Spousal Relationship and Adolescent Psychosocial Health: Evidence from a Randomized Control Trial*

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Abstract

This study examines the effects of parental relationship counseling on adolescent psychosocial well-being and educational outcomes through a cluster randomized controlled trial in Kanpur, India. We evaluate two interventions: (1) gender-sensitive couple counseling and (2) counseling combined with community-based gender-equitable games and activities. Both interventions significantly improved psychosocial health, with stronger effects for girls in self-confidence, parental engagement, school absenteeism, and educational expenditures. The community-based intervention produced larger, durable impacts, improving parental mental health, reducing gender biases, and increasing educational investments. These effects persisted at a one-year follow-up, highlighting the potential for scalable gender-sensitive interventions.

Keywords: Parental Counseling, Psychosocial Health, Gender Inequality, Randomized Control Trial

JEL classification: I12, I24, J13, O15

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1 Introduction

Childhood and adolescence are critical stages for human capital formation, profoundly influencing long-term economic productivity, social mobility, and well-being. Despite the potential for investments in health and education to yield significant social and economic returns (Del Boca, Monfardini, and Nicoletti, 2017; Currie and Hyson, 1999), adolescents in low- and middle-income countries (LMICs) face substantial barriers, particularly girls, who are disproportionately affected by patriarchal norms and restrictive cultural expectations. These barriers limit mobility, psychosocial agency, and access to resources, with nearly 20% of girls aged 6–17 in India out of school due to entrenched gender norms and household responsibilities that deprioritize education (UNICEF, 2021). Furthermore, 84.5% of Indian adolescents lack access to mental health care, leaving psychosocial vulnerabilities unaddressed (Gautham et al., 2020). Additionally, in households characterized by frequent parental conflict or marital discord, these challenges are further exacerbated, adversely impacting adolescents' self-esteem, peer relationships, and trust in parental support (Institute for Family Studies, 2023; Cummings and Davies, 1996).

Adolescence represents a unique window for transformative investments that can shape long-term educational, health, and economic trajectories. Evidence shows that targeted cash transfers, health interventions, infrastructural access, and empowerment programs reduce gender disparities and foster inclusive growth (Dhar, Jain, and Jayachandran, 2022; Buchmann et al., 2018; Muralidharan and Prakash, 2017; Field and Rigol, 2016; Baird, McIntosh, and Özler, 2011). Yet, existing approaches often overlook the critical influence of intra-household dynamics on adolescent development. Parental attitudes, resource allocation decisions, and the quality of marital relationships within households profoundly shape adolescents' well-being. Supportive spousal dynamics foster environments conducive to emotional stability and confidence-building, while conflictual relationships perpetuate

stress and hinder developmental outcomes (Cicchetti and Valentino, 2015; Cutrona and Russell, 2005). Addressing these intra-household dynamics offers a promising pathway to advancing equitable outcomes for adolescents, particularly girls.

To fill this gap, we conduct a cluster randomized controlled trial (RCT) among 742 parents-child dyads in Kanpur, Uttar Pradesh, India,[1] evaluating two parental counseling interventions designed to shift intra-household gender dynamics, reduce gender biases, and encourage equitable parental attitudes toward daughters. The two treatment arms include: (i) a counseling-only model aimed at fostering cognitive change in gender perceptions through structured discussion (Treatment 1) and (ii) an integrated model combining educative counseling with community-based, couple-focused games and activities to support behavioral change through social accountability (Treatment 2).

Our theory of change posits that fostering cooperative parental communication within the household, alongside community-based engagement, can alter household dynamics to better support adolescent psychosocial and educational outcomes. Treatment 1 encourages parents to confront and challenge gendered assumptions through structured discussions, leading to cognitive shifts (i.e., "learning by learning"). Treatment 2 builds on this by introducing "learning by doing," where parents engage in cooperative games and activities—such as shared meal preparation and teamwork exercises—that model gender equitable behaviors within a public setting (alongside other couples in the community). By embedding these gender equitable practices in a community context, Treatment 2 aims to increase the extent and durability of behavior change through social reinforcement. This dual-mechanism model hypothesizes that combining cognitive learning with community reinforcement will yield stronger and more sustainable impacts on adolescent outcomes, especially for girls.

[1]This study adhered to strict ethical guidelines, including informed consent from all participants, with guardian consent provided for minors. Ethical approval was obtained from the Indian Institute of Technology Kanpur Ethical Committee, with consent forms available in the local language. All personal data were securely stored and anonymized to ensure participant privacy.

Both interventions target entrenched gender norms that constrain adolescent psychosocial and educational growth. Treatment 1 involves structured discussions designed to encourage parents to recognize and reduce gender biases, focusing on themes like equitable household responsibilities, open communication, and the detrimental effects of restrictive norms on self-efficacy and school engagement. Through guided self-reflection, this treatment aims to foster more supportive home environments, especially for daughters.

Treatment 2 extends this approach by incorporating community-based sessions where cooperative behaviors are publicly practiced through role-playing and teamwork activities. Examples include couple-based exercises such as shared cooking and joint problem-solving, which provide parents with practical opportunities to model equitable behaviors in a publicly observable setting. This "learning by doing" strategy, grounded in behavioral economics principles, aims to reinforce cognitive changes by embedding them into daily practices across both private and public domains.

The RCT was conducted across 90 clusters in rural and urban areas of Kanpur Nagar, with a socio-economically and geographically diverse sample representative of Uttar Pradesh (Pakrashi et al., 2024; Vlassopoulos et al., 2024), which would rank as the fifth-most populous country if it were an independent nation (Narasimhan and Weaver, 2024). Initiated in mid-2022, the intervention included four months of monthly couple counseling sessions covering topics like gender equality, stereotypes, and intra-household cooperation, followed by two months of biweekly community-based games and activities. These activity sessions aimed to consolidate learnings from the counseling sessions through real-life applications, including shared meal preparation and role-playing, with the objective of fostering cooperation, trust, and equitable household labor divisions. An endline survey was conducted in mid-2023, with a follow-up survey conducted in mid-2024 to assess the sustainability of intervention effects.

Our results reveal significant psychosocial improvements in both treatments, with stronger, more durable effects in Treatment 2. Treatment 1 enhanced boys' self-esteem and girls' self-efficacy, while parents reported reduced anxiety and increased life satisfaction, signaling a shift towards a more supportive family environment. Treatment 2 demonstrated broader and sustainable gains, particularly for girls, in areas such as self-efficacy, self-esteem, parent-child relationships, and peer interactions. The results suggest that interventions combining cognitive and experiential learning offer an effective, scalable approach to challenging gender norms and promoting equitable household practices, providing a valuable model for policymakers aiming to foster gender-inclusive growth.

Moreover, Treatment 2 significantly improved girls' school attendance and educational investment, addressing specific barriers such as menstruation-related absenteeism (Oster and Thornton, 2011). Girls in Treatment 2 reported lower absenteeism, likely due to increased self-efficacy and parental support fostering more consistent school attendance. Additionally, both treatments led to increased educational expenditures for girls, indicating a shift in parental investment toward daughters' futures. Treatment 2's community-based approach fostered shared household values of equity and accountability. Improvements in maternal mental health and reductions in parental anxiety emerged as mechanisms driving these outcomes, particularly for mothers, whose enhanced well-being supported their daughters' development.

