



Source details

BMC Public Health

Incorporating: BMC International Health and Human Rights

Open Access ⓘ

Years currently covered by Scopus: from 2001 to 2024

Publisher: Springer Nature

E-ISSN: 1471-2458

Subject area: Medicine: Public Health, Environmental and Occupational Health

Source type: Journal

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SJR 2023

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SNIP 2023

1.386 ⓘ

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COUNTRY

United Kingdom

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SUBJECT AREA AND DISCIPLINE

Medicine
Public Health
Occupational Health

H-INDEX

197

PUBLICATION TYPE

Journals

ISSN

14712458

COVERAGE

2001-2023

INFORMATION

[Homepage](#)
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SCOPE

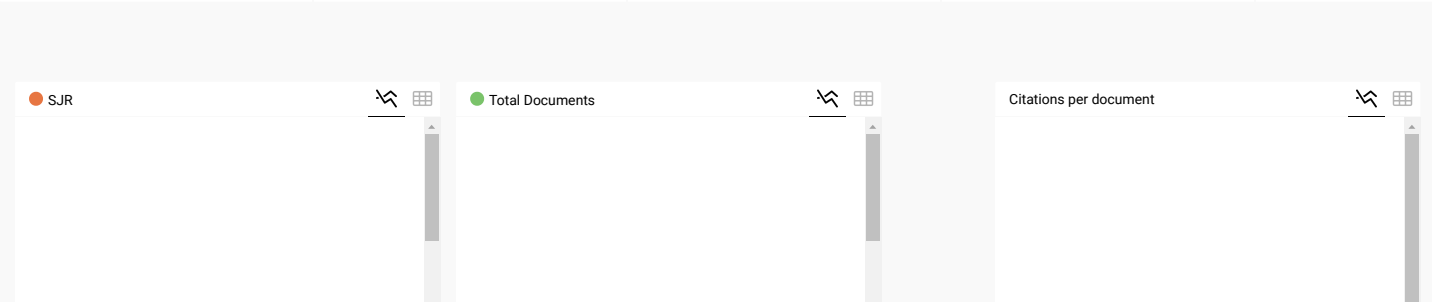
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Variations in the association between polygyny and experience of intimate partner violence by husband's alcohol consumption: a cross-sectional study among postpartum women in Thailand

Paithoon Sonthon¹, Narumon Janma¹ and Wit Wichaidit^{2,3*}

Abstract

Background Intimate partner violence is more common in polygynous couples than monogamous couples, but the extent that this association is modified by the husband's alcohol consumption is unknown. The objectives of this study are: (1) To describe the extent to which polygyny is associated with self-reported experience of intimate partner violence among women receiving postpartum care; (2) To describe the extent to which the mentioned association is modified by the husband's alcohol consumption.

Methods We conducted a hospital-based cross-sectional study among women age 18 years or older receiving postpartum care at 8 public hospitals in 3 provinces in Northern and Northeastern Thailand using self-administered questionnaires. We analyzed data using descriptive statistics, logistic regression, and stratified analyses.

Results A total of 1207 women agreed to participate in the study, 8% of whom reported that their husbands practiced polygyny. Women in a polygynous relationship were more likely than women in monogamous relationships to experience intimate partner violence (11.7% vs. 3.6%, Adjusted OR = 2.23; 95% CI = 0.94, 5.26). The prevalence of intimate partner violence was relatively low in both groups among women whose husbands did not drink (2.9% vs. 0%, Adjusted OR = N/A), and very high in both groups among those whose husbands binge-drank (46.2% vs. 20.8%, Adjusted OR = 9.54; 95% CI = 1.10, 82.54). However, the Breslow-Day Test of Homogeneity suggested that there was no statistically significant effect modification (p -value = 0.259).

Conclusion Stakeholders in intimate partner violence should consider both alcohol use (particularly binge-drinking) and polygyny as risk factors for intimate partner violence. However, caveats regarding study design, misclassification and potential information bias, and lack of generalizability should be considered in the interpretation of the study findings.

