

Intimate partner violence, food insecurity and COVID-19 among newly married women in Nawalparasi district of Nepal: a longitudinal study

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Abstract: *This paper examines factors associated with intimate partner violence (IPV) among newly married women in Nepal, and how IPV was affected by food insecurity and COVID-19. Given evidence that food insecurity is associated with IPV and COVID-19, we explored whether increased food insecurity during COVID-19 is associated with changes in IPV. We used data from a cohort study of 200 newly married women aged 18–25 years, interviewed five times over two years at 6-month intervals (02/2018-07/2020), including after COVID-19-associated lockdowns. Bivariate analysis and mixed-effects logistic regression models were used to examine the association between selected risk factors and recent IPV. IPV increased from 24.5% at baseline to 49.2% before COVID-19 and to 80.4% after COVID-19. After adjusting for covariates, we find that both COVID-19 (OR = 2.93, 95% CI 1.07–8.02) and food insecurity (OR = 7.12, 95% CI 4.04–12.56) are associated with increased odds of IPV, and IPV increased more for food-insecure women post COVID-19 (compared to non-food insecure), but this was not statistically significant (confidence interval 0.76–8.69, p-value = 0.131). Young, newly married women experience high rates of IPV that increase with time in marriage, and COVID-19 has exacerbated this, especially for food-insecure women in the present sample. Along with enforcement of laws against IPV, our results suggest that special attention needs to be paid to women during a crisis time like the current COVID-19 pandemic, especially those who experience other household stressors. DOI: 10.1080/26410397.2023.2181282*

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Introduction

Violence against women and girls (VAWG) ranks among the most widespread human rights violations and public health problems of the twenty-first century, particularly in developing countries.¹ In 1993, the United Nations General Assembly defined VAWG as

“any act of gender-based violence that results in, or is likely to result in, physical, sexual or psychological harm or suffering to women, including threats

*of such acts, coercion or arbitrary deprivation of liberty, whether occurring in public or in private life”.*²

VAWG occurs throughout the life course and for all types of women across class, caste/ethnicity, social status, race, nationality, sexual orientation and other defining features. Studies have shown that 15–71% of women globally reported ever having experienced sexual or physical violence at the hands of an intimate partner, and 5–65% of women from a non-partner.^{3–6}

According to article 38 (3) of the Constitution of Nepal, “no woman shall be subjected to physical, mental, sexual, psychological and other forms of violence or exploitation on the grounds of religion, social, cultural, tradition, practice, or on any other grounds”.⁷ Despite constitutional guarantee and progress made toward gender equality in recent years, VAWG is common in Nepal. Empirical studies conducted between 1997 and 2016 show that in Nepal the prevalence of VAWG (physical, sexual, psychological and controlling behaviour) ranges between 12% and 50% of women.^{5,8–15} The Nepal Demographic Health Survey (2016) found that 32.4% of women aged 15–49 had experienced emotional, physical and/or sexual violence from their intimate partner and 28.3% reported experiencing these forms of violence in the past year.^{15,16} Domestic violence is the predominant form of violence, followed by trafficking of girls, physical/sexual abuse, and social abuses and malpractices including allegations of witchcraft, *Chhaupadi* (which excludes women and girls from normal family activities when menstruating, and thus supposedly “impure”), dowry, *Deuki* and *Jhuma* traditions (whereby a young girl, or specifically the second daughter, is offered to the temple or monastery in the name of religion), and child marriage.

Evidence indicates that the prevalence of IPV among young married women in Nepal is particularly high.^{17–20} For example, a 2011 study conducted in Nepal with 1296 married women aged 15–24 years found 51% had experienced violence from their husbands, including sexual violence (46.5%), physical violence (25.3%), or both sexual and physical violence (19.6%).¹⁸ A 2017 study conducted in India showed that married adolescents were twice as likely to experience IPV compared to married adult women and 62% of women who ever experienced marital violence did so in the first two years of marriage.²¹

Studies have documented several predictors of exposure to VAWG and IPV in particular.^{10–14,18–20,22} These include: individual-level factors (e.g. young age, *low educational attainment*, lower socio-economic status); partner characteristics (e.g. *alcohol* or drug use, *low education attainment*); family characteristics (e.g. economic stress, male dominance); *marriage type*, community-level characteristics (e.g. gender inequality, lack of cohesion) and societal level variables (e.g. regressive gender norms, *lack of female autonomy*, restrictive laws).^{3,5} Being younger is an important

indicator of married women’s exposure to IPV, although older women also continue to experience violence from their husbands.^{23,24} Sons are much preferred over daughters, as they perpetuate the patriarchal family through marriage and care for their parents in old age,^{25,26} while their sisters’ destinies are believed to be tied to prospective *affinal* homes where *dowry* is expected despite its prohibition according to the Social Customs and Practices Act of 1976. Cultural practices, including the *dowry* system, *arranged marriages*, and *child marriage*, impede women’s agency and expose women and girls to violence.²⁷

Another important factor found to be associated with IPV in Nepal and elsewhere is food insecurity.^{28,29} Women and children are particularly vulnerable to both food insecurity and violence in Nepal and about half of women in Nepal live in food-insecure households.¹⁵ Previous studies in Nepal using cross-sectional data found that food insecurity was associated with emotional and physical violence but not sexual violence.³⁰ There is increased concern that COVID-19 will increase food insecurity, due to changes in supply, access, stability and availability.^{31,32} Evidence is needed about the impact of COVID-19 on food security, and whether these impacts are associated with changes in violence among those most vulnerable. With the influx of hundreds of thousands of migrant workers from India to Nepal, COVID-19 cases rapidly increased. Vulnerable communities faced challenges that have been exacerbated by both the countrywide lockdown (that was in effect from 24 March 2020 to 21 July 2020) and the economic downturn, and that may have increased women’s and girls’ risk of violence and IPV.