This study contributes to the literature on intra-household dynamics and adolescent development by focusing on the role of gendered parental attitudes—a dimension often overlooked in existing interventions targeting adolescent outcomes. While prior research has demonstrated the efficacy of adolescent-focused programs such as cash transfers (Baird, McIntosh, and Özler, 2011; Buchmann et al., 2018), school infrastructure improvements (Muralidharan and Prakash, 2017), life skills and communication training (Dhar, Jain, and Jayachandran, 2022; Nyqvist, Jayachandran, and Zipfel, 2024), and peer mentorship (Field and Rigol,

2016), few studies examine how intra-household dynamics influence the implementation and sustainability of such interventions. By integrating cognitive learning with experiential reinforcement through community engagement, our approach addresses this gap and offers a replicable model for fostering equitable gender norms.

Our findings highlight substantial gains in adolescent outcomes, particularly for girls, exceeding those reported in earlier studies. For instance, girls in Treatment 1 experienced a 15 percentage point increase in school attendance during menstruation, surpassing the 9–10 percentage point effects reported by Oster and Thornton (2011) in interventions targeting menstrual stigma. Building on Buchmann et al. (2018), where a Conditional Incentive Program reduced child marriage by 24% and increased school attendance by 25%, our intervention reduces menstruation-related absenteeism by 15 percentage points under Treatment 1, emphasizing the role of intra-household dynamics in improving educational outcomes. The observed increase in self-esteem (0.25 SD) under Treatment 1 aligns with the findings of Dhar, Jain, and Jayachandran (2022), who reported a 0.20 SD improvement in self-esteem among school-going girls following life-skills and communication training. These results underscore the critical role of enhancing parental marital relations as a pathway to significantly bolstering adolescents' self-esteem, highlighting the interconnectedness of household dynamics and individual psychosocial outcomes. Moreover, the self-esteem improvements for girls under Treatment 1 (0.27 SD) are comparable to Miller et al. (2024) effects (0.24 SD) on self-esteem, measured through access to private sanitation, illustrating that cognitive-focused interventions can achieve outcomes similar to infrastructure-driven approaches.

The documented improvements in maternal mental health resonate with evidence from Aizer (2010) and Ashraf et al. (2020), who link maternal empowerment to child welfare. Our study extends this line of inquiry by quantifying the pathways through which couple-based counseling fosters cooperative household dynamics, benefiting adolescent psychosocial and

educational outcomes. The effect sizes for self-efficacy among girls and self-esteem among boys align with Field and Rigol (2016) but demonstrate that family-centered interventions can achieve similar impacts without relying solely on peer networks.

This study advances existing models of intra-household dynamics and decision-making by demonstrating how structured interventions, integrating cognitive and behavioral mechanisms, can effectively reshape gendered norms. By targeting parents as agents of change, the study bridges critical gaps in understanding how household dynamics influence adolescent outcomes. The interventions are cost-effective, scalable, and adaptable to diverse patriarchal contexts, leveraging existing community platforms to minimize resource demands. This dual-treatment framework complements holistic family-based programs by addressing foundational attitudinal and behavioral barriers within households. The findings not only contribute to the literature on human capital formation but also provide actionable insights for policymakers seeking community-based solutions to address gender inequities and promote equitable development.

2 Intervention Design and Rationale

This study presents a novel, dual-mechanism framework on intra-household dynamics and adolescent development. While previous research has documented the impact of parental attitudes on adolescent development (Nyqvist, Jayachandran, and Zipfel, 2024; Kelly et al., 2011; Currie and Hyson, 1999; Del Boca, Monfardini, and Nicoletti, 2017), few interventions have actively engaged both parents to reshape adolescent psychosocial outcomes. Furthermore, community-based initiatives addressing the "implementation gap" between awareness and sustained behavior change remain underexplored. By integrating family-based cognitive learning with community based social accountability, our approach presents an innovative, scalable model for shifting gendered household dynamics and supporting adolescent well-

being in patriarchal settings.

The experimental design shown in Figure 1 targets intra-household dynamics and parental attitudes toward gender norms, aiming to improve psychosocial and educational outcomes for adolescents in gender-unequal settings. Implemented as a RCT, the intervention employs a two-tiered approach: (i) a structured, educative counseling model (*Treatment 1*), and (ii) an expanded model that combines counseling with community-based, interactive couple activities (*Treatment 2*). Both treatments seek to shift traditional gender norms and encourage cooperative household behavior, with Treatment 2 uniquely incorporating public accountability and experiential learning to deepen behavioral change. Each component is described in detail below, with theoretical underpinnings provided for clarity.

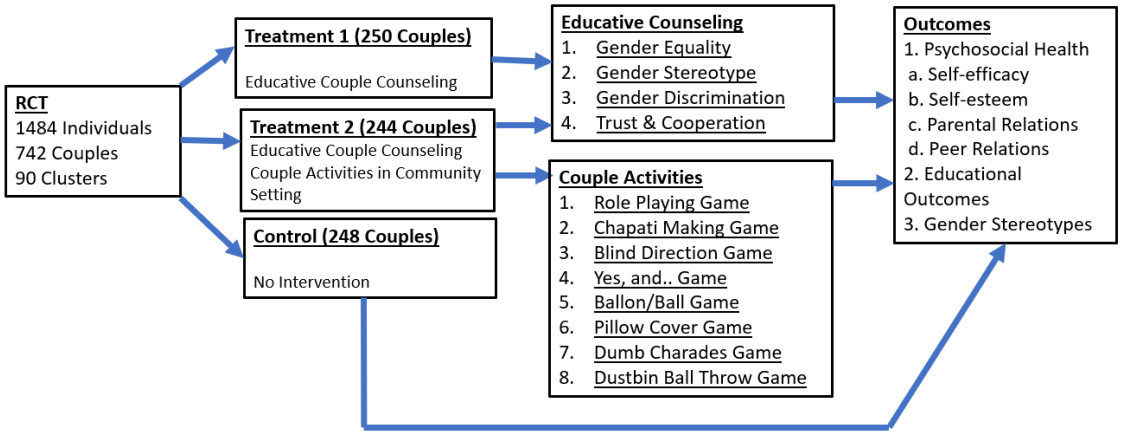


Figure 1: Experimental Design

Note: The RCT involved 1,484 participants, consisting of 742 couples and their children, across 90 clusters (30 clusters each for treatment group, approximately 8.2 couples per cluster). Treatment 1 is the Educative Counseling module. Treatment 2 includes Treatment 1 plus the Couple Activities.

2.1 Treatment 1: Educative Couple Counseling

Treatment 1 focused on structured couple counseling sessions designed to address gender inequality, stereotypes, intra-household cooperation, and communication. The core objec-

tive of these sessions was to foster equitable gender norms within the household through cognitive learning, in line with existing evidence that improved intra-household cooperation and communication positively influence adolescent outcomes (Bertrand, Goldin, and Katz, 2010; Jayachandran, 2015).

Each session began with a focused discussion on gender inequality and its implications for family life and adolescent development. Couples were guided through case studies that illustrated the social and economic costs of gender bias, especially how unequal responsibilities and expectations impact adolescent well-being. This component was included based on evidence that increasing parental awareness of gendered household roles is a critical first step in shifting entrenched norms (Dhar, Jain, and Jayachandran, 2022).

