



Impact of Tipping Point Initiative, a social norms intervention, in addressing child marriage and other adolescent health and behavioral outcomes in a northern district of Bangladesh

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List of acronyms

CM = Child Marriage
CRCT = Cluster Randomized Controlled Trial
FGD = Focus Group Discussions
GBV = Gender Based Violence
GED = Gender Equity and Diversity
IDI = In-depth Interviews
KII = Key Informant Interviews
KMO = Kaiser-Meyer-Olkin
SAA = Social Analysis and Action
SNAP = Social Norms Analysis Plot
SRH = Sexual and Reproductive Health
SRHR = Sexual and Reproductive Health Rights
TOC = Theory of Change
TPI = Tipping Point Initiative
TPP = Tipping Point Program
TPP+ = Tipping Point Program Plus

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Executive summary

Introduction

Child Marriage (CM) is a violation of human rights and it bears negative implications on the lives and well-being of girls. The global rate of CM before age 18 is 40% and before age 15 it is 12%. The adverse impact of CM on girls' physical and mental health and development has been well documented. The literature presents multiple factors associated with CM, among which social norms features as an important one contributing to and perpetuating CM.

Bangladesh has the fourth highest prevalence of CM globally, and the highest in South Asia, with 59% of the women aged 20–24 reported being married before the age of 18. Decrease in the prevalence of CM in Bangladesh is the slowest among the South Asian countries, and most recently it has been stalled.

In Bangladesh, a few promising interventions have been implemented which were proved to be effective in reducing CM. However, those did not include any social norms change component, and thus, they risk not being sustainable.

Based on the success of phase 1, CARE's Tipping Point Initiative (TPI) Phase 2, an integrated social norms intervention was designed to address child marriage through a focus on building adolescent girls' agency, creating supporting relations and transforming norms driving CM.

The Tipping Point Initiative (TPI)

The TPI aspired to address the communities' social norms that restrict the lives and roles of girls and uphold the practice of CM. TPI developed two holistic implementation packages, Tipping Point Program (TPP) and Tipping Point Program Plus (TPP+).

The TPP and TPP+ intervention packages were planned to be implemented and tested for 18 months however, eventually it was implemented over 17 months with a three months suspension in between, due to COVID-19 induced lockdown. The intervention participants included adolescent girls and boys, parents of adolescent girls and boys, and religious leaders and

Union Parishad and community-level influencers. While the adolescent girls and boys received 40 weekly group sessions, parents received 18 monthly group sessions. Religious leaders and Union Parishad and community-level influencers received intense training. In addition, community-level social norms activities were conducted.

Methods

TPI was implemented in selected 51 villages (17 per arm), in purposively selected *Pirgacha upazila* (sub-district) from Rangpur district in Bangladesh. The evaluation employed a mixed-method, three-arm (TPP, TPP+ and control), Cluster Randomized Controlled Trial (CRCT) design.

Quantitative evaluation

A cohort of 25 randomly selected unmarried adolescent girls aged 12–<16 years in each cluster was established, interviewed at baseline, provided with the intervention in the intervention clusters, and interviewed at endline. Randomly selected cross-sectional samples of adult female and male community members aged 25 or more were interviewed at baseline and endline surveys. Baseline data were collected during February–April 2019 and endline data were collected during November–December 2021 by trained survey teams using separate pre-designed questionnaires for girls' and community surveys.

All the scales used in the surveys were validated using factor analysis. The impact of TPI on CM was assessed by fitting multilevel parametric survival models (multilevel inverse-Gaussian frailty model), while its impact on secondary outcomes were assessed using linear regressions (for continuous variables) adjusting for baseline rates. Dose-response analyses were also conducted for all primary and secondary outcomes using the session attendance information from the monitoring data. All analyses were adjusted for all potential individual- and cluster-level covariates.

Qualitative evaluation

The TPI qualitative evaluation was conducted in two purposively selected villages from each of TPP and TPP+ arms. Baseline qualitative data were collected during February-March 2019 and endline data were collected during November-December 2021 by trained research teams. The qualitative sample size included four Key Informant Interviews; 10 In-depth Interviews with unmarried adolescent girls and five with unmarried adolescent boys; two Focus Group Discussions (FGD) with unmarried adolescent girls and two with boys; two FGDs with adult community females and two with adult community males from each arm.

The recorded data were transcribed verbatim. Bengali transcripts were coded and thematic analyses were performed following CARE's Social Norms Analysis Plot framework¹ using MAXQDA 18 (VERBI 2018) and ATLAS.ti softwares.

Ethical considerations

This study follows the WHO ethical recommendations for researching violence against women and the CIOMS International Guidelines for Ethical Review of Epidemiological Studies. The study (PR#18056) received ethical approval from icddr,b's Institutional Review Board. All interviews were conducted upon receiving verbal consent and assent, as appropriate.

Results

Among 1,275 who were successfully interviewed at baseline, 1,123 girls were successfully interviewed the endline survey. A total of 626 and 634 community members were interviewed respectively at baseline and endline. The study arms were balanced in terms of age and education, but there were significant arm-wise differences in religion and wealth status.

The summary of impact of TPI on primary and secondary outcomes have been presented in Table E.1.

¹ https://caringpoint.org/wp-content/uploads/2019/11/TP_Social_Norms_FINAL.pdf

The results of multilevel parametric survival analyses show no overall statistically significant impact of any of the intervention on child marriage in the study area. However, analysis of the intervention effect by the level of girls' participation in group sessions show that **the hazard of child marriage was reduced by 63% in the TPP+ arm among girls who received 36-40 sessions (Adj. hazards ratio=0.37; 95% CI: 0.17, 0.79) compared to those who did not receive any session.**

The findings show no significant impact of overall TPI (TPP, TPP+ and emphasized social norms) on girls' self-efficacy. While girls' self-efficacy significantly decreased in the TPP compared to the control arm, the mean score of self-efficacy significantly increased by 0.96 unit among TPP+ participants who received 36-40 sessions ($\beta=0.96$; 95% CI: 0.11, 1.85), compared to those who did not receive any session.

TPP+ intervention had significantly reduced girls' endorsement of control by family members (mean score reduced by 0.38 unit; 95% CI: -0.67, -0.09) compared to the control arm, while no significant impact of TPI was observed on girls' positive attitudes regarding gender roles, and girls' endorsement of justification of girl-beating. However, positive attitudes regarding gender roles significantly increased among the girls who received 31-35 in TPP and 36-40 sessions in TPP and TPP+ arms. The girls' endorsement of control of girls by family members and justification of girl-beating were significantly reduced among the girls who received 36-40 sessions in TPP+ arm compared to those who did not receive any session.

The TPP+ arm increased girls' knowledge regarding sexual and reproductive health (mean score increased by 0.61 unit; 95% CI: 0.20, 1.02), compared to the control arm. This knowledge also increased among the girls who attended 1-25 and 36-40 sessions in TPP+ arm, and who attended 1-25, 26-30 and 31-35 sessions in the TPP arm.

Table E.1. Summary of impact of TPI on primary and secondary outcomes

Outcome variables	Hypothesized direction	TPP		TPP+		Emphasized social norms
		Full sample	Number of sessions attended	Full sample	Number of sessions attended	
Primary outcome						
Child Marriage	↓				36-40 ↓	
Secondary outcomes						
Self-efficacy	↑	↓			36-40 ↑	
Positive attitudes regarding gender roles			31-35		36-40 ↑	
Endorsement of control of girls by family members	↓			↓	36-40 ↓	
Endorsement of justification of girl- beating	↓				36-40 ↓	
Girls' knowledge regarding SRH	↑		1-25, 26-30, and 31-35 ↑		1-25, and 36-40 ↑	
Girls' mobility	↑				36-40	
Confidence in negotiation skills of the girls	↑				36-40	
Participation in financial activities and decision-making	↑					
Cohesion	↑		1-25			
Collective efficacy	↑					
Connectedness with parents	↑	↓	31-35 ↓		31-35 ↓	
Social norms						
Social norms around girls' mobility	↑	↑				
Social norms around girls' riding and playing in the village	↑					
Social norms around girls' marriage	↑					↑
Social norms around girls' rights	↑					

Girls' mobility and confidence in negotiation skills increased significantly only among the girls who received 36-40 sessions in TPP+ arm compared to those who did not receive any session, while emphasized social norms change component had significant impact on increasing girls' participation in income generating activities.

Surprisingly, cohesion among girls decreased significantly among girls who received 1-25 sessions in TPP, and girls' connectedness with parents significantly reduced in overall TPP intervention

and among the girls who received 31-35 sessions in the TPP+ intervention.

TPP intervention contributed significantly to positive changes in social norms around girls' mobility, while the emphasized social norms component contributed significantly to positive changes in social norms around decision making regarding girls' marriage. However, no significant contribution of TPI was detected in changing social norms around girls' riding and playing in the village, and collective action for girls' rights.

The qualitative results show that while social norms regarding CM has not changed it has become more acceptable to allow girls to express their opinion about the groom. After participating in TPI sessions some families allowed girls to express their aspirations not only about the groom, but also about timing of marriage. Some families were also found to be supportive of the girl's desire to continue education by delaying marriage. On one hand, from TPI sessions the girls became more aware about their rights; their communication and negotiation skills were enhanced; they gained voice. On the other hand, enhanced awareness regarding girls' rights, importance of girls' education and negative consequences of CM among the parents and some community members facilitated created a conducive environment for the girls to raise their voice. A few instances of collective action to stop CM by TPI girls and boys were cited in the villages covered by the qualitative study. The community leaders of one village were also reported to have led one such action.

Discussion and conclusion

Globally reducing child marriage poses a great challenge to the policy makers, program developers and implementers. It is more so in the context of Bangladesh, where historically, the pace of reduction in child marriage has been quite slow and recently the rate has stalled. In case of TPI, the challenges were heightened manifold due to an overlap with the COVID-19 pandemic, which interfered with proper implementation of TPI.

Overall, TPI did not show an effect on CM on the full sample in any of the arms – TPP or TPP+, however, analyses by number of group sessions attended by girls revealed that TPP+ intervention had reduced the hazards of child marriage by 63% among girls who attended 36-40 sessions. The magnitude of effect is, indeed quite large and not achieved in any previous intervention to reduce CM in the country or elsewhere.

Now, if we turn our attention to how this effect of TPP+ was achieved we see that TPP+ intervention has positively changed some indicators that according to the TPI ToC² are key to achieving a reduction in CM. Thus, it significantly reduced endorsement of control exerted by family over girls, and justification of girl-beating; and increased girls' positive attitudes regarding gender roles, knowledge on SRH, mobility, confidence in negotiation skills, and self-efficacy. The only counter-intuitive result in this arm is that TPP+ reduced connectedness with parents. During COVID-19 the girls across arms were more or less confined to home due to school closure and the lockdown, which may have

increased friction within the family by affecting connectedness with parents.

The qualitative results are also in line with the quantitative finding that positive changes occurred not across board and not in all indicators that TPI targeted.

TPP intervention, which did not include the girls' movement building component, did not demonstrate any effect on child marriage either in the full sample or in the analysis by level of participation of the girls in group sessions. However, it has to be noted that TPP intervention had increased positive attitudes regarding gender roles and knowledge on SRH, and positive changes in social norms around girls' mobility. Results for some of the secondary outcomes in this arm show counter-intuitive results (e.g., girls' connectedness with parents, cohesion among girls) though.

The fact that the TPP+ model was effective despite implementation challenges leaves us to ponder whether an optimal implementation of the program could achieve an effect at a lower threshold level than 36-40 sessions. Lack of understanding of social norms and how to change them effectively has long impeded development of effective and sustainable CM prevention programs. Our results shed light on to what magnitude and how TPP+ can effectively reduce CM.

Since there is a threshold effect and only girls who participated in 36 to 40 group sessions benefitted from it, programs replicating TPP+ need to devise ways to promote girls' participation in group sessions for achieving an effect. The TPP+ model needs to be replicated in a non-pandemic situation for understanding its full potential. It is important to integrate from the very outset a cost analysis component in such intervention evaluations for enhancing decision making regarding value for money. It is also essential to assess sustainability of effective interventions such as TPP+. Success of TPP+, a social norms intervention have implications not only for Bangladesh, but also for this region and the beyond.

² <https://caretippingpoint.org/theory-of-change-2-2/#:-:text=The%20Tipping%20Point%20ToC%20underlines,critical%20consciousness%20of%20one's%20rights.>

1. Introduction

Child Marriage (CM) is a violation of human rights and it bears negative impact on the lives and well-beings of girls [1]. Globally, around 650 million females are married before they are 18 [2]. The global rate of CM before age 18 is 40% and before age 15 it is 12% [3]. While the risk of CM in South Asia has declined from 50% to 30% within the last decade, this region still contributes to 44% of the global burden of CM [2].

The adverse impact of CM on girls' physical and mental health has been well documented [4-8]. CM also inhibits developmental opportunities for girls (e.g. education, income earning, etc.) [8-11]. Child brides are at a higher risk of exposure to intimate partner violence [12-14]. Furthermore, children born to child brides are at 60% greater risk of dying in the first year of life [15]. The economic burden of CM is enormous. A reduction in child marriage by one standard deviation (16.7 percentage points) could increase annual per capita real GDP growth by 0.66 percentage points in emerging and developing countries [16].

The literature has documented several factors that influence CM such as girls' education, parent's education [17], religion [18], rural residence [19], household poverty, dowry, gender inequality, safety, and security [20-22]. CM rates tend to be high in the poorest countries and among the poor who are unable to invest in girls for alternative options [23].

Social norms related to CM have been considered as one of the important determinants of CM [24, 25]. Social norms that hinder girls' education and women's labor force participation; and norms surrounding girls' sexuality and purity [26] creates a conducive environment for CM [23]. Human behaviours are guided by social norms. People tend to practice what they believe others do in their community and what others will approve of. At the same time, they tend to avoid deviant behavior considering the sanctions [27, 28]. Thus, despite widespread knowledge regarding adverse consequences of CM, its rate continues to be high in many countries due to prevailing social norms [29].

Therefore, in order to address CM effectively it is imperative to understand and change social norms related to CM in any particular community.

CM in Bangladesh

Bangladesh has the fourth highest prevalence of CM globally [30], and the highest in South Asia, with 59% of the women aged 20-24 reported being married before the age of 18 and 19% before the age 15. There exist large geographical variations in the rate of CM in this country, ranging between 35% and 70%. Poverty, lower level of education, rural residence, pervasive patriarchal social norms, dowry system, concerns about family reputation are cited as important determinants of CM in Bangladesh [19, 31]. Even though Bangladesh has undergone a rapid change in its socio-economic and other developmental and health indicators, there has been little shift in the rate of CM, suggesting that social norms play a stronger role than other risk factors.

In recognition of the need to address high rates of CM, both The Child Marriage Restraint Act, 2017 (Act No. 6 of 2017) and the National Action Plan to End Child Marriage (2018-2030) were developed. Both the government and other civil society organizations and NGOs are investing to eliminate CM. Still, CM is pervasive and the rate of reduction in CM is very slow. Over two decades from 1993 to 2017, the median age at first marriage in this country has risen from 14.1 to only 16.0 [32, 33]. Decrease in the prevalence of CM in Bangladesh was the slowest among the South Asian countries [34]. Alarming is the fact that according to Bangladesh Demographic and Health Survey from 2014 to 2017 even these slow declines in CM have most recently stalled [33, 35].

Interventions addressing CM and the gaps

The Sustainable Development Goals, which have a target to end CM by 2030, have accelerated the efforts of the governments, NGOs and research organizations from different parts of the world in tackling CM through different programs and policies. In

line with that, a variety of interventions have been implemented and tested in different countries including Bangladesh, India, Nepal, Ethiopia, Kenya and Malawi. Common intervention components have included girls' education, livelihoods/conditional cash transfer, empowerment, and community mobilization [36-41]. There have been evaluations, but not all of them were evaluated rigorously [42-44], which leads to missed opportunities to produce evidence on what works in reducing CM and what does not.

Within Bangladesh, a few promising interventions have been implemented. A Cluster Randomized Controlled Trial on CM showed that financial incentives to delay marriage were successful to reduce the likelihood of CM by 21%. A combination of financial incentive and empowerment or empowerment alone, however, did not show an effect on CM in Bangladesh [45]. Another Cluster Randomized Controlled Trial conducted in southern Bangladesh reports that support in education, promotion of livelihood skills, and gender sensitization interventions, each implemented separately, were effective in reducing CM [40].

Although these interventions proved effective, they did not include any social norm change component, an important root cause of CM and thus, they risk not being sustainable. As pointed out by Kalamar [46], Lee-Rife et al. [47], and Cislighi [25] lack of understanding of social norms and how to change them effectively impede the development of effective and sustainable CM prevention programs.

