

# The association between intimate partner violence and self-managed abortion: a cross-sectional study among women in urban Bangladesh

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**Abstract:** *In Bangladesh, abortion is illegal, except to save a woman's life. However, menstrual regulation (MR) to induce menstruation up to 12 weeks from the last menstrual period is permitted. Although safe and legal MR services are available, many women choose to self-manage their abortions. The prevalence of intimate partner violence (IPV) in Bangladesh is high. Whether IPV is associated with self-managed abortion is unknown. Between January and December 2019 we administered cross-sectional surveys to women presenting for MR or post-abortion care (PAC) services at facilities in six cities in Bangladesh assessing if women had ever experienced IPV and if they attempted to self-manage their abortion. We used multivariable logistic regression to assess the association between IPV and self-managed abortion and multinomial logistic regression to the association between IPV by type: (none, any physical, any sexual, or both) and self-managed abortion. Among 2679 women who presented for MR or PAC care and participated in the survey, 473 (17.7%) had previously attempted to self-manage abortion. Women who had ever experienced any IPV were more likely to attempt self-managed abortion prior to presenting for MR or PAC (adjusted odds ratio (aOR) = 1.52, 95% CI 1.24, 1.87). Women who ever experienced physical IPV were more likely to attempt self-managed abortion (adjusted relative risk ratio (aRRR) = 1.62, 95% CI 1.30, 2.03). Women who have ever experienced physical IPV may be more likely to attempt a self-managed abortion because they seek more covert ways of ending a pregnancy out of fear for their safety, or because of limited mobility or lack of resources. Interventions to support women to safely self-manage abortion should focus on populations with higher rates of IPV. DOI: 10.1080/26410397.2022.2107078*

**Keywords:** abortion, Bangladesh, menstrual regulation, family planning, intimate partner violence, self-managed abortion

## Introduction

Worldwide, unsafe abortion is a leading cause of maternal mortality, and deaths disproportionately occur where abortion is restricted.<sup>1</sup> Abortion is illegal in Bangladesh except to save a woman's life. Menstrual regulation (MR), however, has been available since 1979.<sup>2</sup> MR in Bangladesh involves the use of either uterine aspiration or medications (misoprostol with or without mifepristone) to induce menstruation without using any testing to definitively diagnose a pregnancy. MR can be provided up to 12 weeks from the last menstrual period by doctors and 10 weeks by advanced practice clinicians and nurses.<sup>2</sup> Menstrual regulation is permitted by the government. Safe MR services are offered within both governmental and private health facilities.<sup>2</sup>

Despite this formal system that provides safe MR care, many women continue to self-manage their abortions outside of the health system.<sup>2</sup> Self-managed abortion refers to ending a pregnancy without participation of a healthcare provider.<sup>3</sup> In Bangladesh, different methods are used by women to self-manage their abortions. Many women use safe methods such as misoprostol with or without mifepristone obtained from pharmacies and other sources. Mifepristone and misoprostol have become increasingly available for purchase over the counter at pharmacies in Bangladesh. However, a study of women seeking misoprostol (with or without mifepristone) from pharmacies in Bangladesh found that 40% received no instruction on how to use the medications, and only 9% received written information or pictures.<sup>4</sup> In addition, some women have procedural abortions outside of the legal system, attempt uterine massage, ingest traditional herbs or roots or place them in the vagina or uterus.<sup>5–8</sup> Some women who seek abortion care outside of the formal healthcare system eventually present to the formal MR clinics for post-abortion care (PAC).<sup>9,10</sup>

The prevalence of intimate partner violence (IPV) in Bangladesh is high, with an estimated 50–60% of women having experienced IPV in their lifetime.<sup>11</sup> Women who experience IPV may have limited mobility and less reproductive autonomy (the ability to achieve one's own reproductive goals) to seek contraception and abortion care and may be more likely to need covert care. A previous study among women seeking MR/PAC in Bangladesh found a higher prevalence of IPV

(aPR 1.49, 95% CI 1.08–2.07) among women with a previous history of MR and a higher prevalence of receiving PAC compared with undergoing MR (aPR 2.39, 95% CI: 1.01–5.70).<sup>12</sup> These findings would suggest that women who experience IPV may be more likely to attempt to self-manage their abortion.

