Title

Husband's Alcohol Use, Intimate Partner Violence, and Family Maltreatment of Low-Income Postpartum Women in Mumbai, India

Journal

Journal of Interpersonal Violence, 33(14)

ISSN

0886-2605

Authors

Wagman, Jennifer A
Donta, Balaiah
Ritter, Julie
et al.

Publication Date

2018-07-01

DOI

10.1177/0886260515624235

Peer reviewed

HHS Public Access

Author manuscript

J Interpers Violence. Author manuscript; available in PMC 2019 December 02.

Published in final edited form as:

J Interpers Violence. 2018 July ; 33(14): 2241–2267. doi:10.1177/0886260515624235.

Husband's Alcohol Use, Intimate Partner Violence, and Family Maltreatment of Low-Income Postpartum Women in Mumbai, India

Jennifer A. Wagman[1], **Balaiah Donta**[2], **Julie Ritter**[1], **D. D. Naik**[2], **Saritha Nair**[3], **Niranjan Saggurti**[4], **Anita Raj**[1], **Jay G. Silverman**[1]

[1]University of California, San Diego, CA, USA

[2]National Institute for Research in Reproductive Health, Indian Council of Medical Research, Mumbai, India

[3]National Institute of Medical Statistics, Indian Council of Medical Research, New Delhi, India

[4]Population Council, HIV and AIDS Program, New Delhi, India

Abstract

Husbands' alcohol use has been associated with family-level stress and intimate partner violence (IPV) against women in India. Joint family systems are common in India and IPV often co-occurs with non-violent family maltreatment of wives (e.g., nutritional deprivation, deprivation of sleep, blocking access to health care). Alcohol use increases for some parents following the birth of a child. This study examined 1,038 postpartum women's reports of their husbands' alcohol use and their own experiences of IPV (by husband) and non-violent maltreatment from husbands and/or in-laws. We analyzed cross-sectional, quantitative data collected in 2008, from women (ages 15–35) seeking immunizations for their infants <6 months at three large urban health centers in Mumbai, India. Crude and adjusted logistic regression models estimated associations between the independent variable (husbands' past month use of alcohol) and two dependent variables (postpartum IPV and maltreatment). Overall, 15% of husbands used alcohol, ranging from daily drinkers (10%) to those who drank one to two times per week (54%). Prevalence of postpartum IPV and family maltreatment was 18% and 42%, respectively. Prevalence of IPV among women married to alcohol users was 27%. Most abused women's husbands always (27%) or sometimes (37%) drank during violent episodes. Risk for IPV increased with a man's increasing frequency of consumption. Women who lived with a husband who drank alcohol, relative to non-drinkers, were more likely to report postpartum IPV, aOR = 2.0, 95% confidence interval (CI) = [1.3, 3.1]. Husbands' drinking was marginally associated with increased risk for family maltreatment, aOR = 1.4, 95% CI = [1.0, 2.1]. Our findings suggest that men's alcohol use is an important risk factor for postpartum IPV and maltreatment. Targeted services for Indian women contending with these issues are implicated. Postpartum care offers an ideal opportunity to screen for IPV, household

Corresponding Author: Jennifer A. Wagman, Division of Global Public Health, University of California, San Diego Department of Medicine, 9500 Gilman Drive, MC 0507, La Jolla, CA 92093-0507, USA., jwagman@ucsd.edu.

Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

maltreatment, and other health risks, such as husband's use of alcohol. There is need to scale up proven successful interventions for reducing men's alcohol use and design strategies that provide at-risk women protection from alcohol-related IPV.

Keywords

intimate partner violence; husbands; alcohol use; family-level maltreatment; postpartum; low-income women; India; infants

Introduction

Intimate partner violence (IPV) and men's use of alcohol are interrelated public health concerns in India. Approximately one third of Indian women have experienced some form of IPV in their lifetime (International Institute for Population Sciences [IIPS] & Macro International [Macro], 2007) and husbands' alcohol use is consistently identified as a risk factor for IPV in different Indian settings (Berg etal., 2010; Das etal., 2013; Jeyaseelan etal., 2007; Mahapatro, Gupta, & Gupta, 2012; Poulose & Srinivasan, 2009; Subodh etal., 2014). Alcohol use by Indian men also contributes more broadly to family problems by negatively impacting health outcomes (e.g., mental health disorders and injuries), and the social and economic well-being of other household members such as immediate and extended relatives (Ghosh, Samanta, & Mukherjee, 2012; Mahapatro etal., 2012).

Although it is estimated that only 15% of Indians drink (World Health Organization [WHO], 2014), alcohol sales and use are sharply increasing in the country, primarily among men, who represent the main consumers (Benegal, 2005; Prasad, 2009; WHO, 2014). Among Indian drinkers, more than half consume at hazardous or harmful levels (Prasad, 2009) which, respectively, refers to a pattern or quantity of alcohol consumption that increases risk for, or leads to adverse health events (Babor, de la Fuente, Saunders, & Grant, 1992; Reid, Fiellin, & O'Connor, 1999), including, but not limited to, IPV (Devries etal., 2014; Foran & O'Leary, 2008), family problems and disruption (Gethin, Trimingham, Chang, Farrell, & Ross, 2016) and stress on adult family members, primarily parents who live under the same roof and close extended relatives (Orford, Velleman, Natera, Templeton, & Copello, 2013).

The relationship between men's hazardous/harmful alcohol use and perpetration of IPV against women has been well-established globally (Ferrer, Bosch, Garcia, Manassero, & Gili, 2004; Foran & O'Leary, 2008; Stith, Smith, Penn, Ward, & Tritt, 2004). Significant associations between these behaviors have been found in many community-level investigations (Foran & O'Leary, 2008) and in research with key subpopulations, such as male "batterers" (Cattaneo & Goodman, 2003; Else, Wonderlich, Beatty, Christie, & Staton, 1993), alcohol diagnosed offenders (Crane & Easton, 2017), men in alcohol/drug treatment (Bennett, Tolman, Rogalski, & Srinivasaraghavan, 1994; Gilchrist etal., 2015), and men in the military (Foran, Heyman, Smith Slep, & Snarr, 2012). There have also been many studies of alcohol use and IPV against pregnant women (Eaton etal., 2012; Fanslow, Silva, Robinson, & Whitehead, 2008; Shamu, Abrahams, Temmerman, Musekiwa, & Zarowsky, 2011). In contrast, alcohol's role in increasing women's risk of postpartum IPV victimization has only been examined in a few studies (Charles & Perreira, 2007; Silva,

Valongueiro, de Araújo, & Ludermir, 2015; Woodin, Caldeira, Sotskova, Galaugher, & Lu, 2014).

The paucity of data on the relationship between hazardous/harmful alcohol use and postpartum IPV warrants attention for at least three main reasons. First, many new parents' resume or increase their alcohol intake following the birth of a child to self-medicate and/or cope with increased stressors and demands of parenthood. For instance, in a U.S.-based study with 55 married couples expecting their first child, the prevalence of problem drinking went from 1% during the second trimester of pregnancy to 13% at 6 months post-partum (Richman, Rospenda, & Kelley, 1995). Second, postpartum IPV is very common. Many women's experiences of abuse following childbirth begin before or during pregnancy (Ballard etal., 1998; Hedin, 2000). For others, the violence begins (Charles & Perreira, 2007; Martin, Mackie, Kupper, Buescher, & Moracco, 2001) or markedly rises (Gielen, O'Campo, Faden, Kass, & Xue, 1994; Hedin, 2000; Martin, Acara, & Pollock, 2012; Stewart, 1994) after childbirth. Finally, postpartum IPV is strongly linked with multiple, adverse maternal and infant health outcomes. Compared with women in non-violent relationships, abused mothers are more likely to experience postpartum depression (Beydoun, Beydoun, Kaufman, Lo, & Zonderman, 2012; Woolhouse, Gartland, Hegarty, Donath, & Brown, 2012), delay their entry into (or not access) postnatal care, breast-feed for shorter periods of time (Campbell, 2001; Sarkar, 2008), and have reduced use of postpartum contraception (Mody etal., 2014).