Phase 1 of CARE's Tipping Point Initiative (TPI)¹ used a participatory and developmental evaluation approach to identify the social norms that perpetuate CM in Bangladesh and Nepal and worked with communities to drive social change [48, 49]. Based on the success of phase 1, TPI Phase 2, an integrated social norms intervention was designed by CARE to address child marriage through a focus on building adolescent girls' agency, creating supporting relations and transforming norms driving CM.

¹ <https://www.care.org/our-work/health/fighting-gender-based-violence/tipping-point/>

2. The Tipping Point Initiative (TPI)

TPI was designed to address the root causes of CM. The project aspired to address the communities' social norms that restrict the lives and roles of girls and uphold the practice of CM. TPI's approach focused on synchronized engagement with different participant groups to promote the rights of adolescent girls through community-level programming. TPI developed two holistic implementation packages, Tipping Point Program (TPP) and Tipping Point Program Plus (TPP+), following a multi-year phase of formative research, exploration, and community-action research to ensure that the packages were well tailored to address the root causes of CM in these specific communities. The resulting synchronized approaches were rooted in challenging social expectations and repressive norms and promoting girl-driven movement-building and activism; components designed to help adolescent girls to find and collectively step into spaces to engage with and tackle inequality. Both the intervention packages included a core set of interventions, while the TPP+ included an additional set of emphasized social norms change activities.

The TPP and TPP+ intervention packages were planned to be implemented and tested for 18 months however, eventually implemented for 17 months with a three months suspension in between, due to COVID-19 induced lockdown. This was achieved by merging a few sessions and conducting selective sessions virtually and with shorter durations. Total number of sessions originally planned for girls for adolescent girls and boys was 45. A total of 31 sessions with girls were completed in most of the clusters before implementation had to be suspended in March, 2020, when country-wide lock-down was declared in Bangladesh. The intervention was resumed again in August, 2020 and the remaining 14 sessions were reduced to nine by dropping two and merging the other six into three. This made the total number of sessions 40 instead of 45 as originally planned. One merged and one unmerged session were conducted virtually over the phone. In addition, the duration of the sessions was reduced by 15-25 minutes. Similar strategies were undertaken for the boys' and parents' intervention and for the emphasized social norms components. See Table 2.1 below for the package implemented and Annex 1 for the original implementation plan.

Table 2.1 The Tipping Point Initiative as implemented

PARTICIPANTS' GROUPS		SESSIONS	CORE SESSIONS/TRAININGS	GIRL-LED ACTIVITIES	JOINT SESSIONS
CORE PARTICIPANTS' GROUP	Adolescent GIRLS	Weekly 40 Sessions	Social norms [all participant groups]: equity and equality; rights and duties; gender; patriarchy; power and privileges; puberty; sex and love; honor; GBV; child marriage.	4 community level social norms activities* Organized and lead by adolescent girls' groups on following themes: Mobility Menstruation Gender Division of Labor Dowry Family Honor/Sexual Harassment Girls Aspirations	4 Intergroup Dialogues* Facilitated dialogues between core participants groups in the following combinations: Adolescent Girls with Boys Adolescent Girls with Mothers Mothers with Fathers Adolescent Girls, Adolescent Boys, Mothers, and Fathers DURATION = 17 months
	Adolescent BOYS	Weekly 40 Sessions			
	MOTHERS Group	Monthly 18 Sessions	ASRHR [all core participants' group]: menstruation; masculinities; female sexuality; contraception; HIV/AIDs.		
	FATHERS Group	Monthly 18 Sessions	Girls-centered movement building [girls' group only]: (Starting in the 7th month): leadership; empowerment dialogues; collective action; civic participation.		
OTHER PARTICIPANTS	RELIGIOUS LEADERS	Intensive Trainings* Follow-up Meetings*	Activist Training [select champion boys, fathers, mothers]*: (Starting in the 7th month): trainings and meetings to support adolescent girls' activism.	3 Activist-led activities* Created, organized and lead by network of activist girls The network of girl leaders elected across villages will organize and execute 4 activities of their own choice in each of their communities, using their own budget.	CORE FACILITATION APPROACHES A mix of facilitation approaches designed to maximize empowerment, critical thinking and action [didactic, participatory teaching, reflective analysis and facilitation for action]
	LOCAL GOVERNMENT (Union Parishads)		Activist Training [select girl leaders]*: girl leaders receive training on campaigning and activism, linked to other girls groups & networks, and given access to a budget and mentorship to execute 4 community level activities.		
	INFLUENTIAL PEOPLE				
PROJECT STAFF CORE CAPACITIES	Gender Equity and Diversity (GED)		VSLA	Participatory and Reflective Techniques	
	Social Analysis and Action (SAA)		Social Norms	Movement Building	
Facilitation Skills					

*Indicates components that are part of the full package and are not present in the light package

On an average, the girls received 28 and 29 group sessions respectively in TPP and TPP+ arms. In the TPP arm, 7% of the girls received no sessions, 20% received 1-25 sessions, 20% received 26-30 sessions, 22% received 31-35 sessions and 30% of the girls received 36-40 sessions. In the TPP+ arm, 7% of girls received no session, 23% received 1-25 sessions, 13% received 26-30 sessions, 13% received 31-35 sessions and 43% of the girls received 36-40 sessions (Table 3) The average session attendance among boys was 61.5% in TPP and 62.6% in TPP+ arms throughout the course of the implementation. Around 57% fathers attended

group sessions in TPP and 63.4% in TPP+ arms on an average. On the other hand, 67% mothers attended group sessions in TPP and 77% in TPP+ arms on an average (Table 2.2).

At the community level, 04 community level social norms activities, 03 girl-led activities, and 04 inter-group dialogues were conducted as part of the emphasized social norms component (Table 2.2).

Table 2.2 Group and community members' participation in intervention activities

Activity	TPP	TPP+
Group sessions		
Girls' weekly session attendance, average (range, SD)	28 (0-40, 11)	29 (0-40, 12)
Girls' weekly session attendance, categories, %		
None	7	7
1-25	20	23
26- 30	20	13
31-35	22	13
36-40	30	43
Boys' weekly session attendance, average proportion	62	63
Fathers' monthly session attendance, average proportion	57	63
Mothers' monthly session attendance, average proportion	67	77
Social norms related activities		
Community level social norms activities, n	-	4
Girl-led activities, n	-	3
Inter-group dialogues, n	-	4

3. Methods

The detailed methodology was presented elsewhere [50] . Therefore, a brief description of the Tipping Point Initiative (TPI) evaluation methodology has been presented in this section.

3.1 Objectives of TPI evaluation

The overall objective of this evaluation study was to assess the impact of the TPI on CM. The specific objectives were to:

- a) Assess the impact of the TPP and TPP+ interventions on child marriage among adolescent girls participating in TPI; and
- b) Assess the additional impact of the emphasized social norms change model, i.e., TPP+ on child marriage over the impact of the TPP model.

3.2 Study design

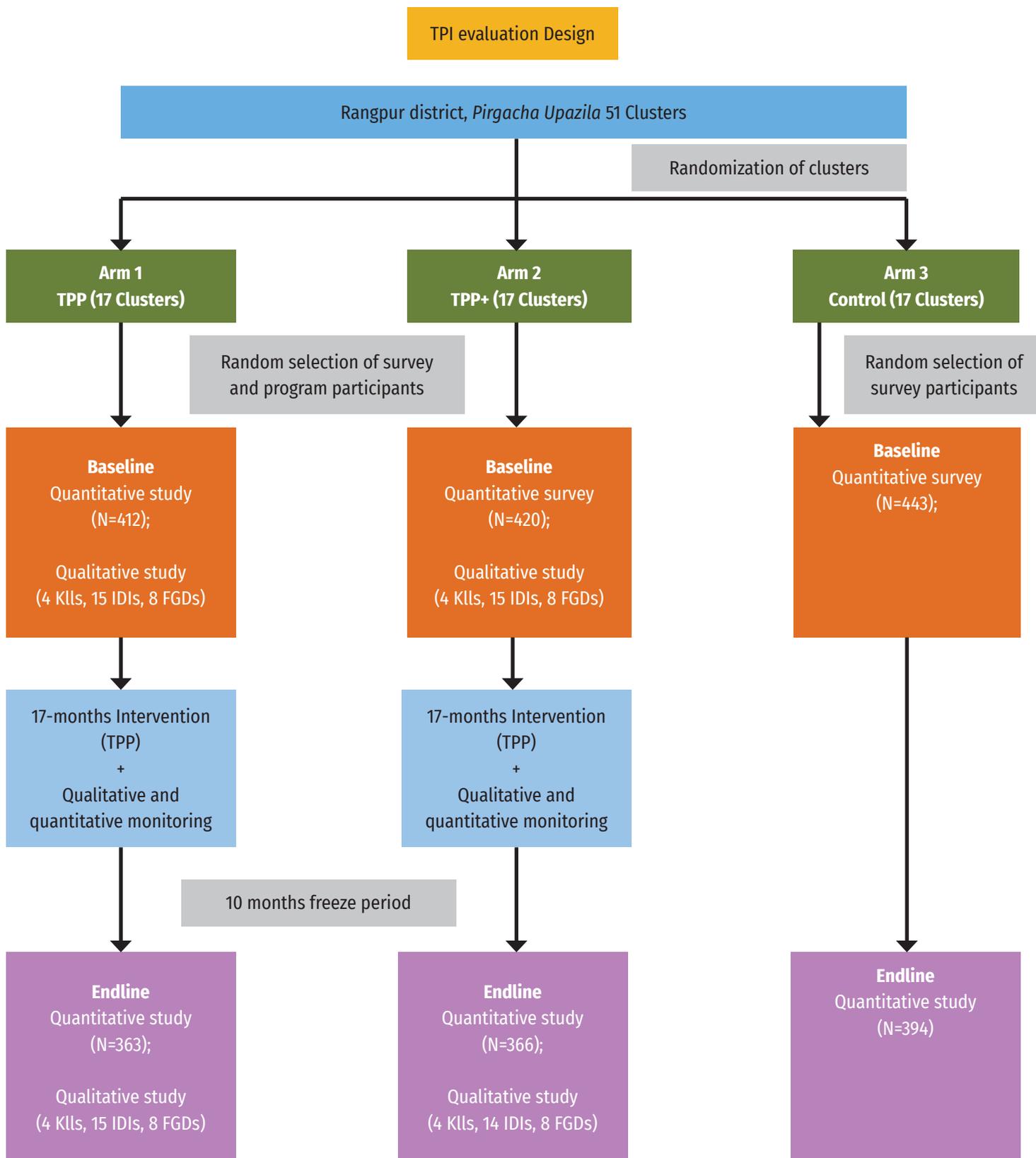
The TPI evaluation study employed a mixed-method, three-arm Cluster Randomized Controlled Trial (CRCT) design (Figure 3.1). The arms were as follows:

Arm 1: Tipping Point Program (TPP), designed to enhance adolescent girls' personal assets, intrinsic and instrumental agency;

Arm 2: Tipping Point Program Plus (TPP+), TPP intervention with additional elements designed to enhance social norms change by engaging community leaders and facilitating girl-led community activities; and

Arm 3: Pure control

Figure 3.1 TPI evaluation design



3.3 TPI study outcomes

Primary outcome:

Child marriage among the girl study participants

The rate of CM was measured among the girl TPI participants. Child marriage was defined as marriage of a girl before the age of 18 years, and very early CM (VECM) was defined if a girl was married before 15. Since only the unmarried girls were recruited in the study, the comparisons were made between the intervention and control arms using the endline data.

Secondary outcomes

Secondary outcomes measured were: (1) Intrinsic agency – defined as one’s consciousness of own aspirations, capabilities, and rights [51-53]; (2) Instrumental agency – defined as the action to achieve one’s aspirations and goals [51-53]; (3) Collective agency – defined as the collective action to achieve common goals [51-53]; (4) social norms – defined as the normative expectations and empirical expectations regarding child marriage, and girls’ ability to stand up for their rights [54].

The specific secondary outcomes of TPI include: (1) Adolescent girl’s self-efficacy in achieving life goals and collective efficacy in preventing CM; (2) Adolescent girl’s aspiration about marriage and education; (3) Adolescent girl’s knowledge about Sexual and Reproductive Health and Rights; (4) Attitudes towards gender and rights among adolescent girls and adult community members; (5) Cohesion among adolescent girl; (6) Communication and negotiation skill of adolescent girls; (7) Adolescent girl’s mobility; (8) Participation in financial activities among adolescent girls; (9) Adolescent girls’ connectedness with parents; and (10) Perception of Social norms among adolescent girls and adult community members. The details of the study outcomes were presented elsewhere [50].

3.4 TPI study sites

TPI intervention and evaluation were implemented in selected 51 villages (17 per arm), in purposively selected *Pirgacha upazila* (sub-district) from Rangpur district in Bangladesh. Rangpur was chosen as the prevalence of CM was the highest in this division (85%) and the median age at marriage in this district was the lowest (15 years among women aged 20–49) in the country during project inception [55]. Villages were considered as clusters or the primary sampling units. Initially, 51 villages were selected from the list of all villages in *Pirgacha* through a two-stage approach – identification of clusters and randomization to three study arms (17 per arm).

3.5 TPI study population

While the TPI recruited adolescent girls and boys aged 12–<16 years; parents of the girls and boys aged 12–<16 years; and the community influential people, the study population of the TPI quantitative evaluation included unmarried adolescent girls aged 12–<16 years at the time of recruitment and adult females and males aged 25 or more. The TPI qualitative evaluation included unmarried adolescent girls and boys aged 12–<16 and fathers and mothers of adolescent girls aged 12–<16 years at the time of recruitment, and community members.

3.6 Household enumeration, recruitment of study participants and cohort establishment

Following cluster selection and randomization, household enumeration was conducted in each of the study villages during January–February 2019 to collect the socio-demographic information (e.g. sex, age, education, religion, marital status, age at marriage, occupation) needed to establish sampling frames. A cohort of 25 randomly selected unmarried adolescent girls aged 12–<16 years in each cluster was established, interviewed at baseline, provided with the intervention in the intervention clusters, and interviewed at endline. In addition, separate cohorts of 25 unmarried adolescent boys aged 12–<16 years, and 25 fathers and 25 mothers of adolescent girls and boys aged 12–<16 years in each intervention cluster were established and provided with the intervention. Cross sectional samples of adult female and male community members aged 25 or more were selected randomly from the enumeration data and interviewed at baseline and endline surveys. A sub-sample of adolescent girls, boys, fathers and mothers were also interviewed qualitatively at baseline and endline.

3.7 Quantitative evaluation

3.7.1 Sample size and sample selection

Girls’ survey

Assuming a 50% prevalence rate of the primary outcome, i.e., child marriage among adolescent girls aged 12–<16, cluster size of 22, 15% effect size, Intra-Cluster Correlation of 0.05, 5% level of significance and 80% power we required 17 clusters per arm making the total number of clusters 51. Considering a 15% non-response/lost to follow-up rate the group size increased to 25 and total sample size increased to 1,275 girls. Simple random samples of 29 eligible girls were drawn from each cluster from the list of eligible girls. A girl was eligible to be included in the study if she was: i) aged 12–<16 years; ii) unmarried; and iii) usual resident of the study village. We oversampled the girls by 16% to achieve a group size of 25, considering the possibility of refusal. The girls successfully interviewed during baseline were followed up during endline.

Community survey

To assess social norms change we considered child marriage related social norms among the adult community members aged 25 or more as the primary outcome. Considering 50% prevalence of child marriage related social norms among the community members aged 25 or more, 15% effect size, 5% significance level, 80% power and 5% non-response rate, we required 540 community members from 51 clusters. To ensure participation of both males and females we required six adult males and six adult females from each cluster. A community member was eligible to be included in the study if s/he was: i) aged 25 years or more; and ii) usual resident of the study village. The details of the sample size calculation have been presented elsewhere [50].

3.7.1.2 Baseline and endline survey data collection and monitoring

Data collection

Baseline data were collected during February-April 2019 and endline data were collected during November-December 2021 by trained survey teams using separate pre-designed questionnaires for girls' and community surveys, which were pre-tested and piloted before the baseline survey. The questionnaires were modified to capture exposure and impact of TPI and COVID for data collection during endline.

Data were collected face-to-face in Bangla using Tablets by gender-matched interviewers upon receipt of oral assent of adolescent girls and oral consent of their parents in the girls' survey, and oral consent of the participants in the community survey. During endline survey, some of the TPI girls were found married and oral consent was sought from them. All the interviews took place in private, in a location convenient for the participants. A selected participant was considered unavailable if the survey team could not reach her/him after three visits during the whole period of data collection. An attempt was made to interview a selected girl even if she was not living in her own village but was living within the study catchment area. The data collected were uploaded on a designated server at the end of each business day.