Keywords Polygyny, Intimate partner violence, Alcohol, Effect modification

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Introduction

Intimate partner violence is a common problem with life-time prevalence between 15 and 25% among women [1, 2]. Intimate partner violence is also known to occur during pregnancy, and may also be associated with under-five mortality among the children [3]. Studies have also shown that intimate partner violence is more common in polygynous couples, where the male partner has multiple partners [4–6], than in monogamous couples. The practice of polygyny is influenced by socio-cultural norms and religious traditions [4], which may also influence intimate partner violence. However, the extent to which polygyny is associated with intimate partner violence may be further modified by patterns of thoughts and local cultural norms [7]. In that regard, the prevalence of polygyny and the extent to which polygyny is associated with intimate partner violence in Thailand has not been systematically quantified.

Alcohol consumption is another strong predictor of family violence with possible dose-response relationship [8]. Alcohol is known to reduce inhibition and increase the likelihood of actual perpetration of intimate partner violence [9]. Previous studies have not assessed the extent to which alcohol consumption modifies the association between polygyny and intimate partner violence. Considering alcohol's ability to reduce inhibitions to engage in violence, and men who practice polygyny are more likely to engage in violence, we hereby hypothesize that: (1) there is a positive association between polygyny and experience of intimate partner violence, and; (2) the association is stronger in couples where the male partner binge-drinks than in couples where the male partner drinks but does not binge, and weakest in couples where the male partner does not drink.

In Thailand, polygyny is known to be common in the local culture [10], and drinking is relatively common among men [11]. Empirical data on the association between polygyny, intimate partner violence, and effect modification by alcohol consumption should be of interest to stakeholders in intimate partner violence and substance misuse. The objectives of this study are: (1) To describe the extent to which polygyny is associated with self-reported experience of intimate partner violence among women receiving postpartum care; (2) To describe the extent to which the mentioned association is modified by the husband's alcohol consumption.

Methods

Study design and setting

We conducted a cross-sectional study at 8 government hospitals in Phetchabun, Loei, and Chaiyaphum Provinces in North and Northeastern Thailand. We collected data during November 2022 thru March 2023.

Study participants and sample size calculation

The target population included women who gave birth at public hospitals during fiscal year 2023 in the study provinces. The inclusion criteria among the study participants were: (1) normal childbirth; (2) aged 18 years and older; (3) able to read and speak the Thai language. Exclusion criteria were: (1) Giving birth by caesarean section; (2) Experience of severe or post-partum infection. We decided to exclude women who underwent caesarean section to avoid disturbing the process of recovery from a major surgery. We did not check the participants' marital status and the lack of a male partner was not an exclusion criterion. Thus, women who had a partner but did not have a wedding or legally registered the marriage were also included in the study.

Sample size calculation for this study was performed to meet the primary cross-sectional study objective of estimating the prevalence of self-reported intimate partner violence among postpartum women. We performed sample size calculation based on an assumed finite source population of 7000 births in the study area, with an estimated prevalence of 15% ($p=0.15$) based on the findings of a previous study [1] at 3% margin of error ($\delta=0.03$), and an arbitrary design effect of 2. We obtained a sample size of 1,010 participants. We then assumed that 15% of the potential participants would refuse to participate and adjusted the target sample size to 1,188 women.

Study instrument

The study instrument was a structured self-administered questionnaire that included 7 sections: (1) Demographic and socioeconomic characteristics of the participant; (2) History of pregnancy and childbirth; (3) Demographic and socioeconomic characteristics of the participant's husband; (4) Alcohol consumption by the participant's husband; (5) Intimate partner violence and history of receiving assistance; (6) Quality of life; (7) Depressive symptoms. The study instrument was 6 pages in length (not including the cover page). The English translation of the sections relevant to the findings of this study are available from the corresponding author upon reasonable request.

All parts of the study instrument underwent validity assessment by 3 provincial experts with knowledge and skill in the assessment of drug misuse and mental health. We calculated the item-objective congruence index (IOC) based on the experts' feedback and pilot-tested the assessed questionnaire among samples of 30 postpartum women at a hospital in a nearby province outside the study area. The Cronbach Alpha Coefficient on the sections pertaining to the husband's controlling behavior, quality of life, and depression were all above 0.70.

Study variables

Exposure: Self-Reported Polygyny. We developed the question to measure polygyny based on the question in the Zimbabwe Demographic and Health Survey (ZDHS) [6, 12]. We adapted the question to suit the local context. Our measurement question was “*Your husband has a total of ... wives (including yourself)*” with responses being integers. We did not include the “Don’t know” option that was available in the original DHS questionnaire [12].