Both lifetime and recent experience of IPV have been associated with increased rates of undesired pregnancy, MR, and need to seek PAC among women in Bangladesh.<sup>12–14</sup> Whether recent or lifetime risk of IPV is associated with self-managed abortion in Bangladesh is unknown. The purpose of this study is to examine the association between IPV and self-managed abortion among women presenting to formal MR/PAC clinics in Bangladesh. We hypothesised that women who experience IPV are more likely to self-manage abortion.

## Methods

### Study design

We integrated a questionnaire into a planned cross-sectional baseline survey administered to women in the Adaptation and Testing of the Addressing Reproductive Coercion in HEalth Settings (ARCHES) intervention study in Bangladesh. ARCHES is an intervention which trains existing health providers to identify IPV and reproductive coercion (behaviour that interferes with contraception use and pregnancy, reducing control over reproductive decision-making)<sup>15</sup> which was delivered during standard MR/PAC clinic-based counselling visits in Bangladesh. It aims to empower women with harm reduction strategies to minimise their risk of unintended pregnancy and connects them to support services in the community that provide a range of resources for women experiencing physical, emotional, and sexual intimate partner violence.<sup>16</sup> Formative research conducted in collaboration between the Center for Gender Equity and Health (GEH) at the University of California, San Diego, Ipas Bangladesh, and the NGO-run RHSTEP (Reproductive Health Services Training and Education Program) clinics in Bangladesh determined that this research was aligned with current local priorities. We administered our cross-sectional survey before any components of the ARCHES intervention were initiated. We offered enrolment to women presenting to any of the six participating clinics for MR/PAC services who met the following criteria: age 18–49 years old, Bangla speaking, able to

provide a safe phone number or address at which they could be contacted for study follow-up, willing and able to consent to participate in the study, and able to be interviewed privately.

### Data collection

The study took place in RHSTEP clinics located within urban tertiary care facilities in six cities from five divisions across Bangladesh (Chittagong, Dhaka, Faridpur, Rajshahi, Rangpur, and Sylhet). Patients from both urban and adjacent rural settings seek care at RHSTEP clinics. The questionnaires were administered in a private setting in clinic the same day as MR or PAC care. The clinics are well equipped to provide MR, PAC, and contraception and their clinical services have been monitored and evaluated by Ipsas. Each clinic is on the campus of an associated medical college hospital. From January to December 2019, female research staff recruited and trained by Ipsas conducted in-person interviewer-administered questionnaires with women presenting for MR or PAC to RHSTEP clinics. We collected data on self-reported socio-demographics, reproductive and marital history, family planning use, fertility preferences, women's family planning attitudes, intimate partner violence, and abortion-seeking practices, including if they attempted to self-manage abortion prior to coming to clinic. Data were collected directly on electronic tablets, and data collection was monitored by project managers and analysts to ensure quality.

### Ethical considerations

Written informed consent was obtained from all participants prior to starting the survey. If a participant could not read and/or write the consent was read to them and they provided a fingerprint on the consent form. The study protocol was approved by the University of California San Diego Human Research Protections Program (Project number 171903, approved 03/5/2018), and the Bangladesh Medical Research Council Institutional Review Board (Project number BMRC/NREC/2016-2019/570 approved 03/06/2018).

### Measures

We considered self-managed abortion to be the primary outcome variable of interest, categorised into a dichotomous variable with yes and no categories. We asked women, "Before coming here, did you do anything or see anyone to start or attempt to start your MR/abortion?" For those that answered "yes",