Sessions included interactive dialogues designed to help participants reflect on prevalent gender stereotypes in their community. Discussions focused on identifying and challenging common stereotypes, such as gender-specific roles in domestic work or attitudes toward girls' education. This component aimed to promote introspection and to foster new attitudes by linking gender equality with broader family welfare goals.

Recognizing the importance of parental cooperation, sessions incorporated role-play exercises focused on conflict resolution and effective communication strategies. Couples practiced techniques such as active listening and compromise, which are theorized to reduce household tensions and foster a more supportive environment for adolescents. By improving family interactions, these techniques are expected to indirectly enhance adolescent psychosocial outcomes through reduced parental anxiety and increased household cohesion.

Visual aids, including a poster (see Appendix Figure A2) displayed in participants' homes, reinforced the key messages from the counseling sessions. The posters promoted gender equality as a human right, emphasized the value of women's unpaid work, and advocated for equitable treatment of daughters and sons. By placing these visual reminders in everyday

spaces, the intervention sought to provide continuous reinforcement, promoting sustained cognitive shifts toward more equitable gender attitudes. Figure 2 illustrates a couple actively engaged in one of these counseling sessions.



Figure 2: A couple participating in an educative counseling session, discussing strategies for equitable household dynamics.

Each session concluded with a short video presentation, which was introduced to enhance message retention and provide visual examples of equitable behaviors. These videos depicted scenarios of balanced household roles, showcasing men and women sharing responsibilities in ways aligned with counseling objectives. Videos were included to facilitate a dual learning process—reinforcing cognitive understanding through observational learning, as parents viewed real-life illustrations of cooperative behavior. This approach draws on social learning theory, suggesting that visual exposure to desired behaviors can accelerate internalization and subsequent behavior change (Bandura, 2001; Bursztyn et al., 2014). For more details on Treatment 1, see Appendix A, Section A.1.

2.2 Treatment 2: Community-Based Experiential Learning

Treatment 2 extended the goals of Treatment 1 by incorporating community-based activities designed to solidify learned behaviors through experiential learning and social accountability. Research supports the idea that behavioral change is more likely to endure

when reinforced through practical, real-world application in socially supportive environments (Agarwal, 2010; Field and Rigol, 2016).

2.2.1 Community-Based Couple Activities

In addition to the counseling components, Treatment 2 included community-based activities, such as role-playing exercises that required couples to collaboratively solve household problems. Tasks included meal preparation, blind trust games and conflict resolution scenarios, designed to mirror daily household challenges. These activities aimed to encourage cooperation and mutual support in a public setting, promoting a "learning by doing" model that extends beyond cognitive understanding to practical application.

Couples also engaged in collaborative projects, such as jointly completing household tasks traditionally assigned to one gender (e.g., cooking or cleaning). These projects served to challenge conventional gender roles in visible ways, fostering teamwork and helping participants internalize the benefits of shared household responsibilities. By demonstrating equitable gender roles publicly, the intervention leveraged social accountability to sustain behavior change. Figure 3 depicts a shared cooking exercise conducted in the community, a practical demonstration of equitable task-sharing.



Figure 3: Participants engage in a community-based shared cooking exercise, fostering cooperation and challenging traditional gender roles.

2.2.2 Theoretical Basis for Experiential Learning

The experiential component of Treatment 2 builds on theories of behavioral economics and social accountability. Publicly observable actions in community settings are theorized to create added incentives for behavior change by fostering a supportive social environment and providing external validation for progressive behaviors. This approach aligns with findings from previous studies that community-based interventions can enhance the durability of gender-equitable attitudes by establishing positive norms at the collective level (Fleming, Lee, and Dworkin, 2014). For more details on Treatment 2, see Appendix A, Section A.2.

The dual-intervention approach is grounded in a conceptual framework that distinguishes between "learning by learning," achieved through Treatment 1, and "learning by doing," achieved through Treatment 2. Treatment 1 is expected to initiate cognitive shifts toward gender equity by increasing awareness and understanding of intra-household cooperation and communication. Treatment 2, through hands-on, socially accountable activities, is hypothesized to produce more enduring behavior change, promoting a deeper internalization of equitable norms. The inclusion of both theoretical and practical learning is intended to address the gap between knowledge and action, with the expectation that Treatment 2 will yield stronger and more sustainable impacts on both adolescent psychosocial health and educational engagement.

2.3 Timeline

The RCT started in July–August 2022, with the baseline survey conducted between September–November 2022. The randomization of the sample was done in December–January 2023, with the intervention carried out between January–April 2023, followed by the endline and lab-in-the field experiment conducted between July–August 2023. A follow-up survey was conducted in July–August, 2024, we were able to track all the participants from the endline survey, thus avoiding any sample attrition. The timeline for the RCT is shown in Figure 4.

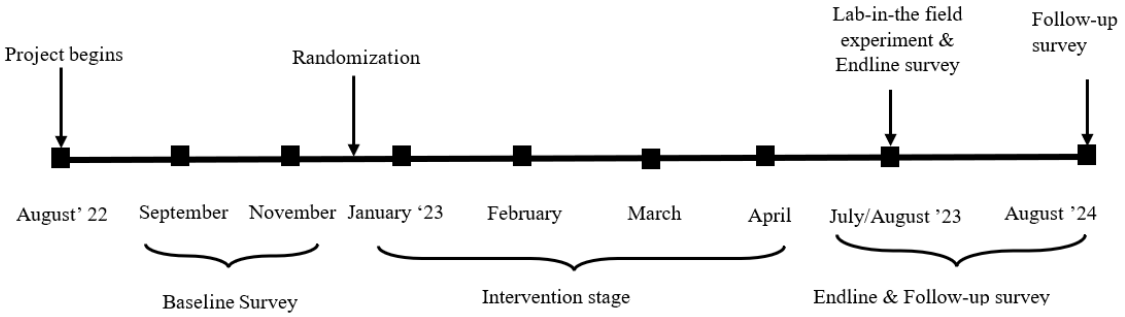


Figure 4: Time of the RCT, August, 2022—August, 2024

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2.4 Sample Selection and Cluster Randomization

Our study sample was drawn from a larger RCT of 900 couples (1,800 individuals) designed to assess the impact of counseling interventions on gender attitudes and household dynamics (Pakrashi et al., 2024). Initial eligibility for the study included women aged 18–60 years. To focus specifically on adolescent psychosocial outcomes, we restricted our sample to couples with children aged 7–20, aligning with the New Education Policy (NEP) 2020 guidelines, which outline key developmental stages for educational and cognitive engagement.[2] After applying this age restriction, the final sample included 742 couples, each with one eligible child, distributed across 90 clusters.

This RCT utilized a cluster-randomized design with the unit of randomization set at the cluster level to mitigate spillover effects within communities. The sampling process followed a structured three-stage randomization. In the first stage, 90 clusters were randomly selected from a list of approximately 150 clusters in Kanpur, maintaining a minimum distance of 2 km between clusters to ensure geographical independence. In the second stage, eligible couples within each selected cluster were identified based on specific criteria: couples had to be married, above 18 years of age, have resided in the cluster for at least 12 months,

[2]NEP 2020 suggests children enter Grade 1 at age six, with prior years dedicated to foundational skills. See New Education Policy, 2020, page 6.

and express willingness to participate. From this pool, 8–9 eligible couples were randomly selected from each cluster, yielding a sample of 742 couples. In the rare instances where a selected couple declined participation at baseline, they were replaced by randomly selecting another eligible couple from the same cluster.