Postpartum IPV also contributes to poor outcomes for children. In their review of research on IPV in early childhood, Pepler, Catallo, and Moore (2000) synthesize compelling evidence that infants and young children are at significantly heightened risk of serious negative influences at all levels of social-emotional development if exposed to IPV. For instance, infants who witness/hear violent conflict between or injury of a parent often show symptoms of posttraumatic stress disorder (e.g., eating problems, sleep disturbances, and developmental skill regression). Postpartum IPV has also been found to compromise an infant's capacity for emotional regulation during times of stress, anger, or trauma given that his or her primary care-giver is unable to fully provide protection and care and offer a sense of safety (Kaufman & Henrich, 2000; Pepler etal., 2000). Research has also found that infants exposed to IPV are more likely to develop attachment insecurities with their mothers as a result of sustained levels of high stress following frightening events (Gunnar & Donzella, 2002; Pepler etal., 2000; Zeanah etal., 1999).

The context in which postpartum IPV and alcohol consumption occur in families has not been well examined. It is possible that patterns of both behaviors following the birth of a child are influenced by the major changes characteristic of this period (e.g., altered household dynamics, extensive responsibilities of caring for an infant, disrupted sleep). Many new parents report increased levels of stress and anxiety (Perren, von Wyl, Bürgin, Simoni, & von Klitzing, 2005), as well as reductions in relationship satisfaction (Doss, Rhoades, Stanley, & Markman, 2009). It is further possible that men's continued or increased use of alcohol following the birth of a child causes or exacerbates existing stress on other family members, leading to hostile interactions with one another. Associations between alcohol use and family problems, distinct from IPV, have been found outside the

perinatal period in many settings (Foran & O'Leary, 2008; Gethin etal., 2016; Orford etal., 2013), including India. One study, conducted in Kolkata, found men's alcohol use created both immediate and extended family concerns surrounding money spent on alcohol and perceived negative influences of the man's drinking on the children (Ghosh etal., 2012). A Chennai-based community-level study found a significant dose–response relationship between men's alcohol abuse and increased suicidal attempts by women of the same household (Gupta etal., 2015).

India provides a unique location to examine the impact of alcohol use on postpartum IPV and related family dynamics given that the extended family plays a large role in society. Prior research from Mumbai, the setting of the current study, found most postpartum women cohabitated with both immediate family members and relatives in addition to their husbands and other children if they had any (Raj etal., 2011). Whereas living in this type of joint family system may provide new mothers with an in-built support system (i.e., extra family members to help care for the newborn and complete household chores and responsibilities), some research has found it was, in fact, a source of risk for postpartum abuse (e.g., insults and physical violence) and non-violent maltreatment from in-laws. For instance, many postpartum women reported their in-laws, primarily the mother-in-law, impeded their access to postpartum care for themselves or their infant, limited their reproductive choices, and dominated decisions about childcare for their own infant (Raj etal., 2011). These behavioral expressions reflect socially sanctioned gender inequities that disempower wives by constraining their capabilities as parents and autonomous, equal members of the household. They also seem to provide a supportive environment for violence as women who reported in-law abuse and/or maltreatment were significantly more likely to have also been victimized by husband-perpetrated IPV during the broader perinatal period (Raj etal., 2011). Building on these data, a recent Mumbai study examined associations between infant morbidity and husband and in-law perpetrated vio-lence and maltreatment (e.g., deprivation of nutrition and/or sleep, punishment for not having a boy child). Findings suggest almost half (49%) of all women experienced one or more forms of non-violent abuse during the perinatal period. Most cases (75%) of IPV co-occurred with these non-violent forms of family maltreatment, which were collectively found to be more strongly associated with poor infant health (e.g., fever, colic, vomiting, respiratory illness) than husband or in-law perpetrated violence (Silverman etal., 2016). These results imply that violence against Indian women occurs in the context of pervasive and normalized maltreatment from the larger family.

The overarching goal of the current study was to expand on this prior research and investigate the role men's use of alcohol played in women's postpartum experiences of both husband-perpetrated IPV and non-violent forms of maltreatment from both husbands and other family members, referred to as gender-based household maltreatment (GBHM). The primary aim was to examine husbands' recent use of alcohol as a predictor of physical or sexual IPV against women within 6 months of childbirth. We hypothesized that, among this sample of postpartum women, those reporting that their husband consumed alcohol in the past month would be significantly more likely to report husband-perpetrated postpartum IPV, relative to women who reported no recent alcohol use by their husband. The secondary aim was to examine husbands' use of alcohol as a predictor of non-violent maltreatment. We

hypothesized that women with husbands who drank alcohol in the past month would be more likely to report GBHM from husbands or in-laws during the postpartum period.

Method

Participants and Procedures

This study uses cross-sectional, survey data collected from 1,038 women who participated in the "Mechanism for Relations of Domestic Violence to Poor Maternal and Infant Health" study between August and December 2008. Participants were married, between the ages of 15 and 35 years, and were recruited from three large urban health centers (UHCs) in three major slum communities in Mumbai, India, where migrants frequently struggle to survive amidst an environment of high-cost living. Participants for the current study were postpartum women seeking immunization for their infants 6 months old or younger. The three health centers from which participants were drawn were selected based on their slum location and provision of services to more than 100,000 residents.

Women were approached for enrollment after receiving immunizations for their children at one of the three UHCs. Participants were deemed eligible if they met the following criteria: (a) having an infant ≤ 6 months of age and (b) being willing to learn more about a study examining conflict in the family and health issues for women and children. All potential participants were led to a private room in the clinic where informed consent forms were read aloud due to concerns regarding low literacy of participants. Although most women came to the health centers alone, some were accompanied by their husband, children, or other relatives. In these cases, one study investigator would escort the participant to the private interview room, while a second study team member would engage the family member(s) in play (i.e., with children) or general or health-related conversation (i.e., with adult relatives). Women who provided verbal informed consent were led through the process of completing a quantitative survey with a trained, female research staff member. The staff member read all questions aloud and recorded answers provided on a paper survey form. All staff members were trained in research ethics, data collection, and interviewing women experiencing IPV. The survey required between 30 and 40 min to complete and, based on the participant's preference, was conducted in Marathi (the native language of Maharashtra) or Hindi. When developing the instrument, survey items were first written in English, then translated to Marathi and Hindi, and then back-translated to English to assure fidelity to original content. Following survey completion, all participants were screened for emotional distress and were given resources for legal, mental health, and IPV-related assistance. The Harvard School of Public Health, the University of California at San Diego, and the National Institute for Research in Reproductive Health (Indian Council of Medical Research) institutional review boards approved all study procedures.

During the recruitment period, a total of 1,830 women were approached for screening. All women presenting to the clinic seeking infant vaccinations were found to be eligible based on their having an infant ≤6 months of age. Of these women, 61% (1,108/1,830) agreed to meet privately with a research team member to learn more about the study. Lack of time was the main reason provided for not agreeing to hear more about the study. Among the women who agreed to hear about the study, 95 (1,049/1,108) provided consent and completed the

survey. A total of 11 participants (1%) were dropped from current analyses due to missing data on husband's alcohol use, IPV, or GBHM, yielding a final adult female sample of 1,038.

Measures

Demographics.—Demographic measures assessed included single-item measures of female participant's age at interview, if she was married <18 years of age (defined as child marriage), highest level of education, past year employment, religion, and whether she was living in a joint family system (i.e., with in-laws). We also assessed whether the participant was living with her husband at the time of interview as cohabitation has been found to increase risk for IPV in multiple international settings (Abramsky etal., 2011). Single-item measures were also used to assess each participant's husband's age, education, and current employment status.

Postpartum IPV was defined in this study to include violence by husbands. Measures to assess IPV were developed based on domestic abuse and violence items from the Indian National Family Health Survey-3 (IIPS & Macro, 2007) which used a shortened and modified version of the Conflict Tactics Scale (CTS; Straus, 1979). The CTS is one of the most widely used instruments in global violence research and has been found to be both valid and effective in measuring IPV. It was chosen for use in the Indian National Family Health Survey-3 because it can be easily adapted for different cultural contexts (IIPS & Macro, 2007). Postpartum IPV was measured via four items. Two items assessed physical abuse: (a) "Did your husband hit, push, kick, beat, or slap you?" (b) "Did your husband try to burn you?" Two items assessed sexual abuse: (c) "Did your husband insist on sex when you did not want to have sex?" (d) "Did your husband use force to make you have sex when you did not want to have sex?" All items were assessed dichotomously (i.e., yes/no), for the postpartum period subsequent to the birth of that infant (a period of 6 months or less for the current sample). An overall IPV measure was also established whereby if a participant said yes to any of these four items for the period since the recent birth, they were defined as having experienced postpartum IPV. The Cronbach's alpha of the postpartum IPV measure was .75.