we then asked, "Who did you see to start or attempt to start your MR/abortion?" Response options were provided. We categorised those who reported traditional healer/traditional birth attendant/village doctor, pharmacist or drug seller, homeopathy/Ayurvedic doctor, community health worker, friend/family/neighbor or no one/did it alone as yes, whereas we categorised those who reported doctor/nurse as no. Our primary predictor variable of interest was lifetime experience of IPV first categorised as dichotomous (yes or no) for any IPV (physical and/or sexual), and then categorised into: none, both physical and sexual, physical only, sexual only. To gather data on IPV, women were asked a series of questions (from the Bangladesh DHS based on the Conflict Tactics Scale) on whether their husbands performed acts of physical or sexual violence.<sup>17</sup> For example, "Has your husband/partner ever pushed you, shaken you, or thrown something at you?" was a physical violence question and "Has your husband/partner ever forced you to have sex or do something sexual when you didn't want to?" was the sexual violence question in the survey (see Appendix for a complete list of items). In addition, we assessed past 3 months IPV, past 3 months physical IPV, and past 3 months sexual IPV with a follow-up question. "When was the last time your husband/partner did any one of these things?" for physical IPV, and "When was the last time your husband/partner forced you to have sex or do something sexual when you didn't want to?" for sexual IPV. Response options were: last 3 months, within the last 4–12 months, more than 12 months ago, and don't know. Within the last 3 months was used to ascertain past 3 months IPV. Analyses were adjusted for covariates chosen *a-priori* including: age (continuous), education (no education, any primary, any secondary or higher), religion (Hinduism/Buddhism/Christianity/other, Islam), residence (urban, rural), marital status (married, separated/deserted/divorced/widowed/never married), living child (yes, no), number of children (categorical), employed in past 12 months (yes, no), and previous MR or abortion (yes, no).

We use the term MR in this manuscript to refer to any uterine aspiration or use of misoprostol (with or without mifepristone) that occurs within the context of the legal system in Bangladesh specifically without the use of ultrasound or pregnancy testing. We use the term abortion to refer to any pregnancy termination that occurs outside the legal system in Bangladesh.

## Statistical analysis

### Sample size

Our sample size estimate was based on the number of planned participants in the ARCHES trial. However, we estimated *a priori* that a 10% difference in self-managed abortion between groups (those who experience IPV and those who do not experience IPV) is clinically meaningful. The incidence of self-managed abortion in Bangladesh is not well described; however, estimates range from 25% to 73% of women seeking abortion care.<sup>6,10</sup> We estimated that the risk of self-managed abortion would be slightly lower than this range at 20% among women who had not experienced IPV in a facility setting. In order to detect a 10 percentage point difference in self-managed abortion with a power of 80% and a two-sided alpha of 0.05, we estimated that 588 women would be needed (294 who experience IPV and 294 who do not experience IPV).

Participants were considered ineligible if they were not 18–49 years old, did not provide any contact information, or did not receive MR/PAC services.

### Analysis

Continuous variables were represented by mean, standard deviation, and range. Comparisons of continuous variables were made using Student's T-test or analysis of variance for more than two comparison groups. Categorical variables were compared using chi-square test or Fisher's exact test when a cell contained less than five observations. We used unadjusted and adjusted multivariable logistic regression to assess the association between any IPV and self-managed abortion. We used unadjusted and adjusted multivariable multinomial logistic regression to assess the association between IPV by type: (none, any physical, any sexual, or both) and self-managed abortion. Covariates were selected *a priori* that were thought to be possible confounders for inclusion in the multivariate model for the adjusted analysis (age, education, religion, urban/rural residence, marital status, living child, number of children, employment status in the past 12 months and previous MR/abortion). Covariates were reviewed for collinearity using a Variance Inflation Factor (VIF) cut-off of 4 when included in the models. STATA 15.0 software was used for all analysis (StataCorp, College Station Texas). A mixed-effects logistic regression

sensitivity analysis was carried out to assess the effect of clinic site as a fixed (Appendix Table A1) and random (Appendix Table A2) effect and to adjust for any possible clustering effects by clinic site.

## Results

We approached 3187 consecutive women presenting for MR/PAC to participate in the study; 2679 women were included in this analysis. Of the 508 patients not included, 225 did not consent, 276 were otherwise ineligible and 7 participated in the study but had missing data for the primary predictor and outcome variables of interest. Four hundred and seventy-three (17.7%) women reported attempting to self-manage their abortion before presenting to clinic for MR/PAC care. There was a statistically significant difference among women who did and did not attempt to self-manage their abortions by their residential location (urban: 237 [50.1%] vs. 1240 [56.2%]  $p = 0.02$ ) and by having a living child (yes: 431 [91.1%] vs. 1925 [87.3%]  $p = 0.02$ ) (Table 1).