Outcome: Intimate Partner Violence. We used the Abuse Assessment Scale (AAS) [13], Thai version [14]. The questionnaire originally contained 5 questions, but we used only 3 questions: Item 3 to measure physical violence, Item 4 to measure sexual violence, and Item 5 to measure emotional violence. We also asked the participant to specify the number of episodes of each type of violence by trimester (gestational age of 1–3 months, gestational age of 4–6 months, and gestational age of 7–9 months) as well as the total number of episodes of each type of violence. We considered participants who were exposed to any type of violence at any gestational age on at least 1 occasion to have experienced intimate partner violence.

Effect Modifier: Husband’s Drinking Behavior. We assessed the drinking behavior of the participant’s husband based on a number of questions, including: (1) Whether the participant’s husband had consumed alcohol since the participant became pregnant (answer choices: “1. No”; “2. Yes”); (2) (Among those whose husband drank) Frequency of alcohol consumption since the participant became pregnant (answer choices: “1. Occasionally (less than once per month)”; “2. Every month (1–3 days per month)”; “3. Every week (1–2 days per week)”; “4. Every other day (3–4 days per week)”; “5. Almost daily (5–6 days per week)”; “6. Every day (7 days per week)”; (3) (Among those whose husband drank) Whether the husband had binge-drunk since the participant became pregnant (drank heavily to the point of intoxication) (answer choices: (1) Never binge-drunk; (2) Binge-drunk); (4) Frequency of binge-drinking (with the same answer choices as Question 2). Based on the answers to the first 3 questions, we classified the participants into 3 groups: (1) Those whose husband did not drink at all during their pregnancy; (2) Those whose husband drank but never binge-drunk during their pregnancy; (3) Those whose husband binge-drunk during their pregnancy. We excluded those with incomplete information from the analyses.

Participant’s own demographic, socioeconomic characteristics, and health behaviors In the first section of the study questionnaire, we asked the participant to self-report their area of residence (within or outside a municipi-

ality area), age, level of education, occupation, household monthly income, length of marriage with the present husband, number of children (including the newborn), history of food insecurity during pregnancy, and frequency of smoking, electronic cigarette use, alcohol consumption, and cannabis consumption during pregnancy.

Husband’s history of controlling behaviors: In the section on characteristics of the participant’s husband, the last five questions included self-reported frequency of the husband’s behavior that emphasizes control including: (1) preventing contact between the participant and friends; (2) preventing contact between the participant and family; (3) accusing the participant of being annoying; (4) displaying anger or jealousy when the participant talks to other men; (5) forcing the participant to request permission before leaving home. For each question item, there were three possible choices: Never, Sometimes, and Often.

Detailed variable definitions are available in Supplementary Table 1.

Data collection

We first trained research assistants (registered nurses from the postpartum ward at each study hospital) with regards to the study objectives, rationale for the study, confidentiality, and participant information and informed consent processes. The research assistants identified postpartum women in the maternity ward who met the eligibility criteria and distributed the information and informed consent document to all eligible persons on the day of data collection. The research assistants then explained to the women about the study and allowed time for decision-making. Women who agreed to participate then signed the informed consent form. Research assistants then organized a private space for questionnaire completion and distributed a guidebook on how to seek help in case of intimate partner violence to all participants. The guidebook included a list of assistance agencies and communication channels, as well as rights and forms of assistance available. The participants then completed the questionnaire. Each questionnaire took an average of 20 min to complete in full. Participants closed and stapled the questionnaire, returned the questionnaire to the research assistants, the assistants returned the questionnaire to us, and we handed the questionnaire to the data entry team.

Data analyses

To address the first objective (assessment of the extent that polygyny is associated with intimate partner violence), we used univariate descriptive statistics to present the general characteristics of the study participants. We then used bivariate descriptive statistics to describe the probability of experiencing intimate partner violence

(any type) among those in a monogamous vs. polygamous relationships. We then used multivariate logistic regression analyses to assess the extent that polygamy was associated with intimate partner violence after adjusting for the participant's socioeconomic characteristics, the participant's own alcohol consumption during pregnancy, the husband's socioeconomic characteristics, and the husband's display of controlling behaviors. We selected these covariates based on the findings of previous studies on potential predictors of intimate partner violence [2, 8, 15–18].