Postpartum GBHM was defined as non-violent forms of abuse from husbands or in-laws occurring during the postpartum period. The GBHM measures were developed during a formative qualitative stage of the "Mechanism for Relations of Domestic Violence to Poor Maternal and Infant Health" study. The data generated were compiled into a compendium of non-violent forms of abuse that were reported to commonly co-occur with perinatal IPV (Raj etal., 2011). Nine identified GBHM items were asked separately for husbands and in-laws. These items included the following: "Did your (husband/in-laws) force you to bring money or other things from your parents' home?" "Did your (husband/in-laws) interfere in your ability to get health care for yourself?" "Did your (husband/in-laws) interfere in your ability to get health care for your children?" "Did your (husband/in-laws) stop you from getting enough food for yourself?" "Did your (husband/in-laws) stop you from getting enough food for your children?" "Did your (husband/in-laws) stop you from getting the rest you needed?" "Did your (husband/in-laws) treat you badly for not having a boy child" "Did

your (husband/in-laws) stop you from taking care of your children?" and "Did your (husband/in-laws) neglect or ignore your baby?" One item was asked exclusively about husbands: "Did you ever feel that you needed help to care for your elder children from your husband but didn't receive it?" There were two additional GBHM items not specific to husbands or in-laws that assessed burden of household labor postpartum: "Did anyone assist you to prepare meals for the household?" "Did anyone assist you to perform cleaning work for the house-hold?" Participants responding "yes" to one or more of the husband/in-law items or "no" to either of the household work items, for the postpartum time period, were coded as having experienced partner or in-law GBHM. Like the IPV items, all GBHM-related items used to measure each of these variables were assessed dichotomously (i.e., yes/no), for the postpartum period. To test for collinearity, correlations were assessed among the main predictor variables (IPV, partner GBHM and in-law GBHM; the correlation between husband and in-law GBHM exceeded $r = .70$ and, for this reason, husband and in-law GBHM were considered as a single variable in subsequent analyses. The final 21-item measure had a Cronbach's alpha of .84.

Husband's alcohol consumption.—Husband's past month alcohol consumption was measured via two questions. All participants were asked "does your husband drink alcohol?" Those who answered "yes" were asked "how many days did he drink alcohol in the last one month."

Frequency of husband's past month alcohol consumption.—Participants gave continuous responses to the question "How many days did he (your husband) drink alcohol in the last one month?" In our descriptive analysis of this outcome, we organized responses into four categories: less than once per week, one to two times per week, three to six times per week, and every day. We also included frequency of husband's alcohol use in the regression analysis, modeling the outcome dichotomously according to men who drank up to (and including) 3 days per week and 4 or more days per week during the past month.

Husband's use of alcohol during violent episodes.—Participants who reported that their husband drank alcohol and that they experienced IPV were also asked "In episodes of violence which occurred during the past year, how frequently was alcohol consumed by your husband?" Responses were categorized as always, sometimes, or never.

Analyses

Basic descriptive statistics were generated for all demographic indicators, postpartum IPV, postpartum GBHM, if husband drank alcohol and husband's past month alcohol use. Chi-square analyses (for categorical variables) or *t* tests (to estimate means) were conducted to examine associations between demographic characteristics and postpartum IPV and GBHM. Six logistic regression models were constructed in total. The first two were developed to determine whether husband's past month alcohol use predicted postpartum IPV and GBHM. The postpartum IPV-alcohol model was restricted to women currently living with their husband ($n = 936$) as this living arrangement was found to be significantly associated ($p < .001$) with reports of IPV. The adjusted model controlled for demographic characteristics associated with the IPV outcome in the bivariate analyses at $p < .10$ (participant's education,

past year employment, religion, husband's employment, and family type) and postpartum GBHM. The adjusted GBHM-alcohol model controlled for demographic characteristics found to be associated with the GBHM outcome in the bivariate analyses at $p < .10$ (husband's education, and family type) and postpartum IPV. Two separate logistic regression models were constructed to assess the relationship between husband's frequency of past month alcohol use and postpartum IPV and GBHM. The adjusted IPV model controlled for participant's education, past year employment, religion, husband's employment, family type, and postpartum GBHM. The adjusted GBHM model controlled for husband's education, family type, and postpartum IPV. Finally, the last two models assessed associations between family type and postpartum IPV and GBHM. The adjusted GBHM model controlled for husband's education, if the woman was currently living with her husband, husband's alcohol use and postpartum IPV. All analyses were conducted using Stata software, Version 12.

Results

Table 1 displays the demographic characteristics of the 1,038 participants, by experience of postpartum IPV and GBHM. Most were Muslim (59%) or Hindu (38%). Approximately one third (32%) had been married as a child (i.e., before the age of 18 years). Almost all participants (90%) reported they were living with their husband at the time of interview, and approximately two thirds (62%) lived in a joint family system, most commonly with their mother-in-law (76%), brother-in-law (70%), and/or father-in-law (59%). Although only 11% of the female participants had worked in the past year, almost all (99%) of their husbands were employed.

Postpartum IPV was reported by 18% of participants and was significantly associated at the $p < .10$ level with the participant having less formal education ($p = .058$) and being employed in the past year ($p = .057$), and at the $p < .05$ level with religion (with the largest proportion of IPV reported by Muslim women, $p < .001$), currently living with her husband ($p < .001$), reporting postpartum GBHM ($p < .001$), husbands' alcohol use ($p < .001$), and living in a nuclear (vs. joint/extended) family ($p = .034$; see Table 1).

Women living with their spouse at the time of the postpartum interview were almost four times as likely to report husband-perpetrated IPV, relative to women living apart from their husband, odds ratio (OR) = 3.7, 95% confidence interval (CI) = [1.6, 8.7]. Therefore, we limited our analysis of the relationship between husband's use of alcohol and postpartum IPV to a sub-sample of 936 women (90% of the larger research sample) living with their spouse during this period. Approximately one fifth (19%) of the women living with their husband after the birth of their child reported some form of IPV. The most common form of abuse experienced was the husband insisting on sex when the participant did not want to (13%), followed by being hit, pushed, kicked, beaten, or slapped (9%; see Table 2).

Among the 177 women who lived with their partner and reported postpartum IPV, more than half (54%) experienced sexual IPV (i.e., her husband insisted and/or used force to make her have sex when she did not want to) in the absence of physical IPV. One third experienced physical IPV (i.e., her husband hit, pushed, kicked, beat, slapped and/or tried to burn her) in the absence of sexual IPV; and 17% reported both types of postpartum abuse (see Table 2).

Postpartum GBHM was reported by 42% of participants and was significantly associated with the husband having less formal education ($p = .021$), reporting postpartum IPV ($p < .001$), husbands' alcohol use ($p = .009$) and living in a nuclear family and not in a joint family system ($p < .001$; Table 1). The most commonly reported forms of household maltreatment, reported by approximately one third of all postpartum women, were not receiving assistance with household meal preparation (35%) or cleaning work (34%). Being forced by husbands (8%) or in-laws (7%) to demand money or other things from their natal family, treating the woman badly for not having a boy child (husband, 4%; in-law, 5%), and preventing the woman from getting adequate rest (both husband and in-law, 3%) were also reported to have occurred during the postpartum period. These and all other forms of postpartum GBHM are shown in Table 3.

Postpartum IPV and GBHM were not mutually exclusive outcomes. Among the entire sample, 13% endured both during the postpartum period. Although 29% of participants reported postpartum GBHM alone, only 5% experienced IPV in the absence of GBHM after childbirth. Among women who experienced IPV, most (73%) also reported family-level mistreatment and approximately one third (31%) of women who reported GBHM also reported IPV (see Table 1).