The final stage of the randomization process involved allocating the 90 clusters into three groups: *Treatment 1* (educative counseling only), *Treatment 2* (counseling plus community-based couple activities), and *Control*. Each group contained 30 clusters, with randomization conducted at the cluster level using computer-generated random numbers. This ensured balanced baseline characteristics across groups, as outlined in Figure 5, which provides a visual representation of the randomization process and participant allocation.

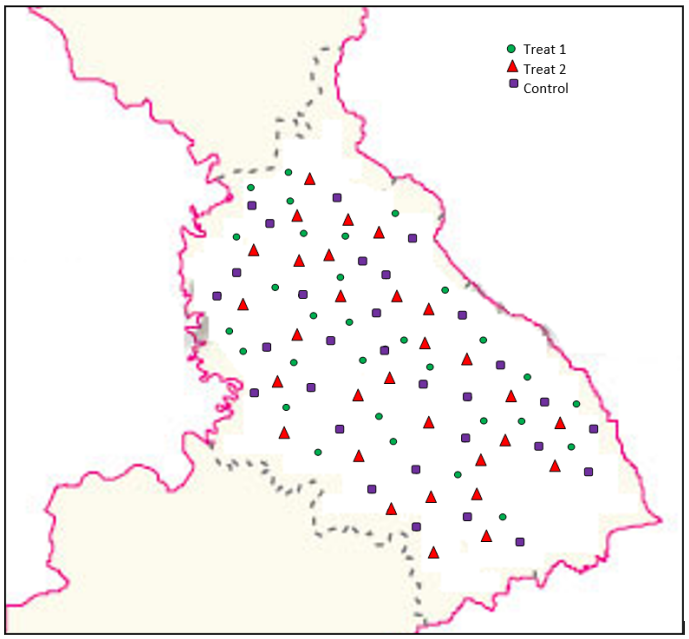


Figure 5: Cluster Randomization

Notes: This RCT was conducted in 90 clusters, with 30 clusters allocated to each of the Control, Treatment 1, and Treatment 2 groups. Randomization was conducted at the cluster level to prevent spillover effects across groups. Outcome variables were measured at the individual level. The figure distinguishes groups with visual markers: circles represent Treatment 1 clusters, triangles denote Treatment 2 clusters, and squares indicate control clusters.

To validate the effectiveness of the randomization, we conducted a balance test across baseline characteristics, including age, gender, education, and household income. As shown in Table A1, there were no statistically significant differences across treatment and control groups, confirming successful randomization and comparable baseline characteristics. Additionally, robustness checks addressing potential confounding factors and response bias confirmed that the randomization process yielded balanced groups suitable for valid causal inference.

The final analytical sample included 361 girls and 381 boys across treatment and control groups. For each couple, we surveyed the eldest child within the eligible age range; if the eldest was over 20, we selected the next-youngest eligible child. This sampling protocol and randomization design were consistently applied across all clusters, ensuring that our study sample was both representative and robust. The clustered randomization and balanced baseline characteristics further affirm the internal validity of our study and support its generalizability to similar contexts.

Retention rates in this study were high across all treatment groups, as shown in Tables A2 to A4, which document attendance rates for counseling sessions and community-based activities. This high retention is attributed to targeted engagement strategies. First, robust tracking mechanisms, including regular check-ins and personalized online group messaging, reinforced participants' commitment. Second, endorsements from respected community leaders—such as the District Magistrate, village heads, and ASHA workers—helped build trust and legitimacy for the interventions.

For Treatment 2 couples, small non-monetary incentives, such as bedsheets, cup sets, and tiffin sets, were provided for each session attended. These items were carefully designed to recognize participants' efforts without inducing financial dependence, fostering intrinsic motivation to remain engaged.

The stability of our study setting, characterized by low migration rates and strong community ties, further supported high retention. The couple-based structure of the intervention introduced an additional layer of accountability, as partners encouraged each other's attendance, reinforcing their commitment to participate in each session. These combined efforts resulted in consistently high attendance rates across treatment arms, thereby preserving the statistical power and representativeness of our sample.

Despite these measures to ensure compliance, the analysis adopts an Intent-to-Treat (ITT) framework. Our outcomes are analyzed based on participants' original treatment assignment, irrespective of session attendance or adherence. This approach maintains the integrity of random assignment and ensures that the results remain policy-relevant by accounting for real-world implementation complexities.

Of the 742 couples surveyed at baseline, in-person, face-to-face surveys were conducted with 711 couples and their children at endline, while 31 couples (4.18%) were contacted by phone following multiple unsuccessful in-person attempts. At follow-up, 698 couples and their children participated in person, and 44 couples (5.93%) were surveyed by phone. To encourage in-person survey completion and reduce non-compliance, small tokens of appreciation were provided to both couples and their children. Importantly, our findings remain robust when restricting the sample to couples who completed both the endline and follow-up surveys in person, with these results available upon request.

2.5 Outcome and Mechanism Variables

In the analysis, four primary psychological constructs are quantified as composite indices derived from multiple items rated on a Likert scale, following the psychosocial measures established in the Young Lives Survey (Barnett et al., 2018), as outlined in Table A5. The constructs include:

(i) **Self-Efficacy**: This index is formed by averaging responses to ten items that capture an individual's perceived capacity to exert control over personal functioning and external events. Items such as "I can solve most problems if I invest the necessary effort" and "I can remain calm when facing difficulties because I can rely on my coping abilities" reflect a sense of agency and resilience in problem-solving. The resulting score represents the degree to which individuals feel empowered to achieve desired outcomes through their own actions.

(ii) **Self-Esteem**: This construct is measured through eight items that assess self-regard and positive self-evaluation. Statements like "I feel that I have a number of good qualities" and "I take a positive attitude toward myself" capture an individual's intrinsic valuation of their worth and capabilities. The mean of these items provides a composite score indicating the individual's overall positive self-perception.

(iii) **Parent Relations**: This measure captures the quality of interactions and relationships with parental figures, using eight items that probe the affective and supportive dimensions of family bonds. Questions such as "I feel that my parents understand me" and "I get along well with my parents" reflect perceived warmth, understanding, and support within the family structure. This composite index serves as an indicator of the quality and closeness of parental relationships.

(iv) **Peer Relations**: This index, comprised of responses to eight items, evaluates the respondent's perceived quality of relationships with peers. Statements such as "I find it easy to make friends" and "My friends understand me" assess the respondent's sense of integration and connection within their peer network, providing an indicator of social support and peer connectivity.

To construct each index, the mean of the item responses within each domain is first computed to obtain a raw score for each respondent. These raw scores are subsequently standardized by subtracting the sample mean and dividing by the standard deviation of each

respective measure, resulting in z-scores with a mean of zero and a standard deviation of one. This standardization provides a consistent metric for analyzing the treatment effects, and facilitates comparison with other studies which have used similar standardized versions of the psychosocial outcomes (Miller et al., 2024; Dhar, Jain, and Jayachandran, 2022).

Beyond these psychosocial indices, additional constructs targeted educational and household variables. These were critical to capturing the broader socio-economic implications of the intervention:

(v) **School Absenteeism**: This variable measures the frequency of missed school days per month by gender. Additionally, we analyze a categorical variable "Missed School Menstruation" for girls which takes value 1 if the girl missed school due to menstruation related issue in the past month, and 0 otherwise

(vi) **School Expenditures**: Monthly household spending on education (tuition and books), by gender, was tracked to observe shifts in resource allocation towards sons and daughters.