Data quality monitoring

A comprehensive data quality monitoring system was in place in both surveys. At the first level, the supervisors observed and spot-checked the interviews and provided feedback to the interviewers, if there was any. Secondly, the quality control officer checked each completed questionnaire for any inconsistencies and solved the issue in consultation with the interviewers. Further, a computer-based data checking routine was developed

and inconsistencies of collected data were checked routinely. Problems identified in the data were communicated to the supervisors through the survey coordinator. The supervisor resolved the problems through discussion with the interviewer if possible. If necessary, the interviewer revisited the respondent and solved the issues by consulting the respondent. Moreover, 5% of the interviews were revisited by the supervisor and they administered a short questionnaire focused mainly on identifying any problems in adhering to ethical guidelines and administering questions on the topics covered in the survey. Finally, the researchers made frequent field visits, randomly checked filled-out questionnaires, observed interviews where possible and provided feedback to the survey team.

3.7.1.3 Measurement and data analyses

To assess the impact of TPI on the primary and secondary outcomes related to the girls, we have merged the baseline and endline datasets both from the girl and community surveys. We have also merged with the working file some variables from the household enumeration. We also conducted dose-response analysis to detect whether there was a threshold at which TPI becomes effective in reducing CM and other secondary outcomes of interest. For the purpose of dose-response analysis, information on session attendance of girls and fathers from the monitoring data were used. To assess the impact of TPI on secondary outcomes related to community members, baseline and endline community survey data were used.

All the scales used in the surveys were validated using factor analysis. Internal consistency (or reliability) of a scale was measured using Cronbach's alpha. A scale with alpha equal to 0.60 or more was considered acceptable. Scale validity was measured using the Kaiser-Meyer-Olkin (KMO) test. KMO equal to 0.60 or more was considered acceptable. Scale validity was measured using the Kaiser-Meyer-Olkin (KMO) test. KMO equal to 0.60 or more was considered acceptable [50]. Items in the scales were recoded so that all were anchored at 0. Summative scores were obtained for each scale and the scores were then divided into tertiles. Summative scores were used when a scale was used as a dependent variable of interest in a regression model. Tertiles were used when the scale was added as a covariate in the model. Both summative score and tertile were used for univariate and bivariate analyses of a scale.

Chi-square test was performed for categorical variables and t-tests for continuous variables to check whether the study arms (control, TPP, and TPP+) were balanced at baseline in terms of basic background characteristics (e.g., age, education, religion, wealth index) of the girls and community members. Changes in

TPI secondary outcomes from baseline to endline were compared arm-wise, while the TPI primary outcome, i.e., rate of child marriage among TPI girls was compared by arm only at endline as all the girls were unmarried at baseline.

The impact of TPI was measured separately for TPP, TPP+ and emphasized social norms change interventions. The impact of TPP and TPP+ were measured by comparing these arms with the control arm, while the impact of emphasized social norms change component was measured by comparing TPP+ with the TPP arm. All analyses were adjusted for the potential individual-level and cluster-level covariates. The potential covariates were identified based on comparison of basic background characteristics between arms, the literature, and statistically significant bivariate associations between the outcomes of interest and the covariates.

The impact of TPI on CM was assessed by fitting a multilevel parametric survival model (multilevel inverse-Gaussian frailty model) adjusting for potential individual-level and cluster-level covariates. In addition, a dose-response analysis was conducted for measuring the impact of number of sessions attended by the TPI girls on CM. The endline girl and community survey data were used for this analysis. Some of the covariates were added from the household enumeration data.

The impact of TPI on the TPI secondary outcomes were assessed using linear regression (for continuous variables) adjusting for baseline rates. The regression coefficient " β " of the variable "survey \times intervention" gives the impact of the TPI where the baseline survey was coded as "0" and endline as "1", and the control arm was coded as "0" and the intervention arm as "1". Moreover, analyses were also conducted for assessing the impact of number of sessions attended by the TPI girls on each of the secondary outcomes. The regression coefficient " β " of that particular number of sessions indicates the impact of that particular number of sessions. Statistical analyses were performed using STATA version 15. The significant level was considered at a 5% level for all bivariate analyses and regression analyses.

Child marriage

In the survival analyses, the dependent variable was the "time to first marriage". This variable was constructed by subtracting the date of baseline interview from the date of first marriage. The variable "child marriage" played the role of a proxy indicator for censoring, and was coded as "1=censored" if the corresponding adolescent girl got married before age 18 years; and "0=uncensored" otherwise.

Girls' self-efficacy

Girls' Self-efficacy was measured using eight items (Cronbach's $\alpha=0.79$ and $KMO=0.80$). The girls were asked eight questions about how confident she is in achieving life goals in education, healthcare, mobility, marriage, and income earning. The response options included: not at all confident, somewhat confident, fairly confident, and strongly confident. The response options were recoded and a summative score was obtained, so that with higher score indicates higher self-efficacy.

Aspirations about marriage and education

Girls' aspirations regarding education and marriage were measured by asking them about the level of highest education they want to complete, whether they want to continue education after marriage, and their preferred age that is the time when they want to get married.

Knowledge regarding sexual and reproductive health and rights (SRHR)

Drawing on the standard questions used in Bangladesh Demographic and Health Survey, the girls were asked eight questions around SRHR (menstruation, reproductive health, contraceptives and sexually transmitted diseases) to assess their knowledge in this domain. The response options were recoded into "1=correct knowledge" and "0=incorrect knowledge". The response options were recoded and a summative score was obtained, with higher score indicates greater knowledge around SRHR.

Attitudes regarding gender attitudes

Gender attitudes of the girls and community members were measured around gender roles, control of girls by family members, justification of girl beating and gender discrimination. Several statements were used to measure gender attitudes under each theme using modified version of the Gender-Equitable Men (GEM) Scale [56]. For girls there were two response categories: disagree and agree. For adult community members there were four response categories ranging from strongly disagree to strongly agree.

Gender roles

Seven items were used to measure adolescent girls' attitudes (Cronbach's $\alpha=0.70$ and $KMO=0.81$) and four items were used to measure community members' attitudes regarding gender roles. The response options were recoded and a summative score was obtained, so that higher score indicates more gender equitable attitudes.

Attitudes regarding control of adolescent girls by family members

The attitudes regarding control of adolescent girls by family members were assessed using four items for both girls (Cronbach's alpha=0.76 and KMO=0.73) and community members (Cronbach's alpha=0.94 and KMO=0.80). The response options were recoded and a summative score was obtained, so that higher score indicates high endorsement of control of adolescent girls by family members.

Attitudes regarding justification of girl-beating

Attitude regarding justification of girl-beating was assessed using eight items for girls (Cronbach's alpha=0.78 and KMO=0.82) and nine items for community members (Cronbach's alpha=0.89 and KMO=0.91). The response options were recoded and a summative score was obtained, so that higher score indicates high endorsement of girl beating.

Girls' mobility

Mobility or freedom of movement of girls was measured using six items regarding girls' ability to visit a distant cluster in the village; friends/relatives in another village/town; market; health facility/provider; community meeting/gathering; and fair/park (Cronbach's alpha=0.53 and KMO=0.69). The response categories were: cannot visit=0; can visit with permission and chaperoned=1; can visit without permission, but chaperoned=2; can visit with permission and without chaperon=3, and can visit without permission and accompanied by none without chaperon=4. The response options were recoded and a summative score was obtained, so that higher score indicates high mobility.

Girls' communication and negotiation

Girls' communication was calculated using ten items (Cronbach's alpha=0.72, KMO=0.67) with two response options (disagree and agree). A summative score was obtained with higher score indicates better communication skills.

Girls' confidence in negotiation regarding education, marriage, and mobility with their parents was measured using three items (Cronbach's alpha=0.72 and KMO=0.68) with four options (Not at all confident, Somewhat Confident, Fairly confident, Strongly confident). A summative score was obtained with higher score indicates more confidence.

Girls' involvement in financial activities

Five questions related to girls' involvement in financial activities and one related to their participation in financial decision-making with two options "Yes" and "No" were asked to measure their participation in financial activities and decision-making. A summative score was obtained with higher score indicates high participation of girls in financial activities and financial decision-making.

Collective agency

The collective agency of girls was measured using three domains namely group membership, cohesion, solidarity, mobilization skills, and participation in events. This report only analyze girls' cohesion, solidarity, and mobilization skills among them. The neighborhood cohesion scale proposed by Buckner [57] was used to measure the group cohesion among the girls. Thirteen items were used to generate the cohesion score (Cronbach's alpha=0.93 and KMO= 0.95). A summative score was obtained with a higher score indicating greater cohesion.

Social norms

The community members were asked 22 questions regarding social norms. The response options were: disapprove; neutral; and approve. Information on social norms was analyzed in three distinct domains: girls' mobility, female rights, and marriage. Girls' mobility-related social norm was measured using six items (Cronbach's alpha= 0.75; KMO= 0.69). Five items were used to measure female rights related social norm (Cronbach's alpha=0.64; KMO=0.67) and another five to measure child marriage related social norm (Cronbach's alpha=0.70; KMO=0.74). Summative scores were obtained for each social norm, with a higher score indicating positive social norms.

Session attendance by girls and parents

To measure the impact of the TPI and assess dose-response relationship, the number of TPI session attendance by girls and fathers were included in the analyses. The total number of sessions for each of the TPI girl was calculated from individual records of attendance and merged with the working data file. Information on attendance was missing for first three months of the intervention, which were imputed using proportion of sessions that a girl attended in the remaining sessions, based on the existing information. The number of sessions attended by girls was categorized as none, 1-25, 26-30, 31-35 and 36-40 sessions. Cluster-level proportions of session attendance by fathers were calculated by dividing the targeted number of fathers in each cluster by the actual number of fathers attended in the sessions.

3.8 Qualitative evaluation

3.8.1.1 Qualitative study sites, data collection methods, sample size and sample selection

The TPI qualitative evaluation was conducted in two purposively selected villages from each of TPP and TPP+ arms. Three different qualitative techniques of data collection were applied in this study, namely, In-depth Interviews (IDI), Focus Group Discussions (FGD) and Key Informant Interviews (KII). The qualitative sample size included four KIIs; 10 IDIs with unmarried adolescent girls and five IDIs with unmarried adolescent boys; two FGDs with unmarried adolescent girls and two with boys; two FGDs with adult community females and two with adult community males from each arm. While the same girls and boys from the baseline

were approached for interview at endline and 70% of the girls and 80% of the boys were interviewed successfully. Newly selected girls and boys replaced the lost to follow up participants. For the other categories of participants, cross sectional samples of other participants were selected purposively at baseline and endline. Seventy percent of the girls and 80% of the boys from the baseline could be interviewed in-depth at endline. The remaining categories, by arms and by round of data collection have been presented in Table 3.1. Following enumeration, the qualitative sample was drawn on purpose through informal discussions with community members from two villages from each intervention arm, TPP and TPP+.

Table 3.1. Qualitative sample size at baseline and endline, by participant category and by arm in Rangpur

Sl	Tools and participant category	Arm 1 (Study villages A & B)	Arm 2 (Study villages C & D)	Total
	KIIs with men	2 (1 A + 1 B)	2 (1 C + 1 D)	4
	KIIs with women	2 (1 A + 1 B)	2 (1 C + 1 D)	4
	IDIs with adolescent girls (Group members)	10 (5 A + 5 B)	10 (5 C + 5 D)	20
	IDIs with adolescent boys (Group members)	5 (3 A + 2 B)	5 (3 C + 2 D)	10*
	FGDs with adolescent girls (Group members)	2 (1 A + 1 B)	2 (1 C + 1 D)	4
	FGDs with adolescent boys (Group members)	2 (1 A + 1 B)	2 (1 C + 1 D)	4
	FGDs with adult women/mother (Group members)	1 A	1 C	2
	FGDs with adult women/mother (Non-group members)	1 A	1 C	2
	FGDs with adult men/father (Group members)	1 B	1 D	2
	FGDs with adult men/father (Non-group members)	1 B	1 D	2
Total		27	27	54

*Only exception is that, at endline, six IDIs with adolescent boys (Group members) were conducted from Arm 1 and four from Arm 2.

3.8.1.2 Qualitative data collection

Baseline qualitative data were collected during February-March 2019 and endline data were collected during December 2021 by a trained research team using separate pre-designed qualitative guides for different target population and different data collection techniques. The interview guides were modified to capture exposure and impact of TPI and COVID for data collection during endline. Interviews and discussions with participants were conducted in Bengali by gender-matched interviewers. Data were audio recorded upon receipt of verbal approval from the participants and guardians (in case of adolescent participants). The researchers used to take part in a compulsory daily debriefing session at the end of each working day for discussing interesting findings, reviewing field notes and experiences. This process helped the team to scrutinize interesting findings which facilitated an iterative process of data collection. It also helped the researchers to resolve issues or challenges related to the data collection.

3.8.1.3 Qualitative data coding and analysis

The recorded data were transcribed verbatim in Bengali and translated into English. The accuracy and completeness of the transcripts were examined by listening to a random sample of 20% of the audio-files of the IDIs, KIIs, and FGDs. The study team marked unclear transcripts for transcriber correction and reviewed corrections upon submission. Researchers always went back to the audio files to maintain the accuracy and completeness of the transcripts and translation for all the interviews.

Bengali transcripts were entered into MAXQDA 18 (VERBI 2018) and ATLAS.ti for qualitative data analysis in order to facilitate coding and data analysis. Once coding was completed the data were retrieved by codes for further analyses by themes. CARE's Social Norms Analysis Plot framework¹ guides thematic analysis, which defines five key elements of a norm: empirical and normative expectations, sanctions, sensitivity to sanctions, and exceptions [57]. The data was subjected to narrative analysis also to gain a better understanding of the norms associated with CM. Repeated discussion took place among the researchers allowing enough scope for examining the data critically, enhancing the rigor of analysis, and reflecting upon the findings.

3.9 Quantitative and qualitative program monitoring

TPI's Phase 2 Monitoring Framework uses a mixed-methods approach to track program activities, progress toward outcomes, and ensure implementation fidelity – all of which are vital inputs

to the RCT's impact story via research partners' triangulation with endline data. For instance, participation rates help inform project reach as well as dosage of the TPI among different participant groups. Due to the suspension of activities during the pandemic, the TPI online monitoring system was adapted continuously to meet the requirements of a rapidly changing environment and TPI adaptations.

TPI's ongoing progress towards outcomes is measured using rolling profiles, i.e., longitudinal in-depth interviews with a total of five TPI families in both Bangladesh and Nepal, focusing on connectedness between adolescents and their parents, changes in communication between adolescents and parents regarding puberty, menstruation, adolescent education and aspirations as well as gender roles and expectations. These interviews were also recognized as a vital set of tools to assess the consequences of COVID-induced lockdown in both the countries and their impact on key TPI outcomes.

The TPI' fidelity has been assessed through monthly sessions and event observations conducted by senior implementing organization staff throughout the course of Phase 2 interventions. Additionally, icddr,b conducted monitoring visits to assess the project's fidelity. Some of the reflections shared by research partners have been helpful in recognizing how the country teams have adapted to a changing environment due to COVID-19 and are still trying to maintain fidelity of the intervention to take forward the key TPI messages.

3.10 Ethical considerations

This study follows the WHO ethical recommendations for researching violence against women [58] and the CIOMS International Guidelines for Ethical Review of Epidemiological Studies [59] for both quantitative and qualitative components. The study (PR#18056) received ethical approval from icddr,b's Institutional Review Board. Participation in the study was voluntary and all the study participants were included in the study upon their oral consent because of the low levels of literacy and concerns regarding confidentiality. Data were collected in Bangla using face-to-face interviews upon receipt of consent of adult community members. In case of interviewing adolescent girls and boys aged <18 years, we sought consent of parents and assent of adolescents. However, married adolescents aged <18 were considered "mature minors" and oral consent was sought from them.

To maintain confidentiality, interviews were conducted in private and in a location convenient for the participants. The participants were forewarned that the data collected will be held

¹ https://caretippingpoint.org/wp-content/uploads/2019/11/TP_Social_Norms_FINAL.pdf

in strict confidence and includes questions on highly personal and sensitive topics. The participants were free to terminate the interview at any point, and to skip any questions that s/he does not wish to respond to. No name was recorded in the data files. Instead, all the study participants were given a unique code and all the identifying information were kept in a separate file. The de-identified data were analyzed and care was taken to present the research findings in sufficiently aggregated form to ensure that no study participant can be identified and avoid possibilities of backlash.