Restricted mobility, fear of COVID, and reduced availability of public services have trapped women and girls at home with their abusers, suffering from isolation or shame at having been violated. Official statistics do not reflect the full extent of the problem, as the authorities only count the most severe cases, often involving rape or serious physical and life-threatening injuries, and often excluding IPV for reasons that include fear of retaliation, shame and stigma. Although empirical evidence on IPV among women is growing, such evidence on newly married women is lacking. Additionally, throughout Nepal, and especially in the mountain regions, there is growing concern about increased food insecurity with extended lockdowns.³³ Therefore, this paper aimed to fill

this knowledge gap by assessing the interrelationship between IPV, food insecurity and COVID-19 among newly married women. We focus on this population because most newly married women cohabit with, and may experience violence from both husbands and in-laws. We explore the prevalence and determinants of IPV using a cohort study design with data from both before and after Covid-19 lockdowns went into effect.

Data and methods

Data

The data come from a study that originally aimed to examine the associations between gender inequality, food insecurity and maternal and child health in newly married households in Nepal. Beginning in 2018, we enrolled newly married young women, living in the Nawalparasi district of Nepal, a plains region bordering India. It is more socially disadvantaged, compared to other rural areas in Nepal, and the status of women, including household's decision-making, is lower in this area.^{15,34} We interviewed women in five rounds of follow-up surveys roughly six months apart, including the baseline. Women who were married within the four months prior to baseline were 18–25 years old at enrolment, and living with their mother-in-laws in the same household in Nawalparasi district of Nepal were eligible to participate in the study. We screened 18,906 households in two municipalities (one rural and one urban), identified 302 eligible participants, and selected 200 participants at random to reach the desired sample size of the parent study. More details about findings from the parent study can be found elsewhere.^{35–37}

Two hundred participants completed the baseline survey, 192 completed Round 2, 191 completed Round 3, 187 completed Round 4 by 11 December 2019 (i.e. pre-Covid, the first case of Covid was confirmed in Nepal on 23 January 2020) and 188 completed Round 5 (during the nationwide Covid-19 lockdown from 1 to 24 July 2020). A team of four trained and experienced female interviewers interviewed participants in their homes. The interviewers completed Rounds 1–4 in person before the nationwide COVID-19 lockdown went into effect. Round 5 was completed by telephone during the lockdowns. There was complete follow-up (of all five surveys) for 180 (92%) participants. The same interviewers conducted all rounds of follow-up interviews. On

average, the interviews lasted 48 minutes (ranged between about 30 minutes to 94 minutes).

Questionnaires were first developed in English and then translated into Nepali. We implemented necessary modifications to the questionnaire before full implementation, after pretesting it with 10 women in the outskirts of Kathmandu. There were no major differences in questionnaire content between in-person interviews (Rounds 1–4) and telephone interviews in Round 5. However, a few questions related to Covid-19, (for example, knowledge about Covid-19, perceived mode of transmission, preventive measures and impact of Covid-19 in their lives, access to health care services, and coping strategies used) were asked in Round 5. Questionnaires were programmed into data collection software called Kobo Tool. Recruitment occurred between February–April 2018, just after the time of year when the vast majority of marriages occur in Nepal, and follow-up data were collected between 2018 and 2020. Research assistants obtained written informed consent and conducted survey interviews in person in a private space in participants' homes (except the last round when interviews were conducted via telephone). Participants who were illiterate provided thumbprints to confirm consent.

Since the participants had already been interviewed in the previous four rounds, they knew interviewers very well and were familiar with the nature of questions that would be asked and the need for maintenance of privacy during the interview. Therefore, a good rapport was established between interviewers and participants before Round 5. During the previous rounds, participants' contact details were collected on a separate piece of paper and updated in every round. In Round 5, interviewers used participants' mobile numbers to contact them and used a conversational tone to ask about their wellbeing and willingness to continue participation in the study. If they agreed, then researchers obtained detailed consent in simple local language (explaining study purpose, methods, risks and benefits, volunteer participation, who to contact for more information, declaration of participants, etc.) and asked them about a good time to call back when privacy was easier to ensure and to guarantee respondents were not overheard by any other family members. They were advised to notify the interviewer if anyone came nearby during the interview or if they suspected anyone overheard the conversation, by using a code (such as

coughing three times). In such cases, the interview was paused and the topic of conversation was changed. A repeated call was made to complete the interviews in a few cases.

The interview questionnaire was a programme in Tablet using software called Kobo Tool and the information collected was carefully anonymised. No individual data or personal identifiers were included in any dissemination materials.

The study team provided participants with an equivalent of US\$ 3 at each visit and a phone top-up was made for the last round of phone follow-up interviews, in line with local incentive standards. We obtained ethical approval from Nepal Health Research Council (Ref 385/2016, dated 8 Dec 2016) and the ethics committee of the University of California, San Francisco (Ref 176007, dated 10 Oct, 2016).

Measures

The survey included a series of questions that aimed to measure women's empowerment, relationship quality, food insecurity, dietary assessments, pregnancy histories, healthcare-seeking behaviour, and violence from intimate partners as well as any other adult family members in the home.

The primary outcome of interest in our analysis was "recent IPV", defined as whether or not the individual woman reported having experienced any recent violence by her husband. Violence questions were mainly based on WHO's multi-country study on violence against women and girls³ and previously applied in Nepal.¹⁴ At baseline, we asked whether participants had ever experienced violence and whether they had experienced violence within the last year. At each of the four subsequent rounds of follow up, we asked whether participants had experienced IPV and non-partner violence (NPV) within the prior six months. For the last round of data, which was collected during the COVID-19 lockdown, the time period was defined as the prior three months to better align with the onset of the COVID-19 pandemic and lockdowns. Specifically, 17 survey questions assessed four types of violence. These included: (1) physical violence (being pushed, slapped, twisted, punched, kicked, choked, or threatened with a weapon); (2) sexual violence (being forced to have sex against your will, forced to perform sex acts, or being offered food, clothing or other resources in exchange for sex); (3) controlling behaviour (being prohibited

from working, losing her earnings or property against her will, being evicted from the household, or threatening children if the respondent did not obey) and (4) psychological violence (being humiliated, threatened, or insulted).