Lifetime experience of IPV (physical or sexual) (or “ever” experiencing IPV) was reported by 1212 (45.2%) women (Table 1). A total of 1148 (42.8%) women reported ever experiencing physical IPV, 344 (12.8%) sexual IPV; 280 (10.4%) both physical and sexual violence, 868 (32.4%) only physical IPV, and 64 (2.4%) only sexual IPV. Lifetime experience of physical IPV was significantly greater among women with self-managed abortion (244 [51.6%] vs. 904 [41.0%],  $p < 0.001$ ).

Women who have ever experienced any IPV (physical or sexual) are more likely to report self-managed abortion prior to presenting for MR or PAC compared to women who did not report ever experiencing IPV after adjusting for potential confounders (adjusted odds ratio (aOR) = 1.52, 95% CI 1.24, 1.87) (Table 2). When assessed by type of IPV, only physical IPV was associated with self-managing abortion (adjusted relative risk ratio (aRRR) = 1.62, 95% CI 1.30, 2.03); sexual IPV was not significantly associated with self-managing abortion (aRRR = 1.33, 95% CI 0.70, 2.54). The association between ever experiencing both physical and sexual IPV and self-managing abortion did not reach statistical significance (aRRR = 1.27, 95% CI 0.90, 1.78). The sensitivity analysis adjusting for the effect of clinic site as a fixed and random effect showed an estimate similar to the main analysis that did not change the

**Table 1. Socio-demographic characteristics of women presenting at urban tertiary care facilities for menstrual regulation or post-abortion care services in Bangladesh (N = 2679)**

Variables	Overall	Self-managed abortion		<i>p</i> -value
	<i>n</i> (%)	Yes <i>n</i> = 473 (%)	No <i>n</i> = 2206 (%)	
Age (years), mean (SD), (Range 18–47)	28.7 (6.2)	28.6 (6.1)	28.7 (6.2)	0.71
Education				0.72
No education	236 (8.8)	46 (9.7)	190 (8.6)	
Any primary	669 (25.0)	115 (24.3)	554 (25.1)	
Any secondary or higher	1774 (66.2)	312 (66.0)	1462 (66.3)	
Religion				0.41
Islam	2467 (92.1)	440 (93.0)	2027 (91.9)	
Hinduism/Buddhism/Christianity/Other	212 (7.9)	33 (7.0)	170 (8.1)	
Residence				0.02
Urban (city/town)	1477 (55.1)	237 (50.1)	1240 (56.2)	
Rural (countryside/village)	1202 (44.9)	236 (49.9)	966 (43.8)	
Marital Status				0.35
Married	2638 (98.5)	468 (98.9)	2170 (98.4)	
Separated/Deserted/Divorced/Widowed/Never Married	41 (1.5)	5 (1.1)	36 (1.6)	
Has a living child				0.02
Yes	2356 (87.9)	431 (91.1)	1925 (87.3)	
No	323 (12.1)	42 (8.9)	281 (12.7)	
Number of children, mean (SD), (Range 0–8)	1.9 (1.2)	2.0 (1.1)	1.9 (1.2)	0.05
0	323 (12.1)	42 (8.9)	281 (12.7)	0.03
1–2	1662 (62.0)	301 (63.6)	1361 (61.7)	
3–4	635 (23.7)	124 (26.2)	511 (23.2)	
5 +	59 (2.2)	6 (1.3)	53 (2.4)	
Employment Status (past 12 months)				0.38
Yes	671 (25.0)	111 (23.5)	560 (25.4)	
No	2008 (75.0)	362 (76.5)	1646 (74.6)	

Previous MR/abortion				0.54
Yes	947 (35.4)	173 (36.6)	774 (35.1)	
No	1732 (64.6)	300 (63.4)	1432 (64.9)	
IPV* (physical or sexual, ever)				<0.01
Yes	1212 (45.2)	256 (54.1)	956 (43.3)	
No	1467 (54.8)	217 (45.9)	1250 (56.7)	
IPV (ever)				<0.1
None	1467 (54.7)	217 (45.9)	1250 (56.7)	
Both	280 (10.4)	51 (10.8)	229 (10.38)	
Physical only	868 (32.4)	193 (40.8)	675 (30.60)	
Sexual only	64 (2.4)	12 (2.5)	52 (2.36)	
IPV* (physical or sexual, past 3 months)				0.67
Yes	246 (9.2)	41 (8.7)	205 (9.3)	
No	2433 (90.8)	432 (91.3)	2001 (90.71)	
IPV (past 3 months)				0.80
None	2433 (90.8)	432 (91.3)	2001 (90.7)	
Both	49 (1.8)	6 (1.3)	43 (1.9)	
Physical only	124 (4.6)	22 (4.6)	102 (4.6)	
Sexual only	73 (2.7)	13 (2.7)	60 (2.7)	
Total N	2679 (100.0)	473 (17.7)	2206 (82.34)	

