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# Evolution of intimate partner violence impacts from cash transfers, food transfers, and behaviour change communication: Mixed-method experimental evidence from a nine-year post-programme follow-up in Bangladesh

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ABSTRACT

Cash or food transfers can reduce intimate partner violence (IPV), but knowledge gaps remain on how impacts evolve over time, and the role of complementary 'plus' activities and contextual factors. We conducted a mixed-method analysis of how the Transfer Modality Research Initiative in Bangladesh affected IPV over time. The programme was implemented from 2012 to 2014, following a randomised controlled trial (RCT) design, across Northern and Southern Bangladesh. Intervention arms included monthly cash or food transfers, with or without complementary nutrition behaviour change communication (BCC). We estimate post-programme impacts on IPV using quantitative data collected in 2014–2015, 2018, and 2022, and combine this with qualitative data collected in 2023 to explore how and why IPV impacts evolved over time and the role of contextual factors. In the North, combining cash with BCC led to sustained IPV reductions in each post-programme round, while cash alone reduced IPV in 2022 but not the previous two rounds; food transfers showed no post-programme impacts. In the South, combining food with BCC led to post-programme IPV reductions in 2014–2015; no intervention sustained IPV reductions thereafter. Sustained IPV reductions are primarily driven by improved household economic security and emotional well-being. Other pathways – family relationships (including in-laws' roles), women's empowerment, and social and community support – contributed to changing couples' relationships during the programme but became less salient after the programme ended. Contextual factors, including demographic changes, climate-related changes, external projects and norms condoning IPV appear to influence the sustainability of impacts. Results suggest that 'plus' programming was key to sustaining IPV impacts soon after the interventions, but less so by nine years post-programme, as economic security increasingly drove impacts. More mixed method research is needed from the outset to unpack if and how pathways to IPV reduction can be sustained in different contexts over time.

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## 1. Introduction

### 1.1. Transfers and intimate partner violence

Globally, 30% of women experience intimate partner violence (IPV) in their lifetime (Sardinha et al., 2022). IPV has numerous detrimental health and well-being impacts (Bacchus et al., 2018; Devries et al., 2013) and intergenerational consequences (Coll et al., 2023). Significant resources have been invested in understanding how to prevent IPV, focusing on cost-effectiveness and scalability of interventions (Ferrari et al., 2022).

Growing evidence demonstrates that cash transfer programmes, which operate at-scale, can reduce IPV (Buller et al., 2018; Baranov et al., 2021). Three hypothesised pathways for how cash transfers affect IPV (Buller et al., 2018) are: 1. *Economic security and emotional wellbeing*, where cash may increase economic security and reduce poverty-related stress, leading to improved emotional wellbeing and reduced IPV; 2. *Intra-household conflict*, where cash may reduce arguments over finances; and 3. *Women's empowerment*, where cash alongside complementary 'plus' programming (such as activities related to nutrition, behaviour change communication, psychosocial support or linkages to health and financial services) may increase a woman's bargaining power, self-worth, and perceived value to the household, particularly if targeted to women; the effects on IPV depend on men's reaction to her empowerment. The first pathway is described by Buller and colleagues (2018) as 'the most generalisable' because it is based on cash transfers being an economic safety net. This pathway suggests that by reducing poverty and providing better access to financial coping strategies such as, savings and assets that result from a cash transfer, there may be a decrease in stress and an overall improvement in well-being, which directly decreases IPV. The second pathway focuses on the notion that cash might be a source of daily arguments and tension in the household, particularly in times of economic scarcity, but if this trigger is no longer a source of arguments, IPV decreases. The third pathway centres on the 'transformational' impacts for women that may be possible from transfers and complementary programming, however Buller and colleagues emphasise that shifts in women's power can be positive or result in backlash if men view women's empowerment as a threat.'

Since the work by Buller et al., other studies have expanded on these three pathways. In Bangladesh Bureau of Statistics (2016, 2024) found that women's social capital may also influence IPV impacts, particularly when programmes include group-based components. Within the framing of economic behaviour, women's social capital was conceptualised as increasing the 'costs' of men's perpetration (if women's greater visibility and social ties within the community increase chances that men's perpetration is noticed and sanctioned, following the literature on 'social control'), as well as improving women's 'bargaining power' (enhancing women's options outside the marital relationship, which strengthen their position within the relationship). In Ethiopia, a complementary 'plus' component of engaging men in household domestic activities led to an additional pathway related to improvements in gender roles and gender equitable attitudes. The sharing of household responsibilities, between women and men, increased mutual respect and communication in the couple (Ranganathan et al., 2022). Findings from this Ethiopia study also showed that the group-based delivery of the complementary activities improved social support and economic resilience against income shocks (Buller et al., 2016).

However, knowledge gaps remain. Few studies on cash transfer programmes assess IPV impacts after the intervention ended (Sara and Priyanka, 2023; Roy et al., 2019, 2024). Moreover, cash transfer programmes often include complementary activities, yet most studies cannot disentangle the roles of transfers from the complementary activities. Evidence comparing different transfer modalities (e.g. food or cash) is also scarce. Importantly, few studies on cash transfers and IPV use mixed methods to explore pathways for how or why changes occur (Buller et al., 2016), and no existing studies use mixed methods to understand how impacts on IPV evolve *after* programming ends.

We contribute to addressing these knowledge gaps through a mixed-method analysis of how IPV impacts evolve over an 11-year period that includes during (2012–2014) and after a cash and food transfer programme ended (2014–2023). We use qualitative data collected in 2023 that asks retrospectively about IPV impacts and pathways during and after the programme and quantitative data collected in three post-programme rounds from 2014 to 2022.

### 1.2. The Transfer Modality Research Initiative

The Transfer Modality Research Initiative (TMRI) provided monthly cash or food transfers, with or without complementary nutrition behaviour change communication (BCC), to mothers of young children in poor rural households from 2012 to 2014. TMRI was implemented as two randomised control trials: one in the northwest ('North'), and one near the southern coast ("South") of Bangladesh. In the North, intervention arms included (1) no intervention ('Control'), (2) monthly cash transfers of 1500 taka ('Cash'), (3) monthly food transfers of rice, lentils, and oil worth 1500 taka ('Food'), (4) a combination of half the cash transfer and half the food transfer ('Cash & Food'), and (5) monthly cash transfers of 1500 taka plus nutrition BCC ('Cash + BCC'). In the South, the first four intervention arms were the same as in the North, while the fifth was monthly food transfers worth 1500 taka plus nutrition BCC ('Food + BCC'). The BCC focused on adoption of recommended child nutrition practices, through weekly group trainings, biweekly home visits, and monthly community meetings. TMRI did not include content on violence prevention. Any gender-related topics in the BCC revolved around food and nutrition, such as role-playing how to negotiate the purchase and consumption of non-traditional foods for children. Following the model of most large-scale cash transfer programmes in low- and middle-income countries, TMRI included only households identified as poor within communities and provided interventions for a limited duration (see Ahmed et al., 2016 and Roy et al., 2019 for further details on TMRI).'

Two prior quantitative studies assessed TMRI's post-programme IPV impacts. At 6 months post-programme, Cash + BCC in the North and Food + BCC in the South led to sustained reductions in physical IPV (Roy et al., 2019). At 4 years post-programme, Cash + BCC in the North still led to persistent large reductions in physical IPV, while Food + BCC in the South no longer showed significant impacts (Roy et al., 2024). Although limited quantitative data on pathways were collected for these studies, analyses at 4 years post-programme indicated that Cash + BCC in the North showed stronger sustained improvements in economic security, women's empowerment, and social and community support than the other intervention arms. A companion paper at 4 years post-programme (Ahmed et al., 2025) indicated that sustained economic security for Cash + BCC in the North was plausibly due to investments in agricultural livelihoods (including home production of healthy foods and livestock-rearing); similar improvements were seen to a lesser extent from Cash in the North, but not from Food, and post-programme economic security improvements in the South were limited, possibly due to the region being more disaster-prone and less conducive to agricultural livelihoods.