The mechanism variables encompass key dimensions of mental health, anxiety, life satisfaction, gender stereotypes, couple relations, and couple time, each capturing specific facets of household dynamics and individual well-being. Mental health is a binary indicator, derived from a scale assessing general health status, where values of 1 indicate a positive rating (OK to very good) and 0 a negative one (bad or very bad). Anxiety is the row mean of binary responses to four items reflecting emotional distress, with responses coded as 0 for "not at all" and 1 for higher frequency responses ("several days" to "nearly every day"). Life satisfaction is measured on a scale from 0 to 10, where higher values reflect greater overall contentment. Gender stereotypes assess household attitudes toward gender equality, with responses recoded to 1 for progressive views (e.g., equal expectations for daughters and sons) and 0 otherwise, capturing the normative stance on gender roles. Couple relations is a composite index based on responses (on a 1–10 scale) regarding key relational dimensions,

including trust, respect, and mutual support. Lastly, couple time measures the frequency of shared activities, such as spending quality time or discussing life plans, derived from categorical responses indicating the extent of couples' engagement in shared experiences.

2.6 Empirical Strategy

To evaluate the impact of the couple counseling interventions, we employ the following empirical model:

$$Y_{ij} = \alpha + \beta_1 \text{Treat1}_{ij} + \beta_2 \text{Treat2}_{ij} + \gamma X_{ij} + \tau_b + \epsilon_{ij} \tag{1}$$

In equation 1, Y_{ij} denotes the outcome variable for individual i within cluster j, where clusters are defined as smaller geographic units nested within larger administrative blocks (wards). Each block comprises multiple clusters, with our study including 90 clusters distributed evenly across three groups: 30 clusters each for the Control, Treatment 1, and Treatment 2 groups. Randomization at the cluster level yielded balanced characteristics across households and individuals within each treatment arm.

The primary outcome measures include standardized scores for self-efficacy, self-esteem, quality of the parent-child relationship, and peer interactions, along with indicators for school absenteeism and educational expenditures, disaggregated by gender. The variables Treat1_{ij} and Treat2_{ij} are binary indicators, set to 1 if parents received either the standard couple counseling intervention (Treatment 1) or the enhanced intervention combining counseling with community-based couple activities (Treatment 2), respectively, and 0 otherwise.

The vector X_{ij} includes individual and household-level control variables, such as the adolescent's age, father's and mother's ages, child's years of education, parental education levels, household income, child's birth order, and the number of siblings. These controls help isolate the intervention's effect on outcomes by reducing potential confounding biases. The term τ_b

represents fixed effects at the block (ward) level, capturing unobserved heterogeneity across these larger geographic units (above the geographic level of randomization). Finally, the error term ϵ_{ij} is clustered at the cluster level to account for intra-cluster correlations, and the coefficients β_1 and β_2 capture the impact of Treatment 1 and Treatment 2, respectively, on the outcome variables.

To further the analysis of the interventions' effects, we incorporate the interaction terms between treatment assignments and gender. This regression model is specified as follows:

$$\begin{aligned} Y_{ij} = \alpha + \beta_1 \text{Treat1}_{ij} + \beta_2 \text{Treat2}_{ij} + \beta_3 \text{Gender}_{ij} \\ + \beta_4(\text{Treat1}_{ij} \times \text{Gender}_{ij}) + \beta_5(\text{Treat2}_{ij} \times \text{Gender}_{ij}) + \gamma \mathbf{X}_{ij} + \tau_b + \epsilon_{ij} \end{aligned} \tag{2}$$

In equation 2, Gender_{ij} captures the adolescent's gender, with a value of 1 for girls and 0 for boys. The interaction terms $\text{Treat1}_{ij} \times \text{Gender}_{ij}$ and $\text{Treat2}_{ij} \times \text{Gender}_{ij}$ allows us to assess whether the effects of these interventions vary systematically by gender.

A positive and statistically significant coefficient for β_4 would indicate that the standard counseling intervention (Treat1_{ij}) is more effective for girls than for boys, suggesting that the intervention enhances psychosocial outcomes to a greater extent for girls. Conversely, a negative and significant β_4 would suggest that the intervention is more beneficial for boys. Similarly, the coefficient β_5 provides insight into the differential impact of the community-based intervention (Treat2_{ij}). By testing these interactions, we can determine whether girls or boys derive more substantial gains.

2.7 Corrections for Multiple Hypotheses Testing:

In analyzing the treatment effects, we employ Randomization Inference (RI) to compute p-values, adhering to Young (2019). This non-parametric approach does not rely on traditional assumptions of normal distribution in random samples, making it particularly suited

for experiments with small sample sizes. By performing over a 1,000 replications, RI estimates the distribution of the test statistic under the null hypothesis of no treatment effect, allowing for a robust assessment of statistical significance without assuming a specific data distribution.

Furthermore, to address the issue of multiple hypothesis testing across various outcomes, we utilize the Westfall and Young (1993) stepdown procedure, which controls the Family-Wise Error Rate (WY FWER). This method adjusts p-values to reflect the maximum of the t-statistics across correlated outcomes, and reduces the likelihood of Type I errors associated with multiple comparisons. These methodological choices ensure that our treatment effects are more accurate and conservative.

2.8 Lab in the Field Experiment

The lab-in-the-field experiment was conducted with a sample of 299 couples, including 100 couples in the control group, 100 in Treatment 2, and 99 in Treatment 1, across all the 90 clusters.[3] Each spouse was provided with six envelopes labeled Education-Boys, Education-Girls, Health-Boys, Health-Girls, General-Boys, and General-Girls, along with a total of 720 INR, distributed as 240 INR per category, in 10-rupee notes.[4] Each envelope was marked with the couple's ID and a unique individual ID to ensure accurate tracking and analysis.

Participants were individually instructed to allocate the 720 INR across the six envelopes in a private setting. The distribution was intended to reflect their preferences for supporting educational supplies, health needs, and general provisions for boys and girls at a nearby school. This design, by focusing on community children rather than the participants' own, aimed to minimize personal biases and capture genuine preferences in resource allocation.

[3]Due to budget constraints, it was necessary to reduce the sample size from the full 742 couples to 299. This selection ensured a consistent and statistically balanced distribution across the treatment and control groups, thereby maintaining the validity and reliability of the experimental results.

[4]The sum of 240 INR (approximately US$3) corresponds to the daily wage rate under the NREGA scheme in rural Uttar Pradesh.

Following the allocation process, participants sealed their envelopes to maintain confidentiality and avoid any external influence the allocations. These sealed envelopes were then collected by the experimenters at the end of the day, and the allocations were systematically recorded.

The experiment focused on two primary outcomes: (i) the proportion of the 240 INR allocated to girls within each category (education, health, general) and (ii) whether the individual showed unbiased behavior, defined as an equal allocation of 720 INR for both the boys and girls. A binary variable was created to capture this behavior, coded as 1 for equal allocation and 0 otherwise.