3.11 Adaptations made to Tipping Point program because of COVID-19

The TPI implementation in Bangladesh was suspended after March 2020. This meant that all activities with the girls, boys, mothers, fathers and key community members were stopped in all the study clusters in *Pirgacha*. Till this time, Tipping Point had already completed 12 months of implementation in all the clusters. At this time, efforts were made not only to ensure the safety of the Tipping Point participants but at the same time, also ensuring that the implementation plans and fidelity of the intervention was least disrupted. Efforts were made to keep the content and modality of the intervention package as similar to what was originally envisioned supported by a multi-layered monitoring process to track all the changes Tipping Point had to make, to adapt the package to the new realities. Adaptations to the TPP and TPP+ packages were made in: i) the content of the sessions, ii) the operational modality of the sessions, iii) the changes in TPI group sizes and/or locations to ensure physical distancing.

3.12 Limitations of the study

The originally planned TPI package could not be implemented due to COVID-19 pandemic, a reduced version of the intervention was actually implemented instead. However, to minimize the loss, some sessions were conducted virtually over phone during lock down. Since virtual sessions could accommodate a smaller number of participants due to technological difficulties some sessions were merged for the sake of managing time.

The design of the study allowed to assess the impact of Tipping Point Initiative among the TPI study participants only, and in the wider community. However, in the intervention clusters most of the eligible adolescent girls were actually covered by the program. Since only unmarried adolescent girls were recruited in the study, the within-arm change in rate of child marriage over time could not be measured. Moreover, child marriage was calculated among girls aged 14-18 years participating in TPI. Thus, for the girls who did not reach 18 years at endline it remains unknown whether

they will eventually get married before 18 or not. In addition, some unobserved differences among arms may have remained unadjusted in the regression analyses. Social desirability bias is often inherent to intervention evaluation studies. In order to minimize this bias we have allowed a 10-month freeze period between intervention completion and endline data collection.

The qualitative component did not include any control village, precluding opportunities for comparisons that could have provided us with greater insights. The intervention villages selected for qualitative study were not representative of the intervention arms. Thus, it was not possible to consider the qualitative findings as representative of the intervention arms. However, some of the findings from both quantitative and qualitative studies do match. In such cases, the qualitative component allows us to understand the pathways through which change happened.

4. Results

Figure 1 presents the CONSORT Flow Diagram of the study (Figure 4.1). Among 1,275 girls from the baseline survey, a total of 1,123 girls were successfully interviewed at endline (394 in control, 363 in TPP and 366 in TPP+). The overall endline response rate in the girls' survey was 88% (89% in control, 88% in TPP and 87% in TPP+). The only reason for the non-response was the lost to follow-up. The selected participants were absent during the whole data collection period due to various reasons including migration due to marriage (51%), education (2%) and employment (14%) and family migration (14%). All the girls who were successfully interviewed at both baseline and endline were included in analysis.

A total of 626 and 634 community members aged ≥ 25 were successfully interviewed respectively at baseline and endline (Figure 4.1). The overall endline response rate in the community survey was 83% (84% in control, 83% in TPP and 81% in TPP+). The selected participants were absent during the whole data collection period due to various reasons including migration, employment, and visiting relatives.

4.1 Background characteristics of the survey samples

Table 4.1 presents the background characteristics of adolescent girl sample aged 12-18 years by arm and by survey. Differences in background characteristics have been adjusted in the regression analyses.

At baseline, statistically significant differences among arms were revealed in religious identity and household wealth. The intervention arms had a higher proportion of Muslim girls (94% and 93% respectively) compared to the control arm (86%) both at baseline and endline. A significantly higher proportion of girls from the TPP arm belonged to the highest wealth quintile (22%) compared to TPP+ (15%). The girls who were aged 12- <16 years at the time of recruitment became aged 14-18 years at endline. Mean years of education among girls was 7 at baseline and 8 at endline.

Figure 4.1 Consort Flow Diagram

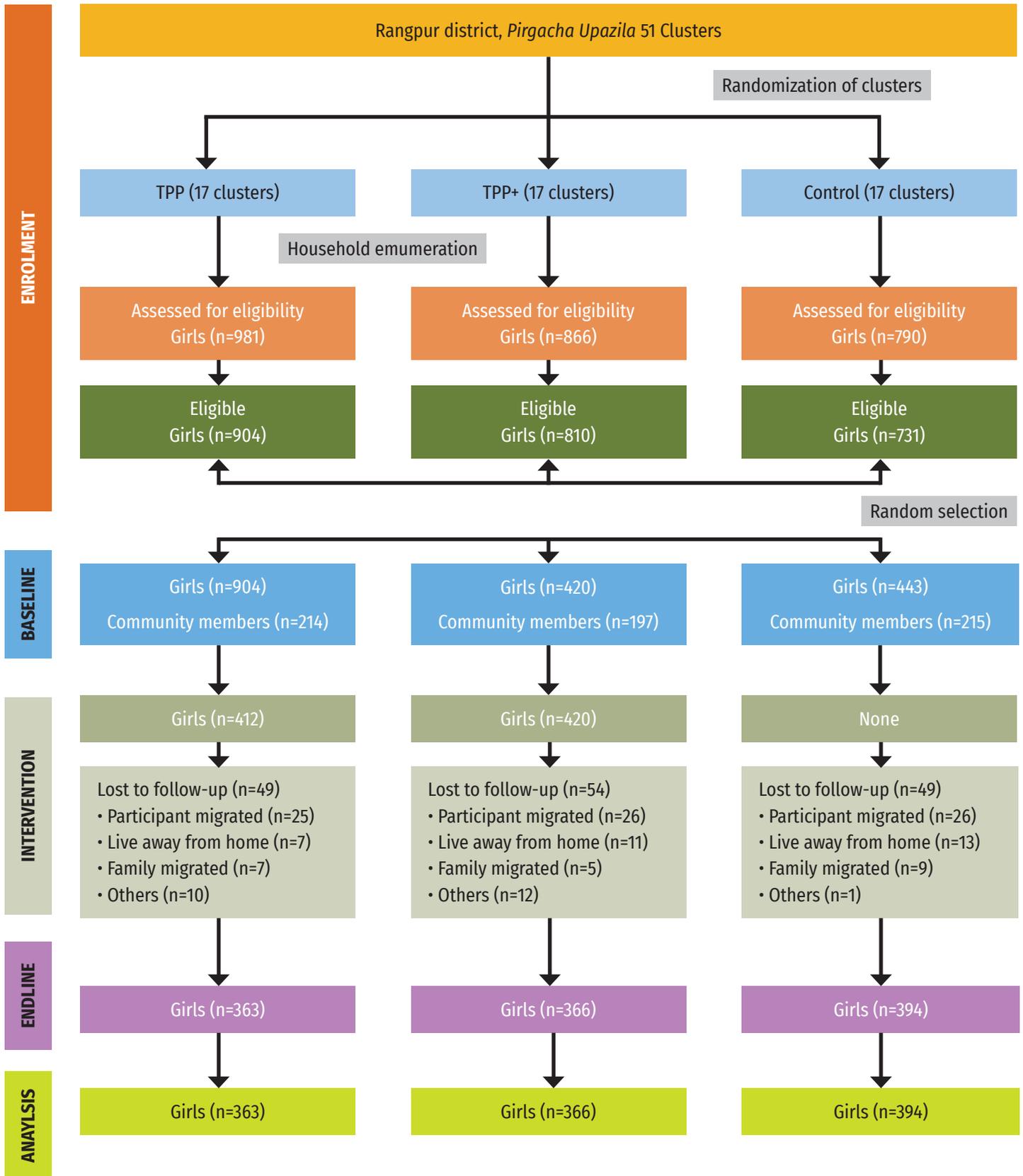


Table 4.1. Background characteristics of adolescent girls aged 12-18 years by arm, at baseline and end-line

Characteristics	Baseline, %				End-line, %			
	Control	TPP	TPP+	Full sample	Control	TPP	TPP+	Full sample
N	394	363	366	1123	394	363	366	1,123
Mean age, years (range, SD)*	13.53 (12-15, 1.08)	13.49 (12-15, 1.09)	13.61 (12-15, 1.08)	13.54 (12-15, 1.08)	16.04 (14-18, 1.17) ¹	15.95 (14-18, 1.19) ²	16.03 (14-18, 1.15) ³	16.01 (14-18,1.1)
Age*								
12 years	22.08	22.31	20.77	21.73				
13 years	26.40	30.58	24.86	27.25				
14 years	27.16	22.59	28.42	26.09	12.18	11.02	9.84	11.04
15 years	24.37	24.52	25.96	24.93	19.54	29.20	23.77	24.04
16 years					30.46	25.62	30.60	28.94
17 years					27.41	22.04	24.32	24.67
18 years					10.41	12.12	11.48	11.31
Mean education, years* (range, SD)	6.77 (1-10,1.55)	6.58 (0-10,1.5)	6.66 (1-9,1.5)	6.67 (0-10,1.53)	8.36 (4-12,1.22) ¹	8.25 (0-12,1.38) ²	8.30 (4-11,1.26) ³	8.30 (4-12,1.29)
Years of Education*								
1-5 years	18.88	22.93	23.22	21.61	3.83 ¹	3.86 ²	3.01 ³	3.57
6-7 years	47.96	49.17	47.54	48.21	16.84	20.39	21.04	19.36
8-10 years	33.16	27.90	29.23	30.18	78.32	74.38	74.59	75.83
>10 years					1.02	1.38	1.37	1.25
Religion								
Muslim	87.06	93.94 ^a	93.17 ^c	91.27	87.06	93.94 ^a	93.17 ^c	91.27
Hindu	12.94	6.06	6.83	8.73	12.94	6.06	6.83	8.73
Wealth index*								
Lowest	20.05	19.56 ^b	20.77	20.12	19.80	19.56	20.77	20.04
Second	21.57	21.49	19.40	20.84	24.37	22.31	18.85	21.91
Middle	19.80	14.05	23.22	19.06	20.05	16.80	18.85	18.61
Fourth	22.08	22.59	21.58	22.08	17.51	20.66	22.13	20.04
Highest	16.50	22.31	15.03	17.90	18.27	20.66	19.40	19.41

*significant difference between baseline and endline; ^a significant difference between control and TPP; ^b significant difference between TPP and TPP+; ^c significant difference between control and TPP+.

The background characteristics of community members by arm and survey have been presented in Table 4.2. Around half of the community samples were females and half were males. While religious identity differed significantly by arm both at baseline and endline surveys, level of education differed significantly between surveys in the control arm. In line with the girl sample

the intervention arms had significantly a higher proportion of more Muslims compared to the control arm at both time points (control=84%, TPP=96% and TPP+=95% at baseline; control=85%, TPP=96% and TPP+=91% at endline). A significantly higher proportion of community members in control group at baseline had no education compared to those who belong to control group at endline (48% vs. 36%).

Table 4.2. Background characteristics of community members by arm, at baseline and endline

Characteristics	Baseline, %				End-line, %			
	Control	TPP	TPP+	Full sample	Control	TPP	TPP+	Full sample
N	115	114	97	308	114	114	106	300
Sex								
Male	51.16	50.00	51.27	50.80	53.02	53.77	51.21	52.68
Female	48.84	50.00	48.73	49.20	46.98	46.23	48.79	47.76
Mean age, years (range, SD)	46.35 (25-80, 13.21)	45.88 (25-91, 14.62)	46.36 (25-99, 15.92)	46.19 (25-99, 14.57)	46.78 (25-80, 13.85)	48.30 (25-94, 14.71)	48.23 (25-99, 14.64)	48.23 (25-99, 14.40)
Age in years								
25-34 years	23.72	27.10	25.38	25.40	23.26	21.23	20.77	21.77
35-44 years		30.58	24.86	27.25				
45-54 years	22.79	21.96	17.26	20.77	21.40	20.75	17.39	19.87
55-64 years	19.53	15.89	19.29	18.21	19.07	22.17	19.81	20.35
65 years and above	11.16	10.75	10.66	10.86	11.63	13.21	16.91	13.88
Mean education, years (range, SD)	3.74 (0-17, 4.57)	3.06 (0-17, 4.80)	3.35 (0-16, 4.15)	3.72 (0-17, 4.53)	4.20 (0-17, 4.66)	4.33 (0-17, 4.78)	3.72 (0-17, 4.47)	4.09 (0-17, 4.64)
Level of Education								
No formal education	48.37	43.46	47.72	46.49	36.281	41.98	43.00	40.38
1-5 years of education	20.47	21.96	26.40	22.84	32.09	20.28	27.54	26.66
6-10 years of education	21.86	24.77	18.78	21.88	21.86	26.89	19.32	22.71
>10 years of education	9.30	9.81	7.11	8.79	9.77	10.85	10.14	10.25
Marital Status								
Currently married	92.09	91.12	91.88	91.69	88.84	88.21	90.82	89.27
Divorced/ Widowed/ widower/ Separated	6.51	7.48	7.11	1.28	9.30	10.38	9.18	9.62
Never Married	1.40	1.40	1.02	0.32	1.86	1.42	0.00	1.10
Religion								
Muslim	87.06	93.94 ^a	93.17 ^c	91.27	87.06	93.94 ^a	93.17 ^c	91.27
Hindu	12.94	6.06	6.83	8.73	12.94	6.06	6.83	8.73
Buddhism	0.00	0.00	0.00	0.00	0.00	0.00	0.97	0.32

*significant difference between baseline and endline; ^a significant difference between control and TPP; ^b significant difference between TPP and TPP+; ^c significant difference between control and TPP+.

¹Statistically significant difference between control arms at baseline and endline at 5% level

² Statistically significant difference between TPP arms at baseline and endline at 5% level

³Statistically significant difference between TPP+ arms at baseline and endline at 5% level

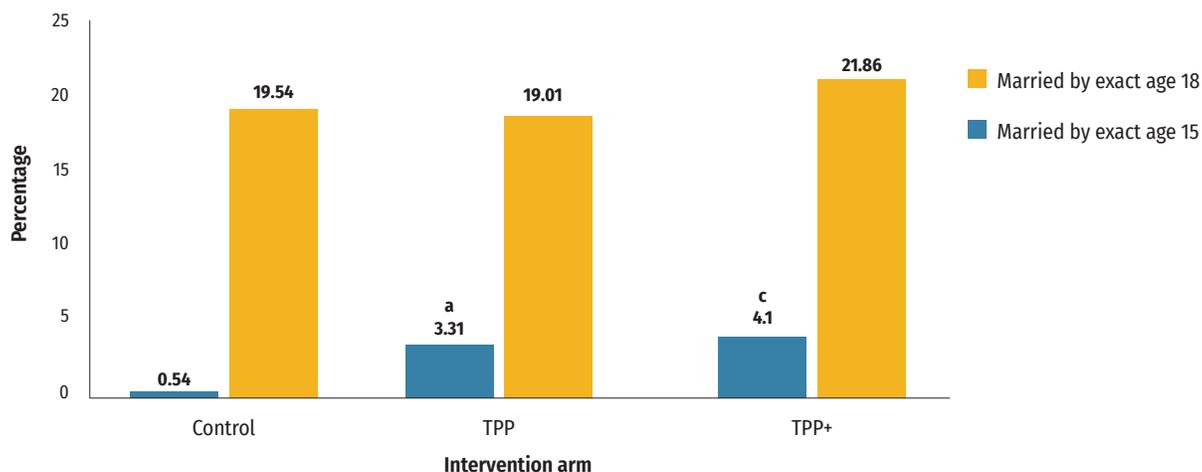
4.2 Impact of TPI

4.2.1 Primary outcome: Child marriage

Since only never-married girls were recruited at baseline, the rate of CM was calculated using the endline data only. The rate of CM among the TPI members aged 14-18 years was 20% in control arm, 19% in TPP and 22% in the TPP+ arm. No statistically significant

difference emerged between arms. The overall rate of VECM was approximately 1% in control arm, 3% in TPP and 4% in TPP+ arm. The rate of VECM was significantly higher in intervention arms compared to control arm (Figure 4.2).

Figure 4.2 Prevalence of child marriage in Rangpur at endline by arm, 2021.



^aSignificant difference exists between control and TPP; ^bSignificant difference exists between TPP and TPP+; ^cSignificant difference exists between control and TPP+

The results of multilevel parametric survival analyses show no overall statistically significant impact of any of the intervention on child marriage in the study area. **However, the analysis of the intervention effect by the level of girls' participation in group**

sessions show that the hazard of child marriage was reduced by 63% in the TPP+ arm among the girls who received 36-40 sessions (out of 40 max.) (Adj. hazards ratio=0.37; 95% CI: 0.17, 0.79) compared to those who did not receive any session (Table 4.3).

