Menstrual restriction prevalence and association with intimate partner violence among Nepali women

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ABSTRACT

Introduction Emerging research has linked women’s sanitation and menstrual hygiene experiences with increased vulnerability to violence outside the home. Few studies, however, have investigated the relationship between menstruation and violence perpetrated by family members. This type of violence may be linked specifically to restrictions placed on women during menstruation, which are common in some regions of Nepal owing to shared power differentials that disfavour women, and societal norms that stigmatise menstruation.

Objective To record the prevalence of menstrual restrictions experienced by married women and examine potential associations between intimate partner violence (IPV) in the past year and menstrual restrictions imposed by husbands and/or in-laws among women in three districts of Nepal: Nawalparasi, Kapilvastu and Chitwan.

Methods Baseline data from a larger randomised control trial aiming to reduce IPV in three districts of the Terai region of Nepal (n=1800) were used to assess the prevalence of menstrual restrictions and the association with IPV.

Results Nearly three out of four women (72.3%) reported experiencing high menstrual restriction, or two or more types of menstrual restriction. When controlling for demographic variables and IPV, no type of IPV was associated with high menstrual restrictions.

Conclusion The experience of menstrual restriction was widespread in this sample of women in Nepal. Future research should seek to identify how best to capture menstrual stigma and deviations around such norms. The global health and development community should prioritise integration with existing water and sanitation programmes to reduce stigma and ensure the well-being of menstruating women and girls.

Trial registration number NCT02942433.

Key messages

► Menstrual restrictions are common among women in the Terai region of Nepal.
► When controlling for demographic variables, no form of IPV was associated with high menstrual restrictions.
► Future research should seek to identify how best to capture menstrual restrictions and stigma, including deviations around such norms.

INTRODUCTION

After a decade of research and advocacy by global health experts, menstrual health and hygiene is now recognised as a public health concern.1,2 In low- and middle-income countries, in particular, recent efforts have focused on dealing with the lack of puberty education and menstrual products and the inadequacy of water and sanitation facilities in schools.1 By some estimates, only 47% of schools in low-income countries have water coverage and only 46% have sanitation infrastructure.3 The failure to provide girls with information and hygiene facilities reinforces the notion that menses are a private matter to be hidden and, in part, explains why many girls miss school while menstruating.4,5 Experiencing shame and fear related to menstruation can diminish girls’ self-confidence6 and has implications for their health and well-being into adulthood.7 Emerging evidence has linked women’s sanitation and hygiene experiences with increased vulnerabilities to violence.8,9 Specifically, poor access to public toilet facilities—either they are too far away or too few—or poor design of the facilities, dimly lit or isolated, leaves women at risk of sexual harassment, assault and...
According to the UN, lack of access is widespread: one in three women does not have access to safe, adequate toilets. A recent population-based study in Kenya directly linked violence against women and inadequate sanitation. Winter and Barchi found that Kenyan women who practised open defaecation had greater odds (adjusted OR = 1.387) of reporting non-partner violence than women who had access to improved sanitation. Women and girls who are menstruating and require more frequent use of these facilities are at increased risk of abuse. Menstruation has been linked to gender-based violence in other ways as well. Girls attending school while menstruating can experience psychological abuse and ridicule from male classmates, particularly if they soil their clothing.

There is some evidence of increasing research and programmes focusing on menstrual health and women and girls’ vulnerability to violence outside the home, but little research has specifically investigated links between violence within the home (ie, intimate partner violence (IPV)) and menstrual health. IPV may be linked to menstrual health owing to power differentials that disfavour women as well as societal norms that stigmatise menstruation. For instance, in Nepal and other global settings, the onset of menses signals girls’ sexual maturity, triggering their removal from school and increasing their vulnerability to forced and/or early marriages; and recent media reports have highlighted increased violence in the home during menstruation: not sleep with her husband, stay away from everyone, not enter a temple or place of worship, stop praying (outside of the temple), not cook, or rape. According to the UN, lack of access is widespread: one in three women does not have access to safe, adequate toilets. A recent population-based study in Kenya directly linked violence against women and inadequate sanitation. Winter and Barchi found that Kenyan women who practised open defaecation had greater odds (adjusted OR = 1.387) of reporting non-partner violence than women who had access to improved sanitation. Women and girls who are menstruating and require more frequent use of these facilities are at increased risk of abuse. Menstruation has been linked to gender-based violence in other ways as well. Girls attending school while menstruating can experience psychological abuse and ridicule from male classmates, particularly if they soil their clothing.