Our analysis has included several risk factors for IPV against women, based on published literature and consistent with prior published analyses from this study.^{14,35,38} At the individual level, participant baseline current age (continuous), caste (categorised as Brahmin/Chhetri, indigenous groups and so-called untouchables/religious minority groups), marriage type (love vs arranged marriage), receipt of dowry (yes/no), level of education (<6 years, 6–12 and over 12 years) and religion (Hindu vs non-Hindu) were included. Although shown in Table 1 for context, we did not include age at marriage or marriage duration into the models due to potential collinearity with age. We created the wealth score using principal component analysis from a series of questions related to assets, household ownership, land ownership and categorised into quintiles. Two time-varying factors (measured at each interval) were included. The first is if the respondent reported working for pay in the last year and the second if the respondent had ever been pregnant. We hypothesised that these two factors may be associated with lower risk for experiencing violence, given that women who work for pay may have greater autonomy and those who have ever been pregnant may hold more status in the household due to the value placed on conception.

Food insecurity was measured using a set of nine questions about the degree to which the participant experienced the following in the recent time period: anxiety and uncertainty about household food access; not being able to eat any kind of food preferred; ate a few kinds of food; ate less because of insufficient food; or ate food that they prefer not to eat (see detailed questionnaire in supplementary information). Answer choices for each question were never, rarely, sometimes and often. Responses were then summed and women were categorised into a score ranging from food secure, mildly food insecure, moderately food insecure and severely food insecure. From this, we made a binary of food security compared to all levels of food insecurity.

Analysis

We conducted descriptive statistics about the sample and the change in reports of any violence

over the five rounds of the survey, using chi-squared tests. Next, we assessed bivariate associations between violence and socio-demographic characteristics for each round of the survey using chi-squared and *t*-tests to look at differences over time. We then explored whether changes in food security status for an individual woman over time were associated with recent exposure to IPV using mixed-effects logistic regression models. Mixed-effects models account for the fact that repeated observations of individuals are not independent by including a time variable denoting each stage in the model.³⁹ In order to specifically understand the change before COVID and during COVID, we included a time variable for pre/during COVID as well as an interaction between this term and food insecurity and relevant covariates (see Table 5). Models were run to look at changes within individuals over time. All analyses were completed using STATA 15.

Results

Over one-third of the sample of newly married women were between 18–19 years (37.5%) at baseline and therefore below the legal age of marriage (20 years) when they got married (Table 1). Most participants (68.5%, *N* = 137) had between 6 and 12 years of education, with 16.6% (*N* = 33) having less than 6 years and 15% (*N* = 30) having more than 12 years. Most (70.5%, *N* = 141) were in arranged marriages and over one-third (36.5%, *N* = 73) had dowry given by her family to her husband's family at the time of marriage. Almost one in five women (18%) reported that their spouse's family was not happy with the dowry they received during the marriage. Most participants (86%, *N* = 172) were Hindu and belonged to an Indigenous group (53%, *N* = 106).

Recent IPV increased over time, from 24.5% (*N* = 49) at baseline to 80.4% (*N* = 148) in the last round of follow-up (Table 2). There was a 30% increase in IPV from four months before the COVID-19 lockdowns (Before March 2020) to during COVID-19 (July 2020). In the first two years of marriage, from baseline to round five, reported physical abuse from a partner increased from 2% to 17.4%, sexual violence increased from 16% to 52.7%, controlling behaviour increased from 12.5% to 36.4%, and psychological abuse increased from 6% to 75.5%. Psychological violence and sexual violence were the most common types of violence reported among those who experienced any IPV at round five.

Table 1. Socio-demographic characteristics of participants at baseline

| Characteristic | <i>N</i> = 200 (%) |
|--|--------------------|
| Current age | |
| <20 year | 75 (37.5) |
| 20 years and over | 125 (62.5) |
| Mean age (years, range) | 20.4 (18–25) |
| Mean marriage duration (days) | 27.9 |
| Age at marriage | |
| <20 year | 76 (37.5) |
| 20 years and over | 124 (62.5) |
| Median age at marriage (SD) | 20.4 (20) |
| Level of education | |
| Illiterate | 8 (4.0) |
| Less than 6 years | 25 (12.5) |
| 6–12 years | 137 (68.5) |
| More than 12 years | 30 (15.0) |
| Place of residence | |
| Urban | 100 (50.0) |
| Rural | 100 (50.0) |
| Religion | |
| Hindu | 172 (86.0) |
| Non-Hindu | 28 (14.0) |
| Caste/ethnic group | |
| Brahmin/Chhetri | 41 (20.5) |
| Indigenous group | 106 (53.0) |
| So-called untouchable/ religious minority group | 53 (26.5) |
| Spouse age | |
| <25 years | 115 (57.5) |
| 20 years and over | 85 (42.5) |
| Spouse education | |
| Illiterate | 3 (1.5) |
| Less than 6 years | 19 (9.5) |
| 6–12 years | 148 (74.0) |
| More than 12 years | 30 (15.0) |

(Continued)

| Table 1. Continued | |
|--|--------------------|
| Characteristic | N = 200 (%) |
| Whether spouse worked for pay in the last 12 months | |
| Yes | 32 (16.0) |
| No | 168 (84.0) |
| Whether worked for pay in the last 12 months | |
| Yes | 84 (42.0) |
| No | 116 (58.0) |
| Marriage type | |
| Arranged | 141 (70.5) |
| Love | 59 (29.5) |
| Ever been pregnant | |
| No | 49 (24.5) |
| Yes | 151 (75.5) |
| Whether or not received dowry | |
| Yes | 73 (36.5) |
| No | 127 (63.5) |
| Whether spouse family are satisfied with the dowry received | |
| Satisfied | 94 (47.0) |
| Not satisfied | 36 (18.0) |
| Did not bring anything/DK | 70 (35.0) |
| Total | 200 (100.0) |

Household-level food insecurity also increased significantly over time, from 53% ($N = 106$) at baseline to 83.5% ($N = 167$) at Round 5, again with the biggest jump between Rounds 4 and 5 (Table 3). Women who reported having worked for pay in the last year declined over the study period from 26% ($N = 52$) to 20.2% ($N = 38$), but this trend was not linear. The proportion of women reporting that they had ever been pregnant increased from 8.5% ($N = 17$) to 83.5% ($N = 157$).