To ensure the robustness and representativeness of our sample, we conducted a balance test, as detailed in Table A6, comparing the 299 couples selected for the lab-in-the-field activities with the 443 couples not included. Couples selected for the experiment were statistically similar to those excluded across several key dimensions, including the likelihood of having a girl child, the child's age, children's education levels, caste category, household income, household size, the child's birth order, and parental age. This balance, along with the fact that the selected couples mirrored the broader sample of 742 couples participating in either in-person or phone-based surveys at endline, supports the internal validity of our experimental findings and ensures robust generalizations from the lab-in-the-field activities. Additional results confirming the representativeness of this selection are available upon request.

3 Results

3.1 Descriptive Statistics

Table 1 presents descriptive statistics for psychosocial outcomes at both baseline and endline. The data reveal significant gender disparities at baseline, with girls consistently scoring

lower than boys across all measured outcomes—self-efficacy, self-esteem, parental relations, and peer relations. By endline, however, these disparities notably reduced, suggesting that the interventions were effective in reducing gender-based differences in psychosocial well-being. Specifically, at baseline, girls' mean scores in self-efficacy and self-esteem were notably lower than those of boys, with respective values of -0.49 versus 0.46 and -0.50 versus 0.47. Similar gaps were observed in parental and peer relations. By the endline, these differences were no longer statistically significant, demonstrating a convergence in psychosocial well-being between genders: self-efficacy (-0.04 for girls vs. 0.04 for boys), self-esteem (-0.02 vs. 0.02), parental relations (-0.05 vs. 0.04), and peer relations (-0.01 vs. 0.01). The effective neutralization of these disparities underscores the potential of targeted interventions to enhance psychosocial outcomes, advocating for policy frameworks that prioritize gender-sensitive approaches to foster equitable developmental environments.

3.2 Sample Balance Tests

Table 2 presents the baseline summary statistics for the control, Treatment 1, and Treatment 2 groups. The descriptive statistics indicate no significant differences across the treatment groups, affirming the effectiveness of the randomization process. Variables such as self-efficacy, self-esteem, parental relations, and peer relations show comparable means across all groups, with p-values indicating non-significance. For example, self-efficacy scores are -0.00, -0.03, and 0.04 for the control, Treatment 1, and Treatment 2 groups, respectively, with p-values of 0.81 (T0 vs. T1) and 0.38 (T0 vs. T2). Similarly, education expenses (Rs. per month) show means of 385.81, 430.82, and 429.79 across the groups, with p-values of 0.36 (T0 vs. T1) and 0.98 (T0 vs. T2), confirming the absence of significant pre-treatment disparities. Demographic variables such as age, gender distribution, and household size also exhibit no significant differences, ensuring the comparability of groups. For instance, the proportion of girls is 0.47, 0.50, and 0.48 in the control, Treatment 1, and Treatment 2

groups, respectively, with corresponding p-values of 0.55 (T0 vs. T1) and 0.40 (T0 vs. T2). These findings validate the randomization, providing a robust foundation for credible and reliable analyses (Angrist and Pischke, 2010).

3.3 Descriptive Statistics at Endline and Follow-up

Table 3 presents the endline summary statistics by treatment group, highlighting key psychosocial and demographic variables for the control group, Treatment 1, and Treatment 2. Children in Treatment 2 (counseling plus couple-based activities) exhibit significantly higher self-efficacy, self-esteem, parent relations, and peer relations compared to both the control group and Treatment 1. Specifically, the mean self-efficacy score for Treatment 2 is 0.23, while it is -0.20 for the control group and -0.01 for Treatment 1, indicating a significant positive impact of the hybrid intervention on children's self-confidence. Similar trends are observed for self-esteem, parent relations, and peer relations, with Treatment 2 consistently showing the highest mean scores.

The data also reveals that children in the control group miss more days of school per month (mean of 2.74 days) compared to those in Treatment 1 (1.54 days) and Treatment 2 (1.17 days), suggesting that the interventions effectively reduced absenteeism, likely through improved family dynamics and support systems. Notably, the mean education expenditure is higher for Treatment 2 (Rs. 513.98 per month) compared to the control group (Rs. 458.79 per month), reflecting increased parental investment in education following the counseling interventions.

Overall, Table 3 provides raw evidence that couple counseling, particularly when combined with community activities, significantly enhances various aspects of children's psychosocial health and reduces school absenteeism.

Descriptive statistics in Table A7 demonstrates that psychosocial outcomes remained stable

between the endline and follow-up phases for both genders. The lack of statistical significance in the 't-test' suggests that the interventions had a lasting impact. The follow-up survey's summary statistics by treatment status, presented in Table A8, further support the long-term positive effects of the interventions, particularly Treatment 2.

3.4 Treatment Effects: Counseling and Psychosocial Outcomes

Following equation 1, Table 4 presents the estimated treatment effects of the interventions on adolescent psychosocial outcomes. The table is divided into three panels: the full sample (Panel A), boys (Panel B), and girls (Panel C). The corresponding point estimates are shown in Figure 6 at 5% level of significance. In interpreting the results, we draw directly on our theoretical framework anticipating a greater effectiveness of Treatment 2 in improving psychosocial outcomes due to its dual focus on cognitive and behavioral change, with a predicted differential impact that is more pronounced among girls due to their higher sensitivity to parental inputs and social reinforcement of gender equitable attitudes.

For the full sample, both treatments exhibit positive effects on self-efficacy by 0.19 standard deviations (SD), self-esteem by 0.25 SD, and peer relations by 0.19 SD, while the impact on parent relations, though positive, is not statistically significant. In contrast, Treatment 2 demonstrates larger effects across all domains, enhancing self-efficacy by 0.44 SD, self-esteem by 0.50 SD, parent relations by 0.51 SD, and peer relations by 0.46 SD.

The gender-disaggregated analysis reveals important differences. For boys, Treatment 1 significantly improves self-esteem by 0.29 SD, while the effects on self-efficacy, parent and peer relations, although positive, are not statistically significant. Treatment 2, however, shows robust positive effects, enhancing self-efficacy by 0.24 SD, self-esteem by 0.40 SD, and peer relations by 0.39 SD, while the impact on parent relations remains statistically insignificant.