This study builds on the prior studies by: assessing how effects have evolved over a longer 11-year period; comparing IPV impacts across more treatment arms; and integrating qualitative and quantitative data to unpack pathways based on participants' accounts on how reductions in IPV were sustained (or not) over time, thus providing a more in-depth understanding of context and lived experience.

### 1.3. IPV in Bangladesh

IPV is pervasive in Bangladesh with 72.6% of currently married women experiencing some form of violence from their current partner, while 49.6% experience physical violence (Bangladesh Bureau of

Statistics, 2016). IPV has been linked to unequal power dynamics, household economic insecurity, and gender norms that result in violence being viewed as acceptable and normal (Van der Putten and Nur-E-Jannat, 2020). Research in Bangladesh indicates that women's economic empowerment may be protective at times, but not always (Bates et al., 2015), due to patriarchal norms that give men control over resources (Shohel et al., 2023). While there is evidence of gender norms shifting in Bangladesh (Chandramohan et al., 2023; Kabeer et al., 2021), studies stress that interventions should address both economic drivers and underlying gender norms that sustain IPV in Bangladesh (Schuler et al., 2016).

## 2. Methods

### 2.1. Study design

The study design includes quantitative data collected as part of the impact evaluation of TMRI and a nested qualitative study. The quantitative component used the randomised design to estimate IPV impacts in three survey rounds (2014-15, 2018, 2022) and impacts on potential pathways in one round (2022). The qualitative study used focus group discussions (FGDs) with women and men and in-depth interviews (IDIs) with women in 2023, to explore how IPV impacts of different transfer modalities evolve over time.

We developed the qualitative and qualitative instruments together: qualitative instruments were based on key quantitative findings from 2014 to 2015, 2018 and 2022, and quantitative instruments included questions on hypothesised pathways discussed with the qualitative team. Men and women who completed the quantitative survey in 2022 were invited to participate in the qualitative study. We engaged in joint interpretation to identify points of tension and connection between qualitative and quantitative findings, informed by Fetters et al. (2013).

Quantitative and qualitative findings complement each other in understanding TMRI's evolving impacts on IPV through 2023. First, quantitative analysis leads on understanding 'what' the impacts were, and the qualitative leads on understanding 'how' and 'why' they occurred. Second, quantitative analysis focuses on post-programme impacts, while the qualitative analysis traces experiences both during and after TMRI. Third, quantitative findings present *differences between arms at each time point*, while the qualitative findings explore *changes over time within each arm*. In particular, quantitative analysis estimates how experiences of women differ across treatment arms compared to a counterfactual experience in the same period had they never received TMRI (as proxied by the control group); the qualitative analysis explores women's experiences throughout their lives and their reflections on what role TMRI has played (recognising participants may not be able to attribute changes to the intervention).'

### 2.2. Quantitative

#### 2.2.1. Sample and data

250 villages in the North and 250 villages in the South were selected for inclusion in TMRI. Within each region, villages were randomly assigned to one of four treatment groups or control group. From each village, 10 households were selected for inclusion in the study, with 4000 treatment households and 1000 control households across the North and South. Further details on TMRI's selection of villages and households are in Appendix A.1.

The initial impact evaluation of TMRI included three survey rounds from 2012 to 2014 that did not collect information on IPV. After TMRI ended, three post-programme quantitative surveys were conducted that included IPV data: in October 2014–February 2015; in April–May 2018; and in April–May 2022.

Our IPV estimation sample in each round consists of 'index women' in treatment and control arms, defined as women who met programme criteria at baseline to be the main beneficiary, and who had non-missing IPV data. The sample of women with IPV data differed across the three post-programme rounds due to a smaller subset of intervention arms interviewed in 2014-15 than in 2018 and 2022 (due to budget constraints, see Table 1), minor differences in the sampling criteria for the IPV module between 2014 and 2015 versus 2018 and 2022 (see Roy et al., 2024), and loss of women in each round.

Table 2 shows resulting estimation samples in each post-programme round (see Appendix Table 1 for the breakdown of the estimation samples across intervention arms and regions). Appendix Tables 2a, 2b, and 2c show that attrition from baseline to each post-programme round does not differ by intervention arm within each region, which minimizes concerns of bias due to selective attrition. Moreover, Appendix Tables 3a and 3b shows that baseline characteristics are balanced by intervention arms.

#### 2.2.2. Analysis

The quantitative analysis focuses on estimating the intent-to-treat impact of each treatment arm compared to the control arm. We estimate impacts separately for the North versus South, since randomization was conducted separately by region, and treatment arms differ across regions.

For IPV outcomes, we estimate impacts in all three post-programme rounds. Outcomes include whether index women report (1) any emotional IPV, or (2) any physical IPV, over the reference period. The reference period is the past 6 months for 2014–2015 (to restrict it to the post-programme period), and the past 12 months for 2018 and 2022. Violence questions were drawn from the internationally validated IPV module in the WHO Violence Against Women instrument (Ellsberg and Heise, 2005). We use probit models to estimate impacts on the binary IPV outcomes and report the average marginal effect. We present impacts for the unbalanced panel sample, but results are robust to using the balanced sample of women who appear in all three rounds (Appendix Tables 4a and 4b).

For pathways, we focus only on data collected in the 2022 round, given that the 2014–2015 round had limited information. In the discussion, we mention findings from Roy et al. (2024) related to 2018 pathways. We present results drawing on three of four pathways found in the qualitative findings (described in more detail in the next section): economic security and emotional well-being, women's empowerment, and social support and community relationships. We exclude the family relationships pathway because we did not collect relevant quantitative information. We construct 11 indices that are mapped to these pathways. Indices are continuous standardised variables, where higher values indicate better outcomes; Appendix A.2 describes the variables used and the process for constructing indices. We then estimate TMRI's impacts on the indices using ordinary least squares models.

For all estimates we control for baseline characteristics of the index women and cluster standard errors at the village level. Data were analysed using Stata 18.

**Table 1**
Intervention arms included in quantitative survey, by post-program round.

| | 2014–15 | 2018 | 2022 |
|---|---|---|---|
| **North** | | | |
| Cash | ✓ | ✓ | ✓ |
| Food | | ✓ | ✓ |
| Cash & Food | | | |
| Cash + BCC | ✓ | ✓ | ✓ |
| Control | ✓ | ✓ | ✓ |
| **South** | | | |
| Cash | | ✓ | ✓ |
| Food | ✓ | ✓ | ✓ |
| Cash & Food | | | |
| Food + BCC | ✓ | ✓ | ✓ |
| Control | ✓ | ✓ | ✓ |

**Table 2**
Estimation sample for IPV impacts in each post-program round.

| | 2014–15 | 2018 | 2022 |
|---|---|---|---|
| Index women in relevant TMRI arms at baseline | 2956 | 3940 | 3940 |
| Index women lost to follow-up between baseline and post-program round | 279 | 329 | 350 |
| Index women without IPV data in post-program round | 3 | 283 | 387 |
| Post-program IPV estimation sample | 2674 | 3328 | 3203 |

### 2.3. Qualitative

#### 2.3.1. Sample and data collection

Qualitative data collection was led by a local researcher, supported by a team of four local researchers, who were trained in research ethics and IPV and paid for their contributions, including transcription. A subsample of households from the 2022 quantitative survey participated in the 2023 qualitative study.

Data collection occurred in four TMRI upazilas (subdistricts), selected based on accessibility and representation of both regions: Rajarhat and Gangachara upazilas in the North, and Dacope and Bauphal upazilas in the South. In each upazila, villages met the inclusion criteria if, in the 2022 quantitative survey, the village had more than four study participants and at least one participant reported IPV. Nine villages per upazila were randomly sampled from a list, stratified by intervention arm (Cash, Cash + BCC, and Control in the North, and Food, Food + BCC, and Control in the South). FGD data were not collected in control villages. Women who participated in TMRI were then randomly sampled within each village and invited to participate in either FGDs or IDIs. There were no age restrictions to participate. For male FGDs, husbands of women who participated in TMRI were invited to participate, with one exception of a son attending an FGD instead of his father. All men invited to participate were from different households than invited women, to avoid creating conflict within households.

