Intimate Partner Violence Beliefs</i> | 1.20 (1.01-1.42)* | 1.12 (1.05-1.20)** | 1.12 (.98-1.29) | .93 (.88-.99)* |
| <i>Intimate Partner Violence</i> | 1.34 (1.05-1.70)** | 1.20 (1.09-1.33)*** | 1.02 (.86-1.22) | 1.08 (.99-1.17) |
| Current Drinking | | | | |
| <i>Intimate Partner Violence Beliefs</i> | 1.08 ^b (.81-1.44) | 1.25 (1.10-1.41)** | 1.18 (.86-1.60) | .94 (.84-1.05) |
| <i>Intimate Partner Violence</i> | .85 (.58-1.26) | 1.60 (1.28-2.00)*** | 1.04 (.71-1.52) | 1.17 (.95-1.44) |

^aRR - relative rates^bOR - odds ratios**p*<.05, ***p*<.01, ****p*<.001

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