As shown in Table 1, 15% ($n = 152$) of women reported their husband drank alcohol. Of these participants, 148 provided data on their husband's alcohol use over the past 30 days. Most (54%) said their husband drank one to two times per week, 29% drank less than once per week, 7% said their husband drank three to six times per week, and 10% said their husband drank every day (Table 4).

Because differences in alcohol use exist by religion in India, with Muslims making up the lowest proportion of male drinkers (IIPS & Macro, 2007), we examined alcohol use by religion. Most drinkers (65%) were non-Muslim (i.e., Hindu, Buddhist, Christian, Parsi, Jain, Sikh). Clearly, not all Muslims abstained from alcohol use. Thus, we also examined what percentage of cases of IPV corresponded with alcohol consumption among those of different religions and found no real difference between non-Muslim and Muslim drinkers (see Table 4). The 41 participants who reported both IPV and husband's use of alcohol during the postpartum period indicated alcohol was consumed during all (27%) or some (37%) violent episodes. Slightly more than one third of abused women (37%) reported alcohol was never used by husband when he perpetrated violence (Table 4).

Table 5 shows results from the adjusted logistic regression analyses. Women with husbands who drank alcohol were twice as likely to report post-partum IPV, relative to women with non-drinking spouses, even after controlling for potential confounders, aOR = 2.0, 95% CI = [1.3, 3.1]. Husbands' alcohol use was also found to increase women's risk for postpartum GBHM in bivariate analysis, but this association attenuated to marginal significance in the adjusted model, aOR = 1.4, 95% CI = [1.0, 2.1], primarily after adjusting for postpartum IPV. To better understand the influence of family structure on the relationship between men's use of alcohol and their wives' experiences of violence by husbands and maltreatment from various relatives, we examined the relationship between family type (i.e., nuclear vs. joint) and both outcomes. Results indicate that women living in a nuclear family were more

than two and a half times more likely than those living in a joint family system to experience non-violent maltreatment from their husband and/or in-laws, aOR = 2.7, 95% CI = [2.0, 3.5]. We examined this association for IPV as well but type of family structure was not predictive of a woman's risk for husband-perpetrated physical or sexual violence.

Discussion

Our study suggests low-income Indian mothers commonly experience IPV by husbands and non-violent maltreatment from multiple family members (i.e., GBHM) during the postpartum period. Approximately one fifth (18%) of all women interviewed reported some form of physical or sexual partner violence, and more than 40% reported non-violent abuse from husbands and/ or in-laws within the first 6 months of delivering a baby. A shared risk factor for both outcomes was husbands' alcohol use which was reported by 15% of women, a figure that is consistent with WHO estimates for national prevalence of alcohol consumption in India (WHO, 2014).

A woman's risk for postpartum IPV was significantly elevated if she was cohabitating with her husband during that period, which characterized the living arrangements of most (90%) participants. However, it is important to note that some women not living with their spouse (~6%) after childbirth also experienced abuse. Thus, although living apart reduced chances of IPV, it did not entirely protect from it. Postpartum IPV was reported by 19% of women living with their husband, with sexual violence representing the most common form of abuse in this population, during the period following childbirth. Physical IPV was also experienced and 17% of women endured both types of abuse. Relative to women living together with extended family members, postpartum IPV was reported by a higher proportion of women living in a nuclear family, suggesting the joint family structure might offer wives protection from husband-perpetrated violence. However, the association between type of family and postpartum IPV was not statistically significant.

Among women living with their spouse, those married to drinkers were twice as likely to experience physical or sexual abuse, relative to those married to non-drinkers, aOR = 2.0, 95% CI = [1.3, 3.1]. These results are consistent with previous investigations from India that found men's alcohol use was significantly associated with perpetration of violence against wives/ female partners (Berg etal., 2010; Das etal., 2013; Jeyaseelan etal., 2007; Poulose & Srinivasan, 2009; Subodh etal., 2014). Expanding on these results, our study implies that risk for IPV rises with increasing frequency of husbands' drinking. Specifically, we found women married to men who drank alcohol on four or more days per week reported IPV more frequently than women whose husbands drank on three or fewer days per week, aOR = 2.9, 95% CI = [1.0, 8.5], indicating a dose–response. This also highlights that not all drinking is harmful. In fact, approximately one third of all women in violent relationships reported alcohol was never used by their husband when he perpetrated physical or sexual abuse. To better understand the relationship between alcohol use and violence, research should be designed to detect and distinguish between moderate, hazardous, and harmful drinking, as well as alcohol dependence. In our study, not all husbands who drank alcohol were violent and not all violent husbands drank. Thus, factors surrounding men's use of alcohol may be particularly important for understanding women's experiences of IPV in

general and during the unique postpartum period and may be a useful area for future research.

More prevalent than IPV against mothers during the postpartum period were a broad range of different forms of non-violent abuse by husbands and/ or the in-laws. Those most commonly experienced were not receiving assistance with household meal preparation or cleaning. Less frequently mentioned were being forced by husbands or in-laws to demand money or other things from their natal family and being treated badly for not having a boy child. The substantial prevalence of multiple forms of family-level maltreatment of Indian wives reflects the way in which subordination, disrespect, and emotional abuse against them are condoned and normalized in Indian families. Our research population is defined by a predominance of joint family systems meaning young wives have increased daily exposure to both their in-laws and their risk for GBHM. Interestingly, however, living in the same household as extended family members (compared with a nuclear setting) seemed to offer women protection from non-violent maltreatment from husbands and in-laws during the postpartum period. Extended family residence has been associated with lower risks of violence against women in other studies as well, in settings such as Jordan (Clark, Silverman, Shahrouri, Everson-Rose, & Groce, 2010) and Bangladesh (Koenig, Ahmed, Hossain, & Khorshed Alam Mozumder, 2003). It is thought that the degree to which extended family members, particularly mothers-in-law, are supportive of wives living with their marital families seems to make the biggest difference with regard to their risk for abuse. In other words, women who have supportive relatives are at lower risk for experiencing violence and maltreatment from them, as well as their husbands (Clark etal., 2010). This is likely the case with women living in nuclear families as well since even women not living with their husband's parents/family are strongly influenced and controlled by them (Fernandez, 1997). In our study, however, we did not examine factors that facilitate supportive, protective family environments for Indian women, thus can only speculate on the reasons behind our findings.

The period of transitioning to parenthood is a key time for the health and development of mothers, infants and their families. In India, there is a cultural practice of postpartum confinement (of up to 40 days) of the new mother and her infant so as to protect them from exposure to illness and evil spirits. These practices are typically upheld by the woman's female in-laws, relatives, and elders and this period is meant to be one of protection and caring for the woman and her newborn (Kim-Godwin, 2003). Despite this tradition and the special needs of postpartum mothers, many experience IPV and GBHM during this period. Husbands' alcohol use exacerbates risk for both. Interventions to effectively reduce violence and maltreatment of postpartum mothers are urgently needed. A few initiatives have been implemented in India to help improve women's perinatal health, such as participatory women's groups to raise awareness and mobilize communities to take action to improve perinatal outcomes (More etal., 2012; Tripathy etal., 2010), cash incentives for using health care-based obstetric care (Lim etal., 2010), and home-based newborn care (Bang, Reddy, Deshmukh, Baitule, & Bang, 2005). Nonetheless, few services provide screening or interventions for Indian women dealing with IPV and/or other forms of domestic maltreatment, in general and during the postpartum period. Furthermore, we are unaware of any programs that address women's experiences of and risks related to their husbands'

harmful use of alcohol. Our results support the value of providing targeted services for women contending with these issues. Furthermore, our findings can be used toward the design of effective, setting-specific approaches that targetalcohol use as a modifiable determinant of both IPV and non-violent maltreatment of Indian wives.