FGDs incorporating vignettes were designed to surface key issues that were later explored in more depth within IDIs. FGDs explored perceptions of TMRI, contextual factors, and how social and gender norms influence IPV and interact with other drivers of IPV. We did not ask about individual experiences of IPV during FGDs to protect women's confidentiality. IDIs focused on understanding women's lived experiences; views of transfers and BCC, if/how they impacted IPV and relationships before, during and after the transfers; and perceptions of contextual factors. FGDs and IDIs involved different participants. FGDs and IDIs were guided by semi-structured topic guides, which were piloted before data collection. FGDs and IDIs were audio-recorded.

Table 3 outlines the breakdown of FGDs and IDIs. In this paper we do not draw on interviews with the control group because we did not ask these participants questions about the evolution of the husband-wife relationship over time. Thus, we analyse data from nine FGDs with 49 women who participated in TMRI, nine FGDs with 52 husbands of women who participated in TMRI, and 64 IDIs with women who participated in TMRI.

**Table 3**
Focus group discussions and in-depth interviews by sex and modality.

| | | Focus group discussions | | In-depth interviews |
|---|---|---|---|---|
| Region | Modality | Women | Men | Women |
| North | Cash | 2 FGDs with total of 10 women | 2 FGDs with total of 11 men | 15 |
| | Cash + BCC | 3 FGDs with total of 16 women | 3 FGDs with total of 18 men | 12 |
| | Control | – | – | 5 |
| South | Food | 2 FGDs with total of 12 women | 2 FGDs with total of 12 men | 14 |
| | Food + BCC | 2 FGDs with total of 11 women | 2 FGDs with total of 11 men | 13 |
| | Control | – | – | 5 |
| | **TOTAL** | 49 | 52 | 64 |

#### 2.3.2. Qualitative analysis

Audio recordings were transcribed by the research team into Bangla, then translated into English. The transcripts were anonymised then analysed using Dedoose. We used Braun & Clarke's 6-step process for reflexive thematic analysis, developing codes inductively and deductively and identifying key themes based on codes.

### 2.4. Ethics and positionality

Ethics approval for the quantitative study was obtained through Cornell University (ref: IRB0143585,May 17, 2022). Ethical approval for the qualitative research was obtained from the London School of Hygiene and Tropical Medicine (ref: 28286, 17/01/2023), the International Food Policy Research Institute (ref: 00007490, 24/01/2023), and the Institute of Health Economics at the University of Dhaka (ref: IHE/IRB/DU/55/2022/Final, 14/01/2023).

Both quantitative and qualitative data collection followed guidelines for research on IPV (World Health Organization, 2001) including ensuring thorough training of interviewers, guaranteeing privacy during interviews/FGDs, arranging reliable referral mechanisms and interviewing only one woman per household. Steps taken to re-contact, invite, and seek consent from participants followed protocols approved by the above IRBs. Survey participants were invited to participate through home visits, and IDI and FGD participants were invited to participate by phone calls and home visits. Participants were provided with information that explained the purpose of the study and how data would be used before providing written consent. Invited qualitative participants were drawn from the 2022 quantitative survey sample, during which participants consented to being re-contacted for future follow-up. Identifiers required to re-contact participants, stored securely in accordance with IRB approval were shared confidentially with the qualitative principal investigator leading the fieldwork. All participants were provided a small gift to compensate them for their time; FGD participants were given refreshments.

As part of our commitment to conducting reflexive, equitable research, we reflected on the positionality of our team. Multiple authors (AA, JH, SR, MH) worked over the last 12 years on previous quantitative studies of TMRI. AA and NS are Bangladeshi and have extensive experience leading research in Bangladesh. Many authors have previous experience researching (MR, MH, DR, SR, ML) and implementing (ML) cash transfer or IPV programmes. Some local staff who conducted fieldwork are not co-authors but contributed significantly to this research. We sought to mitigate against bias and recognise the power dynamics within our team through taking a collaborative approach to research design, analysis and writing.

## 3. Findings

We first describe IPV impacts over time, starting with quantitative data, followed by qualitative data. We next outline pathways of impact from the qualitative data, followed by a section that integrates these pathways with the quantitative results.

### 3.1. IPV impacts over time

#### 3.1.1. Quantitative impacts

We estimate the causal impacts on IPV of TMRI's treatment arms relative to the control arm. Impact estimates are shown for each post-programme round by region, using the round-specific IPV estimation sample. Because the 2014–2015 measures of IPV prevalence refer to a 6-month recall period, while the 2018 and 2022 measures refer to a 12-month recall period, prevalence rates are not directly comparable across rounds; the 6-month prevalence rate can be considered a lower

bound on a 12-month prevalence rate. However, because the recall period for each arm is consistent within a round, round-specific impact estimates are valid.

Table 4a presents post-programme impacts in the North. Relative to the control group, Cash showed no impact on physical or emotional IPV in 2014–2015 or 2018, but impacts emerge in 2022. In particular, in 2022, Cash decreased the prevalence of physical IPV by 7 percentage points (pp) and emotional IPV by 6 pp; these represent a 30% and 18% reduction in physical and emotional IPV relative to the control group, respectively. Food showed no impact on physical or emotional IPV in 2018 and 2022. Cash + BCC, on the other hand, significantly decreased physical IPV in all three rounds and emotional IPV in 2018 and 2022. Impacts range from 7 to 15 pp (or 28–58% reductions relative to the control) for physical IPV and 9 pp (or 20–26% reduction relative to the control) for emotional IPV.

Table 4b presents post-programme impacts in the South. Relative to the control group, Cash showed no impact on physical or emotional IPV in 2018 or 2022. Food showed no impact on physical or emotional IPV in 2014–2015 or 2018 but increased physical IPV in 2022 (by 6 pp, or 46% relative to the control). Food + BCC reduced physical IPV in 2014–2015 (by 6 pp, or 26% relative to the control), then showed no impact in 2018, and increased physical IPV in 2022 (by 4 pp, or 31% relative to the control). Food + BCC showed no impact on emotional IPV in any post-programme survey round.

### 3.1.2. *Qualitative findings*

We organise the results of the qualitative findings by study impacts during the programme and after the programme. Qualitative data indicates changes that participants experienced did not vary by arm or region.

*3.1.2.1. During programme.* Participants qualitatively described how TMRI may have impacted on experiences of IPV during the programme. Some participants across both the North and South regions and treatment arms said TMRI improved relationships with their husbands, describing greater affection, fewer fights, less verbal abuse, and husbands listening to their wives more as illustrated by the quotes below:

> "Well, I would get money every month, so there was a lot more affection than usual" (Woman, IDI, North, Cash).

> "He really liked the fact that I was getting food from the project, so he used to behave pretty well with me. We didn't have a lot of fights anymore" (Woman, IDI, South, Food + BCC).

Others suggested the relationship with their husbands was always good and did not change during TMRI. There did not appear to be increases in IPV during TMRI.