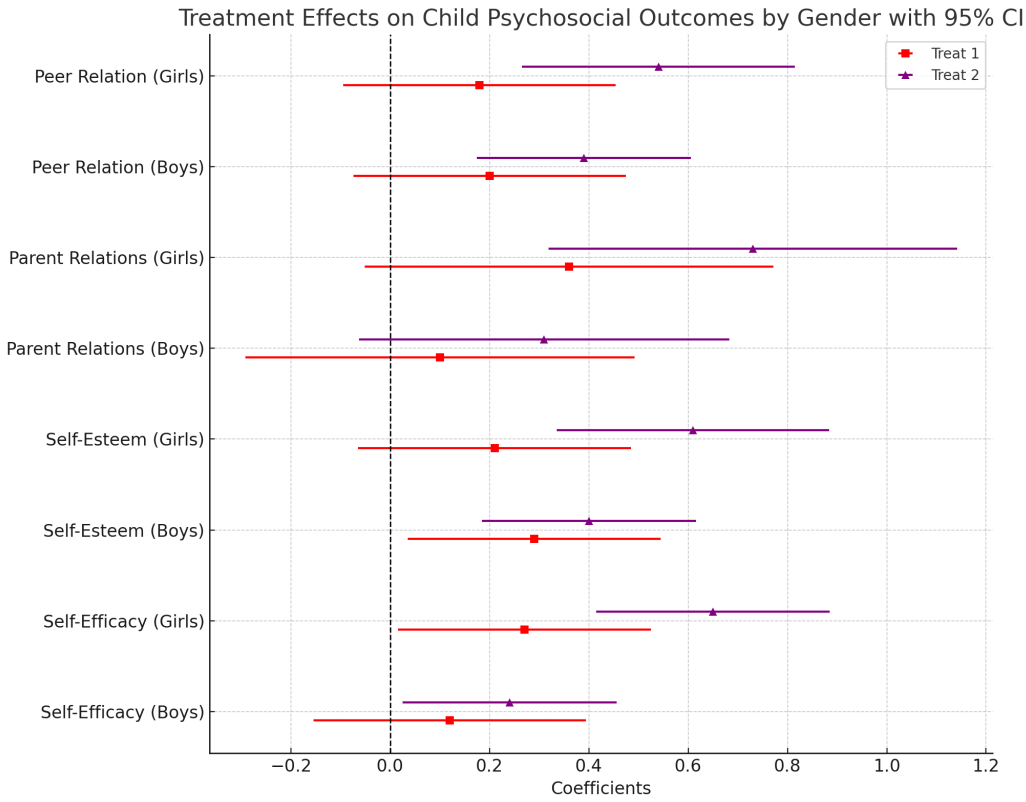


Figure 6: Treatment Effects at Endline on Child Psychosocial outcomes

Note: Coefficients are measured in Standard Deviations (SD), Unadjusted for covariates. Standard Errors in bars at 5% level of significance.

For girls, the impact of both treatments is notably pronounced. Treatment 1 significantly enhances self-efficacy by 0.27 SD and parent relations by 0.36 SD, while the effects on self-esteem and peer relations, although positive, are not statistically significant. Treatment 2, however, yields substantial improvements across all domains, increasing self-efficacy by 0.65 SD, self-esteem by 0.61 SD, parent relations by 0.73 SD, and peer relations by 0.54 SD.

Overall, our findings at the endline survey suggest that counseling interventions, particularly Treatment 2, significantly improve adolescents' psychosocial health. The follow-up survey results, in Table A9, indicate a reduction in the magnitude of the effects observed at the endline, yet significant positive impacts persisted, particularly for girls. Point estimates

are shown in Figure A3. For the full sample, Treatment 1 was no longer significant, while Treatment 2 sustained significant effects on self-efficacy (0.17 SD), self-esteem (0.25 SD) and peer relations (0.23 SD).

Among boys, the follow-up survey showed diminished and insignificant effects. Treatment 2 maintained significant effects on self-esteem (0.20 SD) and peer relations (0.23 SD), all other positive effects for boys at the endline were tapered off after one year of the endline survey. For girls, the impacts of Treatment 1 did not yield any significant effects. Treatment 2, however, continued to yield substantial benefits for girls, with effects on self-efficacy (0.33 SD), self-esteem (0.31 SD), and peer relations (0.23 SD).

The comparison between the endline and follow-up surveys underscores the sustainability of effects, particularly for Treatment 2. While there is a natural attenuation of effect sizes over time, the follow-up results demonstrate that both treatments retained their efficacy in improving adolescent psychosocial health, with Treatment 2 showing more durable impacts. The long-term findings reinforce the initial conclusions that parental relationship counseling, especially when combined with couple-based gender-equitable activities in a public setting, is an effective strategy to improve adolescent psychosocial outcomes.

3.5 Difference in Treatment Effects for Boys and Girls

Table 5 summarizes the interactive treatment effects on gender differences in psychosocial outcomes, following the treatment-gender interaction model specified in equation 2. Treatment 2 exhibits a significant impact on self-efficacy (0.22 SD) and self-esteem (0.40 SD) relative to the control, with notable gender-specific effects. The interaction term for Treatment 2*Girls shows an additional significant effect on self-efficacy (0.35 SD), indicating that girls experience particularly strong gains in self-confidence from this intervention. For self-esteem, while Treatment 2 produces a substantial overall increase, the gender interaction term (0.15 SD) is not statistically significant, suggesting that while both genders benefit,

girls' gains in self-esteem do not exceed those of boys in a statistically meaningful way.

In terms of relational outcomes, Treatment 2 has a positive, though not statistically significant, effect on parent relations (0.25 SD), with an additional effect for girls (0.45 SD), indicating that the intervention meaningfully improves girls' relationships with parents more than it does for boys. Peer relations show a robust improvement under Treatment 2 (0.36 SD), benefiting both boys and girls, though the gender-specific interaction term (0.11 SD) is not significant.

The observed higher effects on self-efficacy and parent relations for girls are likely due to the direct focus of the treatments on intra-household dynamics and individual empowerment. Counseling sessions and community-based activities fostered environments where girls could articulate their goals and better navigate familial expectations (Duflo, 2012). These interventions may have shifted parental perceptions of daughters' capabilities, promoting improved communication and understanding within the household (Kabeer, 2016). Unlike self-esteem and peer relations, which are influenced more heavily by societal norms, self-efficacy and parent relations are more directly malleable through targeted family-oriented programs. Conversely, the lack of additional effects for girls in self-esteem and peer relations, despite overall treatment improvements, underscores the persistence of external social barriers. Gendered stereotypes and restrictive norms in peer networks and broader societal expectations around self-worth may limit the extent to which girls can fully leverage these gains (Lundberg and Pollak, 1996).

The baseline gender gap, indicated by the negative coefficients for girls across all outcomes, highlights pre-treatment disparities, particularly in self-efficacy (-0.28 SD) and parent relations (-0.32 SD), underscoring the inequities the intervention addresses. Although the follow-up results (Table A10) suggest that the gender-specific effects of Treatment 2 taper over time, especially in parent and peer relations, the sustained gains in self-efficacy for

girls underline the intervention's potential to foster lasting improvements in gender equity within psychosocial development. These findings collectively advocate for continuous engagement in gender-sensitive, community-embedded interventions to reinforce and maintain these initial gains over time.

3.6 Counseling, Adolescent School Absenteeism and Expenditures

As a direct channel of the observed effects on adolescents' psychosocial development, we explore the effect of parental relationship counseling on schooling outcomes. This focus is crucial because improved parental relationships can lead to a more supportive home environment, which positively impacts children's academic performance and engagement (Pianta et al., 2012; Das, Singh, and Chang, 2022; Currie and Hyson, 1999). Communication and reduced conflict between parents provide a stable and nurturing environment that allows children to focus better on their studies. These improvements in the home environment, driven by effective parental counseling, are essential for fostering better academic outcomes and overall psychosocial health of adolescents. In Table 6, we examine the effects on school absenteeism and the likelihood of missing school during menstruation for girls. In Table 7, we examine the effects on education expenses differentiated by gender.