Table 4 shows reported recent IPV by selected socio-demographic characteristics. Women who were younger, less educated, food insecure, of indigenous caste and of lower wealth quintile were more likely to report recent IPV at baseline

and at Round 5 (during the COVID-19 pandemic) (Table 4). Religion was significantly associated with recent IPV in the pre-COVID-19 period but not during the COVID-19 pandemic, and pregnancy was associated with recent IPV during the COVID-19 pandemic but not prior, with women who had been pregnant being more likely to report recent IPV.

The odds of IPV increased significantly from before COVID-19 to after COVID-19 (OR = 2.93, 95% CI 1.07–8.02, $p = 0.037$), adjusting other covariates (Table 5). Household food insecurity was associated with increased odds of IPV (OR = 7.12, 95% CI 4.04–12.56, $p < 0.000$). The main effect of COVID-19 indicates that violence increased after COVID for food-secure women and that violence after COVID-19 increased more for food-insecure women (the product of COVID-19 and interactions effects, $3.3404 \times 1.8790 = 6.28$) but this increased effect does not reach statistical significance. Younger women and women who worked outside the home were less likely to report IPV, and women who had ever been pregnant or from indigenous caste groups more likely to report IPV.

Discussion

Young, newly married women experience high levels of IPV, even higher than other populations of women in Nepal when compared to other studies.^{12,14,15} The longitudinal nature of this data is able to show that reporting of IPV increases markedly among young newly married women in the first two years of marriage, a previously understudied population. Food insecurity is also associated with IPV in our population, as has been found previously in Nepal.¹ We find that those that were in disadvantaged subpopulations – younger, poorer, less educated, not working, living in rural areas, and non-Hindu or of lower caste – were also more likely to experience IPV. Marriage-related factors (arranged marriages) and husband-related factors (lack of employment and young age) were also associated with IPV. These findings support previous studies about risk factors for IPV in Nepal and other settings and provide evidence that similar factors pertain to newly married women.^{12,14}

IPV increased to a greater extent during the national COVID-19 lockdowns, from about 50% six months before the COVID-19 lockdowns to 80% four months after the lockdowns. This highlights that women already facing high levels of IPV have been even more exposed to violence

Table 2. Reported intimate partner violence among newly married women at baseline and 6-month follow-up intervals

| Type of violence | Baseline (n = 200) | Round-2 (n = 192) | Round-3 (n = 189) | Round-4 (n = 184) | Round-5 (n = 184) |
|----------------------------|-----------------------|----------------------|----------------------|----------------------|----------------------|
| | n (%) | n (%) | n (%) | n (%) | n (%) |
| Any violence*** | 49 (24.5) | 88 (45.8) | 97 (50.8) | 92 (49.2) | 148 (80.4) |
| Physical*** | 4 (2.0) | 19 (9.9) | 29 (15.3) | 22 (12.0) | 32 (17.4) |
| Sexual*** | 32 (16.0) | 66 (34.4) | 49 (25.9) | 54 (29.3) | 97 (52.7) |
| Psychological*** | 12 (6.0) | 44 (22.9) | 63 (33.3) | 64 (34.8) | 139 (75.5) |
| Controlling behavior*** | 25 (12.5) | 52 (27.1) | 73 (38.6) | 62 (33.7) | 67 (36.4) |

*** $p < 0.001$, chi-squared tests for differences over time.

during the COVID-19 pandemic and that increased efforts are needed to provide support and launch preventive interventions. Many factors could be associated with this rise in violence during lockdown, including increasing tensions in household relationships and stress due to the impacts of the COVID-19 pandemic on income, jobs and food security. Our findings add to the growing body

of literature about the impacts of COVID-19 on violence, which has so far found mixed evidence in Nepal as a whole, but some evidence of increased risk among subgroups.^{38,40} Our study highlights that young married women in rural parts of Nepal who are already exposed to high levels of violence face increased rates of violence in a time of lockdown and crises like COVID-19.

Table 3. Time-varying (measured in each interval) covariates among newly married women at baseline and 6-month follow-up intervals

| | Round-1 n (%) | Round-2 n (%) | Round-3 n (%) | Round-4 n (%) | Round-5 n (%) | Total n (%) |
|-------------------------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Household food insecurity*** | | | | | | |
| No | 94 (47.0) | 92 (46.0) | 101 (50.5) | 102 (51.0) | 33 (16.5) | 422 (42.2) |
| Yes | 106 (53.0) | 108 (54.0) | 99 (49.5) | 98 (49.0) | 167 (83.5) | 578 (57.8) |
| Paid work in the last year* | | | | | | |
| No | 148 (74.0) | 167 (87.0) | 156 (81.7) | 151 (80.7) | 150 (79.8) | 772 (80.6) |
| Yes | 52 (26.0) | 25 (13.0) | 35 (18.3) | 36 (19.3) | 38 (20.2) | 186 (19.4) |
| Ever been pregnant*** | | | | | | |
| No | 183 (91.5) | 99 (51.6) | 54 (28.3) | 39 (20.9) | 31 (16.5) | 406 (42.4) |
| Yes | 17 (8.5) | 93 (48.4) | 137 (71.7) | 148 (79.1) | 157 (83.5) | 552 (57.6) |
| Total | 200 (100.0) | 192 (100.0) | 191 (100.0) | 187 (100.0) | 188 (100.0) | 958 (100.0) |