*3.1.2.2. Sustainability of impacts.* A few participants discussed how not receiving money/food any longer worsened the relationship with the husband after the programme ended:

**Table 4b**
Post-program impact of treatment on prevalence of IPV, South.

| | Physical violence | | | Emotional violence | | |
|---|---|---|---|---|---|---|
| | 2014–15 | 2018 | 2022 | 2014–15 | 2018 | 2022 |
| *Treatment impacts* | | | | | | |
| Cash | | 0.01 | 0.04 | 0.00 | 0.02 | 0.06 |
| | | (0.03) | (0.03) | (0.00) | (0.04) | (0.04) |
| Food | 0.00 | −0.02 | 0.06** | 0.05 | 0.01 | 0.05 |
| | (0.03) | (0.02) | (0.03) | (0.06) | (0.04) | (0.04) |
| Food + BCC | −0.06* | −0.01 | 0.04* | −0.04 | 0.01 | 0.05 |
| | (0.03) | (0.02) | (0.03) | (0.05) | (0.04) | (0.04) |
| *Control Mean* | 0.23 | 0.17 | 0.13 | 0.61 | 0.40 | 0.31 |
| *N* | 1341 | 1713 | 1659 | 1341 | 1713 | 1659 |

Outcomes in 2014-15 were for past 6 months and in 2018 and 2022 for past 12 months. Marginal effects of probit models reported. Covariates include baseline characteristics of the target woman and her household: age, years of education, can read and write, spouse of head, number of children aged 0–5 and 6–15, doing paid work, monthly labor index, control over money, owns savings, and household's total monthly consumption. Standard errors clustered at the village level. *p < 0.1 **p < 0.05; ***p < 0.01.

> "Once I stopped getting the money, he immediately started fighting with me again. It really hurt me" (Woman, IDI, North, Cash).

> "He would scream and say that he couldn't bring food again and again and that we should be eating less to make the existing grocery last" (Woman, IDI, South, Food).

While participants also discussed improved relationships with husbands after TMRI ended, qualitatively it was complicated attributing post-programme changes in IPV to TMRI. This is because many contextual factors that influence IPV were mentioned during qualitative interviews and FGDs. Some factors, such as demographic changes were potential facilitators, and other factors, such as traditional norms were potential barriers to sustained reductions in IPV from TMRI. These factors were relevant across all modalities in influencing participant experiences.

Demographic factors, include the passing of time, changes in maturity, and children being older made it easier to sustain positive changes *after* TMRI across both regions and treatment arms.

> "We have matured over time, which has evolved our understanding of each other's views. He explains everything to me, and he discusses everything with me a lot more …" (Woman, IDI, South, Food).

> "We don't have as many fights as we used to. We are older. Our granddaughters have grown up" (Woman, IDI, North, Cash).

Other factors such as traditional social norms around the acceptability of violence in the household and community appear to instigate and maintain IPV:

> "I think if the husband doesn't work, if the wife doesn't take care of the household chores properly and just sits around, if the wife

**Table 4a**
Post-program impact of treatment on prevalence of IPV, North.

| | Physical violence | | | Emotional violence | | |
|---|---|---|---|---|---|---|
| | 2014–15 | 2018 | 2022 | 2014–15 | 2018 | 2022 |
| *Treatment impacts* | | | | | | |
| Cash | −0.01 | −0.03 | −0.07* | −0.01 | 0.03 | −0.06* |
| | (0.03) | (0.03) | (0.03) | (0.05) | (0.04) | (0.04) |
| Food | | −0.04 | 0.03 | 0.00 | 0.03 | −0.02 |
| | | (0.03) | (0.03) | (0.00) | (0.04) | (0.04) |
| Cash + BCC | −0.08** | −0.15*** | −0.07** | 0.01 | −0.09** | −0.09** |
| | (0.03) | (0.03) | (0.03) | (0.05) | (0.04) | (0.04) |
| *Control Mean* | 0.29 | 0.26 | 0.23 | 0.61 | 0.44 | 0.34 |
| *N* | 1333 | 1615 | 1544 | 1333 | 1615 | 1544 |

doesn't want to cook, or if the food doesn't taste well, then a husband might beat his wife" (Woman, IDI, South, Food).

### 3.2. Pathways of impact

We explore four pathways through which TMRI may have contributed to IPV impacts during and after the programme: 1) Economic security and emotional well-being, 2) Family relationships, 3) Women's empowerment, and 4) Social support and community relationships. The first three pathways are outlined in the introduction and appear in the Buller et al. (2018) paper, though we expand pathway 2 on conflict between the couple, to include the broader family based on our qualitative findings (for instance the role of mothers-in-law in instigating conflict between a husband and wife). The fourth pathway on social support and community relationships emerged as a cross-cutting theme from previous quantitative research on TMRI in Bangladesh and we explored it further in this study.

#### 3.2.1. Qualitative findings

##### 3.2.1.1. Pathway 1: Economic security and emotional well-being pathway

*3.2.1.1.1. During programme.* Participants described increased financial and food security, such as being able to save money and purchase assets, resulting in improved emotional well-being during the programme, with few noticeable differences across modality or region in the types of changes described:

"I could use that money for food and just any other household necessities. It really helped my mental being [well-being] as well. I was happy. I saved money to buy land and build my house" (Woman, IDI, North, Cash).

"We could eat three times a day. There were positive changes in our lives. We were at peace" (Man, FGD, South, Food + BCC).

"Our poverty had lessened, so he didn't verbally abuse me as much"

(Woman, IDI, South, Food).

*3.2.1.1.2. Sustainability of impacts.* Participants discussed varied post-programme changes related to TMRI, including positive long-term impacts or a return to their original financial status.

Across modalities and regions, positive impacts included being able to save to buy livestock, improve their housing or land, and start businesses; these investments and savings, even if they occurred during the programme, helped to sustain economic security after the programme ended:

"I mean, it was better than before, for sure. I put together the cash I received from the project and some of the cash I saved to buy a cow and a goat. I mean, with time and through the impact of the project, our livelihood and income has improved." (Woman, IDI, North, Cash + BCC)

"I started to loan out the money that I saved to other people on interest through my husband. That brought in some more money for me (…), With that saved money, my husband bought the *Nosimon* [three-wheeler] car. That increased my husband's income! It's been three years since I started cultivating crops by leasing land. I leased it using some of my saved and borrowed money" (Woman, IDI, South, Food).

Other households found ways to maintain the family's economic status after TMRI ended, such as working more to increase income.

However, for many others, the gains achieved through TMRI could not be maintained, and they returned to their original financial status. Difficulties in sustaining improvements in economic security post-programme were mentioned more often by Food or Food + BCC recipients in the South than by Cash or Cash + BCC recipients in the North.

"The moment that cash stopped, there was nothing extra in my hands anymore, and we started to suffer again" (Woman, FGD, North, Cash).

"I was buried in debt, and we were suffering from poverty again. My income was the same, but we stopped getting extra food from the project" (Man, FGD, South, Food).

Some participants in the South described not being able to save anymore, having to reduce the amount of food consumed and having to make difficult choices about how to spend money: "I wasn't getting the food anymore, so what could we do? Should we get food or pay off our debts with his income?" (Woman, IDI, South, Food). A few participants in the North said their children had to stop attending school due to TMRI ending.

Household factors may have made it difficult to sustain changes in economic security after TMRI, including stressful events, such as divorce or a husband dying, being too sick to work, or him having fewer work opportunities. These factors increased the burden on women, further strained the family, or required that women work outside the home.

There was also a general recognition in both regions that the impacts of climate-related disasters on livelihoods and crops increased household economic insecurity and led to more conflict during the programme. These challenges may have also affected sustainability after TMRI given the recurrence of climate disasters in Bangladesh.

"It was tough to manage with my family … [after climate event]. I had no money to get household necessities, so it would create a lot of conflict with my wife" (Man, FGD, North, Cash).

"We would have some conflicts and unrest in the house at that time [cyclone] I couldn't cook on time and children were in hunger … [My husband couldn't go to work because of the storms and heavy rainfall … He had no work, so he had no income. So we would have some arguments. We would be angry and upset" (Woman, IDI, South, Food).

##### 3.2.1.2. Pathway 2: family relationships

*3.2.1.2.1. During programme.* Responses about changes to broader family relationships during TMRI were mixed irrespective of location or the BCC component. Some women indicated relationships improved because of cash and food resulting in less stress in the family and women receiving more affection:

"Everyone in the family praised the project and valued me more …" (Woman, IDI, South, Food + BCC).

"My relationship with all the family members during the project was a little better than before …. I mean, they still hit me, but it wasn't as much as it was before" (Woman, IDI, South, Food).