Our study's findings should be interpreted in light of several limitations. First, our independent variable (husband's recent alcohol use) was measured via women's reports on their husband's behavior, that is, we did not interview male partners, which might bias the results. However, research comparing husband's and wife's reports (of husband's) problem drinking has found there is high concordance between partners' responses about the man's drinking (Satyanarayana etal., 2010). We therefore feel wives' reports are likely reliable proxies of their husbands' alcohol consumption. Second, our measures of IPV and GBHM are self-reported and might be underestimated due to social desirability bias. Looking at our results and those from other studies in Mumbai and India more broadly (Das etal., 2013; IIPS & Macro, 2007; Raj etal., 2011), however, suggests comparability in the scope of abuse reported. Moreover, with respect to IPV measures, we did not collect data on the frequency or severity of postpartum abuse. We were therefore unable to distinguish between repeated and isolated events, as well as severe/moderate violence from minor abuse. Thus, all reported experiences of violence were treated equally in our analysis whereby it is most likely that some women were exposed to more frequent and more severe forms of abuse than others. In addition, our findings from this low-income population might not be generalizable to Indian mothers who do not seek immunizations for their infants and the study has limited generalizability to higher income individuals. Research confirms that alcohol use is significantly higher among lower socioeconomic urban sections of the country (Benegal, 2005; Subramanian, Davey Smith, & Subramanyam, 2006), such as where our study was conducted. Furthermore, despite examining differences in alcohol use by religion, we did not investigate how patterns differed by ethnic group.

Another limitation is that we did not collect data on quantity, exact frequency, or husbands' dependency on alcohol. Thus, despite our findings suggesting a dose–response relationship between the approximate frequency of husbands' alcohol consumption and their wives' increasing risk of violence, these results must be interpreted with caution as we only asked about the number of days that men drank in the past month. We did not ask about the number of drinks consumed per day or the size and type of each alcoholic beverage. We recommend future research with women include questions that elicit more detailed and comprehensive information about their husband's alcohol use. It would be ideal to also collect data from the men themselves, using a validated instrument, such as the "Alcohol Use Disorders Identification Test" (AUDIT; Babor etal., 1992) designed to detect hazardous drinking, harmful drinking, or alcohol dependence. The cross-sectional nature of our data also poses limitation in that it precludes our ability to elucidate alcohol's temporal relationship with IPV or GBHM. Furthermore, although we asked women whether alcohol was used by their husband's during past year episodes of IPV, we are unable to distinguish how many of these reports were limited to the postpartum period. We recommend longitudinal, larger scale assessment be done to precisely measure the magnitude and determinants of men's alcohol use in this setting, and fully understand the role that husbands' alcohol consumption plays in the context of women's postpartum experiences of

domestic violence and maltreatment in India. Future research should also clarify the role and timing of consumption of alcohol during abusive events and inform interventions to mitigate risk or provide timely referral. Finally, our survey instrument did not include questions to measure women's use of alcohol. It has been found that although women consume less alcohol than men, they have increased risk of alcohol-related harms (NIAAA, 2008), and focused alcohol prevention research with women is needed. However, government statistics indicate that only 2% of Indian women drink (IIPS & Macro, 2007) and, compared with men's drinking, women's harmful alcohol use is a less reliable predictor of their experiences of physical IPV during the transition to parenthood (Woodin etal., 2014).

Conclusion

This study adds important evidence to current understanding of husband's alcohol consumption as a risk factor for IPV among Indian women (Berg etal., 2010; Jeyaseelan etal., 2007; Poulose & Srinivasan, 2009; Subodh etal., 2014) by specifying these associations during the postpartum period, a time of stress, transition, and high maternal and child health risk. Furthermore, this study builds on existing knowledge by demonstrating that men's alcohol use is not only associated with husband-perpetrated abuse but also with non-violent forms of mistreatment by both husbands and other family members. These results suggest protocols for screening women for IPV should also include other more prevalent forms of family-level maltreatment, and that such screening during postpartum care visits may provide indications of other forms of risk (e.g., husband drinking), offering an opportunity for counseling or other intervention. Furthermore, our findings strongly implicate the need for scaling up proven successful interventions for reducing men's alcohol use and providing protection for women at risk from alcohol-related IPV (Pelto & Singh, 2010; Schensul, Saggurti, Burleson, & Singh, 2010)

Acknowledgments

The authors acknowledge the Municipal Corporation of Greater Mumbai for allowing us to conduct our study within their health posts, and also thank Dr. Radha Y. Aras, Former Head of the Department of Preventive and Social Medicine at TN Medical College and Nair Hospital, for her ongoing guidance and support with this study. In addition, we would like to recognize our data collection investigator team from the National Institute for Research in Reproductive Health, Meghna Jethva, Shruti Kalan, Ratnamala Nagpure, Kavita Juneja, Sheetal Panhalkar, and Kirti Bodke, for their sensitive and high-quality data collection efforts for this study. We would also like to thank Michele Decker for coordinating the study on the United States side.

Funding

The author(s) disclosed receipt of the following financial support for the research, authorship, and/or publication of this article: This study was supported by the Indian Medical Research Council, the Eunice Kennedy Shriver National Institute of Child Health and Human Development (R03HD055120 and RO1HD61115), and the Department of Biotechnology, Government of India (BT/IN/US/01/BD/2010). Analysis of the research reported in this publication was supported by a training grant from the National Institute on Drug Abuse (T32DA023356).

Author Biographies

Jennifer A. Wagman, PhD, MHS, is an assistant professor in the Division of Global Public Health and Center on Gender Equity and Health at the University of California, San Diego, Department of Medicine. Her research focuses on the relationship between women's experiences of intimate partner violence and adverse reproductive health outcomes; and the

development of community and clinic-based violence prevention interventions that can be implemented internationally. Her more recent work focuses on the role that alcohol plays in increasing women's risk for violence and HIV/STI infection.

Balaiah Donta, PhD, MSc, is a statistician by training and is Scientist G (Director Grade) at the National Institute for Research in Reproductive Health in Mumbai India. His research interests include sampling techniques and large scale sample surveys, enhancing male partnership in sexual and reproductive health, and expanding contraceptive choices.

Julie Ritter, MPH, is a research analyst for the Center on Gender Equity and Health in the Division of Global Public Health at the University of California, San Diego, Department of Medicine. She specializes in biostatistics and her experience includes data management and analyses for population-based studies as well as program evaluation, including randomized controlled trials. Most of her work has focused on research related to maternal and child health in the United States as well as abroad in Asia, Africa, and Central America. Her research interests include maternal and child health and disadvantaged or high-risk populations.

D. D. Naik, MA, MPS, DPM, works on community-based and social research at the National Institute for Research in Reproductive Health in Mumbai, India. His research interests include male involvement in sexual and reproductive health, gender issues, violence, and cervical cancer. He has previously worked on community-based programs focused on leprosy and polio. He has more than 30 years of experience in community-based research.

Saritha Nair, PhD, is a demographer by training. She currently works as a socio-behavioral scientist at the National Institute for Research in Reproductive Health in Mumbai, India. She works in the areas of sexual and reproductive health, gender issues, and male involvement in reproductive health.

Niranjan Saggurti, PhD, is an associate with the Population Council's HIV and AIDS program, based in New Delhi, India. He is a demographer and biostatistician by training, and has approximately 15 years of experience conducting research on sexual and reproductive health, HIV/STI, gender-based violence, and the intersection of these issues in India and other highly affected settings.

Anita Raj, PhD, is a professor in the Division of Global Public Health and director for the Center on Gender Equity and Health at the University of California, San Diego, Department of Medicine. She is a developmental psychologist by training, with more than 20 years of experience conducting research on sexual and reproductive health/HIV/STI, gender-based violence, substance misuse and abuse, and the intersection of these issues. Her current research is based in North America, South Asia, and Russia.

Jay G. Silverman, PhD, is a professor in the Division of Global Public Health and research director for the Center on Gender Equity and Health at the University of California, San Diego, Department of Medicine. His research focuses on the health-related consequences and prevention of gender-based violence against adolescent and adult women (e.g., intimate

partner violence, sexual assault, sex trafficking) globally. His recent research has centered on implications of intimate partner violence and commercial sexual exploitation for heterosexual HIV/STI infection and for reproductive and child health.

References

Abramsky T, Watts CH, Garcia-Moreno C, Devries K, Kiss L, Ellsberg M, … Heise L (2011). What factors are associated with recent intimate partner violence? Findings from the WHO multi-country study on women's health and domestic violence. BMC Public Health, 11, Article 109. doi: 10.1186/1471-2458-11-109

Babor TF, de la Fuente JR, Saunders J, & Grant M (1992). AUDIT. The alcohol use disorders identification test. Guidelines for use in primary health care Geneva, Switzerland: World Health Organization.