*** $p < 0.001$, * $p < 0.05$, chi-squared tests for differences over time.

| Table 4. Socio-demographic characteristics, by report of any intimate partner violence among newly married women at baseline and Round 5 (during COVID-15) | | | | | | |
|---|--|------------------|--------------------|--|------------------|--------------------|
| | Round 1: Recent intimate partner violence | | | Round 5: Recent intimate partner violence | | |
| | No n (%) | Yes n (%) | Total n (%) | No n (%) | Yes n (%) | Total n (%) |
| Age at baseline | | | | | | |
| <20 | 69 (45.7) | 44 (89.8) | 113 (56.5)*** | 11 (27.5) | 94 (63.5) | 105 (55.9)*** |
| 20 and above | 82 (54.3) | 5 (10.2) | 87 (43.5) | 29 (72.5) | 54 (36.5) | 83 (44.1) |
| Education | | | | | | |
| <6 years | 21 (13.9) | 12 (24.5) | 33 (16.5)*** | 1 (2.5) | 30 (20.3) | 31 (16.5)*** |
| 6–12 years | 100 (66.2) | 37 (75.5) | 137 (68.5) | 27 (67.5) | 105 (70.9) | 132 (70.2) |
| >12 years | 30 (19.9) | - | 30 (15.0) | 12 (30.0) | 13 (8.8) | 25 (13.3) |
| Household food security | | | | | | |
| Food secure | 84 (55.6) | 10 (20.4) | 94 (47.0)*** | 22 (55.0) | 11 (7.4) | 33 (17.5)*** |
| Food insecure | 67 (44.4) | 39 (79.6) | 106 (53.0) | 18 (45.0) | 137 (92.6) | 155 (82.5) |
| Type of marriage | | | | | | |
| Love | 47 (31.1) | 12 (24.5) | 59 (29.5) | 14 (35.0) | 42 (28.4) | 56 (29.8) |
| Arranged | 104 (68.9) | 37 (75.5) | 141 (70.5) | 26 (65.0) | 106 (71.6) | 132 (70.2) |
| Dowry given at wedding | | | | | | |
| No | 28 (18.5) | 9 (18.4) | 37 (18.5) | 8 (20.0) | 25 (16.9) | 33 (17.5) |
| Yes | 123 (81.5) | 40 (81.6) | 163 (81.5) | 32 (80.0) | 123 (83.1) | 155 (82.5) |
| Religion | | | | | | |
| Non-Hindu | 15 (9.9) | 13 (26.5) | 28 (14.0)*** | 4 (10.0) | 21 (14.2) | 25 (13.3) |
| Hindu | 136 (90.1) | 36 (73.5) | 172 (86.0) | 36 (90.0) | 127 (85.8) | 163 (86.7) |
| Caste | | | | | | |
| Brahmin/Chhetri | 42 (27.8) | 3 (6.1) | 45 (22.5)*** | 21 (48.1) | 17 (13.5) | 38 (20.5)*** |
| Indigenous group | 81 (53.6) | 25 (51.0) | 106 (53.0) | 14 (36.5) | 87 (58.8) | 101 (53.7) |
| So-called untouchables/religious minority group | 28 (18.5) | 21 (42.9) | 49 (24.5) | 5 (15.4) | 44 (27.7) | 49 (26.1) |
| Wealth quintile at baseline | | | | | | |
| 1 | 29 (19.2) | 18 (36.7) | 47 (23.5)* | 19 (47.5) | 17 (11.5) | 36 (19.2)*** |
| 2 | 28 (18.5) | 13 (26.5) | 41 (20.5) | 8 (20.0) | 30 (20.3) | 38 (20.2) |
| 3 | 30 (19.9) | 8 (16.3) | 38 (19.0) | 7 (17.5) | 31 (20.9) | 38 (20.2) |
| 4 | 31 (20.5) | 6 (12.2) | 37 (18.5) | 5 (12.5) | 32 (21.6) | 37 (19.7) |
| 5 | 33 (21.9) | 4 (8.2) | 37 (18.5) | 1 (2.5) | 38 (25.7) | 39 (20.7) |
| Whether worked for pay in the last 12 months | | | | | | |
| No | 102 (67.5) | 46 (93.9) | 148 (74.0)*** | 29 (72.5) | 121 (81.8) | 150 (79.8) |
| Yes | 49 (32.5) | 3 (6.1) | 52 (26.0) | 11 (27.5) | 27 (18.2) | 38 (20.2) |

(Continued)

| | Round 1: Recent intimate partner violence | | | Round 5: Recent intimate partner violence | | |
|---------------------------|---|-------------------|--------------------|---|--------------------|--------------------|
| | No <i>n</i> (%) | Yes <i>n</i> (%) | Total <i>n</i> (%) | No <i>n</i> (%) | Yes <i>n</i> (%) | Total <i>n</i> (%) |
| Ever been pregnant | | | | | | |
| No | 141 (93.4) | 42 (85.7) | 183 (91.5) | 12 (30.0) | 19 (12.8) | 31 (16.5)* |
| Yes | 10 (6.6) | 7 (14.3) | 17 (8.5) | 28 (70.0) | 129 (87.2) | 157 (83.5) |
| Total | 151 (100.0) | 49 (100.0) | 200 (100.0) | 40 (100.0) | 148 (100.0) | 188 (100.0) |