\*IPV – Intimate Partner Violence.  
 Note: Proportions are reported for categorical variables. Mean (SD/range) are reported for continuous variables. *P* values are calculated from chi2 test for categorical and t-test for continuous variables.

interpretation of the findings (See Appendix Table A1 and Appendix Table A2).

Any IPV (physical and/or sexual) in the past 3 months was reported by 246 (9.2%) women, physical IPV in the past 3 months was reported by 173 (6.5%) women, and sexual IPV in the past 3 months was reported by 122 (4.5%) women. Both physical and sexual IPV in the past 3 months was reported by 49 (1.8%) women, physical only was reported by 124 (4.6%) women, and sexual only was reported by 73 (2.7%) women. Any IPV in the past 3 months (aOR = 0.92, 95% CI 0.64, 1.31), and IPV by type in the past 3 months (both aRRR = 0.66 95% CI 0.28, 1.57; physical only aRRR = 1.00 95% CI 0.62, 1.61;

sexual only aRRR = 0.97 95% CI 0.52, 1.78), were all not associated with self-managed abortion in the adjusted analysis. Any IPV in the past 12 months was also not associated with self-managed abortion. The sensitivity analysis with clinic site as a fixed and random effect did not change the interpretation of the findings (data not shown).

### Discussion

We found that women who have experienced physical IPV in their lifetime are more likely to attempt to self-manage abortion. While the same association was not found between sexual



**Table 2. Unadjusted and adjusted logistic regressions between physical IPV, sexual IPV, IPV and self-managed abortion among women presenting at urban tertiary care facilities for MR or PAC services in Bangladesh (N = 2679)**

Self-managed abortion ( <i>n</i> = 2679)	Unadjusted		Adjusted*	
	OR (95% CI)	<i>p</i> -value	OR (95% CI)	<i>p</i> -value
IPV (any physical or sexual, ever)				
No	Ref		Ref	
Yes	1.54 (1.26, 1.88)	<0.01	1.52 (1.24, 1.87)	<0.01
IPV (ever)	RRR (95% CI)	<i>p</i> -value	RRR (95% CI)	<i>p</i> -value
None	Ref		Ref	
Both	1.28 (0.92, 1.79)	0.15	1.27 (0.90, 1.78)	0.18
Physical only	1.65 (1.33, 2.04)	<0.01	1.62 (1.30, 2.03)	<0.01
Sexual only	1.33 (0.70, 2.53)	0.39	1.33 (0.70, 2.54)	0.39

\*Adjusted for age, education, religion, residence (urban/rural), marital status, living child, number of children, employment status in past 12 months and previous MR/abortion.  
Note: OR – odds ratio. RRR– relative risk ratio. CI – confidence interval, ref – reference category.

IPV or any type of IPV in the last three months and self-managed abortion, the analysis was not adequately powered to assess for differences in these sub-groups. Our findings are similar to a retrospective study from the region which demonstrated that women experiencing physical IPV or both sexual and physical IPV in India had greater odds of self-managed abortion.<sup>18</sup>

In our study, 45% of women had ever experienced any form of IPV, which is slightly lower than population-based studies estimating about 50–75% of women experience IPV in their lifetime in Bangladesh.<sup>11,13</sup> This may be because our sample consisted of women who were able to present to clinics for MR or PAC care in urban settings. Although women from rural settings represented 45% of our sample, rural women may be under-represented. Many women in Bangladesh have limited mobility to go to health centres and limited agency in reproductive healthcare decision-making, especially in rural areas.<sup>19</sup> Women in the community experiencing violence may be even less likely to have the ability to safely leave their homes to present to clinics for abortion care, and the current findings of increased risk of self-managed abortion in the setting of

experiences of IPV support this hypothesis. IPV has been associated with unintended pregnancy, miscarriage, MR, and stillbirth as well as seeking PAC services in Bangladesh.<sup>12,13</sup> While women can seek PAC services after an attempted self-managed abortion or miscarriage and violence can lead to miscarriage, attempting self-managing abortion could, in part, explain the increased likelihood of seeking PAC among women experiencing IPV identified in other studies.