Others reflected that the cash/food gave women more value, space to be involved in the broader family, and helped to equalise the relationship.

Notably, the dynamic with in-laws was mentioned by many participants across interviews and FGDs. In one example, the in-laws were "extra affectionate" because the participant gave all her TMRI money to her mother-in-law, but this affection stemmed from fear of losing the money:

"My in-laws would tell everyone not to hurt me or argue with me because if they did, then apparently, I wouldn't give them the money. They would say if they hurt me, I would create more conflicts and eventually give the money to my parents" (Woman, IDI, North, Cash + BCC).

For another, ongoing physical violence from her in-laws decreased during the programme but not emotional violence:

"They wouldn't beat me up as much but still verbally abused me, especially if I argued … They would abuse and discipline me … It was a little better because the family was getting food because of me and my kid" (Woman, IDI, South, Food).

One woman directly referenced experiencing less physical violence from her husband – though violence from in-laws continued, but to a lesser degree:

"My husband didn't beat me up anymore, but my mother-in-law and my brother-in-law still did. Less than before, though" (Woman, IDI, South, Food).

Examples of no changes were also described, for example in cases where women always had good relationships with in-laws, or where relationships were always bad.

*3.2.1.2.2. Sustainability of impacts.* Participants in all treatment arms across regions identified limited changes to household relations *after* TMRI. For a few families, the increased value women were given during TMRI due to receiving transfers extended to after TMRI: "they value me a lot more now" (Woman, IDI, North, Cash).

In a few cases, improvements in household relations were discussed and attributed to other sources of income:

"My relationship with everyone got much better once I started to get the cash … It stayed better even after the cash stopped in 2014. This is because my husband and I started working outside for more income" (Woman, IDI, North, Cash + BCC).

A few participants also observed that the end of TMRI meant returning to scarcity which resulted in conflict including "arguments and screaming" from other members of the family (Woman, IDI, North, Cash), as well as less voice: "They don't listen to me as they used to during the project because I stopped receiving 1500 takas every month" (Woman, IDI, North, Cash).

Other impacts included family members not checking up on them after TMRI:

"[N]ow that we have stopped getting that benefit, they don't really check up on us anymore. When I go to work, and my husband is hungry, no one comes in and gives him food to eat" (Woman, IDI, South, Food).

### *3.2.1.3. Pathway 3: Women's empowerment pathway*

*3.2.1.3.1. During programme.* There were no differences by region, but participants discussed how TMRI's BCC activities empowered them with useful knowledge during the programme:

"I really liked that they taught us about what foods to eat that will be more nutritious for us. I tried to eat according to those instructions. I learned about things I didn't know before" (Women, IDI, North, Cash + BCC).

When reflecting on the changes experienced during TMRI, a few women in both the North and South shared examples that illustrate both self-efficacy and financial autonomy:

"I was able to use that money to repay almost all of our debts. I didn't need to ask people for help" (Woman, IDI, South, Food).

"I saved some money and gave my husband some pocket-money as well. I could spend some money on my own … I saved money to build a house … I bought two trees with the money as well. I also have a mango tree. That's how I improved our livelihood" (Woman, IDI, North, Cash + BCC).

Only one participant directly described having no financial autonomy but then also described working around her husband to save in the second year of TMRI:

"My husband would say, 'Give the cash you get to my mother. My mother will take care of it, and that is the right way to get peace'. So, in the first year I gave all cash to my mother-in-law but in the second year, I started saving up for my kids" (Woman, IDI, North, Cash + BCC).

Most participants indicated that the division of labour during TMRI was unchanged – and that women continued to be responsible for household chores, while men worked outside the home during TMRI.

However, both women and men shared examples of men discussing how to spend money with their wives during TMRI:

"Previously, only I used to take the decisions, but after she started getting cash from the project, we discussed and took decisions together. She was the one getting the money, so I asked about her opinions" (Man, FGD, North, Cash).

However, others described having discussions, but then giving "all the money to my husband anyway" (Woman, IDI, North, Cash), or reflected on a continued power dynamic with the husband or other male decision-makers: "[M]y husband would take some of my opinions, and then he would do what he wanted to do" (Woman, IDI, North, Cash).

Still others described no change in decision-making during TMRI, including because wives always made decisions, husbands always discussed financial decisions with the wife, or husbands still made decisions.

When asked about food purchasing decision to participants receiving food in the South, participants mentioned that there were no changes in food purchasing decisions - that it is always men who purchase food, but women may tell them what they need to buy. In a few cases, in the absence of men, women did make purchases, but they did not link this to TMRI.

*3.2.1.3.2. Sustainability of impacts.* There were no regional differences, but women reflected on how TMRI's BCC activities increased their nutrition knowledge, which they shared with others: "I have taught everything to my daughters … We all learned what to feed our pregnant daughters and daughters-in-law" (Woman, IDI, South, Food + BCC).

One participant discussed having more autonomy and self-efficacy after TMRI:

"After the project, I was better at handling my household with the experience I had from the project … I could explain the rationalities of my opinion to my husband, so if I wanted to do or say something, my husband would listen or do what we discussed" (Woman, IDI, South, Food + BCC).

Some participants reflected on how their level of control over their own lives was unchanged after TMRI:

"No. It was the same as it was before. My husband would do whatever he wanted to do. I couldn't do anything that I wanted to do" (Woman, IDI, South, Food + BCC).

Participants were asked about changes to gender roles after TMRI ended, with the majority indicating that division of labour remained unchanged. In a few cases, women who worked outside the home before TMRI continued to do so after TMRI, and in some cases, women were the only ones working because the husband had become sick. A few women reflected that gender norms require women to remain responsible for household chores.

When asked about post-programme changes to household decision-making, participants did not mention changes to decision-making. Some women indicated joint decisions were made with their husbands about household spending and food even before TMRI, while for others the husband made key decisions about spending and the wife decided about food, based on gender roles – both before and after TMRI. However, a few male participants said although women made decisions about food purchases before, they now based these on their knowledge about nutrition gained through TMRI's BCC activities.

One participant felt that the change in her husband discussing decisions with her was not sustained after TMRI:

> "[S]ince I was the one getting the cash, my husband used to discuss it before making decisions. But, after the project ended, he basically went back to what he was before … He rarely discusses things with me now" (Woman, IDI, North, Cash + BCC).

#### 3.2.1.4. Pathway 4: social support and community relationships pathway

*3.2.1.4.1. During programme.* There is some evidence of social support during TMRI, especially among the BCC participants. Many participants mentioned the benefits of group learning in the BCC sessions. Some also spoke about feeling emotionally connected with other group members, having others who would listen to them and being able to discuss topics beyond nutrition. Some women mentioned feelings of happiness and comfort when chatting with other women whom they referred to as their "friends":

> "When all the women sit together, we discuss many things. Everyone laughs and has a good time. I really like that" (Woman, IDI, North, Cash + BCC).

Only a few women mentioned not interacting with other women during the group sessions:

> "No, we would leave immediately after the meeting was over. I didn't spend any extra time with those women or talk to them" (Woman, IDI, North, Cash + BCC).

Husbands also discussed the BCC and the support wives received by meeting other women. One husband reflected: "I think she liked that almost 30 women sat together and discussed important things". In the same FGD, another husband added, "[S]he learned a lot of things and she could also advise others. So, she liked it" (Male FGD, North, Cash + BCC).

Participants identified limited changes in relationships with the broader community during TMRI. However, there were some examples of jealousy from villagers potentially impacting TMRI participants' access to other programmes.

*3.2.1.4.2. Sustainability of impacts.* There is limited qualitative evidence indicating that social support was sustained post-programme. One participant mentioned that relationships that formed with other BCC group members continued after TMRI:

> "When we all used to sit together and talk about a lot of good things, I really liked that. We still have that friendship among the women who participated in those meetings. We all used to go and speak together" (Woman, IDI, North, Cash + BCC).

However, all the other women said they were no longer in contact with the TMRI participants, as they did not live in the same village (potentially surprising, given that the BCC group sessions were designed to convene women within a village) and were busy with household tasks.