*** $p < 0.001$, * $p < 0.05$, chi-squared tests for differences over time.

| | Any IPV in the last reporting period | 95% CI | <i>p</i> -value |
|---|--------------------------------------|---------------|-----------------|
| Pre/Post COVID | 2.93 | (1.07–8.02) | 0.037 |
| Household Food Insecurity (binary) | 7.12 | (4.04–12.56) | <0.000 |
| Interaction between household food insecurity and COVID | 2.56 | (0.76–8.69) | 0.131 |
| Age at baseline (continuous) | 0.80 | (0.68–0.93) | 0.005 |
| Education at baseline (continuous) | 0.91 | (0.50–1.66) | 0.758 |
| Worked outside the home in the last year | 0.48 | (0.26–0.90) | 0.021 |
| Arranged marriage (compared to love marriage) | 1.26 | (0.66–2.41) | 0.488 |
| Dowry paid in marriage (compared to no dowry) | 1.29 | (0.60–2.79) | 0.516 |
| Ever been pregnant (compared to never pregnant) | 4.21 | (2.63–6.75) | < 0.000 |
| Hindu religion (compared to non-Hindu) | 0.46 | (0.20–1.08) | 0.073 |
| Caste (reference Brahmin/Chhetri) | | | |
| Indigenous group | 2.40 | (1.07–5.37) | 0.034 |
| So-called untouchables/religious minority | 3.20 | (1.19–8.63) | 0.021 |
| Wealth quintile at baseline | 1.13 | (0.88–1.46) | 0.328 |
| Constant | 5.38 | (0.15–194.21) | 0.357 |
| Observations | 958 | | |
| Number of groups | 200 | | |

We specifically focus on food security and find evidence that IPV increases more for food-insecure women post-COVID-19 compared to food-secure women post COVID-19. This finding was likely not significant due to small subgroup sizes and we feel that this still provides some evidence of impact of these two factors. Other research from Nepal recently has suggested that food insecurity caused by COVID-19 could increase violence, although to date this has mostly been qualitative in nature.⁴¹ One study from Bangladesh found increases in food insecurity and IPV post-COVID-19, but did not look at the interaction between these two during COVID-19.⁴² Given Nepal's high rates of existing food insecurity, crises situations like COVID-19 appear to push families increasingly into food insecurity, which can exacerbate household stress and lead to even more violence.

Other household stressors such as changes in financial security, exposure to COVID-19 or deaths in the family or community, or the stress of shared living spaces and quarantines may also result in a heightened risk of violence. More research on these other stressors, how they changed during COVID-19, and how they in turn might have led to increased IPV could help us understand these pathways better.

The strengths of this paper include the longitudinal nature of the data, which allow us to measure trends over time, including before COVID-19 and during the pandemic. However, there are a few limitations. First, the data were collected from women in one plains district of Nepal, and therefore results are not generalisable to other parts of Nepal or globally; the sample also includes only newly married women, so may not reflect the experiences of older women or non-married, but partnered, young women. Second, Rounds 1–4 of the data were collected through in-person interviews, however, due to the COVID-19 pandemic, Round 5 data were collected over the phone. It is possible that some of the differences we see between Round 5 and earlier rounds may be due to different data collection approaches. For example, women might have been more comfortable reporting violence over the phone than in person, and thus some of the apparent increases in violence may be due to the data collection approach. In addition, IPV being a sensitive topic, it is possible that familiarity with the study staff over time may have had some impact on the increased reporting of IPV. However, data were collected by the same, experienced staff which may

have built women's confidence to disclose their IPV experiences from the beginning of the study. Third, due to the nature of practicalities in data collection, each round of data collection was not exactly the same, ranging between 6–8 months. While we did not account for this difference in our models, we feel that it was small enough that it should not make a difference in the interpretation of our results. Nevertheless, we do not know which items may be more or less sensitive to the data collection type and therefore cannot know how this might bias the data. Larger cohort studies, with data available before, during and after the COVID-19 lockdowns, would be preferable for confirming these findings.

Conclusions

We found that even in the early months of marriage IPV is very common in Nepal. The main focus of our analysis was to identify predictors of IPV over time, including before and after the COVID-19 lockdowns, and to assess whether household food insecurity is associated with IPV before and after the lockdowns. Young women, who are already at risk of IPV, were at risk after COVID-19, and in the present sample women who lived in households with food insecurity were even more at risk. This suggests that multiple stressors can interact to put these young women at additionally high risk of experiencing IPV. Although the Domestic Violence and Punishment Act 2009 was enacted over a decade ago, we find no indication of decreasing prevalence of IPV in Nepal. Along with enforcement of anti-violence laws, our results suggest that equal attention needs to be given to interventions that aim to improve women's education, socio-economic status, and reproductive history. Research on male attitudes and beliefs that contribute to IPV is also needed to gain a comprehensive understanding of the problem. Given the ongoing nature of COVID-19 (as we write Nepal is going back into lockdown in May 2021) and likelihood of future pandemics or other similar crises, it is important to consider how to especially target interventions to young women who may be experiencing other stressors.

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Data availability

De-identified dataset used and/or analysed during the current study will be available from the first author upon reasonable request.