Table 4.3 Impact of TPI on reducing child marriage, 2019-2021.

Intervention	Adj. hazards ratio (95% CI)		
	Impact of TPP [TPP - Control]	Impact of TPP+ [TPP+ - Control]	Impact of emphasized social norms [TPP+ - TPP]
Arm-wise impact¹ of TPI			
TPP vs. control (ref: control)	1.14 (0.79, 1.63)		
TPP+ vs. control (ref: control)		1.24 (0.89, 1.71)	
TPP+ vs. TPP (ref: TPP)			1.03 (0.72, 1.47)
Impact of girls' session attendance²			
0 session (ref)			
1-25 sessions	0.74 (0.29, 1.84)	0.45 (0.20, 1.01)	-
26 to 30 sessions	0.93 (0.37, 2.29)	0.41 (0.16, 1.10)	-
31 to 35 sessions	0.75 (0.31, 1.77)	0.47 (0.19, 1.15)	-
36 to 40 sessions	0.38 (0.15, 1.00)	0.37* (0.17, 0.79)	-

* $P < 0.05$; ¹The models are adjusted for covariates at three different levels. Individual/household level covariates: girls' age, education, religion, household wealth index, and household head's education. Village level covariates: women's education, religion. ²Additional covariates added: village level session attendance rates of fathers.

4.2.2 Secondary outcomes

4.2.2.1 Self-efficacy

Self-efficacy of girls increased significantly over time in the control arm (mean score: 15.35 vs. 16.24), but not in TPP and TPP+ arms. Correspondingly, linear regression analyses show no significant impact of TPI (TPP, TPP+ and emphasized social norms) on girls' self-efficacy. Girls' self-efficacy significantly decreased

in the TPP compared to the control arm. However, analyses by session attendance show that the mean score of self-efficacy significantly increased among the girls in TPP+ arm who received 36 to 40 sessions by 0.96 unit ($\beta=0.96$; 95% CI: 0.11, 1.85) compared to those who did not receive any session (Table 4.4).

Table 4.4 Impact of TPI on girls' self-efficacy, 2019-2021

Intervention ¹	n	Change in outcome, mean score			Adjusted regression coeff. β (95% CI)		
		Before	After	After-Before	Impact of TPP [TPP - Control]	Impact of TPP+ [TPP+ - Control]	Impact of emphasized social norms [TPP+ - TPP]
Arm-wise impact of TPI							
Control	394	15.35	16.24	0.88*			
TPP	363	16.28	16.17	-0.11	-1.11* (-2.15, -0.06)	-0.67 (-1.78, 0.43)	0.14 (-0.83, 1.12)
TPP+	366	16.58	16.59	0.01			
Impact of girls' session attendance							
0 session (ref.)							
1-25 sessions					-0.65 (-1.84, 0.53)	-0.16 (-1.26, 0.93)	-
26 to 30 sessions					-0.27 (-1.46, 0.92)	0.63 (-0.79, 2.06)	-
31 to 35 sessions					-0.12 (-0.27, 1.03)	-0.30 (-1.72, 1.11)	-
36 to 40 sessions					0.48 (-0.54, 1.50)	0.96* (0.11, 1.85)	-

* $P < 0.05$; ¹The models were adjusted for covariates: girls' education, religion, ownership of asset, group membership, and household's wealth index

4.2.2.2 Gender attitudes

Positive attitudes of girls' regarding gender roles significantly increased over time in TPP (mean score: 3.13 vs. 3.49) and in TPP+ (mean score: 2.96 vs. 3.34) arms. Endorsement of control over girls by family members among the girls increased over time in control arm (mean score: 2.83 vs. 3.06). Endorsement of justification of girl-beating significantly decreased over time in TPP (mean score: 2.35 vs. 2.03) and TPP+ (mean score: 2.35 vs. 1.88) arms. We observed no significant change in girls' endorsement of gender discrimination over time across arms (Table 4.5).

Linear regression results show that TPP+ intervention had significantly reduced girls' endorsement of control by family

members compared to the control arm (mean score reduced by 0.38 unit; 95% CI: -0.67, -0.09), while no significant impact of TPI was observed on girls' positive attitudes regarding gender roles, and girls' endorsement of justification of girl-beating. However, positive attitudes regarding gender roles significantly increased among the girls who received 31-35 sessions in TPP arm and 36-40 sessions TPP+ arm, compared to those who did not receive any session. The mean score of girls' endorsement of control of girls by family members and of justification of girl-beating were significantly reduced (by 0.32 unit and 0.52 unit respectively), among the girls who received 36-40 sessions in TPP+ arm compared to those who did not receive any session (Table 4.5).

Table 4.5 Impact of TPI on girls' gender attitudes, 2019-2021

Intervention ¹	n	Change in outcome, mean score			Adjusted regression coeff. β (95% CI)		
		Before	After	After-Before	Impact of TPP [TPP - Control]	Impact of TPP+ [TPP+ - Control]	Impact of emphasized social norms [TPP+ - TPP]
Positive attitudes regarding gender roles							
Arm-wise impact of TPI							
Control	394	3.17	3.20	0.03			
TPP	363	3.13	3.49	0.35*	0.30 (-0.10, 0.70)	0.29 (-0.10, 0.70)	0.006 (-0.41, 0.39)
TPP*	366	2.96	3.34	0.37*			
Impact of girls' session attendance							
0 session (ref.)							
1-25 sessions					0.06 (-0.41, 0.54)	0.01 (-0.44, 0.46)	-
26 to 30 sessions					0.31 (-0.17, 0.79)	-0.29 (-0.88, 0.30)	-
31 to 35 sessions					0.46* (0.003, 0.93)	0.21 (-0.37, 0.80)	-
36 to 40 sessions					0.18 (-0.23, 0.59)	0.41* (0.05, 0.77)	-
Endorsement of control of girls by family members							
Arm-wise impact of TPI							
Control	394	2.83	3.06	0.22*			
TPP	363	2.9	3.03	0.13	-0.06 (-0.32, 0.20)	-0.35* (-0.62, -0.09)	-0.25 (-0.53, 0.02)
TPP*	366	2.93	2.80	-0.12			
Impact of girls' session attendance							
0 session (ref.)							
1-25 sessions					0.04 (-0.28, 0.36)	-0.17 (-0.47, 0.13)	-
26 to 30 sessions					0.09 (-0.22, 0.41)	0.08 (-0.31, 0.48)	-
31 to 35 sessions					-0.16 (-0.47, 0.14)	-0.22 (-0.62, 0.18)	-
36 to 40 sessions					-0.09 (-0.36, 0.19)	-0.32* (-0.56, -0.08)	-
Endorsement of justification of girl-beating							
Arm-wise impact of TPI							
Control	394	2.48	2.24	-0.24			
TPP	363	2.35	2.03	-0.31*	-0.04 (-0.46, 0.37)	-0.22 (-0.64, 0.20)	-0.15 (-0.57, 0.27)
TPP*	366	2.35	1.88	-0.46*			
Impact of girls' session attendance							
0 session (ref.)							
1-25 sessions					0.13 (-0.37, 0.64)	-0.24 (-0.72, 0.23)	-
26 to 30 sessions					-0.08 (-0.58, 0.43)	-0.33 (-0.95, 0.29)	-
31 to 35 sessions					-0.21 (-0.71, 0.27)	-0.53 (-1.15, 0.08)	-
36 to 40 sessions					-0.23 (-0.67, 0.20)	-0.52* (-0.90, -0.14)	-

*P<0.05; ¹The models were adjusted for covariates: girls' education, religion, and household's wealth index

4.2.2.3 Girls' knowledge regarding sexual and reproductive health (SRH)

Knowledge regarding SRH significantly increased among the girls over time across arms. The mean score for knowledge regarding SRH was 2.12 at baseline and 4.66 at endline in the control arm, 2.24 at baseline and 5.10 at endline in the TPP arm and 2.13 at baseline and 5.25 at endline in the TPP+ arm. The overall TPP+ intervention had increased girls' knowledge regarding SRH by 0.61 unit compared to control arm ($\beta=0.61$; 95% CI: 0.20, 1.02), however, the TPP and emphasized social norm interventions had

no impact on this outcome. The mean score of girls' knowledge regarding SRH also increased among the girls who attended 36-40 sessions in TPP+ arm (by 0.67 unit; 95% CI: 0.35, 0.99), compared to those who did not attend any session. Such knowledge also increased among the girls in the TPP+ arm who received 1-25 sessions. Surprisingly, girls' knowledge regarding SRH increased among the girls who received 1-25, 26-30 and 31-35 sessions in the TPP arm, but not among who received 36-40 sessions (Table 4.6).

Table 4.6 Impact of TPI on girls' knowledge regarding SRH, 2019-2021

Intervention ¹	n	Change in outcome, mean score			Adjusted regression coeff. β (95% CI)		
		Before	After	After-Before	Impact of TPP [TPP - Control]	Impact of TPP+ [TPP+ - Control]	Impact of emphasized social norms [TPP+ - TPP]
Arm-wise impact of TPI							
Control	394	2.12	4.66	2.53*			
TPP	363	2.24	4.65	2.86*	0.17 (-0.20, 0.55)	0.61* (0.20, 1.02)	0.26 (-0.09, 0.61)
TPP+	366	2.13	5.25	3.12*			
Impact of girls' session attendance							
0 session (ref.)							
1-25 sessions					0.54* (0.11, 0.97)	0.53* (0.12, 0.93)	-
26 to 30 sessions					0.69* (0.27, 1.13)	0.24 (-0.28, 0.76)	-
31 to 35 sessions					0.71* (0.29, 1.13)	0.24 (-0.27, 0.76)	-
36 to 40 sessions					0.15 (-0.24, 0.51)	0.67* (0.35, 0.99)	-

* $P < 0.05$; ¹The models were adjusted for covariates: girls' education, religion, group membership, and household's wealth index.

4.2.2.4 Girls' mobility

Girls' mobility significantly increased over time across all arms. Mean score of girls' mobility was 4.59 at baseline vs. 5.75 at endline in control arm, 5.15 at baseline vs 6.09 at endline in TPP arm, and 5.32 at baseline vs. 6.10 at endline in the TPP+ arm. Although, no significant impact was observed of TPI on mobility in the full sample of girls, the mean score of girls' mobility increased significantly among the girls who received 36-40 sessions in TPP+ arm (by 0.61 unit; 95% CI: 0.098, 1.12) compared to those who did not receive any session (Table 4.7).

Table 4.7 Impact of TPI on girls' mobility, 2019-2021

Intervention ¹	n	Change in outcome, mean score			Adjusted regression coeff. β (95% CI)		
		Before	After	After-Before	Impact of TPP [TPP - Control]	Impact of TPP+ [TPP+ - Control]	Impact of emphasized social norms [TPP+ - TPP]
Arm-wise impact of TPI							
Control	394	4.59	5.75	1.15*			
TPP	363	5.15	6.09	0.94*	0.10 (-.49, 0.70)	-.06 (-0.71, 0.59)	-0.19 (-0.77, 0.38)
TPP*	366	3.11	6.25	3.14*			
Impact of girls' session attendance							
0 session (ref.)							
1-25 sessions					0.11 (-.56, 0.79)	0.17 (-0.47, 0.82)	-
26 to 30 sessions					0.55 (-0.11, 1.23)	0.05 (-0.79, 0.89)	-
31 to 35 sessions					0.49 (-.15, 1.15)	0.53 (-0.29, 1.37)	-
36 to 40 sessions					0.15 (-0.42, 0.73)	0.61* (0.09, 1.12)	-

*P<0.05; ¹The models were adjusted for covariates: girls' education, religion, group membership, ownership of asset, and household's wealth index.

4.2.2.5 Confidence in negotiation skills of the girls

No significant change was observed in girls' confidence in negotiation skills over time in the full sample across arms. However, such confidence increased significantly among the girls

who received 36-40 sessions (mean score increased by 0.43 unit; $\beta=0.43$; 95% CI: 0.08, 0.78) in the TPP+ arm compared to those who did not receive any session (Table 4.8).

Table 4.8 Impact of TPI on girls' negotiation skills, 2019-2021

Intervention ¹	n	Change in outcome, mean score			Adjusted regression coeff. β (95% CI)		
		Before	After	After-Before	Impact of TPP [TPP - Control]	Impact of TPP+ [TPP+ - Control]	Impact of emphasized social norms [TPP+ - TPP]
Arm-wise impact of TPI							
Control	394	7.15	7.11	-0.04			
TPP	363	7.33	7.25	-0.08	-0.03 (-0.45, 0.38)	0.01 (-0.43, 0.46)	0.05 (-0.32, 0.43)
TPP*	366	7.36	7.29	-0.08			
Impact of girls' session attendance							
0 session (ref.)							
1-25 sessions					0.19 (-0.28, 0.67)	-0.36 (-0.81, -0.07)	-
26 to 30 sessions					0.06 (-0.41, 0.53)	0.27 (-0.30, 0.85)	-
31 to 35 sessions					-0.18 (-0.64, 0.27)	0.08 (-0.48, 0.66)	-
36 to 40 sessions					0.03 (-0.37, 0.44)	0.43* (0.08, 0.78)	-

*P<0.05; ¹The models were adjusted for covariates: girls' education, religion, group membership, ownership of asset, and household's wealth index.

4.2.2.6 Participation in financial activities and decision-making

Girls' participation in income generating activities increased over time in control (mean score: 1.42 vs. 1.88) and TPP+ (mean score: 1.70 vs. 2.13) arms, but not in the TPP arm. This result is not surprising as income generating activities were promoted only in TPP+ arm and not in TPP. Linear regression results show that

emphasized social norms change component had significantly increased girls' participation in income generating activities (mean score increased by 0.26 unit; 95% CI: 0.001, 0.53), compared to the control arm (Table 4.9).

Table 4.9 Impact of TPI on girls' participation in income generating activities, 2019-2021

Intervention ¹	n	Change in outcome, mean score			Adjusted regression coeff. β (95% CI)		
		Before	After	After-Before	Impact of TPP [TPP - Control]	Impact of TPP+ [TPP+ - Control]	Impact of emphasized social norms [TPP+ - TPP]
Arm-wise impact of TPI							
Control	394	1.42	1.88	0.46*			
TPP	363	1.72	1.82	0.10	-0.13 (-0.40, 0.14)	0.22 (-0.06, 0.52)	0.26* (0.001, 0.53)
TPP+	366	1.70	2.13	0.43*			
Impact of girls' session attendance							
0 session (ref.)							
1-25 sessions					-0.05 (-0.36, 0.25)	0.28 (0.005, 0.58)	-
26 to 30 sessions					-0.23 (-0.54, 0.08)	-0.09 (-0.47, 0.29)	-
31 to 35 sessions					0.13 (-0.16, 0.43)	0.23 (-0.14, 0.61)	-
36 to 40 sessions					-0.18 (-0.45, 0.08)	0.23 (-0.002, 0.46)	-

*P<0.05; ¹The models were adjusted for covariates: girls' education, religion, group membership, ownership of asset, and household's wealth index.

4.2.2.7 Cohesion

Cohesion among girls increased significantly over time in control (mean score: 12.17 vs. 12.53) and TPP+ (mean score: 12.04 vs. 12.45) arms. No positive impact of TPI was observed on girls' cohesion. On the contrary, cohesion actually decreased among girls in the

TPP arm who received 1-25 sessions compared to them who did not receive any session (mean score reduced by 0.76 unit) (Table 4.10).

Table 4.10 Impact of TPI on cohesion among girls, 2019-2021

Intervention ¹	n	Change in outcome, mean score			Adjusted regression coeff. β (95% CI)		
		Before	After	After-Before	Impact of TPP [TPP - Control]	Impact of TPP+ [TPP+ - Control]	Impact of emphasized social norms [TPP+ - TPP]
Arm-wise impact of TPI							
Control	394	12.17	12.53	0.36*			
TPP	363	12.05	12.32	0.27	-0.20 (-0.62, 0.20)	-0.05 (-0.48, 0.38)	0.11 (-0.32, 0.55)
TPP+	366	12.04	12.45	0.41*			
Impact of girls' session attendance							
0 session (ref.)							
1-25 sessions					-0.76* (-1.23, -0.29)	-0.02 (-0.45, 0.40)	-
26 to 30 sessions					0.01 (-0.45, 0.48)	-0.25 (-0.81, 0.30)	-
31 to 35 sessions					-0.04 (-0.50, 0.41)	0.21 (-0.34, 0.77)	-
36 to 40 sessions					-0.001 (-0.40, 0.40)	0.17 (-0.16, 0.51)	-

*P<0.05; ¹The models were adjusted for covariates: girls' education, religion, group membership, and household head's wealth status.