Ballard TJ, Saltzman LE, Gazmararian JA, Spitz AM, Lazorick S, & Marks JS (1998). Violence during pregnancy: Measurement issues. American Journal of Public Health, 88, 274–276. [PubMed: 9491021]

Bang AT, Reddy HM, Deshmukh MD, Baitule SB, & Bang RA (2005). Neonatal and infant mortality in the ten years (1993 to 2003) of the Gadchiroli field trial: Effect of home-based neonatal care. Journal of Perinatology, 25(Suppl. 1), S92–S107. [PubMed: 15791283]

Benegal V (2005). India: Alcohol and public health. Addiction, 100, 1051–1056. [PubMed: 16042631]

Bennett LW, Tolman RM, Rogalski CJ, & Srinivasaraghavan J (1994). Domestic abuse by male alcohol and drug addicts. Violence and Victims, 9, 359–368. [PubMed: 7577762]

Berg MJ, Kremelberg D, Dwivedi P, Verma S, Schensul JJ, Gupta K, …Singh SK (2010). The effects of husband's alcohol consumption on married women in three low-income areas of Greater Mumbai. AIDS and Behavior, 14(Suppl. 1), S126–S135. doi:10.1007/s10461-010-9735-7 [PubMed: 20544380]

Beydoun HA, Beydoun MA, Kaufman JS, Lo B, & Zonderman AB (2012). Intimate partner violence against adult women and its association with major depressive disorder, depressive symptoms and postpartum depression: A systematic review and meta-analysis. Social Science & Medicine, 75, 959–975. doi:10.1016/j.socscimed.2012.04.025 [PubMed: 22694991]

Campbell JC (2001). Abuse during pregnancy: A quintessential threat to maternal and child health—So when do we start to act? Canadian Medical Association Journal, 164, 1578–1579. [PubMed: 11402797]

Cattaneo LB, & Goodman LA (2003). Victim-reported risk factors for continued abusive behavior: Assessing the dangerousness of arrested batterers. Journal of Community Psychology, 31, 349–369.

Charles P, & Perreira KM (2007). Intimate partner violence during pregnancy and 1 year postpartum. Journal of Family Violence, 22, 609–619.

Clark CJ, Silverman JG, Shahrouri M, Everson-Rose S, & Groce N (2010). The role of the extended family in women's risk of intimate partner violence in Jordan. Social Science & Medicine, 70, 144–151. doi:10.1016/j.socs-cimed.2009.09.024 [PubMed: 19837499]

Crane CA, & Easton CJ (2017). Physical health conditions and intimate partner violence perpetration among offenders with alcohol use diagnoses. Journal of Interpersonal Violence, 32, 1678–1691. doi:10.1177/0886260515590124 [PubMed: 26058979]

Das S, Bapat U, Shah More N, Alcock G, Joshi W, Pantvaidya S, & Osrin D (2013). Intimate partner violence against women during and after pregnancy: A cross-sectional study in Mumbai slums. BMC Public Health, 13, Article 817. doi:10.1186/1471-2458-13-817

Devries KM, Child JC, Bacchus LJ, Mak J, Falder G, Graham K, …Heise L (2014). Intimate partner violence victimization and alcohol consumption in women: A systematic review and meta-analysis. Addiction, 109, 379–391. doi:10.1111/add.12393 [PubMed: 24329907]

Doss BD, Rhoades GK, Stanley SM, & Markman HJ (2009). The effect of the transition to parenthood on relationship quality: An 8-year prospective study. Journal of Personality and Social Psychology, 96, 601–619. doi:10.1037/a0013969 [PubMed: 19254107]

Eaton LA, Kalichman SC, Sikkema KJ, Skinner D, Watt MH, Pieterse D, & Pitpitan EV (2012). Pregnancy, alcohol intake, and intimate partner violence among men and women attending drinking establishments in a Cape Town, South Africa township. Journal of Community Health, 37, 208–216. doi:10.1007/s10900-011-9438-7 [PubMed: 21744297]

Else LT, Wonderlich SA, Beatty WW, Christie DW, & Staton RD (1993). Personality characteristics of men who physically abuse women. Hospital and Community Psychiatry, 44, 54–58. [PubMed: 8436362]

Fanslow J, Silva M, Robinson E, & Whitehead A (2008). Violence during pregnancy: Associations with pregnancy intendedness, pregnancy-related care, and alcohol and tobacco use among a representative sample of New Zealand women. The Australian & New Zealand Journal of Obstetrics & Gynaecology, 48, 398–404. doi:10.1111/j.1479-828X.2008.00890.x [PubMed: 18837846]

Fernandez M (1997). Domestic violence by extended family members in India: Interplay of gender and generation. Journal of Interpersonal Violence, 12, 433–455.

Ferrer V, Bosch E, Garcia E, Manassero MA, & Gili M (2004). Meta-analytic study of differential characteristics between batterers and non-batterers: The case of psychopathology and consumption of alcohol and drugs. Psykhe: Revista de la Escuela de Psicologıá, 13, 141–156.

Foran HM, Heyman RE, Smith Slep AM, Snarr JD, & United States Air Force Family Advocacy Research Program. (2012). Hazardous alcohol use and intimate partner violence in the military: Understanding protective factors. Psychology of Addictive Behaviors, 26, 471–483. doi:10.1037/a0027688 [PubMed: 22448763]

Foran HM, & O'Leary KD (2008). Alcohol and intimate partner violence: A meta-analytic review. Clinical Psychology Review, 28, 1222–1234. [PubMed: 18550239]

Gethin A, Trimingham T, Chang T, Farrell M, & Ross J (2016). Coping with problematic drug use in the family: An evaluation of the Stepping Stones program. Drug and Alcohol Review, 35, 470–476. doi:10.1111/dar.12327 [PubMed: 26365113]

Ghosh S, Samanta A, & Mukherjee S (2012). Patterns of alcohol consumption among male adults at a slum in Kolkata, India. Journal of Health, Population and Nutrition, 30, 73–81.

Gielen AC, O'Campo PJ, Faden RR, Kass NE, & Xue X (1994). Interpersonal conflict and physical violence during the childbearing year. Social Science & Medicine, 39, 781–787. [PubMed: 7802853]

Gilchrist G, Blazquez A, Segura L, Geldschläger H, Valls E, Colom J, & Torrens M (2015). Factors associated with physical or sexual intimate partner violence perpetration by men attending substance misuse treatment in Catalunya: A mixed methods study. Criminal Behaviour and Mental Health, 25, 239–257. doi:10.1002/cbm.1958 [PubMed: 25939654]

Gunnar MR, & Donzella B (2002). Social regulation of the cortisol levels in early human development. Psychoneuroendocrinology, 27, 199–220. [PubMed: 11750779]

Gupta A, Priya B, Williams J, Sharma M, Gupta R, Jha DK, … Dhillon PK (2015). Intra-household evaluations of alcohol abuse in men with depression and suicide in women: A cross-sectional community-based study in Chennai, India. BMC Public Health, 15, Article 636. doi:10.1186/s12889-015-1864-5

Hedin LW (2000). Postpartum, also a risk period for domestic violence. European Journal of Obstetrics & Gynecology and Reproductive Biology, 89, 41–45. [PubMed: 10733022]

International Institute for Population Sciences, & Macro International. (2007). National Family Health Survey (NFHS-3), 2005–06: India, Volume I. Mumbai, India: International Institute for Population Sciences.

Jeyaseelan L, Kumar S, Neelakantan N, Peedicayil A, Pillai R, & Duvvury N (2007). Physical spousal violence against women in India: Some risk factors. Journal of Biosocial Science, 39, 657–670. [PubMed: 17349066]

Kaufman J, & Henrich L (2000). Exposure to violence and early childhood trauma. In Zeanah CH (Ed.), Handbook of infant mental health (2nd ed, pp. 195–208). New York, NY: The Guilford Press.