IPV has also been associated with discordance in fertility intentions between women and their partners/in-laws and reproductive coercion (such as preventing the use of family planning by husbands or in-laws to force pregnancy) in the region.<sup>12,20</sup> In India, where abortion care is legal for several circumstances, both IPV and reproductive coercion have been shown to be associated with an increased risk of unintended pregnancy and abortion.<sup>20</sup> A combination of IPV, reproductive coercion, fertility intention discordance, and gender-inequitable social norms among couples may cause women to prioritise privacy in abortion more highly, as they may be more concerned about hiding the abortion due to fear of violence, or lack the autonomy to decide to have an

abortion, causing them to seek more covert methods of abortion and attempt to self-manage it. We hypothesise that women experiencing IPV may be more susceptible to reproductive coercion, resulting in the higher rate of unintended pregnancy observed among women who experience physical IPV in Bangladesh.<sup>13</sup> Women who experience IPV and reproductive coercion may be more likely to utilise self-managed abortion, a covert method of pregnancy termination, to resist reproductive coercion, and avoid violence. Interventions should ensure women have easy and confidential access to accurate information on how to safely self-manage abortion, especially among populations with high rates of IPV. IPV resources should be readily available in facilities or among providers who frequently assist women in self-managed abortion. For example, interventions that provide IPV resources to those accessing mifepristone and misoprostol through pharmacies have the potential to decrease morbidity and mortality from violence in this high-risk population.

The strengths of this study are that its large sample size allows the study to be powered to evaluate the association between self-managed abortion and IPV in Bangladesh, which to our knowledge has not been previously studied. The study is also unique in that it assesses self-managed abortion among women who are presenting to formal MR clinics. Although prior studies have identified that women present for PAC after self-managed abortion, it was unknown whether women who attempt to self-manage their abortion later present for MR in some cases.<sup>21</sup> A further strength of this study is that this secondary analysis was planned *a priori* so the survey questions were written specifically to assess for IPV and self-managed abortion.

This study has several limitations. In a context where abortion is illegal, the sensitivity of topics such as IPV and self-managed abortion may have led to under-reporting, likely underestimating the actual prevalence of each. While a trained, female local researcher interviewed participants directly to minimise this, it is not possible to determine the level of under-reporting. Also, participants were sampled from urban tertiary care facilities in divisional capitals, which limits generalisability of the findings as women from rural areas may be less likely to travel to access care. Regional differences in the country may also affect generalisability to areas beyond the six regional capitals in which the study took place. The

women participating either presented to a tertiary care facility for MR initially or had an incomplete abortion from an attempted induced abortion, an MR procedure, or a miscarriage. The study did not sample women who successfully completed a self-managed abortion in the community or were unable to present to the facilities due to cost, travel, distance, privacy, or fear of violence. Women who were not included may have continued their pregnancy, successfully completed a self-managed abortion, or sought PAC outside the legal system. This is a cross-sectional analysis and therefore it is impossible to know the temporal relationship between IPV and self-managed abortion in all cases. The adjusted OR for the association between IPV and self-managed abortion was modest at 1.52, so it is possible that this perceived association was not causal but due to unrecognised confounding. However, women experiencing IPV might be less likely to be able to leave their home to present to a facility if self-managed abortion is unsuccessful, so we would expect that these results are conservative and biased toward the null hypothesis. We likely underestimated the extent of the association between IPV and self-managed abortion due to limited mobility of women who experience IPV and attempted self-managed abortion to reach MR clinics. There may be misclassification of some abortions as supported by a health provider or not, if the qualifications of the provider from whom they are seeking care are unknown or not disclosed to the client. It is possible that women who reported seeing a doctor or nurse to obtain medications were actually consulting with a different type of provider, further underestimating the rate of self-management. Finally, our data were unable to provide an understanding of the mechanisms which lead women who experience IPV to choose self-managed abortion. Further qualitative research on self-managed abortion and IPV in the region may provide important insight into the experience of women who self-manage their abortion and their reasons for doing so.