To address the second objective (assessment of the extent that male alcohol consumption modifies the association between polygyny and intimate partner violence, we stratified the analysis of the association between polygyny and intimate partner violence by the husband's drinking behaviors (did not drink vs. drink but did not binge vs. binge-drunk) and assessed the heterogeneity of the estimates using the Breslow-Day test at 95% level of confidence with adjustment for the same confounders as those used to address the first objective. We used R version 4.3.0 for all data analyses.

Results

A total of 1207 women (101.6% of the target sample size) agreed to participate in our study. Most participants lived in rural areas with the mean age of 28 years (Table 1). Approximately 8% of the participants reported that their husband had two or more wives (including themselves), i.e., practiced polygyny. Use of substances during pregnancy was relatively uncommon. Less than 5% of the participants experienced intimate partner violence of any type during pregnancy. The participants reported that their husbands were similarly educated and were mostly employed. Only one-third reported that the husband did not drink during their pregnancy, although the majority of those whose husband drank during their pregnancy did not report binge-drinking.

With regard to the association between polygyny and intimate partner violence, those who reported polygyny were more likely to experience violence than those who did not report polygyny, although the association became statistically non-significant after adjusting for confounders (11.7% vs. 3.6%, Adjusted OR=2.23; 95% CI=0.94, 5.26) (Table 2). Assessment of effect modification by husband's drinking behavior showed that intimate partner violence in both groups was low to non-existent among those whose husband did not drink (2.9% vs. 0%, Adjusted OR=N/A) (Table 3). However, the prevalence was higher in both groups among those whose husbands drank but did not binge-drink (6.7% vs. 1.9%, Adjusted OR=2.16; 95% CI=0.41, 11.32), and was substantially high among those whose husband binge-drunk (46.2% vs. 20.8%, Adjusted OR=9.54; 95% CI=1.10, 82.54). The

Breslow-Day Test of Homogeneity, however, suggested that the differences between sub-groups were not statistically significant (p -value=0.259), i.e., there was no significant effect modification.

Discussion

In this cross-sectional study, we described the association between polygyny and intimate partner violence, and the extent that this association was modified by the male partner's alcohol consumption. We found that women who reported that their husbands practiced polygyny were more than twice as likely to experience intimate partner violence during pregnancy, although this prevalence was low among those whose husbands did not drink, and concerning high among those whose husbands were binge-drinkers. The findings of this study have implications for stakeholders in substance misuse, violence prevention, and family services.

This is one of the first studies to quantify the prevalence of polygyny among Thai men. The findings of our study add to the existing literature on polygyny in Thailand [10, 19]. In that regard, potential misclassifications should be considered in the interpretation of the study findings. Polygyny in our study was self-reported by the women and not the men themselves, thus the prevalence in our study could have reflected: (1) actual polygyny (i.e., true positives); (2) unfounded allegations of polygyny (i.e., false positives). Similarly, self-reported monogamy in our study could have reflected: (1) actual monogamy (i.e., true negatives); (2) undiscovered or denied polygyny (i.e., false negatives). We also did not measure the practice of polyandry on the participants' part, which could have further contextualized the relationships and provided more insights. However, considering that Thai people generally do not approve of polyandry [20] and that polygyny in Thailand itself is practiced in a clandestine manner [10], polygyny was likely under-reported in our study. Future studies should consider modifying the study instrument to further contextualize polygyny in the study population. One additional point of consideration was that having a male spouse or partner (or lack thereof) was not an inclusion criterion. Thus, our participants also could have those who were not in a partnered relationship. However, fewer than 2% of the participants had missing data regarding basic characteristics of the "husband", and such missing value could include those indeed without a male partner and those who wished not to disclose information about their male partner, thus the lack of having a male spouse or partner as a study criterion did not seem to pose a significant threat to the validity of the study findings.