References

- Devries KM, Mak JYT, García-moreno C, et al. The global prevalence of intimate partner violence against women. *Science*. 2013;340(6140):1527–1528.
- United Nations. Declaration on the elimination of violence against women proclaimed by General Assembly resolution 48/104 of 20 December 1993. Available from: https://www.un.org/en/genocideprevention/documents/atrocity-crimes/Doc.21_declaration%20elimination%20vaw.pdf.
- WHO. WHO *multi-country study on women's health and domestic violence against women*. World Health Organization, Geneva. World Health Organisation, Geneva. 2005. Available from: http://www.who.int/gender/violence/who_multicountry_study/en/.
- Solotaroff JL, Pande RP. Violence against women and girls: lessons from South Asia. Washington (DC): South Asia Development Forum, World Bank Group; 2014.
- Kishor S, Johnson K. Profiling domestic violence. Calverton (MD): ORC Macro, Inc; 2004.
- WHO. Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence. Geneva: World Health Organization; 2013. 2013.
- Nepal Law Commission. Constitution of Nepal, 2015. Government of Nepal 2015. Available from: <https://lawcommission.gov.np/en/wp-content/uploads/2021/01/Constitution-of-Nepal.pdf>.
- SAATHI and The Asia Foundatio. *A Situation Analysis of Violence Against Women in Nepal*. Kathmandu, Nepal. 1997.
- Women's Rehabilitation Centre. *Breaking the Silence: Needs Identification of Victims of Gender-based Violence*. Kathmandu, Nepal. 2002.
- Deuba AR, Rana PS. *A Study on Linkages between Domestic Violence and Pregnancy*. SAMANTA – Institute for Social and Gender Equality, Kathmandu, Nepal. 2005.
- Puri M, Cleland J. Assessing the factors sexual harassment among young female migrant workers in Nepal. *J Interpers Violence*. 2007;22(11):1363–1381.
- Puri M, Tamang J, Shah I. Exploring the nature and reasons for sexual violence within marriage Among young women in Nepal. *J Interpers Violence*. 2010;25:1873–1892.
- Puri M, Tamang J, Shah I. Suffering in silence: consequences of sexual violence within marriage among young women in Nepal. *BMC Public Health*. 2011;11(1):11–29.
- Puri M, Forst M, Tamang J, et al. The prevalence and determinants of sexual violence against young married women by husbands in rural Nepal. *BMC Res Notes*. 2012;5:291.
- Ministry of Health and Population (MOHP) [Nepal], New ERA, and Macro International Inc. *Nepal demographic and health survey 2016*. Kathmandu: Ministry of Health and Population, New ERA, and Macro International Inc.; 2017.
- Atteraya MS, Gnawali S, Song IH. Factors associated with intimate partner violence against married women in Nepal. *J Interpers Violence*. 2015;30(7):1226–1246.
- SAATHI and UNFPA. *Situational analysis of gender-based violence in Surkhet and Dang Districts Nepal*. SAATHI. Kathmandu, Nepal. 2008.
- Lamichhane P, Puri M, Tamang J, et al. Women's status and violence against young married women in rural Nepal. *BMC Womens Health*. 2011;11:11–19.
- Puri M, Hawkes S, Tamang A, et al. A study on gender-based violence in selected districts of Nepal. Kathmandu: Ministry of Women, Children, and Social Welfare/CREHPA. 2012.
- Puri M, Tyynela J, Chain E, et al. A study on advancing justice sector reform to address discrimination and violence against women in four selected districts of Nepal. Kathmandu: Ministry of Women, Children and Social Welfare/CREHPA; 2013.

21. Pande RP, Nanda P, Bopanna K, et al. Addressing intimate partner violence in south Asia: evidence for interventions in the health sector, women's collectives, and local governance mechanisms. New Delhi: International Center for Research on Women; 2017.
22. Colombini M, Mayhew S, Hawkin HB, et al. Agenda setting and framing of gender-based violence in Nepal: how it became a health issue. *Health Policy Plan.* 2016;31(4):493–503.
23. Dalal K, Wang S, Svanstro ML. Intimate partner violence against women in Nepal: an analysis through individual, empowerment, family and societal level factors. *J Res Health Sci.* 2014;14(4):251–257.
24. Dalal K, Lee MS, Gifford M. Male adolescents' attitudes toward wife beating: a multi-country study in south Asia. *J Adolesc Health.* 2012;50(5):437–442.
25. Pun KD, Infanti JJ, Koju R, et al. Community perceptions on domestic violence against pregnant women in Nepal: a qualitative study. *Glob Health Action.* 2016;9(1):1–13.
26. Brunson J. Son preference in the context of fertility decline: limits to new constructions of gender and kinship in Nepal. *Stud Fam Plann.* 2010;41(2):89–98.
27. Male C, Wodon Q. Basic profile of child marriage in Nepal. Washington, DC: The World Bank; 2016.
28. Ellsberg M, Jansen HA, Heise L, et al. WHO Multi-country study on women's health and domestic violence against women study team. intimate partner violence and women's physical and mental health in the WHO multi-country study on women's health and domestic violence: an observational study. *Lancet.* 2008 Apr 5;371(9619):1165–1172. doi:10.1016/S0140-6736(08)60522-X. PMID: 18395577.
29. Fulu E, Jewkes R, Roselli T, et al. UN Multi-country cross-sectional study on men and violence research team. prevalence of and factors associated with male perpetration of intimate partner violence: findings from the UN multi-country cross-sectional study on men and violence in Asia and the Pacific. *Lancet Glob Health.* 2013 Oct;1(4):e187–e207. doi:10.1016/S2214-109X(13)70074-3.
30. Diamond-Smith N, Conroy AA, Tsai AC, et al. Food insecurity and intimate partner violence among married women in Nepal. *J Glob Health.* 2019;9(1):1–9. doi:10.7189/jogh.09.010412.
31. Laborde D, Martin W, Swinnen J, et al. COVID-19 risks to global food security. *Science.* 6503;369:500–502. doi:10.1126/science.abc4765.
32. Pérez-Escamilla R, Cunningham K, Moran VH. COVID-19 and maternal and child food and nutrition insecurity: a complex syndemic. *Matern Child Nutr.* 2020;16(3):1–4. doi:10.1111/mcn.13036.
33. Singh DR, Sunuwar DR, Adhikari B, et al. The perils of COVID-19 in Nepal: implications for population health and nutritional status. *J Glob Health.* 2020;10(1):1–4. doi:10.7189/jogh.10.010378.
34. Acharya DR, Bell R, Simkhada p, et al. Women's autonomy in household decision-making: a demographic study in Nepal. *Reprod Health.* 2010;7:1–12. doi:10.1186/1742-4755-7-15.
35. Raifman S, Puri M, Arcara J, et al. Is there an association between fertility and domestic violence in Nepal? *AJOG Global Reports.* 2021;1(2):1–8. doi:10.1016/j.xagr.2021.100011
36. Diamond-Smith N, Plaza N, Puri M, et al. Perceived conflicting desires to delay the first birth: a household-level exploration in Nepal. *Int Perspect Sexual Reprod Health.* 2020;46:125–133. doi:10.1363/46e9420.
37. Diamond-Smith NG, Dahal M, Puri M, et al. Semi-arranged marriages and dowry ambivalence: tensions in the changing landscape of marriage formation in south Asia. *Culture Health & Sexuality.* 2019;19:971–986. doi:10.1080/13691058.2019.1646318.
38. Lamichhane A, Rana S, Shrestha K, et al. Violence and sexual and reproductive health service disruption among girls and young women during COVID-19 pandemic in Nepal: A cross-sectional study using interactive voice response survey. *PLoS ONE.* 2021;16(12):1–13. doi:10.1371/journal.pone.02604.
39. Hoekstra T, Twisk JWR, et al. The analysis of individual health trajectories across the life course: latent class growth models versus mixed models. In: Burton-Jeangros C, Cullati S, Sacker A, editors. A life course perspective on health trajectories and transitions. Cham (CH): Springer; 2015. Chapter 9. Available from: <https://www.ncbi.nlm.nih.gov/books/NBK385363/> doi:10.1007/978-3-319-20484-0_9.
40. Ghimire C, Acharya S, Shrestha C, et al. Interpersonal violence during the COVID-19 lockdown period in Nepal: a descriptive cross-sectional study. *JNMA.* 2020;58(230):751–757. doi:10.31729/jnma.5499.
41. Singh DR, Sunuwar DR, Shah SK, et al. Food insecurity during COVID-19 pandemic: a genuine concern for people from disadvantaged community and low-income families in Province 2 of Nepal. *PLoS ONE.* 2021;16(7):1–20. doi:10.1371/journal.pone.0254954.
42. Hamadani JD, Hasan IH, Baldi AJ, et al. Immediate impact of stay-at-home orders to control COVID-19 transmission on socioeconomic conditions, food insecurity, mental health, and intimate partner violence in Bangladeshi women and their families: an interrupted time series. *Lancet Glob Health.* 2020;8(11):1380–e1389. doi:10.1016/S2214-109X(20)30366-1.