4.2.2.8 Collective efficacy

Collective efficacy among girls decreased significantly over time in TPP (mean score: 13.26 vs. 12.46) and TPP+ (mean score: 13.60 vs. 12.69) arms and the regression results did not show any

significant impact of TPI in increasing collective efficacy among girls (Table 4.11).

Table 4.11 Impact of TPI on girls' collective efficacy in Rangpur, 2019-2021

Intervention ¹	n	Change in outcome, mean score			Adjusted regression coeff. β (95% CI)		
		Before	After	After-Before	Impact of TPP [TPP - Control]	Impact of TPP+ [TPP+ - Control]	Impact of emphasized social norms [TPP+ - TPP]
Arm-wise impact of TPI							
Control	394	12.96	12.53	-0.43			
TPP	363	13.26	12.46	-0.79*	-0.22 (-0.90, 0.45)	-0.02 (-0.73, 0.67)	-0.04 (-0.65, 0.56)
TPP+	366	13.60	12.69	-0.91*			
Impact of girls' session attendance							
0 session (ref.)							
1-25 sessions					-0.13 (-0.90, 0.64)	-0.11 (-0.81, 0.58)	-
26 to 30 sessions					0.24 (-0.52, 1.02)	0.01 (-0.89, 0.92)	-
31 to 35 sessions					-0.05 (-0.80, 0.69)	-0.14 (-1.04, 0.75)	-
36 to 40 sessions					-0.21 (-0.88, 0.44)	0.48 (-0.06, 1.04)	-

*P<0.05; ¹The models were adjusted for covariates: girls' education, religion, group membership, ownership of asset, and household head's wealth status.

4.2.2.9 Connectedness with parents

Though girls' connectedness with parents decreased over time across arms, the decrease was significant in TPP (mean score: 6.73 vs. 6.38) and TPP+ (mean score: 6.65 vs. 6.44) arms. Surprisingly,

connectedness significantly reduced in TPP intervention arm (by 0.22 unit; 95% CI: -0.43, -0.01) compared to control arm (Table 4.12). The dose response analyses also show identical results.

Table 4.12 Impact of TPI on girls' connectedness with parents in Rangpur, 2019-2021

Intervention ¹	n	Change in outcome, mean score			Adjusted regression coeff. β (95% CI)		
		Before	After	After-Before	Impact of TPP [TPP - Control]	Impact of TPP+ [TPP+ - Control]	Impact of emphasized social norms [TPP+ - TPP]
Arm-wise impact of TPI							
Control	394	6.63	6.48	-0.14			
TPP	363	6.73	6.38	-0.34*	-0.22* (-0.43, -0.01)	-0.08 (-0.29, 0.12)	0.13 (-0.07, 0.35)
TPP+	366	6.65	6.44	-0.20*			
Impact of girls' session attendance							
0 session (ref.)							
1-25 sessions					0.07 (-0.18, 0.32)	-0.02 (-0.26, 0.21)	
26 to 30 sessions					0.02 (-0.23, 0.28)	0.21 (-0.09, 0.52)	
31 to 35 sessions					-0.30* (-0.55, -0.05)	-0.49* (-0.80, -0.19)	
36 to 40 sessions					-0.15 (-0.37, 0.06)	-0.01 (-0.80, 0.17)	

*P<0.05; ¹The models were adjusted for covariates: girls' education, religion, group membership, ownership of asset, and household head's wealth status.

4.2.2.10 Social norms: quantitative exploration

Findings from the community survey show that there was a positive change in social norms around girls' mobility in and around the village, girls' riding and playing in the village, decision making regarding girls' marriage, and collective action for girls' rights over time across arms. The linear regression results show that the TPP intervention contributed significantly to positive changes in social norms around girls' mobility in and around the village (mean score increased by 0.64 unit; 95% CI: 0.03, 1.25)

compared to the control arm. The emphasized social norms component contributed significantly to positive changes in social norms around decision making regarding girls' marriage (mean score increased by 0.94 unit; 95% CI: 0.10, 1.78) compared to the control arm. However, no significant contribution of TPI was detected in changing social norms around girls' riding and playing in the village, and collective action for girls' rights (Table 4.13).

Table 4.13. Impact of TPI to make a positive change in social norms in Rangpur, 2019-2021

Intervention ¹	n	Change in outcome, mean score			Adjusted regression coeff. β (95% CI)		
		Before	After	After-Before	Impact of TPP [TPP - Control]	Impact of TPP+ [TPP+ - Control]	Impact of emphasized social norms [TPP+ - TPP]
Social norms around girls' mobility in and around the village							
Control	430	1.13	1.39	0.27			
TPP	426	1.00	1.93	0.92*	0.64* (0.03, 1.25)	0.36 (-0.21, 0.92)	-0.25 (-0.84, 0.33)
TPP*	404	0.80	1.49	0.69*			
Social norms around girls' riding and playing in the village							
Control	430	1.34	1.79	0.44*			
TPP	426	1.21	1.96	0.75*	0.30 (-0.25, 0.85)	0.10 (-0.45, 0.64)	-19 (-0.75, 0.36)
TPP*	404	1.18	1.79	0.61*			
Social norms around decision making regarding girls' marriage							
Control	430	3.76	4.75	0.99*			
TPP	426	3.80	4.44	0.63*	-0.41 (-1.26, 0.43)	0.55 (-0.27, 1.37)	0.94* (0.10, 1.78)
TPP*	404	3.39	4.93	1.54*			
Social norms around collective action for girls' rights							
Control	430	4.26	6.14	1.87*			
TPP	426	4.28	6.23	2.33*	0.47 (-0.45, 1.39)	0.27 (-0.64, 1.19)	-0.18 (-1.10, 0.74)
TPP*	404	4.38	6.53	2.14*			

* p<0.05; ¹The models were adjusted for covariates: community members age, education, marital status, religion. Higher scores indicate more positive social norm

4.2.2.11 Social norms: qualitative explorations

Social norms around decision making regarding child marriage: baseline and endline comparison

FGDs with adolescent girls and parents at the endline in all the intervention villages indicated that most of the girls aged 12-16 were still not expected to take part in the decision-making regarding their marriage timing. Let alone participating in decision-making, a girl is not even expected to talk about her own marriage unless she has been asked to. Most parents and villagers consider that a girl should not override her parents' decision regarding marriage. Most girls internalized this and they felt this was only fair given their parents' role in upbringing them and protecting family honor.

The villagers usually expected the parents to marry off their daughters before they reach 18 and they actively encouraged the parents to accept a good marriage proposal, since it is considered futile to invest in girls' higher education unless the girl is exceptionally meritorious. Overall, most girls were expected to get married by the age of 16/17 both at baseline and endline across the intervention arms. The factors driving such expectations were as follows. First, it was considered easier to get a marriage proposal for a girl younger than 18, since a girl's face was believed to begin to lose its charm after she crosses 16/17. This is why the villagers believe that neither money nor education is sufficient to attract a good marriage proposal once a girl is 18 or more. Second, the dowry demanded was usually larger for girls over 18. Third, an unmarried adolescent girl was considered a high risk for the parent's *maan-shomman* and a village's reputation, since she may get sexually harassed or may even develop a romantic relationship.

According to the parents and girls, sexual harassment in school and in the community was lower during the pandemic since girls' mobility was drastically curtailed. A substantial surge was, however, found in mobile phone communication by the girls, often leading to the development of a romantic relationship and elopement which eventually amplified parents' concern about the loss of the family's *maan-shomman* (honor). Thus, a 'perceived threat to adolescent girls' sexuality' became more pronounced during the pandemic and made many parents eager to avert the risks of any romantic engagement and elopement by marrying them off as soon as they received a good marriage proposal. At both time points in all the intervention villages, girls and parents reported that a *bhalo ghor* (good marriage proposal) is usually accepted by the parents' overriding the girls' opinion.

Sanctions regarding rejecting a good marriage proposal were found to remain the same in both time points and across the intervention. If a good marriage proposal was rejected, most of the villagers suspected a romantic relationship as the reason for rejection. They usually criticized the girl and the family and hurled insults at them, while gossiping. The villagers labeled the girl involved as *shorom nai* (shameless), *beyadob* (impudent), *ussringkhol* (undisciplined), or *kharap meye/kharap maiyaloke* (bad/nasty girl).

According to parents, accepting a girl's rejection of a "good" marriage proposal by the parents is considered damaging to the family's reputation. In case of rejection of a "good" marriage proposal for a school dropout, the girl and the family would be severely slandered, while in an identical situation a meritorious or an average student would be subject to less harsh sanctions.

At both time points, girls from financially disadvantaged families were reported to be married off early due to resource constraints across intervention arms. Good-looking girls attracted more attention and marriage proposals and usually got married earlier than others out of concerns regarding their safety and due to appropriate marriage proposals. Moreover, the endline data reveal that girls with excessive height, and weight were also more susceptible to early marriage since they show physical signs of maturity earlier mounting the pressure for marriage. On the other hand, if a girl was too skinny, she was usually suspected to have a critical health condition and was considered not easily marriageable. This often made the parents rush their marriage by accepting any proposal received.

At both time points across the intervention villages, most girls did not dare to discuss their own marriage with their parents' fearing angst and criticism from the villagers. According to all categories of the informants, the community members were an important reference group for the parents in sustaining the norms around child marriage. Within the family, the father was the main norm setter. According to girls and mothers, the *ghotok* (match-makers) (i.e., the father of a boy, elderly people in the family as well as in the community, and other family members) also played the role of *ushkanidata* (instigators) of child marriage.

Despite all the barriers in avoiding child marriage the endline data suggest that some parents, who had strong connections with the girl, had high aspirations for girls' education and employment, and had high sensitivity to the negative consequences of early marriage, were more successful in averting child marriage.

“Parents, who have a dream to educate their daughter to a certain level, educate them to that level and don’t marry off them.... Villagers can mind. But these parents and the daughter don’t heed their opinion.”

FGD_Endline_AdG_3_TPP+

Girls participating in an FGD in a TPP village reported that in one neighborhood of the village a number of parents regardless of their socioeconomic status possessed higher aspirations for a girl’s education compared to the other neighborhoods. They took a collective decision not to marry off their daughters early and they were less sensitive to sanctions from other neighborhoods. They did not allow anyone to bring a marriage proposal before a girl completed her secondary education. Some girls in this neighborhood were attending higher secondary and tertiary level education without being married.

Data from an FGD show that a few mothers showed low sensitivity to the sanctions imposed by the community and opted to reject early marriage for their daughters based on their own negative experiences.

“P5: ...Almost a year ago a good marriage proposal came for my daughter.... As it was a good marriage proposal, her father wanted her to get married but I did not agree. I said, “I will not marry off my daughter until she is 18 years old.... Even if a thousand good marriage proposals come now, I will not marry off my daughter.” A daughter of mine got married when she was 13. I am suffering a lot (for this reason). After a year of her marriage, she got pregnant.... She was taken to the hospital and had cesarean delivery.... She suffered from **khichuni** and **shhashkoshto** (eclampsia and asthma)For these reasons, I said my husband that I will not marry off (another) daughter until she is 18 years old.

P8: ...We will not let our daughters suffer from the diseases which our mothers as well as we suffered. We have to try (to achieve) this.

FGD_Endline_Mo_2_TPP+

Thus, despite the fact that a father is the main decision-maker regarding a girl’s marriage, a few mothers have started to raise their voices against child marriage, which was not the case at baseline.

The data obtained from all the participants across the intervention villages during the endline indicated that parents, girls and boys became more sensitive about child marriage of girls after joining Tipping Point.

“If a girl is married off at twelve or thirteen years and gives birth to a child when she is young then the girl’s body collapses – the villagers learned about it through observation and (Tipping Point) training.... They [Tipping Point fieldworkers] talked about child marriage issues to adolescent boys and girls and to the other villagers. They discussed that a girl should not get married immediately after having menstruation. After that very early child marriage reduced a lot.... Half of our villagers did not know about this at all. They used to think that whenever a girl has menstruation, they should marry her off.”

KII_Endline_M_1_TPP+

Although girls at endline were still largely expected not to take part in decision-making regarding their marriage timing, while the father was still expected to be the primary decision-maker in a girl’s marriage, an openness to seek the girl’s opinion about the groom was observed at the endline (Case Study XX). Parents participating in FGDs reasoned that a girl should have a say in choosing a groom since she has to live with her husband. They recognized that the risk of a conflict potentially escalating to a marriage breakdown may be high otherwise. At endline, 11 out of 20 adolescent girls interviewed in-depth reported sharing their aspirations regarding groom with parents and family members, while no girl at baseline had done so. A few girls reported seeking help from the Tipping Point facilitators to negotiate their aspirations regarding delayed marriage with their parents at the endline.

According to parents and key informants, an increase in the girls' communication regarding delayed marriage was possible due to an increase in awareness regarding gender equality, the importance of girls' education and the negative effects of child marriage and early childbearing. Schooling, mass media campaigns, and NGO programs, including TPI were recognized as contributors to the spread of such awareness in the study villages.

"A man used to propose to me. He was the **debar** (brother-in-law) of my sister.... This made my parents insisting me for marriage. ...Once I became a member of Tipping Point, I discussed the matter with Madam (female facilitator). I told her that I did not wish to get married. Madam talked to my parents. I convinced my mother that my studies will be ruined if they marry me off. I used to give the example of my sister, whom they did not marry off as early. I told them, "If you could educate my sister up to 12th grade, then allow me to do so as well."

FGD_Endline_AdG_3_TPP+

"I have talked to my family (about my aspiration to complete MA and then to get employed). I talked to my brother and father.... They advised me to study well and that they'll respect my aspiration.... We have learned from Tipping Point as well as from our textbook that men and women have equal rights and about the importance of girls' education. ... Support from family [towards a girl] is the real support. Families should understand that people might say a lot of [negative] things behind. But should we heed those comments? Everyone should help girls achieve their own goals without listening to those (negative comments)."

IDI_Endline_AdG_19_TPP

Social norms around girls' mobility:

Baseline and endline comparison

All categories of the study participants across the intervention villages reported that a girl's frequent unaccompanied movement to any places inside and outside the village without any acceptable purposes (e.g., education, joining NGO meetings and activities, health check-ups, shopping, going to tailoring shop, attending family functions, and visiting relatives, neighbors and peers from the same village or different village) was still viewed as misbehavior and transgression of morality, and thus, not braced for support. Such behavior of a girl was suspected of having a romantic relationship by most of the villagers. Data from all categories of informants across the villages at both

CASE STUDY

Communication regarding timing of marriage and selection of groom

Tithi (pseudonym) is an unmarried girl aged 17 coming from a middle-class family. She is in grade 10. Her father is a service holder. Her mother is a homemaker with some education. Tithi aspires to marry not before she turns 22 so that she can complete her Master's degree. She discussed it with her parents and they assured her their support. A few months back, a marriage proposal came for her. Her mother rejected it by saying that Tithi is still young for marriage and she does not wish to marry now for continuing her studies. More proposals came and then her mother forbade the matchmaker to come with any more proposals.

Tithi wants to marry a service holder, who will respect her desire to continue her studies even after marriage. She shared her aspirations not only with her grandmother but also with her father, with whom she had a close bonding. Her grandmother and her parents promised her to find such a groom.

time points indicate that most parents of adolescent girls in the community did not want their daughters to roam alone and engage in romantic behaviors because that causes a threat to their sexuality, and thus, affects their chances of getting a good match. Apart from this, safety concern (e.g., risk of sexual harassment) was also depicted as a major factor behind the restriction on a girl's mobility. Both fears posed barriers to girls' freedom of mobility across the study villages at both time points. Moreover, during the COVID-induced lockdown schools and colleges were closed and TPI arranged mobile-phone-based sessions instead of face-to-face sessions. Thus, whatever mobility the girls had was further compromised. Some girls had to discontinue their education due to the COVID-related financial crisis in the family and were ultimately married off.

Across the study villages, participants (girls, boys and parents) reported that, apart from going to school, colleges and coaching for study purposes, girls usually go to the nearby bazaar alone or with relatives/female friends to buy necessary things for themselves or for the household. All girls from these villages can go to the Upazila market if accompanied. Villagers do not criticize girls when they go to the market alone to buy supplies for school/college, groceries, sanitary pads, or buy/make clothes. Villagers do not trouble if girls leave the market as soon as their

purpose is served. In absence of any male members in the family, villagers do not criticize a girl if she goes to the market alone. However, at both time points, girls were not expected to remain outside the home after the evening unless it was for study purposes and it was confirmed by the study participants (girls, boys, and key informants) in all the study villages. In case of a late schedule for coaching classes, villagers accept their return home quite late in the evening. Usually, an adult (the teacher or a parent) accompanies the girls in order to ensure their safety while returning from coaching at that point in time.