The association between polygyny and intimate partner violence itself should be considered with care. Our question regarding polygyny did not specify the length of time

Table 1 Characteristics of the study participants (n = 1207 participants)

Characteristic	Frequency and Percent, unless noted otherwise
PARTICIPANT'S OWN CHARACTERISTICS	
Residing within municipality area (yes)	342 (30.5%)
Age in years (mean ± SD)	28.0 ± 6.3 years
Education level	(n = 1192)
No education	32 (2.7%)
Primary school or equivalent	127 (10.7%)
Secondary school or equivalent	806 (67.6%)
Undergraduate degree or equivalent	227 (19.0%)
Occupation	(n = 1184)
Group 1 (unemployed, agriculture, homemaker, others)	560 (47.3%)
Group 2 (manual labor, factory worker, vendor/own business)	537 (45.4%)
Group 3 (state employees, civil service/state enterprise)	87 (7.3%)
Monthly household income [median (quartile 1, quartile 3)]	15,000 (9500, 20000)
Participant's own alcohol use during pregnancy (occasional or frequent)	65 (5.4%)
Participant's smoking during pregnancy (occasional or frequent)	24 (2.0%)
Participant's electronic cigarette use during pregnancy (occasional or frequent)	14 (1.2%)
Participant's cannabis use during pregnancy (occasional or frequent)	25 (2.1%)
Experience of Intimate Partner Violence during Pregnancy	
Experienced physical violence	13 (1.1%)
Experienced sexual violence	11 (0.9%)
Experienced verbal/emotional violence	49 (4.1%)
Experienced violence (any type)	54 (4.5%)
HUSBAND CHARACTERISTICS	
Age in years (mean ± SD)	30.3 ± 7.2 years
Education level	
No education	29 (2.4%)
Primary school or equivalent	176 (14.9%)
Secondary school or equivalent	807 (68.1%)
Undergraduate degree or equivalent	173 (14.6%)
Occupation	
Group 1 (unemployed, agriculture, homemaker, others)	327 (27.9%)
Group 2 (manual labor, factory worker, vendor/own business)	739 (63.1%)
Group 3 (state employees, civil service / state enterprise)	106 (9.0%)
Number of wives (including participant)	
One	1,054 (91.8%)
Two or more	94 (8.2%)
Husband's history of controlling behavior (sometimes or always)	
Preventing contact with friends	36 (3.1%)
Preventing contact with family	10 (0.9%)
Accusing participant of being annoying	114 (9.8%)
Display anger or jealousy when talking to other men	160 (13.7%)
Forced participants to request permission before leaving home	51 (4.4%)
Husband exhibited at least one controlling behavior	229 (19.7%)
Husband's alcohol consumption during pregnancy	
Did not drink	388 (34.2%)
Drank but did not binge	607 (53.5%)
Binge-drunk	140 (12.3%)

at which the polygyny had existed, nor the partner order of the participants. Polygyny could have been completely unrelated to the violence or preceded it. The exact mechanism of association between polygyny and intimate partner violence in the Thai context is unclear. Although

in the polygyny there are clear power differences between the main vs. minor wives, the violence appears to be more common between the male and female spouses [10]. Thus, it is likely that violence in polygynous marriage in the Thai context is less attributable to competition

Table 2 Association between Polygyny and Self-reported experience of intimate Partner Violence (any type)

	Did not report intimate partner violence	Reported intimate partner violence	Crude OR (95% CI)	Adjusted OR (95% CI)*
Monogyny: Husband had one wife (including self)	1,016 (96.4%)	38 (3.6%)	1 (Reference)	1 (Reference)
Polygyny: Husband had two or more wives	83 (88.3%)	11 (11.7%)	3.54 (1.75,7.19)	2.23 (0.94,5.26)

*Adjusted for household income, participant's education, participant's occupation, participant's own alcohol consumption during pregnancy, husband's education, husband's occupation, and husband's display of controlling behaviors

Table 3 Association between Polygyny and Self-reported experience of intimate Partner Violence (any type), stratified by husband's drinking behavior during pregnancy

	Did not report intimate partner violence	Reported intimate partner violence	Crude OR (95% CI)	Adjusted OR (95% CI)*
Among those whose husband never drank during pregnancy				
Husband had one wife (including self) (n = 328)	328 (100%)	0 (0%)	1 (Reference)	1 (Reference)
Husband had two or more wives (n = 35)	34 (97.1%)	1 (2.9%)	N/A**	N/A**
Among those whose husband drank but did not binge during pregnancy				
Husband had one wife (including self) (n = 583)	572 (98.1%)	11 (1.9%)	1 (Reference)	1 (Reference)
Husband had two or more wives (n = 45)	42 (93.3%)	3 (6.7%)	3.71 (1.00, 13.83)	2.16 (0.41, 11.32)
Among those whose husband binge-drank during pregnancy				
Husband had one wife (including self) (n = 120)	95 (79.2%)	25 (20.8%)	1 (Reference)	1 (Reference)
Husband had two or more wives (n = 13)	7 (53.8%)	6 (46.2%)	3.26 (1.00, 10.56)	9.54 (1.10, 82.54)