Kim-Godwin YS (2003). Postpartum beliefs and practices among non-Western cultures. MCN: The American Journal of Maternal Child Nursing, 28, 74–8; quiz 79–80. [PubMed: 12629311]

Koenig MA, Ahmed S, Hossain MB, & Khorshed Alam Mozumder AB (2003). Women's status and domestic violence in rural Bangladesh: Individual-and community-level effects. Demography, 40, 269–288. [PubMed: 12846132]

Lim SS, Dandona L, Hoisington JA, James SL, Hogan MC, & Gakidou E (2010). India's Janani Suraksha Yojana, a conditional cash transfer programme to increase births in health facilities: An impact evaluation. The Lancet, 375, 2009–2023.

Mahapatro M, Gupta R, & Gupta V (2012). The risk factor of domestic violence in India. Indian Journal of Community Medicine, 37, 153–157. [PubMed: 23112440]

Martin SL, Acara J, & Pollock MD (2012). Domestic violence during pregnancy and the postpartum period Harrisburg, PA: VAWnet, A Project of the National Resource Center on Domestic Violence Retrieved from http://www.vawnet.org

Martin SL, Mackie L, Kupper LL, Buescher PA, & Moracco KE (2001). Physical abuse of women before, during, and after pregnancy. Journal of the American Medical Association, 285, 1581–1584. [PubMed: 11268265]

Mody SK, Nair S, Dasgupta A, Raj A, Donta B, Saggurti N, … Silverman JG (2014). Postpartum contraception utilization among low-income women seeking immunization for infants in Mumbai, India. Contraception, 89, 516–520. doi:10.1016/j.contraception.2014.01.001 [PubMed: 24560478]

More NS, Bapat U, Das S, Alcock G, Patil S, Porel M, … Osrin D (2012). Community mobilization in Mumbai Slums to improve perinatal care and outcomes. A Cluster randomized controlled trial. PLoS Medicine, 9, e1001257. doi:10.1371/journal.pmed.1001257 [PubMed: 22802737]

National Institute on Alcohol Abuse and Alcoholism (NIAAA). (2008). Alcohol: A women's health issue (NIH Publication 03–4956) Retrieved from http://pubs.niaaa.nih.gov/publications/brochurewomen/Woman_English.pdf

Orford J, Velleman R, Natera G, Templeton L, & Copello A (2013). Addiction in the family is a major but neglected contributor to the global burden of adult ill-health. Social Science & Medicine, 78, 70–77. doi:10.1016/j.socscimed.2012.11.036 [PubMed: 23268776]

Pelto PJ, & Singh R (2010). Community street theatre as a tool for interventions on alcohol use and other behaviors related to HIV risks. AIDS and Behavior, 14(Suppl. 1), S147–S157. doi:10.1007/s10461-010-9726-8 [PubMed: 20582461]

Pepler DJ, Catallo R, & Moore TE (2000). Consider the children: Research informing interventions for children exposed to domestic violence. Journal of Aggression, Maltreatment & Trauma, 3, 37–57.

Perren S, von Wyl A, Bürgin D, Simoni H, & von Klitzing K (2005). Depressive symptoms and psychosocial stress across the transition to parenthood: Associations with parental psychopathology and child difficulty. Journal of Psychosomatic Obstetrics & Gynecology, 26, 173–183. doi:10.1080/01674820400028407 [PubMed: 16295515]

Poulose B, & Srinivasan K (2009). High risk behaviours following alcohol use in alcohol dependent men. Indian Journal of Medical Research, 129, 376–381. [PubMed: 19535831]

Prasad R (2009). Alcohol use on the rise in India. The Lancet, 373, 17–18.

Raj A, Sabarwal S, Decker MR, Nair S, Jethva M, Krishnan S, … Silverman JG (2011). Abuse from in-laws during pregnancy and post-partum: Qualitative and quantitative findings from low-income mothers of infants in Mumbai, India. Maternal and Child Health Journal, 15, 700–712. doi:10.1007/s10995-010-0651-2 [PubMed: 20680670]

Reid MC, Fiellin DA, & O'Connor PG (1999). Hazardous and harmful alcohol consumption in primary care. Archives of Internal Medicine, 159, 1681–1689. [PubMed: 10448769]

Richman JA, Rospenda KM, & Kelley MA (1995). Gender roles and alcohol abuse across the transition to parenthood. Journal of Studies on Alcohol, 56, 553–557. [PubMed: 7475036]

Sarkar NN (2008). The impact of intimate partner violence on women's reproductive health and pregnancy outcome. Journal of Obstetrics and Gynaecology, 28, 266–271. doi:10.1080/01443610802042415 [PubMed: 18569465]

Satyanarayana VA, Vaddiparti K, Chandra PS, O'Leary CC, Benegal V, & Cottler LB (2010). Problem drinking among married men in India: Comparison between husband's and wife's reports. Drug and Alcohol Review, 29, 557–562. doi:10.1111/j.1465-3362.2010.00177.x [PubMed: 20887581]

Schensul SL, Saggurti N, Burleson JA, & Singh R (2010). Community-level HIV/ STI interventions and their impact on alcohol use in urban poor populations in India. AIDS and Behavior, 14(Suppl. 1), S158–S167. doi:10.1007/s10461-010-9724-x [PubMed: 20582462]

Shamu S, Abrahams N, Temmerman M, Musekiwa A, & Zarowsky C (2011). A systematic review of African studies on intimate partner violence against pregnant women: Prevalence and risk factors. PLoS ONE, 6, e17591. doi:10.1371/journal.pone.0017591 [PubMed: 21408120]

Silva EP, Valongueiro S, de Araújo TV, & Ludermir AB (2015). Incidence and risk factors for intimate partner violence during the postpartum period. Revista de Saúde Pública, 49, 1–9. doi:10.1590/S0034-8910.2015049005432 [PubMed: 25741653]

Silverman JG, Balaiah D, Decker MR, Boyce SC, Ritter J, Naik DD, … Raj A (2016). Family violence and maltreatment of women during the perinatal period: Associations with infant morbidity in Indian slum communities. Maternal and Child Health Journal, 20, 149–157. doi:10.1007/s10995-015-1814-y [PubMed: 26440937]

Stewart DE (1994). Incidence of postpartum abuse in women with a history of abuse during pregnancy. Canadian Medical Association Journal, 151(11), 1601–1604. [PubMed: 7954159]

Stith SM, Smith DB, Penn CE, Ward DB, & Tritt D (2004). Intimate partner physical abuse perpetration and victimization risk factors: A meta-analytic review. Aggression and Violent Behavior, 10, 65–98. doi:10.1016/j.avb.2003.09.001

Straus MA (1979). Measuring intra family conflict and violence: The Conflict Tactics Scale. Journal of Marriage and Family, 41, 75–88.

Subodh NB, Grover S, Grewal M, Grewal S, Basu D, & Mattoo SK (2014). Interpersonal violence against wives by substance dependent men. Drug and Alcohol Dependence, 138, 124–129. doi:10.1016/j.drugalcdep.2014.02.017 [PubMed: 24641807]

Subramanian SV, Davey Smith G, & Subramanyam M (2006). Indigenous health and socioeconomic status in India. PLoS Medicine, 3, e421. [PubMed: 17076556]

Tripathy P, Nair N, Barnett S, Mahapatra R, Borghi J, Rath S, … Costello A (2010). Effect of a participatory intervention with women's groups on birth outcomes and maternal depression in Jharkhand and Orissa, India: A cluster-randomised controlled trial. The Lancet, 375, 1182–1192.

Woodin EMA, Caldeira V, Sotskova A, Galaugher T, & Lu M (2014). Harmful alcohol use as a predictor of intimate partner violence during the transition to parenthood: Interdependent and interactive effects. Addictive Behaviors, 39, 1890–1897. doi:10.1016/j.addbeh.2014.07.033 [PubMed: 25150656]

Woolhouse H, Gartland D, Hegarty K, Donath S, & Brown SJ (2012). Depressive symptoms and intimate partner violence in the 12 months after child-birth: A prospective pregnancy cohort study. British Journal of Obstetrics and Gynaecology, 119, 315–323. doi:10.1111/j.1471-0528.2011.03219.x [PubMed: 22145631]

World Health Organization. (2014). Global status report on alcohol and health – 2014 ed Retrieved from http://www.who.int/substance_abuse/publications/global_alcohol_report/msb_gsr_2014_1.pdf?ua=1

Zeanah CH, Danis B, Hirshberg L, Benoit D, Miller D, & Heller SS (1999). Disorganized attachment associated with partner violence: A research note. Infant Mental Health Journal, 20, 77–86.