In all villages, most TPI girls were either in G9 or G10 and some girls went to college. There was no secondary school (from G6 to 10) in two of the intervention villages. There was no college in any of the studied intervention villages. Therefore, the secondary-level students (of one TPP and one TPP+ village) go to other villages. Most of the college-going girls go to Pargachha town, while some others go to Rangpur town to study. So, there was higher mobility for older college-going girls in terms of moving alone to Upazila and the district town. However, at both time points and across the study villages, girls reported that most girls needed to inform their parents/family if they wanted to go anywhere alone outside the home, and in that case, villagers did not mind.

M: In which situations the villagers would not mind even if the girls move alone?

P4: If a girl tells her parents, then no one else can say anything.

P5: Yes, (for attending) school.

P4: (For attending) School, coaching.

P5: If we inform nothing (to our parents), and suddenly go anywhere, then many people will talk (negatively) a lot.

FGD_Endline_AdG_1_TPP+

Both at baseline and endline, girls and parents reported that most villagers considered parents should always keep an eye on every move a **shabalok** girl (a girl who reached puberty) makes. Thus, details of her movement such as where she goes, how frequently, for how long, when, why, with whom, and who she meets outside the home has to be known. According to the parents from both the intervention villages, it is a mother's primary responsibility to be vigilant in this regard since she is usually at home to look after the children. Data from all sources at both time points suggest that villagers also play an important role in vigilance regarding what a girl wears, how she carries herself, and how she behaves, especially when she is outside the home.

“When girls are **shabalika** (who reached puberty), [the community people] keep a careful eye on them and guide them [on proper mobility]. The community people do not want their girls to do any bad things [indicating a romantic relationship and possibility of sexual relationship] and they do not want any harm to the community.”

FGD_Endline_AdG_2_TPP

According to the girls, the boys and parents, uneducated villagers, and elderly people were described as more critical of girls' freedom of movement at both time points.

At both time points, study participants (girls, boys, parents and key informants) depicted a “good girl” as a girl who maintains the social code of conduct properly in terms of talking and interacting with people (e.g., she does not talk loudly, greets people with **salam**, she respects the elders, does not talk to or hang out with a boy/male frequently in person or via phone without any necessary cause such as study, does not engage herself in any romantic relationship) in terms of dress-up (e.g., she maintains *purdah* and wears dresses endorsed by the community) and her movement (e.g., she usually does not go outside home or stays outside home late at night without study purpose/any necessary or acceptable purpose). Whenever any prerequisite of a “good girl” was transgressed, a girl's mobility was questioned at both time points.

At both time points, the common reaction to the violation of the norm regarding girls' mobility was spreading rumors about the girl as well as blaming and bashing the parents as careless in case of failure in monitoring and disciplining the girl. A girl who did not conform to the social expectations is insulted and labeled by the villagers as '**ussrinkhol/ beyadob**' (unruly/impudent), and '**kharap meye**' (bad girl).

Most parents were sensitive to these sanctions at both baseline and endline, and as a response, pursued both positive and negative disciplining (e.g., talking to the girl and asking her to conform to the norm, scolding, calling names, physical torture, restricting movement, suspending studies, arranging child marriage) for transgressing norms related to mobility with a view to upholding family honor and avoiding social humiliation.

In all the study villages at both time points, girls and parents depicted educated and friendly parents as avid supporters of girls' freedom of movement and usually did not give attention to the criticism of the villagers. Girls and parents who participated in NGO meetings and activities were also described as less sensitive to the sanctions during the endline.

However, according to the girls and parents, the financial status and attributes of a family widely matter to the villagers in case of criticizing/not criticizing a girl for her mobility, which was the same at baseline. Usually, villagers avoided criticizing the girls belonging to an *orthoshompodshali* (wealthier) or a *shikkhito* (educated), or a powerful family for wandering alone and/or frequently without any purpose. People evaded criticizing the families that were argumentative. The villagers could indulge in backbiting about these girls but they avoided discussing the matter with their parents directly fearing repercussions. Girls from economically-disadvantaged households who get involved in seasonal work were found to be not criticized by the villagers at both points of time. During the endline, girls and boys in the FGD reported that the villagers do not criticize married girls if they move alone inside and around the village.

Although in all the intervention villages girls at endline were still largely expected not to move alone in and around the village, other than exclusively for study purposes, their mobility for joining NGO meetings and NGO organized activities received acceptability among most of the villagers. They were positive about girls' moving alone inside and outside the village for attending group sessions, training, or events organized by Tipping Point. According to the girls, parents' participation in the Tipping Point activities (i.e., sessions and meetings), and the facilitators' communication with other villagers about the activities of the TPI created this acceptability.

P8: I went alone to Pargachha several times to attend the activities arranged by the Tipping Point. On those occasions, nobody told me anything (negative)... There is a hotel in Rangpur town. One session [training] was held there. I went there like others. None of my family members told me anything (negative) when I went there. ... However, one day [before I went] someone from our neighborhood asked me, "Where are you going?" I replied, "We have to go to Pargachha to attend an activity from our organization (referring to Tipping Point)." After that, the outsiders did not say anything. Tipping Point also had sessions with parents. They (villagers) knew about it.

P4: Villagers knew about the parents who joined the Tipping Point sessions.

P8: When villagers do not know the purpose [of a girl's mobility all by herself], they talk about it a lot!

...P4: They knew that girls [who joined TPI] regularly went to join the session. They knew that girls often had sessions.

P8: ...They (facilitators) used to talk to the villagers about it during their visit. The organization worked for two years.

FGD_Endline_AdG_3_TPP+

Social norms around girls' interaction with opposite sex: baseline and endline comparison

Although girls at endline were still largely expected to interact with males exclusively for study related purposes, an openness regarding interaction with boys at NGO meetings and activities was observed at endline.

"M: Would most people in your village consider it appropriate if parents allow an adolescent girl to talk to an adolescent boy on the way to school or in the neighborhood?

P5: (The villagers) would not mind if they talk about study. Otherwise, they would mind and say, 'What do they talk about? What is the nature of the relationship between them?'

M: Would not it be accepted by the villagers?

P(All): No. No.

M: When girls interact with boys at (TPI) meetings, what would the villagers say about them? ...

P(All): ... They will not say anything (negative)."

FGD_Endline_Mo_2_TPP+

However, if a girl's interaction with a male was private, frequent, and long (either face-to-face or over the mobile phone) without any acceptable to the community purpose, it was still viewed as a transgression of morality and not supported. Moreover, a romantic relationship was suspected by most of the villagers across the study villages. This fear fringed upon free-flowing interaction of girls with boys. Girls usually talked with their male peers and relatives, keeping in line, but they rarely hung out with boys.

Both at baseline and endline, most villagers considered a romantic relationship harmful to family honor. The common reaction to it was gossiping about the girl and blaming of the parents for their failure to control her. A girl who did not conform to the social expectations is slandered and labeled by the villagers as '*ussrinkhol/ beyadob*' (unruly/impudent), and '*kharap meye*' (bad girl). A girl's family is labeled as '*ussrinkhol poribar*' (unruly family) in case of failure in monitoring and disciplining the girl.

In all the study villages, girls and parents reported that the financial status of a girl's family determines the extent and nature of such criticisms. For example, usually, girls and parents from financially disadvantaged families are more vulnerable to criticism by the villagers.

"P8: Parents whose financial condition is somewhat bad, many villagers criticize them (for not disciplining their daughter's interaction with boys) in many ways. They criticize (the parents) a lot if they could find a little deviation (of the girl). Villagers do not have the courage to criticize wealthy parents. They think that if they criticize them then they may react.

*...P4: Even if a daughter of a **borolouk** (rich) family does bad things (romantic relationships), they don't suffer any **durnaam** (bad name).*

P3: Yes, in the case of poor people it is common.

*P4: And in the case of the extremely poor people, **paan theke choon khoshlei ekbare shesh** (a little mistake would cost them a lot). The villagers will spread gossip (about their girl) around the village. This is the rule of the village."*

FGD_Endline_AdG_3_TPP+

A school dropout girl faced fiercer criticism for interacting with a boy transgressing the norm at both study points.

Parents were sensitive to these sanctions at both baseline and endline and as a response, they took specific measures against the girl. Mild measures included imposing restrictions on the girls' movement, keeping them under continuous surveillance, scolding them, and prohibiting them to talk with males. Sometimes girls were tortured physically for an alleged or real romantic relationship. Often the girl's education was stopped and her marriage is arranged to protect family honor.

"P5: When people call the girl bad for her interaction with the boy, there are so many things that come across the minds of the parents.

P (3,5): They think that they have failed to bring up the girl properly.

P6: [They think] today because of her, we are being taunted so much by the people!

P7: Considering these, parents choose to marry off the girl quickly!

P5: They think that it is better to marry off girls than to lose honor."

FGD_Endline_AdG_1_TPP+

The endline findings across the study villages and participants (girls and parents) suggest that the parents who are well connected with their daughters, and parents who participated in Tipping Point group sessions usually avoided imposing any restrictions on a girl's movement or interaction with a boy based on assumptions. These parents usually tried to convince the girl that she should focus on her studies so that the villagers cannot speak ill of her. According to the girls and boys, TPI sessions and meetings helped in bringing forth this change.

"Two years ago, Tipping Point project came to our village. The attitude of the members of this project (i.e., boys, girls, and parents), and the parents or the guardians of the participating boys and girls has changed [regarding a girl's interaction with a boy], while the non-members did not change."

FGD_Endline_AdB_4_TPP

"Changes in my parents may have occurred due to their participation in the Tipping Point as they attended the meetings... Earlier if I talked to any boy, they used to scold me a lot, they used to forbid me to talk to any boys and they used to say a lot more things.... After they joined those meetings, they did not say such things anymore. They gave me permission to talk to boys. They said that I should inform them if I go somewhere (with a boy) or if I like a boy."

IDI_Endline_AdG_16_TPP

Social norms around girls' engagement in sports: Baseline and endline comparison

Both at baseline and endline, playing in the courtyard (*khuli*) inside the boundary of a house or nearby the house and/or proximate vicinity was found permissible and less subject to verbal criticism than open fields and locations further away from the homestead. Thus, similar to baseline all informants at endline reported that the majority of the girls aged 12-16 did not play games recognized as "male games" like football and cricket in an open field. They usually play games like *hari-patil* (cooking), *putul* (doll), *lodo*, *kitkit* (hopscotch), *roshi khela* (rope tugging). *These games either did not involve much physical movement or activity or the movements took place more or less in the same place. There were some other games requiring much physical*

activity, including running (e.g., *gollachut/gadol*, *dariabandha*, *bouchi*, and badminton), which the girls usually play before reaching menarche. It was reported that sometimes girls aged 12-16 years were allowed to play football or cricket within the boundaries of school. However, this was hampered due to school closure during the COVID pandemic. While at home during COVID, many girls got used to playing mobile phone-based games and started preferring them to play outdoor games.

In general, the girls actually did not have much time for games trying to complete their studies and household responsibilities. Even when they could manage the time it was difficult to gather a team willing to play “male games” or to play other games in open field. Many girls in this age group were not interested to play games, which require running. Mothers reported that when girls reach menarche, parents become cautious, they try to control their sexuality and impose restrictions on their mobility outside the home and on playing outdoor games. Almost all the FGD participants mentioned that girls (12-16) were not usually allowed to play *dour-jhaper khela*, games that require running and jumping. It was deemed inappropriate for their age since it is likely to attract unwarranted sexual attention. Boys reported sexual remarks were made pointing at a girl’s body by males when girls play sports in the open field. The adolescent boys who supported girls playing football or cricket were viewed as ‘bad’ by their peers and the majority of the villagers.

When these norms were defied, the villagers were reported to verbally abuse the girls at both baseline and endline. Usually, the villagers label such girls as *beyadob* (impudent), *behaya* (shameless) and *kharap* (bad) and label their parents as those, who gave birth to impudent girls and careless. These sanctions were imposed in the name of controlling the girls’ behavior to safeguard their prospects of marriage.

“All: If girls play football or cricket, villagers will say, ‘Now you have grown enough! If you were married, you will be in your *shoshurbari* (marital home) by now. Why are you playing in the field?’

...

All: People will call (a girl) *kharap* (bad).”

FGD_Endline_AdG_4_TPP

Fathers reported that poorer parents were more vulnerable than well-off parents to criticism for allowing girls to play football/cricket. Even if the well-off parents are sometimes criticized, they remain insensitive to it and continue transgressing the norm.

Elderly and uneducated villagers were described by the girls, boys, and mothers as the main critics at both time points.

It was reported in the TPP+ villages at endline that girls participated in playing cricket, football, and *hadudu* (kabaddi) when Tipping Point organized the events. Although girls at endline were still largely expected not to play games like football and cricket in the open field, their participation in these games was celebrated by most villagers. In the intervention villages, Tipping Point participants learned the rights of the girls playing sports like football and cricket and the importance of equal rights in this regard through joining sessions and meetings.

“We knew about equal rights of boys and girls earlier, but we did not have any deeper understanding. We got it from Tipping Point [sessions]. We learned that there are no sports that are only for boys or only for girls. Both can play all kinds of games.”

FGD_Endline_AdB_4_TPP

Although girls participating in Tipping Point held a positive attitude toward a girl’s right to play games like football and cricket, once the Tipping Point intervention was over, the girls stopped playing these games fearing backlash from the community against them and their parents.

Social norms around girls’ riding bicycles: Baseline and endline comparison

In the intervention villages both at baseline and endline, riding a bicycle by an adolescent girl was found permissible for study purposes and for buying groceries from the market. During endline, according to the reporting of the girls who participated in IDI, it was found that girls riding bicycles to visit their female friends and relatives at a distant place, and for any competition gained some acceptability among the villagers. However, girls and key informants reported that roaming around with bicycles without any acceptable purpose was not supported by the villagers.

“If I roam around with a cycle every now and then, villagers would not appreciate me because I am a girl. But they will not say anything if I go to school, or coaching or a distant place with my cycle. They will not object if I go out with my female friends and ride a cycle with them after lending a hand in household work and completing my study. Moreover, they will not say anything if I practice cycling before a competition.”

IDI_AdG_13_TPP+

Six out of 20 girls who participated in IDIs reported riding bicycles during the endline, while during baseline only two girls reported riding bicycles. One girl in TPP+ village reported continuing bicycle riding even after marriage as she got support from both her natal and marital families. Three girls from TPP and TPP+ villages reported discontinuing riding bicycles. Two of them lost interest in it out of fear of repercussions, while the third had to stop after her marriage upon insistence from the natal family for preventing criticism from the villagers. Thus, almost half of the sample ever rode a bicycle. The rest of the girls did not learn to ride.

In the intervention villages both at baseline and endline, riding a bicycle after reaching puberty was not well received by the villagers. Girls who defy this norm and parents who allow it usually face verbal criticism from the villagers. Two girls from a TPP village reported that parents usually ask their daughters to stop riding bicycles when they start receiving marriage proposals fearing that it may compromise the marriage prospect. Parents from financially disadvantaged families were the most sensitive to the sanctions.

“When a marriage proposal comes, the groom’s family may come to the village to enquire about the girl....If they learn that the girl rides a bicycle, or does this and that, then they may back out.... If a family does not have much money, they need to have a good reputation to marry off their daughters to a good family. If you have a good reputation, everyone will be willing to marry [your daughter]. Otherwise, no one will show interest and the girl will become a **bojha** (burden) to her parents. For this reason, they (parents) forbid their daughters to do anything that is bad [for the family]. Because the villagers would **chhi-chankhar** (cry shame on) them.

IDI_Endline_AdG(M)_8_TPP

“Q: Okay. How will your neighbors or villagers react if you play in the open field or ride a cycle as the boys do?”

A: These are rural people and many of them would say many things.... Rural people do not like it. They would question a girl who rides a cycle! Moreover, they label girls playing in the open field as indecent behavior. This is why I do not play [in open field] and do not ride a cycle though I know how to do it. My mother asks me not to do this because the villagers are not good people; they would ruin a marriage proposal.

... There was a girl who was (our) neighbor. She used to ride a cycle and play games with boys and girls. Then

the villagers said that she was a very **kharap** (bad) and **ussrinkhol** (unruly) girl who would not receive any marriage proposal.... Different people used to say different things (about her) It broke the girl. She stopped talking and going outside that much. Eventually, she was married off. I felt very bad [for her]. Why cannot girls enjoy freedom like boys? Why should they (the girls) abide by people’s opinion?”