### Conclusion

Women in Bangladesh who have ever experienced physical IPV are more likely to have attempted a self-managed abortion. Interventions should be designed to empower women to achieve reproductive autonomy. One approach is to ensure that women have access to accurate information



about how to use mifepristone and misoprostol medications, what doses and routes to use, side effects and necessary warning signs for seeking PAC, regardless of where they obtain these medications. IPV resources should also be available in facilities and from providers that assist women in self-managing abortion. In addition, further interventions aimed at decreasing abortion stigma could improve utilisation of MR services among vulnerable women. Further study is warranted to understand what interventions can support safe abortion care and decrease violence for women who experience IPV and choose to self-manage abortion.

#### Disclosure statement

No potential conflict of interest was reported by the author(s).

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## Appendix

**Table A1. Adjusted logistic regressions between physical IPV, sexual IPV, IPV and self-managed abortion among women presenting at urban tertiary care facilities for MR or PAC services in Bangladesh with fixed effects for site (N = 2679)**

Self-managed abortion (n = 2679)	Adjusted*	
	OR (95% CI)	p-value
IPV (physical and sexual, ever)		
No	Ref	
Yes	1.25 (1.01, 1.56)	0.04
IPV (ever)	RRR (95% CI) p-value	
None	Ref	
Both	1.08 (0.75, 1.54)	0.69
Physical only	1.32 (1.05, 1.67)	0.02
Sexual only	1.05 (0.54, 2.03)	0.88

\*Adjusted for site, age, education, religion, residence (urban/rural), marital status, living child, number of children, employment status in past 12 months and previous MR/abortion.  
Note: OR – odds ratio, RRR – relative risk ratio, CI – confidence interval, ref – reference category.

**Table A2. Unadjusted and adjusted logistic regressions between physical IPV, sexual IPV, IPV, and self-managed abortion among women presenting at urban tertiary care facilities for MR or PAC services in Bangladesh analysis presented in Table 2 with random effects for site (N = 2679)**

Self-managed abortion (n = 2679)	Unadjusted		Adjusted*	
	OR (95% CI)	p-value	OR (95% CI)	p-value
IPV (physical and sexual, ever)				
No	Ref		Ref	
Yes	1.32 (1.07, 1.62)	0.01	1.27 (1.02, 1.57)	0.03
IPV (ever)	RRR (95% CI) p-value		RRR (95% CI) p-value	
None	Ref			
Both	1.14 (0.81, 1.63)	0.45	1.09 (0.76, 1.56)	0.63
Physical only	1.40 (1.12, 1.74)	<0.01	1.34 (1.06, 1.69)	0.01
Sexual only	1.07 (0.55, 2.06)	0.84	1.07 (0.55, 2.07)	0.84

\*Adjusted for age, education, religion, residence (urban/rural), marital status, living child, number of children, employment status in past 12 months and previous MR/abortion.  
Note: OR – odds ratio, RRR—relative risk ratio, CI – confidence interval, ref – reference category.

### Items measuring physical and sexual violence in the ARCHES Bangladesh survey:

#### Physical IPV

1. Has your husband/partner ever pushed you, shaken you, or thrown something at you?
2. Has your husband/partner ever slapped you?
3. Has your husband/partner ever twisted your arm or pulled your hair?
4. Has your husband/partner ever hit you with his fist or with something that could hurt you?
5. Has your husband/partner ever kicked you, dragged you, or beaten you up?

6. Has your husband/partner ever tried to choke or burn you?
7. Besides your husband/partner, have any of the following people ever done any of these things like slapped, kicked, hit with fist or something else that can hurt you, or pulled your hair? Your in-laws/parents of your partner? Anyone else?

#### Sexual IPV

Has your husband/partner ever forced you to have sex or do something sexual when you didn't want to?