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other restriction. Women could choose all factors that applied. A dichotomous variable was created: women who chose one or none of the items were coded as ‘low menstrual restriction’ and women who selected two or more items were coded as ‘high menstrual restriction.’ Since this is among the first studies to quantify menstrual restrictions, the variable was coded to capture the quartile of respondents who experienced most restrictions.

The demographic variables were drawn from previous research in Nepal on IPV and included a continuous measure of age and categorical measures of education and husband’s education (none, primary, secondary and higher). Additionally, categorical variables were created for age at marriage (≤14, 15–17 and ≥18) and number of children (0, 1–3, ≥4). A dichotomous measure was created for household income stress (yes/no). In consultation with in-country partners, caste was coded as a dichotomous variable, comprising advantaged castes (eg, upper caste, advantaged Janajatis) and disadvantaged castes/religious minorities (eg, disadvantaged Janajatis, Dalit, Muslim).

### Analysis

Descriptive statistics of all demographic, menstrual restriction and violence variables were obtained. Bivariate cross-tabulations using Pearson’s χ² tests assessed the association between demographics and menstrual restrictions, and between menstrual restriction and IPV. Generalised estimating equation logistic regressions were used to assess the relationship between IPV and menstrual restriction while accounting for the clustering within the data. Unadjusted logistic regressions were conducted with each type of IPV (separately) as the predictor and high menstrual restriction as the outcome. Finally, we used two adjusted logistic regressions. The first included any IPV and menstrual restriction, while controlling for demographic variables. The second adjusted logistic regression included all the (separate) types of IPV, so as to isolate the association of each type with the outcome, menstrual restriction, while also controlling for the demographic variables.

### Patient statement

Participants were not directly involved in the design of the research. However, the research team relied on the local knowledge and expertise of our in-country implementation partners to help devise and carry out a study reflective of the communities’ needs and experiences. After conclusion of the larger study, the results of this paper and others will be disseminated to participants via community meetings.

**RESULTS**

As shown in table 1, participants had a mean age of 34.5. Around one in three women (31.2%) had no education and almost one in five (18.5%) had more than a secondary education. Husbands were slightly more educated: 14.1% had no education, while 28.4% had attended higher than secondary school. Nearly half (48.5%) of the sample had been married before the age of 18—35.9% between the ages of 15 and 17 and 12.6% at age ≤14. The majority of women (79.7%) had between 1 and 3 children. Just under half of the participants (44.9%) reported experiencing household income stress and just over half (52.9%) were from a disadvantaged caste.

Experience of menstrual restriction was widespread. Almost three out of four women (72.3%) reported experiencing high menstrual restriction, or two or more types of menstrual restriction. Experience of menstrual restriction varied significantly by age (p=0.047) and by education. Women who were more educated (p<0.001) or who had husbands who were more educated (p<0.001) reported higher levels of menstrual restriction. Women from an advantaged caste also reported higher levels of menstrual restriction (p<0.001).