IDI_AdG_9_TPP

Interestingly, it seems that in the same TPP village, some mothers were quite enthusiastic and supportive of girls riding a bicycle. In one case, at least, it seemed that the girl could continue riding despite her father’s disapproval only due to her mother’s strong support.

“P5: My eldest daughter was very fond of cycling but she could not continue it. ...When villagers saw her riding a bicycle they said, ‘Ah! What is this? **Beyadob** (impudent)! How come she rides a bicycle!’ I said, ‘She will continue riding. I purchased her the cycle because there is no one to accompany her when she visits her sister’.

P8: ...My daughter also learned how to ride a bicycle. One day her **jethha** (elder paternal uncle) came and scolded me saying, ‘She is a girl! How come she rides bicycle! Since then, my daughter stopped riding bicycle.

P1: Such a backdated environment! ... One day my girl carried potatoes (to the field) riding a cycle. My elder brother-in-law’s son (complained to my husband), ‘Uncle! (her daughter’s name) is riding a bicycle!’ I did not forbid her to ride bicycle...When her **jethha** (elder paternal uncle) is not at home then she rides the bicycle in secret. I do not forbid her. But her father does not like it at all.

P6: Many villagers do not like bicycle riding by a girl.

FGD_Endline_Mo_4_TPP

In one of the TPP+ villages, a girl shared that a female neighbor was criticizing a girl who rides bicycle in their villages and she was trying to convince others with her words. The girl’s mother, a UP member and a participant in Tipping Point activities, came to know about this. She went to that woman and convinced her to stop her criticism.

During a group discussion with fathers of a TPP+ village, participants reported that girls took part in a bicycle competition when Tipping Point organized a sports event. Although girls at endline were still largely expected not to ride bicycles, their

participation in this sport event was celebrated by most villagers. Girls who participated in Tipping Point held a positive attitude toward a girl's right to ride bicycles. According to them, they learned the rights of the girls' riding bicycles and the importance of equal rights in this regard through joining sessions and meetings. It helped change their perspectives.

“Earlier I did not like girls moving or hanging out alone or riding a cycle. I knew that these are not good [activities] and girls should not do these. But I have learned from the Tipping Point project that a girl can do these things. If someone thinks that she wants to do these, she can do so.”

IDI_AdG_4_TPP+

Collective action for girl's rights: Baseline and endline comparison

Comparison of endline data with baseline revealed that girls' collective action for achieving rights was met with greater acceptability only if it concerned sexual harassment in three out of four intervention villages studied qualitatively. Most of the villagers in these three villages maintained that the girls should report sexual harassment and demand justice. Most of the parents and villagers of the other village believed that the parents/guardians should demand justice for sexual harassment and not the girls.

According to the description of the girls and key informants, TPI facilitators tried to sensitize parents and other community members not to blame girls for being exposed to sexual harassment, which according to a key informant bore fruit.

“Earlier people (parents and villagers) used to *shashon* (discipline) a girl, if any boy proposed her a romantic involvement. They harassed her by asking, “Why did he give you the letter? Why he comes to see you?” But the girl may have had nothing to do with that. Now, villagers reflect first whether it is justified to blame the girl. ...Earlier the entire blame fell on a girl for it [getting sexually harassed]. In many cases, [such] girls were not allowed to go to school anymore.”

...The change in their perspective came particularly due to the Tipping Point. [Parents and villagers] have understood that being a victim of eve-teasing is not a girl's fault. But it was the girl who suffered the punishment. I would give all the credit Tipping Point for making us realize that this was wrong.”

KII_Endline_M_2_TPP+

However, according to the adolescent girls, most girls still do not seek help from the broader community in addressing sexual harassment out of fear of getting blamed. At best, most girls protest against sexual harassment on the spot, and they do it collectively with the help of their male and female peers. They seek help from their parents, the perpetrator's parents and school teachers only if the harassment keeps repeating.

“If any boy harasses any of our female friends, we ask the boy (not to harass her). Even after that if he continues to do it frequently then we go to his parents. If he still continues to do so then we go to our teacher and request him to do something about it by saying, “That boy is frequently harassing our female friend. Please tell him something [so that he does not harass her further].”

IDI_Endline_AdG_19_TPP+

The data obtained from girls indicate that most parents were fearful of sexual harassment due to its connection to the girl's sexuality and possible *durnaam* (bad reputation). Most of the time parents prefer to marry off a girl than to live in constant fear of loss of *maan-shomman*. Therefore, most girls feel hesitant to report sexual harassment to their parents. From girls' data in the intervention villages, it seems that there is a visible conflict between stated support and the usual practice of the community members in dealing with sexual harassment.

The girls from TPP+ villages mentioned that girls' collective action against sexual harassment was well accepted during the Tipping Point project period. Girls from one of these villages organized a community event on preventing sexual harassment while TPI was active in their village, in which parents and boys, and influential community members participated. During that event, girls flagged the places in and around their village, where they were vulnerable to sexual harassment and asked influential community members to reduce their vulnerability. ...The influential community members helped in raising awareness in the community [against sexual harassment] and TPI boys talked to their peers and perpetrators in the community. This event and action helped in reducing sexual harassment in the village.

The endline findings across the study villages suggest that although influential community members were more or less supportive of preventing sexual harassment, most of them did not help prevent child marriage. In the case of preventing child marriage, collective action by girls was not successful as it met strong resistance from the community against girls' being vocal about their marriage and raising the issue of transgressing the existing norms of age hierarchy. Most parents still do not endorse

the interference of adolescent girls in this matter. These barriers, along with consideration of poverty and corruption, which facilitate child marriage discouraged most adolescent girls to raise a collective voice against it.

All informants unanimously stated that any initiative to stop child marriage faced strong resistance from the parents. The parents reminded the actors that it was a private matter. Despite this resistance, the data seem to suggest that attempts to stop child marriage increased at endline (from one to three). The number of successfully stopped child marriage also increased in line with this (from zero to two).

In an FGD with mothers, the participants reported that in their village a few **dewanee/moy-murubbi** (influential and elderly villagers) tried to stop a girl's child marriage by reporting it using the hotline number. As a result, the parents were arrested and charged a fine. However, as per advice of another more politically powerful **dewanee/moy-murubbi**, the parents bribed the police, got released, and married off their daughter without further interference. Mothers and girls from this village felt that most of the influential people in their community (e.g., arbitrators/**dewanee/moy-murubbi**, teachers) actually supported child marriage.

In the TPP villages, a few male and female TPI members took initiative to stop a few child marriages. In one case, the girls went up to the parents of the girl and convinced them not to get their daughter married. In another case, adolescent boys stopped a child marriage by calling the hotline number.

Girls and mothers pointed out that unity among all villagers is the most important factor in preventing child marriage. According to them, the ground is not yet ready for the girls to bring about this unity all by themselves. They actually need support from forces like Tipping Point in this endeavor.

5. Discussion

Globally, reducing CM poses a great challenge to the policy makers, program developers and implementers. It is more so in the context of Bangladesh, where historically, the pace of reduction in CM has been quite slow and recently the rate has stalled [33]. To the best of our knowledge, this is the first study of its kind in Bangladesh, which evaluated TPI, an integrated social norms intervention to reduce CM through promotion of adolescent girls' agency, creation of supporting relations and transforming norms driving CM. Overall, TPI did not show an effect on the full sample in any of the arms – TPP or TPP+. It is noteworthy that the challenges of TPI were heightened manifold due to an overlap between the implementation period and the COVID-19 pandemic. The literature suggests that during the pandemic child marriage had escalated due to: (1) financial problems and uncertainty; (2) school closure and uncertainty regarding education of the girls; and (3) a rise in availability of desired grooms during the pandemic [58-60]. Our qualitative findings show a surge in mobile phone communication by adolescent girls and development of actual or presumed romantic relationship in the intervention arms. This heightened the pressure on the parents to marry off the girls for protecting family honor. What we do not know is whether these factors affected the study arms differently contributing to the absence of an effect on the full sample.

Analyses of the intervention effect by the number of group sessions by the girls, however, reveal that in face of implementation challenges, TPP+ intervention had reduced the hazards of child marriage by 63% among girls who attended 36-40 sessions. The magnitude of effect is, indeed quite large and not achieved in any previous intervention in Bangladesh or elsewhere. Thus, the study by Buchman et al. [45] showed a 25% reduction in child marriage in a rural site in Bangladesh after a conditional incentive intervention to the parents not to marry off the girls before 18 years of age. The Balika study [40] in southern Bangladesh showed a 23% reduction in child marriage as a result of a livelihood program; 31% reduction due to education support program; and 31% reduction in the arm, where the girls received life skills training on gender and rights.

If we compare the TPP+ effect size with those reported in the recent review of effective interventions to reduce CM worldwide [61] it becomes evident that TPP+ effect far exceeds any other intervention effects worldwide. The single intervention that achieved a 90% reduction in CM was only among very young girls aged 10-14 years. As indicated by the story of reduction in CM in Bangladesh, it is easier to reduce very early CM compared to CM among older adolescents [62, 63] Thus, the highest proportion of CM reduction in Bangladesh was achieved through reduction of very early CM. The bottleneck is to address CM among the older adolescents. Probably this is why a stalling in CM is being observed in CM reduction in Bangladesh during 2014 to 2017-18 [33] In this context, the importance of the huge positive effect TPP+ on CM reduction among girls aged 16-18 cannot be overemphasized.

Comparing effectiveness of single component with multi-component interventions [61] conclude that multi-component interventions show low success. We argue that treating all multi-component interventions into a single category ignoring variations in the content of the interventions may be misleading. In fact, our finding from TPP+ provide evidence to that effect. We agree with [61] that single component interventions are easily scalable and they do get scaled up much more than multi-component interventions. However, that does not necessarily mean that it is worthwhile doing so. Decisions regarding interventions to scale up needs to be based on careful consideration of the effect size, feasibility of replication and cost. The upcoming cost assessment of TPI is expected to make valuable contribution to discussion and decisions about choice of intervention to scale up. It is true that sustainability of the TPP+ effect remains to be assessed. However, since social norms are widely recognized to perpetuate CM, we assume that TPP+ aimed at changing pro-CM social norms will be sustainable.

According to the ToC of TPI the TP intervention was hypothesized to contribute to reducing CM by promoting individual agency (e.g., self-efficacy; aspirations; knowledge regarding SRHR; gender attitudes), empowering girls to navigate their lives

(e.g., mobility; communication and negotiation; participation in financial activities, and decision-making, group membership; cohesion, solidarity and mobilization skills; participation in events; collective efficacy; improving connectedness with parents), engaging proactively with the structures that inhibit equitable access to services and protection from harm, and making positive changes in social norms.

Our study findings show that, the overall TPP+ intervention had significantly reduced girls' endorsement of control exerted by family over girls, and increased girls' knowledge on SRH. Moreover, girls' attendance in 36-40 sessions in the TPP+ arm contributed in reducing child marriage by increasing positive attitudes regarding gender roles, girls' mobility, confidence in negotiation skills, and self-efficacy; and reducing girls' endorsement of justification of girl-beating. The only counter-intuitive result in this arm is that TPP+ reduced connectedness with parents. During COVID-19 the girls across arms were more or less confined to home due to school closure and the lockdown. It may have increased friction within the family by affecting connectedness with parents.

The qualitative results are also in line with the quantitative finding that positive changes occurred not across board and not in all indicators that TPI targeted. While social norms regarding CM have not changed it has become more acceptable to allow girls to express their opinion about the groom. After participating in TPI sessions some families allowed girls to express their aspirations not only about the groom, but also about timing of marriage. Some families were also found to be supportive of the girl's desire to continue education by delaying marriage. On one hand, from TPI sessions the girls became more aware about their rights; their communication and negotiation skills were enhanced; they gained voice. On the other hand, enhanced awareness regarding girls' rights, importance of girls' education and negative consequences of CM among the parents and some community members facilitated created a conducive environment for the girls to raise their voice. A few instances of collective action to stop CM by TPI girls and boys were cited in the villages covered by the qualitative study. The community leaders of one village was also reported to have led one such action. Thus, summarizing the results of the TPP+ impact of CM we can confidently say that the results lend support to the TPI ToC.

Although TPP, did not reduce CM effectively either in the full sample of girls or in the sample that attended the highest number of sessions, it importantly increased known protective factors against child marriage: girls' positive attitudes regarding gender roles; knowledge on SRH; and positively changed social norms

around girls' mobility. The emphasized social norms component, the impact of TPP+ on top of TPP, significantly increased girls' participation in income generating activities and increased participation of girls decision making regarding own marriage.

Summarizing the findings, we can say that in a context similar to Pargacha, affected by a pandemic such as COVID-19, only 36-40 sessions of a TPP+ intervention will be able to reduce the hazards of child marriage by 63%. The fact that the TPI model was effective despite implementation challenges leaves us to ponder whether an optimal implementation of the program could achieve an effect at a lower threshold level than 36 sessions.

As pointed out by Kalamar [46], Lee-Rife et al. [47], and Cislighi [25] lack of understanding of social norms and how to change them effectively impede the development of effective and sustainable CM prevention programs. At this backdrop, our findings, particularly from TPP+ intervention are very encouraging and demand attention of the program implementers, policy makers and researchers devoted to elimination of child marriage. An optimal implementation of the TPI model during a non-pandemic period is essential for understanding its full potential. Our findings demonstrating success of social norm intervention have implications for child marriage not only in Bangladesh, but also for South Asia and beyond.

6. Conclusion and recommendations

TPP+, a social norm-based intervention with a girls' movement building component is much more effective than any previous intervention in reducing CM among girls. Since there is a threshold effect and only girls who participated in 36 to 40 group sessions benefitted from it, programs replicating TPP+ need to devise ways to promote girls' participation in group sessions for achieving an effect. The TPP+ model needs to be replicated in a non-pandemic situation for understanding its full potential. It is important to integrate from the very outset a cost analysis component in such intervention evaluations for enhancing decision making regarding value for money. It is also essential to assess sustainability of effective interventions such as TPP+. Success of TPP+, a social norms intervention have implications not only for Bangladesh, but also for this region and the beyond.

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Annexure

Tipping point initiative original implementation plan

PARTICIPANTS' GROUPS		SESSIONS	CORE SESSIONS/TRAININGS	GIRL-LED ACTIVITIES	JOINT SESSIONS
CORE PARTICIPANTS' GROUPS	Adolescent GIRLS	Weekly 45 sessions	Social norms [all participant groups]: equity and equality; rights and duties; gender; patriarchy; power and privileges; puberty; sex and love; honor; GBV; child marriage.	6 Community level social norms activities Organized and lead by adolescent girls' groups on following themes: Mobility Menstruation Gender Division of Labor Dowry Family Honor/ Sexual Harassment Girls Aspirations	6 Intergroup Dialogues Facilitated dialogues between core participant groups in the following combinations: Adolescent Girls with Boys Adolescent Girls with Mothers Mothers with Fathers Adolescent Girls, Adolescent Boys, Mothers, and Fathers
	Adolescent BOYS	Weekly 45 sessions	Access to Alternatives [girls' groups only]: financial literacy and girls from the group who are interested participate in Village Savings and Loans Association (VSLA) (starting in the 7 th month). ASRRH [all core participants' groups]: menstruation; masculinities; female sexuality; contraception; HIV/AIDs.		
	MOTHERS Group	Monthly 18 sessions	Girls-centered movement building [girls' groups only]: (starting in the 7 th month): leadership; empowerment dialogues; collective action; civic participation.		
	FATHERS Group	Monthly 18 sessions	Activist training [select champion boys, fathers, mothers]: (starting in the 7 th month): trainings and meetings to support adolescent girls' activism. Activist training [select girl leaders]: girl leaders receive training on campaigning and activism, linked to other girls groups & networks, and given access to a budget and mentorship to execute 4 community level activities.		
OTHER PARTICIPANTS	RELIGIOUS LEADERS	Intensive Trainings* Follow-up Meetings*	* # of trainings/meetings are not yet finalized	4 Activist-led activities Created, organized, and lead by network of activist girls The network of girl leaders elected across villages will organize and execute 4 activities of their own choice in each of their communities, using their own budget.	DURATION = 18 months CORE FACILITATION APPROACHES A mix of facilitation approaches designed to maximize empowerment, critical thinking and action [didactic, participatory teaching, reflective analysis, and facilitation for action].
	LOCAL GOVERNMENT (Union Parishads)				
	INFLUENTIAL PEOPLE				
PROJECT STAFF CORE CAPACITIES		Gender Equity and Diversity (GED) Social Analysis and Action (SAA)	VSLA Social Norms	Participatory and Reflective Techniques Movement Building	Facilitation Skills

 Indicates components that are part of the full package and are not present in the light package