**Response Options:** Yes, No, Refused.

### Résumé

Au Bangladesh, l'avortement est illégal, sauf pour sauver la vie de la femme. Néanmoins, la régulation menstruelle pour provoquer des menstruations jusqu'à 12 semaines après les dernières règles est autorisée. Même si des services sûrs et légaux de régulation menstruelle sont disponibles, beaucoup de femmes choisissent de gérer elles-mêmes leur avortement. La prévalence de la violence exercée par un partenaire intime (VPI) est élevée au Bangladesh. On ignore si la VPI est associée aux avortements autogérés. Nous avons réalisé des enquêtes transversales auprès de femmes se présentant pour des services de régulation menstruelle ou soins post-avortement dans des centres de six villes du Bangladesh afin d'évaluer si les femmes avaient déjà connu la VPI et si elles avaient tenté d'autogérer leur avortement. Nous avons utilisé une régression logistique multivariée pour estimer l'association entre la VPI et l'avortement autogéré, et une régression logistique multinomiale pour l'association entre la VPI par type: (aucune, physique, sexuelle, ou les deux) et l'avortement autogéré. Parmi les 2679 femmes s'étant présentées pour une régulation menstruelle ou des soins post-avortement et ayant participé à l'enquête, 473 (17.7%) avaient précédemment tenté de gérer elles-mêmes leur avortement. Les femmes qui avaient déjà été victimes d'une VPI avaient plus de probabilités de tenter d'autogérer leur avortement avant de se présenter pour une régulation menstruelle ou des soins post-avortement, après ajustement pour tenir compte de l'âge, de l'éducation, de la religion, de la résidence urbaine,

### Resumen

En Bangladés, el aborto es ilegal, salvo para salvar la vida de la mujer. Sin embargo, se permite la regulación menstrual (RM) para inducir la menstruación hasta 12 semanas después del último período menstrual. Aunque hay servicios de RM seguros y legales disponibles, muchas mujeres optan por autogestionar su aborto. La prevalencia de violencia de pareja íntima (VPI) en Bangladés es alta. Se desconoce si la VPI está asociada con la autogestión del aborto. Administramos encuestas transversales a mujeres que se presentaron en busca de servicios de RM o de atención postaborto (APA) en establecimientos de salud en seis ciudades de Bangladés, con el fin de determinar si las mujeres alguna vez habían sufrido VPI y si intentaron autogestionar su aborto. Utilizamos la regresión logística multivariable para determinar la asociación entre VPI y la autogestión del aborto, y la regresión logística multinomial para determinar la asociación entre VPI por tipo: (ninguna, cualquiera física, cualquiera sexual, o ambas) y la autogestión del aborto. De 2679 mujeres que se presentaron en busca de RM o de APA y participaron en la encuesta, 473 (17.7%) habían intentado anteriormente autogestionar su aborto. Las mujeres que alguna vez habían sufrido VPI eran más propensas a intentar autogestionar el aborto antes de presentarse en busca de RM o APA, después de ajustar por edad, educación, religión, residencia urbana, estado civil, tener un hijo vivo, paridad, empleo y RM anterior (razón de momios ajustada (RMa) = 1.52, IC de 95% 1.24, 1.87). Las mujeres que alguna vez habían sufrido VPI física eran más

de la situation matrimoniale, du fait d'avoir d'un enfant vivant, de la parité, de l'emploi et d'une précédente régulation menstruelle (rapports de cotes ajustés (RCa) = 1.52, 95% IC 1.24, 1.87). Les femmes ayant déjà connu une VPI physique avaient plus de probabilités de tenter d'autogérer leur avortement (rapport de risque relatif ajusté = 1.62, 95% IC 1.30, 2.03). Il est possible que les femmes ayant déjà subi une VPI physique risquent d'être plus tentées d'autogérer leur avortement car elles cherchent des moyens plus discrets d'interrompre une grossesse par peur pour leur sécurité, ou en raison d'une mobilité limitée ou d'un manque de ressources. Les interventions menées pour aider les femmes à autogérer leur avortement en toute sécurité doivent se concentrer sur les populations avec les taux les plus élevés de VPI.

propensas a intentar la autogestión del aborto (razón de riesgo relativo ajustada (RRRa) = 1.62, IC de 95% 1.30, 2.03). Las mujeres que alguna vez habían sufrido VPI física probablemente son más propensas a intentar la autogestión del aborto porque buscan maneras más encubiertas de interrumpir el embarazo por temor a su seguridad, o por movilidad limitada o falta de recursos. Las intervenciones para apoyar a las mujeres en la autogestión segura del aborto deben enfocarse en poblaciones con tasas de VPI más elevadas.