Table 1.

Demographic Characteristics of Postpartum Women in Research Sample Recruited From a Mumbai Slum Community Health Center, by Experience of Postpartum IPV and GBHM (N = 1,038).

			Postpartum IPV					Postpartum GBHM				
	Total		IPV		No IPV			GBHM		No GBHM		
	N = 1,038		17.6% (183)		82.4% (855)			41.7% (433)		58.3% (605)		
	%	*n*	%	*n*	%	*n*	*p* Value	%	*n*	%	*n*	*p* Value
Age in years												
<20	7.6%	79	8.7%	16	7.4%	63	.681	7.2%	31	7.9%	48	.336
20–24	48.3%	501	45.4%	83	48.9%	418		46.0%	199	49.9%	302	
25–29	29.4%	305	29.0%	53	29.5%	252		30.0%	130	28.9%	175	
30+	14.7%	153	16.9%	31	14.3%	122		16.9%	73	13.2%	80	
Child marriage	31.5%	327	34.4%	63	30.9%	264	.348	33.9%	147	29.8%	180	.151
Any formal education	84.4%	876	79.8%	146	85.4%	730	.058	82.2%	356	86.0%	520	.102
Employed in the past year	10.8%	112	14.8%	27	9.9%	85	.057	12.5%	54	9.6%	58	.140
Religion												
Hindu	37.7%	391	25.1%	46	40.4%	345	<.001	35.3%	153	39.3%	238	.119
Muslim	58.9%	611	69.9%	128	56.5%	483		62.1%	269	56.5%	342	
Other	3.5%	36	4.9%	9	3.2%	27		2.5%	11	4.1%	25	
Currently living with husband	90.2%	936	96.7%	177	88.8%	759	<.001	91.5%	396	89.3%	540	.241
Husband's age (mean and *SD*)	29.1 (5.1)		29.3 (5.5)		29.0 (5.0)		.658	29.4 (5.3)		28.8 (4.9)		.686
Husband has formal education	87.8%	911	84.7%	155	88.4%	756	.163	85.0%	368	89.8%	543	.021
Husband currently employed	99.1%	1,029	97.8%	179	99.4%	850	.034	98.8%	428	99.3%	601	.398
Family type												
Nuclear	38.4%	399	45.4%	83	37.0%	316	.034	52.0%	225	28.8%	174	<.001
Joint	61.6%	639	54.6%	100	63.0%	539		48.0%	208	71.2%	431	

Note. IPV = intimate partner violence; GBHM = gender-based household maltreatment

Table 2.

Prevalence and Overlap of Different Forms of IPV Among Postpartum Women Living With Their Husband When Recruited From a Mumbai Slum Community Health Center.

Prevalence of IPV by Type	**%**	***n*/936**
Any IPV	18.9	177
Hit, pushed, kicked, beat, or slapped her	8.8	82
Tried to burn her	0.1	1
Insisted on sex when she did not want to	13.1	123
Used force to make her have sex when she did not want to	7.5	70
Overlap of Physical and Sexual Forma of IPV	%	*n*/177
Both physical and sexual	16.9	30
Physical only	29.4	52
Sexual only	53.7	95

Note. IPV = intimate partner violence.

Table 3.

Prevalence and Types of Postpartum Abuse Perpetrated by Husbands and in-Laws Against Women Recruited From a Mumbai Slum Community Health Center (N = 1,038).

	%	*n*
Any postpartum household maltreatment	41.7	433
Force women to bring money or other things from her parents' home		
Husband	8.4	87
In-laws	7.2	75
Interfere with woman's ability to get health care for herself		
Husband	1.5	16
In-laws	1.5	16
Interfere with woman's ability to get health care for her children		
Husband	1.2	12
In-laws	1.0	10
Stop woman from getting enough food for herself		
Husband	1.4	15
In-laws	1.5	16
Stop woman from getting enough food for her children		
Husband	0.5	5
In-laws	0.6	6
Stop woman from getting the rest she needed		
Husband	2.9	30
In-laws	3.3	34
Treat woman badly for not having a boy child		
Husband	4.2	31
In-laws	5.0	37
Stop woman from taking care of her children		
Husband	0.5	5
In-laws	0.6	6
Neglect or ignore woman's baby		
Husband	1.2	12
In-laws	2.0	21
Did not receive needed help from husband to care for elder children[a]	3.6	23
Did not receive assistance with household meal preparation	35.4	364
Did not receive assistance with household cleaning work	33.6	346

[a]Denominator = 639; 399 excluded because they did not have older kids.

Table 4.

Characteristics of Husbands' Alcohol use as Reported by Postpartum Women Recruited From a Mumbai Slum Community Health Center.

Characteristic	%	*n/N*
Total reporting husband's alcohol use	14.6	152/1,038
Religion of alcohol users		
Non-Muslim	64.5	98/152
Muslim	35.5	54/152
Frequency of husbands' past month drinking[a]		
Less than once per week	29.1	43/148
One to two times per week	54.1	80/148
Three to six times per week	7.4	11/148
Every day	9.5	14/148
Prevalence of IPV among all alcohol users[a]	26.9	41/152
Patterns of IPV by religion of all alcohol users		
Non-Muslim drinkers who perpetrated IPV	51.2	21/41
Muslim drinkers who perpetrated IPV	48.8	20/41
Husband's alcohol use during violent episodes		
Always	26.8	11/41
Sometimes	36.6	15/41
Never	36.6	15/41

[a]Data on frequency was missing for some drinkers, thus denominator is lower.

Table 5.

Husbands' Alcohol use and Postpartum IPV and GBHM as Reported by Women Recruited From a Mumbai Slum Community Health Center.

	Postpartum IPV as Reported by Women Living With Their Spouse				
	Total % (*n*/*N*)	**% Reporting IPV**	***n* Reporting IPV/Total *N***	**OR [95% CI]**	**Adjusted OR[a] [95% CI]**
Husband drinks alcohol					
No	85.3 (798/936)	17.0	136/798	1.0	1.0
Yes	14.7 (138/936)	29.7	41/138	2.1 [1.4,3.1]	2.0 [1.3, 3.1]
Frequency of husbands' past month drinking					
Drinks ≤3 days per week	83.0 (112/135)	25.0	28/112	1.0	1.0
Drinks ≥4 days per week	17.0 (23/135)	52.1	12/23	3.3 [1.3, 8.2]	2.9 [1.0, 8.5]
Family type					
Nuclear	40.4 (378/936)	21.4	81/378	1.3 [0.9, 1.8]	
Joint	59.6 (558/936)	17.2	96/558	1.0	
	Postpartum GBHM as Reported by All Women				
	Total % (*n*/*N*)	**% Reporting GBHM**	***n* Reporting GBHM/Total *N***	**OR (95% CI)**	**Adjusted OR[b] (95% CI)**
Husband drinks alcohol					
No	85.4 (886/1,038)	40.1	355/886		
Yes	14.6 (152/1,038)	51.3	78/152	1.6 [1.1, 2.2]	1.4 [1.0, 2.1]
Frequency of husbands' past month drinking					
Drinks ≤3 days per week	83.9 (125/149)	47.2	59/125	1.0	
Drinks ≥4 days per week	16.1 (24/149)	66.7	16/24	2.2 [0.9, 5.6]	
Family type[c]					
Nuclear	38.4 (399/1,038)	56.4	225/399	2.7 [2.1, 3.5]	2.7 [2.0, 3.5]
Joint	61.6 (639/1,038)	32.6	208/639	1.0	1.0

Note. IPV = intimate partner violence; OR = odds ratio; CI = confidence interval; GBHM = gender-based household maltreatment.

[a]Adjusted model controls for participant's education, past year employment, religion, husband's employment, family type, and postpartum GBHM.

[b]Adjusted GBHM model controls for husband's education, family type, and postpartum IPV.

[c]Adjusted GBHM model controls for husband's education, husband's alcohol use, and postpartum IPV.