Breslow-Day Test of Heterogeneity p-value = 0.259

* Adjusted for household income, participant's education, participant's occupation, participant's own alcohol consumption during pregnancy, husband's education, husband's occupation, and husband's display of controlling behaviors

**OR (95% CI) could not be calculated due to perfect prediction

between the wives within the same households, and more to the tendency for polygynous men to view their partners as acquisitions [4]. Senior wives may also face higher risk of violence compared to minor wives [5], and the lack of such information in our study data did not allow us to contextualize violence in our study. Future studies should consider adding qualitative data collection to further contextualize the violence.

Effect modification in the association between polygyny and alcohol, although non-significant, appeared to be in the opposite direction compared to our hypothesis. Higher consumption of alcohol did not enhance the association; the gap narrowed instead. The prevalence of intimate partner violence, however, rose steadily. The contradiction between the direction of association and the exponentially rising probability of violence was also reported in a previous study [8], and the low number of participants who reported violence (and the subsequent width of the confidence intervals) should be taken into account. Measurement of husband's alcohol consumption in our study also lack details. We only assessed whether the participant's husband drank and binge-drank alcohol during pregnancy, but not whether alcohol consumption immediately preceded and influenced the events. Such

lack of information was also issues in previous studies [6, 8]. However, considering the dose-response association between alcohol consumption and domestic violence [8, 21] and in light of this study's findings, stakeholders in intimate partner violence should consider both alcohol use (particularly binge-drinking) and polygyny as risk factors for intimate partner violence.

The strength of this study was the relative novelty of the research question on effect modification in the association between polygyny and intimate partner violence by alcohol consumption. However, limitations should be considered in the interpretation of our study findings. Firstly, the cross-sectional study design did not allow us to ascertain the temporality of polygyny, violence, and the actual role of alcohol in the study findings. Secondly, potential misclassification of polygyny could have introduced information bias to the study findings. Lastly, we only collected data on intimate partner violence during pregnancy, which limited the scope of the study and the generalizability of the study findings.

Conclusion

In this hospital-based cross-sectional study, we found a significant association between polygyny and intimate partner violence during pregnancy. Husband's alcohol consumption behavior (particularly binge-drinking) had a strong influence in intimate partner violence, although there was no statistical evidence of effect modification by alcohol consumption on the association between polygyny and intimate partner violence. Caveats regarding study design, misclassification and potential information bias, and lack of generalizability should be considered in the interpretation of the study findings.

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s12889-024-20281-7>.

Supplementary Material 1

Acknowledgements

We wish to thank all study participants for their valuable time and willingness to answer our study questionnaires. We also wish to thank our research assistants for their tireless efforts.

Author contributions

P.S. and N.J. designed the study and supervised the data collection process. W.W. conceptualized the analysis. P.S. and W.W. performed data analysis. W.W. drafted the manuscript. P.S. revised the manuscript. P.S., N.J., and W.W. approved the final version of the manuscript.

Funding

Funding for this study was provided by the Centre for Alcohol Studies under the support of the Thai Health Promotion Foundation (grant no. 65-10068-02).

Data availability

The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request. The English translation of the study questionnaire (for sections relevant to the findings of this study) is also available from the corresponding author upon reasonable request.

Declarations

Ethical approval and consent to participate

All research protocols and tools were reviewed and approved by the Human Research Ethics Committee of Nakhon Ratchasima Rajabhat University (HE-184-2565, dated 30 September 2022). Our research assistants identified postpartum women in the maternity ward who met the eligibility criteria and distributed the information and informed consent document. The research assistants then explained to the women about the study and allowed time for decision-making. Women who agreed to participate then signed the informed consent form. Research assistants then organized a private space for questionnaire completion and distributed a guidebook on how to seek help in case of intimate partner violence to all participants. The guidebook included a list of assistance agencies and communication channels, as well as rights and forms of assistance available. The participants then filled the questionnaire.

Consent for publication

Not applicable.

Competing interests

The authors declare no competing interests.

Published online: 08 October 2024

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Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.

Received: 4 December 2023 / Accepted: 3 October 2024