In relation to community relationships, a few participants reflected on the increased social status just after TMRI that they attained from receiving cash or food:

> "Now, people ask us where we are and what we eat. People value us now" (Woman, IDI, North, Cash + BCC).

A few also discussed jealousy from the community after TMRI, which sometimes led to continued exclusion from other projects:

> "[O]nce some people came in. They told us that they would come and help. But at present, the people of the neighbourhood tell one another that they don't need to help us anymore because they are jealous. None of the villagers want anyone else in the village to do well" (Woman, IDI, South, Food)

> "If someone comes, they [villagers] say we are already involved in a project. This is why they [other organisations] refuse to involve us in any more projects" (Man, FGD, North, Cash).

Participants also mentioned that participating in other projects after TMRI may have helped sustain IPV impacts. These other projects included violence prevention programs, as well as projects aiming to reduce poverty (such as provision of housing, facilitating access to water, and other social assistance programs including cash and in-kind transfers, cash for work, and government stipends for children and elderly). Together, the above observations suggest that continued exclusion from these projects after TMRI ended could have contributed to worsening IPV in some cases.

### 3.2.2. Quantitative support

We next explore quantitative support for the qualitative findings on post-programme sustainability of pathways. We used the 2022 data relevant to three of the four pathways from the qualitative analysis and created the following indicators mapping to these pathways, recognising overlap between pathways.

- Economic security and emotional well-being (Pathway 1): food security, financial security, men and women's emotional wellbeing, men and women's work
- Women's empowerment (Pathway 3): women's economic resources, women's agency
- Social support and community relationships (Pathway 4): Women's social and community support, perceived social control, social assistance programs

Table 5 shows impacts of TMRI's treatment arms on these indicators in 2022, by region. In the North, we find significant improvements in several dimensions of *"Economic security and emotional well-being*" from Cash and Cash + BCC (food security and financial security from both arms; men's and women's emotional wellbeing from Cash + BCC), but not from Food. For *"Women's empowerment,"* we find some improvements from Food and Cash + BCC (women's economic resources from Food and women's agency from Cash + BCC). For *"Social and community support,"* we find no impact from any arm. Quantitative findings in the North showing sustained improvements in economic security and emotional well-being, but limited sustained impacts on other pathways, are consistent with the qualitative findings. Sustained improvements in economic security and emotional well-being from Cash and Cash + BCC could also explain the post-programme decreases in IPV from the Cash and Cash + BCC arms in 2022.

In the South, we find limited post-programme improvements in 2022 across all three pathways. While we find some weak improvements in the *"Economic security and emotional well-being*" pathway (marginally significant increases in men's emotional wellbeing from Cash and in food security from Food + BCC), we also find some weak reductions in the *"Women's empowerment"* (marginally significant reductions in women's agency from Cash) and *"Social and community support"* (marginally significant reductions in perceived social control and social assistance from Food) pathways. Quantitative findings in the South are consistent with the qualitative findings on households having more difficulties sustaining economic security in this region and on TMRI beneficiaries being disproportionately not included in other programs (which could further limit improvements in economic security). The lack of sustained improvement in economic security in the South, alongside potential post-programme reductions in other pathways, could also explain why we find increases in IPV from the Food and Food + BCC arms in the South in 2022.

**Table 5**
2022 post-program impact of treatment on IPV channels, North vs. South.

| Pathways | Indicators | North | | | | South | | | |
|---|---|---|---|---|---|---|---|---|---|
| | | Mean of Control | Cash | Food | Cash + BCC | Mean of Control | Cash | Food | Food + BCC |
| Economic security and women's well-being | Food security | −0.16 | 0.20** | 0.05 | 0.37*** | 0.15 | 0.03 | −0.07 | 0.15* |
| | | | (0.09) | (0.09) | (0.08) | | (0.09) | (0.09) | (0.09) |
| | Financial security | −0.10 | 0.15* | 0.09 | 0.17*** | 0.09 | −0.05 | −0.01 | 0.14 |
| | | | (0.08) | (0.08) | (0.06) | | (0.09) | (0.09) | (0.09) |
| | Men's emotional well-being | 0.10 | 0.07 | 0.00 | 0.28*** | −0.09 | 0.18* | 0.12 | 0.05 |
| | | | (0.08) | (0.09) | (0.08) | | (0.10) | (0.09) | (0.09) |
| | Women's emotional well-being | −0.10 | 0.12 | −0.00 | 0.29*** | 0.09 | −0.08 | −0.04 | −0.07 |
| | | | (0.11) | (0.10) | (0.10) | | (0.11) | (0.12) | (0.11) |
| | Men's work | 0.04 | 0.02 | 0.01 | 0.00 | −0.04 | −0.02 | 0.02 | 0.03 |
| | | | (0.07) | (0.07) | (0.07) | | (0.09) | (0.08) | (0.09) |
| | Women's work | −0.06 | 0.04 | 0.11 | 0.06 | 0.06 | 0.01 | −0.08 | 0.11 |
| | | | (0.09) | (0.09) | (0.09) | | (0.09) | (0.09) | (0.09) |
| Women's empowerment | Women's economic resources | −0.05 | 0.13 | 0.21*** | 0.13 | 0.05 | 0.09 | 0.03 | 0.13 |
| | | | (0.08) | (0.08) | (0.08) | | (0.08) | (0.08) | (0.08) |
| | Women's agency | −0.23 | 0.16 | 0.01 | 0.22*** | 0.22 | −0.20* | −0.03 | −0.03 |
| | | | (0.10) | (0.10) | (0.08) | | (0.10) | (0.10) | (0.10) |
| Social support and community relationship | Women's social and community support | −0.07 | 0.14 | 0.06 | 0.13 | 0.06 | −0.03 | −0.16 | 0.00 |
| | | | (0.10) | (0.10) | (0.11) | | (0.11) | (0.10) | (0.11) |
| | Perceived social control | 0.01 | −0.02 | −0.10 | 0.02 | −0.01 | −0.07 | −0.24* | −0.14 |
| | | | (0.19) | (0.16) | (0.16) | | (0.14) | (0.12) | (0.14) |
| | Safety net programs | −0.05 | 0.03 | −0.11 | −0.09 | 0.05 | −0.15 | −0.19* | −0.08 |
| | | | (0.08) | (0.08) | (0.08) | | (0.09) | (0.10) | (0.09) |

OLS coefficients reported with standard errors in parentheses (clustered at the village level). N = 3203 (North = 1,544, South = 1659) for all outcomes. Same baseline covariates as Table 4.

### 3.3. Summary of TMRI's impacts on IPV and potential pathways during and after the programme

We summarise the quantitative and qualitative evidence on TMRI's impacts on IPV and the potential pathways during and after the programme in Table 6.

Overall the qualitative findings indicate that *during* the programme, TMRI either decreased or did not change IPV for participants across all modalities and regions, driven by four pathways: (1) economic security and emotional well-being increasing for many participants, (2) family relationships improving for some participants, (3) women's empowerment improving for some participants, and (4) social and community support improving for some participants, particularly those participating in the BCC activities.

*After* the programme, the quantitative findings indicate that the evolution of IPV impacts differed substantially by intervention arm and region. The Cash + BCC arm in the North showed consistent reductions in IPV relative to the control in each post-programme round (2014-15, 2018, 2022). Cash in the North had no impact on IPV in the first two post programme rounds (2014-15, 2018) but showed significant reductions in IPV relative to the control by 8 years post-programme (2022). Food + BCC in the South showed significant reductions in IPV at 6 months post-programme (2014–2015), no significant impact at 4 years post-programme (2018), and an *increase* in IPV relative to the control by 8 years post-programme (2022). Food in the South showed no impact on IPV in the first two post programme rounds, but also showed an *increase* in IPV relative to the control by 8 years post-programme. Meanwhile, Food in the North and Cash in the South never showed impacts on IPV. Qualitatively, it was difficult for participants to attribute post-programme changes to TMRI due to other contextual factors such as demographic changes, social norms, climate-related changes and external projects.