Résumé

Cet article examine les facteurs associés à la violence exercée par un partenaire intime chez des jeunes mariées au Népal, et comment cette violence a été influencée par l'insécurité alimentaire et la COVID-19. Étant donné qu'il est avéré que l'insécurité alimentaire est associée à la violence exercée par un partenaire intime et à la COVID-19, nous avons recherché si une insécurité alimentaire accrue pendant la COVID-19 était associée à des changements dans ce type de violence. Nous avons utilisé des données tirées d'une étude de cohorte de 200 jeunes mariées âgées de 18 à 25 ans, interrogées à cinq reprises sur deux ans, à six mois d'intervalle (02/2018–07/2020), y compris après les confinements dus à la COVID-19. Une analyse bivariée et des modèles de régression logistique à effets mixtes ont été utilisés pour examiner l'association entre des facteurs de risque choisis et de récentes violences conjugales. Les violences conjugales sont passées de 24.5% pendant la période initiale à 49.2% avant la COVID-19 et jusqu'à 80,4% après la COVID-19. Après ajustement pour tenir compte des covariables, nous constatons que la COVID-19 (RC = 2.93, IC 95% 1.07–8.02) de même que l'insécurité alimentaire (RC = 7.12, IC 95% 4.04–12.56) sont associées à un risque accru de violences conjugales et que les violences conjugales se sont aggravées davantage pour les femmes souffrant d'insécurité alimentaire après la COVID-19 (par comparaison avec les femmes ne connaissant pas l'insécurité alimentaire), mais que cette hausse n'était pas statistiquement significative (intervalle de confiance 0.76–8.69, valeur $p = 0.131$). Les jeunes femmes nouvellement mariées connaissent des taux élevés de violences conjugales qui augmentent avec la durée du mariage, et la COVID-19 a exacerbé ce phénomène, tout particulièrement pour les femmes souffrant d'insécurité alimentaire dans le présent échantillon. Parallèlement à l'application des lois contre la violence exercée par un partenaire intime, nos résultats semblent indiquer qu'il faut accorder une attention spéciale aux femmes pendant les périodes de crise comme la pandémie actuelle de COVID-19, en particulier à celles qui subissent d'autres facteurs de tension dans le ménage.

Resumen

Este artículo examina los factores asociados con la violencia de pareja íntima (VPI) entre mujeres recién casadas en Nepal, y cómo la VPI se vio afectada por la inseguridad alimentaria y por COVID-19. En vista de evidencia de que la inseguridad alimentaria está asociada con VPI y COVID-19, exploramos si el aumento de inseguridad alimentaria durante COVID-19 está asociado con cambios en VPI. Utilizamos datos de un estudio de cohortes con 200 mujeres recién casadas de 18 a 25 años, entrevistadas cinco veces durante dos años, a intervalos de 6 meses (02/2018 a 07/2020), incluso después de cierres asociados con COVID-19. Se utilizaron análisis bivariados y modelos de regresión logística de efectos mixtos para examinar la asociación entre los factores de riesgo seleccionados y VPI reciente. La VPI aumentó de 24.5% en la línea base a 49.2% antes de COVID-19, y luego a 80.4% después de COVID-19. Después de ajustar por covariables, encontramos que tanto COVID-19 (RM = 2.93, IC al 95% 1.07–8.02) como la inseguridad alimentaria (RM = 7.12, IC al 95% 4.04–12.56) están asociados con mayores probabilidades de VPI, y la VPI aumentó más para las mujeres con inseguridad alimentaria después de COVID-19 (comparadas con las mujeres sin inseguridad alimentaria), pero esto no fue estadísticamente significativo (intervalo de confianza 0.76–8.69, valor- $p = 0.131$). Las mujeres jóvenes recién casadas sufren altas tasas de VPI que aumentan con el paso del tiempo en el matrimonio, y COVID-19 ha exacerbado esto, en particular para las mujeres con inseguridad alimentaria en la muestra actual. Nuestros resultados indican que, además de hacer cumplir las leyes contra la VPI, es necesario prestar atención especial a las mujeres en tiempos de crisis como la actual pandemia de COVID-19, especialmente a aquellas que experimentan otros factores estresantes domiciliarios.