### Table 1 Demographic characteristics and associations with menstrual restrictions

<table>
<thead>
<tr>
<th></th>
<th>Total (n=1800)</th>
<th>Low menstrual restriction (%)</th>
<th>High menstrual restriction (%)</th>
<th>P values</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total (%)</td>
<td>100</td>
<td>27.7</td>
<td>72.3</td>
<td></td>
</tr>
<tr>
<td><strong>Demographics</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>34.5</td>
<td>33.9</td>
<td>34.8</td>
<td>0.047</td>
<td></td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>562 (31.2)</td>
<td>36.3</td>
<td>63.7</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Primary</td>
<td>444 (24.7)</td>
<td>24.6</td>
<td>75.5</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>461 (25.6)</td>
<td>26.5</td>
<td>73.5</td>
<td></td>
</tr>
<tr>
<td>Higher</td>
<td>333 (18.5)</td>
<td>19.2</td>
<td>80.8</td>
<td></td>
</tr>
<tr>
<td>Husband’s education</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>253 (14.1)</td>
<td>34.0</td>
<td>66.0</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Primary</td>
<td>397 (22.1)</td>
<td>32.5</td>
<td>67.5</td>
<td></td>
</tr>
<tr>
<td>Secondary</td>
<td>636 (35.4)</td>
<td>27.8</td>
<td>72.2</td>
<td></td>
</tr>
<tr>
<td>Higher</td>
<td>510 (28.4)</td>
<td>20.4</td>
<td>79.6</td>
<td></td>
</tr>
<tr>
<td>Age at marriage (years)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>≤14</td>
<td>226 (12.6)</td>
<td>30.5</td>
<td>69.5</td>
<td>0.415</td>
</tr>
<tr>
<td>15–17</td>
<td>646 (35.9)</td>
<td>28.5</td>
<td>71.5</td>
<td></td>
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<tr>
<td>≥18</td>
<td>928 (51.6)</td>
<td>26.5</td>
<td>73.5</td>
<td></td>
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<tr>
<td><strong>Number of children</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>None</td>
<td>77 (4.3)</td>
<td>28.6</td>
<td>71.4</td>
<td>0.955</td>
</tr>
<tr>
<td>1–3</td>
<td>1435 (79.7)</td>
<td>27.8</td>
<td>72.2</td>
<td></td>
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<tr>
<td>4+</td>
<td>288 (16.0)</td>
<td>27.1</td>
<td>72.9</td>
<td></td>
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<tr>
<td>Income stress</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Yes</td>
<td>806 (44.9)</td>
<td>26.6</td>
<td>73.4</td>
<td>0.269</td>
</tr>
<tr>
<td>No</td>
<td>990 (55.1)</td>
<td>28.9</td>
<td>71.1</td>
<td></td>
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<tr>
<td><strong>Caste/ethnicity</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Disadvantaged</td>
<td>952 (52.9)</td>
<td>40.2</td>
<td>59.8</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Advantaged</td>
<td>848 (47.1)</td>
<td>13.7</td>
<td>86.3</td>
<td></td>
</tr>
</tbody>
</table>
As shown in table 2, in the past year 40.4% of women reported any IPV, 29% reported emotional IPV, 17.5% reported economic IPV, 15.7% reported physical IPV and 18.1% reported sexual violence. Unadjusted odds ratios showed that with the exception of physical violence, all other types of IPV were not significantly associated with high menstrual restrictions. When controlling for demographic variables and IPV, adjusted regressions indicated that no type of IPV was associated with high menstrual restrictions.

DISCUSSION
These findings indicate that women’s participation in family and social life during menstruation is widely restricted by both husbands and husbands’ family members in this sample of married women from three districts in the Terai region of Nepal. Our study sought to examine whether IPV correlated with experience of menstrual restriction; no such association was identified. Because this study is among the first to assess both menstrual restrictions and potential associations with...
IPV experiences, further research is clearly needed. It may be that owing to the prevalence of self-reported menstrual restriction among participants in this sample, significant associations were not found because of limited variation in the outcome of interest. Furthermore, some 7 in 10 Nepalese women reported high levels of menstrual restriction in this sample, thus indicating that such restrictions reflect a socially accepted practice. This study did not examine whether or not women accepted this practice, and neither did it investigate whether women resisted or deviated from this socially acceptable practice. Possibly, women who challenge or defy socially acceptable practices, such as menstrual restrictions, may be more vulnerable to IPV. Similar to IPV and gender norms research, it would be important for future research to identify specific situations that are less socially acceptable than others. For instance, challenging the menstrual restriction of not entering a temple might have elicited more negative responses than not entering the kitchen. One limitation of the study is that measurement of menstrual restriction has not been standardised. This study is a critical first step in this process, but additional research is needed. Future research should also seek to identify how best to capture menstrual stigma, norms, and deviations around such norms to obtain a better understanding of this gendered phenomenon.

The study of social norms and menstrual restrictions is particularly important in light of recent events in Nepal. In August 2017, Nepal passed a law criminalising Chaupadi. This action was widely received as a positive step toward ensuring the safety and well-being of Nepali women and girls. However, as indicated by our findings and prior research, numerous types of menstrual restriction are faced in Nepal, and in some areas these practices are pervasive. Similar to other practices rooted in gender norms (eg, IPV, child marriage), ending these practices will require, together with legislation, changing and challenging social norms. Since Nepal’s 2015 earthquake, increased programming and funding has focused on gender equity and women’s empowerment. More research is needed to determine how such initiatives might also deal with social norms, stigma and restrictions related to menstruation.

The high frequency of menstrual restrictions reported herein highlights the need for global health and development to address this problem. Although not explicitly stated in the sustainable development goals, ensuring menstruation is safe and destigmatised is essential to achieving these targets, particularly those related to health, equitable education, gender equality, available and adequate sanitation and inclusive economic opportunity. Integrating efforts to reduce menstrual stigma within existing water, sanitation and hygiene (WASH) initiatives that focus on menstrual hygiene education and facilities is an initial way to tackle this issue jointly with sustainable development goal priorities.

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Competing interests None declared.

Patient consent Not required.

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REFERENCES