In terms of pathways, quantitative and qualitative evidence suggest that the sustained post-programme reductions in IPV in some arms are driven primarily by sustained improvements in the economic security and emotional well-being pathway. Specifically, the post-programme reductions in IPV from Cash + BCC and Cash in the North correspond to quantitative post-programme improvements in economic security and emotional well-being in those arms; conversely, the regions and arms with no reduction in IPV in 2022 also show limited improvements in the economic security and emotional well-being pathway in 2022. This is consistent with qualitative evidence, which reflects that TMRI households in the South reported more challenges sustaining economic security post-programme than those in the North; it is also consistent with prior evidence from TMRI that a combination of transfer modality, complementary programming, and regional context made Cash + BCC and (to a lesser extent) Cash in the North better able to sustain improved livelihoods 4 years post-programme than the other arms and regions (e.g., through investments in home production of healthy foods and livestock-rearing, which are better suited to the agroecology in the North than the disaster-prone, salinity-affected South) (Ahmed et al., 2025). Both quantitative and qualitative evidence suggest few sustained improvements in family relationships and women's empowerment. Meanwhile, quantitative and qualitative evidence suggest that the increases in IPV we see in the Food and Food + BCC arms in the South may be driven by the combination of no sustained improvement in other pathways for these arms, alongside less social and community support; the quantitative evidence shows a marginally significant post-programme decrease in receipt of other safety net programmes for Food and a non-significant decrease for Food + BCC, while qualitative evidence suggests that while other programmes were helpful for sustaining IPV reductions, community jealousy may have contributed to former TMRI participants being excluded from some other programmes after TMRI.

## 4. Discussion

This paper uses mixed methods to assess the impacts of a transfer programme on IPV over an 11-year period (during and nine years post programme) and explores pathways to sustained impact across two regions of Bangladesh. We find that patterns of impact vary over time and by treatment arm and context. Quantitatively, in the North, Cash + BCC consistently leads to reductions in IPV over time post-programme, while Food never leads to post-programme reductions in IPV. IPV impacts of Cash take time to realise and appear only in 2022, 8 years post-programme. In the South, Food + BCC reduces IPV immediately after

**Table 6**
Quantitative and qualitative evidence on TMRI's impacts on IPV and potential pathways during and after the programme.

| | | During TMRI (May 2012–April 2014) | After TMRI (May 2014 onward) | |
|---|---|---|---|---|
| | | Qualitative (collected in 2023) | Quantitative (collected in 2014-15, 2018, 2022) | Qualitative (collected in 2023) |
| **Impacts on IPV** | | ↓ or no change | North:<br>• Cash: No impact in 2014-15 and 2018; ↓ **IPV** in 2022<br>• Food: No impact in any round<br>• Cash + BCC: ↓ **IPV** in all rounds<br>South:<br>• Cash: No impact in any round<br>• Food: No impact in 2014-15 and 2018; ↑ **IPV** in 2022<br>• Food + BCC: ↓ **IPV** in 2014-15, no impact in 2018; ↑ **IPV** in 2022 | Difficult to attribute changes over time in IPV to TMRI (due to demographic changes over time and social norms). |
| | | **Qualitative** (collected in 2023) | **Quantitative** (collected in 2022) | **Qualitative** (collected in 2023) |
| **Pathways** | **Economic Security & Emotional Well-being** | Improved economic security for many households | North, 2022:<br>• Cash: ↑ (mainly from food security)<br>• Food: No impact<br>• Cash + BCC: ↑ (mainly from food and financial security and emotional well-being)<br>South, 2022:<br>• Cash: No impact<br>• Food: No impact<br>• Food + BCC: No impact | Sustained economic security is often through agricultural investments during the programme.<br>More challenges reported in the South than in the North to sustain improved economic security.<br>Climate hazards may have made it hard to sustain economic impacts after TMRI. |
| | **Family relationships (including with in-laws)** | Improved in some households | – | Limited post-programme impacts |
| | **Women's Empowerment** | Increased for some women, BCC increased women's nutrition knowledge | North, 2022:<br>• Cash: No impact<br>• Food: ↑<br>• Cash + BCC: ↑<br>South, 2022:<br>• Cash: ↓<br>• Food: No impact<br>• Food + BCC: No impact | Limited post-programme impacts. |
| | **Social support & Community relationships** | Increased particularly for group BCC participants | North, 2022:<br>• Cash: No impact<br>• Food: No impact<br>• Cash + BCC: No impact<br>South, 2022:<br>• Cash: No impact<br>• Food: ↓<br>• Food + BCC: No impact | Most former BCC participants no longer interact with group members but continue to advise the community.<br>Community jealousy leads some to be excluded from other programmes. |

TMRI ends (in 2014/2015) but by 2022, impacts have reversed. Food and Cash do not have significant impacts on IPV relative to the control group in the first two post-programme rounds, but by 8-year post programme, Food leads to increased IPV. Qualitatively, for some participants, not receiving money or food after TMRI negatively affected the relationship with their husbands and families, while others mentioned improved relationships with their husbands after TMRI but did not attribute these improved relationships to TMRI given demographic changes, external projects, social norms and climate-related changes.

We interpret IPV impacts against evidence on how TMRI influenced *pathways* that affect IPV. The strongest pathway through which TMRI led to sustained IPV reductions in the North is the economic insecurity and emotional well-being pathway, aligning with research in Ghana and Ethiopia (Barrington et al., 2022; Ranganathan et al., 2022). Qualitatively, there is variability in the extent to which improvements in economic security were sustained post-programme, with challenges mentioned more often by Food or Food + BCC recipients in the South than by Cash or Cash + BCC recipients in the North. Programmatically, results suggest that post-programme reductions in IPV are possible from cash transfers (but not food) and may not necessarily require complementary 'plus' programming, as reductions can be driven by improved economic security. However, results are also highly context-dependent and vary over time.

For the family relationship pathway, we expand on Buller et al.'s (2018) conceptualisation of conflict between the couple to include the broader family, particularly in-laws who instigate conflict between the couple. Qualitatively, we find mixed changes during TMRI, with some examples of positive change occurring because of transfers (including greater affection and less violence from in-laws), as well as examples of little change to in-law dynamics. Notably, we find limited changes to household relations after TMRI. Aligning with other research in South Asia, the role of the mother-in-law in managing finances and household decision-making is important (Gram et al., 2018) and should be considered when studying IPV.

For the women's empowerment pathway, qualitatively, we find improvements during TMRI for some aspects, such as self-efficacy, decision-making, and nutrition knowledge (especially for the BCC participants). This aligns with research from Ethiopia which showed that the group-based delivery of BCC activities strengthened social support, gender relations and joint decision-making (Buller et al., 2016). There was limited evidence of changes persisting after TMRI, which could be linked to difficulties in recalling changes, broader social changes and/or contextual factors. Quantitatively, in the 2018 survey (Roy et al., 2024), Cash + BCC and to a lesser extent Cash showed sustained improvements in women's empowerment in the North, but in 2022 impacts on the empowerment pathway were no longer significant.

Finally, for the social and community relationships pathway we find strong qualitative evidence of improvements during TMRI, with social support improving particularly from BCC sessions, and improved community status. There was scarce qualitative evidence of social and community support persisting after TMRI, with some indication that community jealousy may have prevented TMRI participants from accessing other programmes. This is consistent with the 2022 quantitative findings that receiving transfers in the South (especially Food) reduced perceptions around social control and decreased receipts of public transfers. In 2018, Cash + BCC showed sustained improvements in women's social and community support (Roy et al., 2024); however, by 2022, impacts on these pathways are no longer significant. It is possible that the social and community impacts decreased over time.

Both quantitative and qualitative findings suggest the role of BCC in influencing pathways becomes less salient over time. This may explain why IPV reductions in earlier rounds were driven by arms with BCC (Cash + BCC and Food + BCC in 2014-15, Cash + BCC in 2018), but this no longer seems the case by 2022. In the South, participants revealed challenges in sustaining improvements in economic security and emotional well-being, exclusion from subsequent social assistance programs, and potential community jealousy, highlighting a possible harm from targeting consistent with other studies (Skovdal et al., 2013). Additionally, qualitative evidence on climate events increasing stress and conflict in some relationships are potential barriers to IPV reductions especially in the South, since this region is more susceptible to extreme climate events, aligning with literature on the relationship between extreme weather events and IPV (van Daalen et al., 2022). These adverse pathways and contextual factors could explain why we see increases in IPV from Food and Food + BCC in the South.

This study contributes insights on the value of using mixed methods to explore sustained IPV impacts from transfers post-programme. The quantitative evidence being based on an RCT and drawing on many years of longitudinal data gives credibility to estimates of causal impact over time, while the qualitative data contributes insights to the "how" and "why" underpinning changes and the contextual issues affecting change. Across both methods, it remains challenging to disentangle different pathways of impact. Conceptually, pathways are not mutually exclusive but overlap - aligning with Barrington et al. (2022) - and can reinforce each other's impacts. Understanding their roles in sustaining impact is also complicated by contextual factors, including post-programme demographic changes, external projects, social norms and climate factors.

This study had some limitations. First, lack of quantitative data on IPV during TMRI and lack of consistent quantitative measures on pathways across all post-programme rounds make it challenging to get a complete picture of how effects evolve over time; however, this limitation is partly offset by triangulating with the qualitative evidence. Second, research budget constraints led to differences in which intervention arms were interviewed over time and across methods, limiting our ability to triangulate across methods for some interventions. Third, we experienced some challenges during qualitative fieldwork in accessing remote sites, short data collection timeframes prior to Ramadan, participants with competing responsibilities, and a lack of private spaces to conduct interviews and FGDs, but we adapted to the circumstances and the flexibility of the team made data collection occur within the limited timeframe. Fourth, due to the passage of time since TMRI had ended, some qualitative study participants found it challenging to recall the programme, especially changes "during the programme," affecting the quality of some interviews/FGDs. Fifth, there was a risk of underreporting IPV due to sensitivity or social desirability bias if participants provided more positive responses in the hope that the programme would resume; quantitative impact estimates would not be affected unless underreporting or social desirability bias differed across intervention arms, but qualitative responses may underrepresent challenges. Lastly, even with mixed methods it is challenging to disentangle post-programme impacts from other factors that changed after the programme, reflecting a broader challenge of measurement within longitudinal research.

Recognising these challenges, future research and programmes should consider how intervention effects evolve over time, including after programmes end, and how they are shaped by other contextual factors. Including qualitative research from the outset would more meaningfully explain change over time. Transfer programmes should consider approaches to explicitly help participants build trajectories after interventions end, including through direct livelihood support, and should also ensure participation in programmes does not preclude inclusion in future programmes. Understanding how to sustain impacts on pathways is particularly important since each pathway – greater economic security, improved family relationships, women's empowerment, and women's social and community support – has intrinsic value.

## 5. Conclusion

This paper contributes mixed methods evidence on the sustained impacts of transfer programmes on IPV and on the pathways to impact across two regions of Bangladesh. Despite IPV prevention not being the

focus of TMRI, quantitative evidence indicates TMRI reduced IPV post-programme, but impacts depended on treatment arm, time post-program, and context. Qualitative data also shows nuance in the pathways to IPV. We contribute to work on pathways through which cash/food may affect IPV, in outlining how the economic insecurity and emotional wellbeing pathway appeared strongest in sustaining IPV reductions post-programme. We also expand the family dynamic pathway to consider other family members' impact on household relations and IPV - with implications for other IPV work in South Asia. Our study contributes to understanding the complexities of pinpointing how pathways contribute to change. We suggest mixed-methods work is important when exploring the impacts of transfer programmes and recommend future longitudinal research incorporates qualitative methods from the outset.

## CRediT authorship contribution statement

**Michelle Lokot:** Writing – review & editing, Writing – original draft, Project administration, Methodology, Formal analysis, Data curation, Conceptualization. **Nasrin Sultana:** Writing – review & editing, Writing – original draft, Project administration, Methodology, Investigation, Formal analysis, Data curation, Conceptualization. **Melissa Hidrobo:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Formal analysis, Data curation, Conceptualization. **Akhter Ahmed:** Validation, Resources, Methodology, Conceptualization. **John Hoddinott:** Validation, Resources, Methodology, Conceptualization. **Deboleena Rakshit:** Writing – review & editing, Writing – original draft, Visualization, Formal analysis, Data curation. **Shalini Roy:** Writing – review & editing, Writing – original draft, Visualization, Supervision, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization. **Meghna Ranganathan:** Writing – review & editing, Writing – original draft, Supervision, Project administration, Methodology, Funding acquisition, Formal analysis, Data curation, Conceptualization.

## Confirmation of ethical opinion

On behalf of the Committee, I am pleased to confirm a favourable ethical opinion for the above research on the basis described in the application form, protocol and supporting documentation as revised, subject to the conditions specified below.

## Conditions of the favourable opinion

Approval is dependent on local ethical approval having been received, where relevant.

## Approved documents

The final list of documents reviewed and approved by the Committee is as follows.

| Document Type | File Name | Date | Version |
|---|---|---|---|
| Other | CITI certificate_Shalini Roy | 10/03/2018 | 1 |
| Investigator CV | CV_Melissa Hidrobo | 01/01/2022 | 1 |
| Other | Ethics certificate_Michelle Lokot | 08/03/2022 | 1 |
| Investigator CV | CV - Michelle Lokot | 01/04/2022 | 1 |
| Investigator CV | CV_Shalini Roy | 01/05/2022 | 1 |
| Other | CITI certificate_Melissa Hidrobo | 09/05/2022 | 1 |
| Other | Ethics certificate_Meghna Ranganathan | 10/06/2022 | 1 |
| Investigator CV | CV of Nasrin Sultana September 2022 | 01/09/2022 | 1 |
| Investigator CV | CV - Meghna Ranganathan | 25/10/2022 | 1 |
| Protocol/Proposal | Distress Protocol | 31/10/2022 | 1 |
| Protocol/Proposal | Safety Protocol | 31/10/2022 | 1 |
| Protocol/Proposal | Topic guide - Bangladesh IPV_CLEAN_31Oct | 31/10/2022 | 3 |
| Local Approval | IHEirb552022fin | 14/01/2023 | 1 |
| Information Sheet | FGD - Info Sheet & Consent Form_16Jan | 16/01/2023 | 2 |
| Information Sheet | IDI - Info Sheet & Consent Form_16Jan | 16/01/2023 | 2 |
| Protocol/Proposal | Protocol - Cash and IPV qual_16Jan | 16/01/2023 | 6 |
| Covering Letter | Cover Letter | 17/01/2023 | 1 |

## After ethical review

The Chief Investigator (CI) or delegate is responsible for informing the ethics committee of any subsequent changes to the application. These must be submitted to the Committee for review using an Amendment form. Amendments must not be initiated before receipt of written favourable opinion from the committee.

The CI or delegate is also required to notify the ethics committee of any protocol violations and/or Suspected Unexpected Serious Adverse Reactions (SUSARs) which occur during the project

by submitting a Serious Adverse Event form.

An annual report should be submitted to the committee using an Annual Report form on the anniversary of the approval of the study during the lifetime of the study. At the end of the study, the CI or delegate must notify the committee using an End of Study form.

All aforementioned forms are available on the ethics online applications website and can only be submitted to the committee via the website at: http://leo.lshtm.ac.uk.

## Declaration of competing interest

We have no competing interests to declare.

## Acknowledgements

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## Appendix A. Supplementary data

Supplementary data to this article can be found online at https://doi.org/10.1016/j.socscimed.2025.117901.

## Data availability

The authors do not have permission to share data.

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