Table 6 shows that Treatment 1 decreased absenteeism by 0.75 days per month, while Treatment 2, which included reduced it by 1.23 days, highlighting its greater efficacy. This significant difference between the treatments suggests the additive benefits of a comprehensive approach. Disaggregated by gender, the reductions were more pronounced for girls, with decreases of 1.21 and 1.46 days for Treatments 1 and 2, respectively, compared to more modest decreases for boys. Notably, menstruation-related absenteeism among girls also declined by 15 and 18 percentage points for Treatment 1 and 2, respectively, though without significant differences between the treatments, underscoring the effectiveness of the foundational strategies in Treatment 1, such as the use of case studies and examples that

foster supportive educational environments (see appendix section A1).[5]

These findings align with Dhar, Jain, and Jayachandran (2022) and Duflo, Dupas, and Kremer (2011), who emphasize that shifting parental gender attitudes significantly improves educational outcomes for girls. Research by Chetty, Friedman, and Rockoff (2011) and Almlund et al. (2011) further supports the role of parental involvement and family dynamics in fostering children's academic success and non-cognitive skills development. Additionally, Collins and Laursen (2004) and Bertrand and Pan (2013) illustrate how cooperative parental relationships and positive expectations shape a nurturing home environment, directly influencing children's educational engagement. Evidence from studies on menstrual health by Sommer (2010) and Oster and Thornton (2011) reinforces that addressing girls' psychosocial health can reduce absenteeism, suggesting that comprehensive, family-centered interventions can effectively bridge gendered educational disparities.

Table 7 illustrates the effects of couple counseling on educational expenditures. Treatment 1 had no impact on education spending, whereas Treatment 2 significantly raised expenditures by Rs. 55.01, indicating a more substantial effect of the integrated activities on educational investment. Gender-disaggregated data reveal modest increases in spending for boys under both treatments, with Treatment 2 showing a larger, though non-significant, rise of Rs. 41.36 compared to Rs. 14.43 in Treatment 1. In contrast, for girls, while Treatment 1 resulted in a non-significant increase of Rs. 16.35, Treatment 2 significantly elevated education spending by Rs. 100.84, underscoring its more pronounced impact on girls' educational resources.

Moreover, interaction terms highlight that education expenses for girls at baseline are generally lower than those for boys, with a significant gap of Rs. 94.45. However, Treatment

[5]We do not restrict the age of girls in the analysis of school absenteeism due to menstruation, as we did not collect data on age at menarche. Additionally, we chose not to ask such sensitive information to ensure the comfort and privacy of the children and adolescents. As a result, the control mean for absenteeism is understated, as it includes younger girls who are not yet affected by menstruation.

2 not only mitigates this disparity and promotes a more equitable distribution of educational resources. This suggests that couple counseling, particularly when augmented by community-based activities, not only enhances educational investments but also effectively addresses gender inequalities in resource allocation.

These findings align with literature advocating for gender-responsive educational interventions. Studies by Dhar, Jain, and Jayachandran (2022) and Duflo (2012) show that addressing gender biases in resource allocation improves educational outcomes for girls. The increased educational spending on girls in Treatment 2 echoes Evans and Yuan (2019), affirming that gender-equalizing interventions enhance children's educational investments.
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4 Mechanisms

4.1 Counseling, Mental Health, Stereotypes and Couple Relationship

In this section, we explore the indirect channels through which parental mental health, gender stereotypes, and the quality of parental relationships may influence adolescents' psychosocial development. Table 8 presents the impact of the counseling interventions on various aspects of parental well-being, including both mothers' and fathers' mental health, anxiety levels, and overall life satisfaction. These factors are crucial, as improved mental health and life satisfaction among parents can create a more supportive and nurturing environment for their children, thereby fostering better psychosocial outcomes (Vlassopoulos et al., 2024; Phua, Kee, and Meaney, 2020). Table 9 examines the effects of the interventions on gender stereotypes within the household. Challenging and reshaping these stereotypes is essential, particularly in patriarchal contexts, as they can significantly influence children's self-perception and aspirations (Alesina, Giuliano, and Nunn, 2013; Jayachandran, 2015). Furthermore, we evaluate the interventions' impact on the quality of the parental relation-

ship. This includes subjective measures of communication quality, the perceived strength of the relationship, and the amount of time couples spend together. Improved communication and stronger relationships between parents are likely to create a more stable and harmonious home environment, which is beneficial for the psychosocial development of adolescents.

Table 8 presents the impact of the intervention on parental mental health, anxiety, and life satisfaction, disaggregated by gender. The findings indicate notable positive effects on women's mental health, with Treatment 1 increasing mental health by 0.16 percentage points and Treatment 2 by 0.15 percentage points. However, for men, the effects are not statistically significant, with coefficients of -0.06 and -0.03 for Treatments 1 and 2, respectively. These results suggest that while the interventions effectively enhance mental health for women, men do not experience comparable improvements. The gender-specific effects reflect its design, empowering women, addressing burdensome norms, and validating roles—yielding meaningful, lasting improvements in women's mental health.

For anxiety, both interventions significantly reduce anxiety among women, with Treatment 1 lowering anxiety by 0.21 percentage points and Treatment 2 achieving a larger reduction of 0.39 percentage points. Among men, Treatment 1 shows no significant effect, whereas Treatment 2 reduces anxiety by 0.28 percentage points. These findings suggest that the more comprehensive intervention, Treatment 2, is crucial to realizing significant anxiety reduction across genders, with particularly pronounced benefits for women.

For life satisfaction, the interventions yield substantial positive effects for women: Treatment 1 raises life satisfaction by 0.73 points (an 11% increase over the control group mean), while Treatment 2 achieves a larger increase of 1.44 points (22% over the control mean). For men, however, effects are not statistically significant, with coefficients of 0.10 and 0.17 for Treatments 1 and 2, respectively. These findings indicate that while both treatments significantly enhance life satisfaction for women, they have limited impact on men.

4.2 Counseling, stereotypes and relationship quality

Table 9 presents the impact of the counseling interventions on parental attitudes towards gender stereotypes, relationship quality, and time spent together. These factors are crucial in shaping the psychosocial health of children (Almlund et al., 2011). Reducing gender stereotypes fosters an inclusive environment that promotes equality and reduces discriminatory behaviors, which is vital for children's self-esteem and social development (Ellemers, 2018; Ajayi et al., 2022; Huddy and Terkildsen, 1993). Strong relationship quality between parents sets a positive example of interpersonal relationships, contributing to healthier social skills and emotional regulation in children (Jeon and Neppl, 2019; Ajayi et al., 2022). Additionally, increased time spent together as a family strengthens bonds and fosters a sense of belonging, which is critical for children's psychological well-being and resilience (Del Giudice, Belsky et al., 2011).

The interventions lead to a significant reduction in gender stereotypes (combined score for both parents), with coefficients of 0.25 SD for Treatment 1 and 0.23 SD for Treatment 2. Couple relationship quality, measured from responses by women on a scale of 1-10 also saw significant improvements, with coefficients of 1.54 for Treatment 1 and 2.75 for Treatment 2. These results suggest that both the interventions were effective in strengthening relationship dynamics, supporting the conclusions of Bertrand and Pan (2013) and Collins and Laursen (2004) who highlight the importance of effective relationship between couples in reducing gender disparities. The interventions significantly increase the time couples spend together, with Treatment 1 showing a coefficient of 0.10 SD, and Treatment 2 showing a coefficient of 0.27 SD. These increases likely contribute to better mutual understanding and cooperation within the family. The improvements in parental relationships: trust and cooperation mediated the the improvement in psychosocial outcomes and reductions in school absenteeism, especially for girls.

The reduction in gender stereotypes observed in this study resonates with the findings of Alesina, Giuliano, and Nunn (2013) and Jayachandran (2015), which demonstrates that transforming cultural norms surrounding labor and domestic roles can significantly alter perceptions of women's roles both within the household and in broader society. These shifts are crucial for fostering an environment where gender equality can flourish, ultimately leading to more inclusive and equitable communities.

4.3 Lab in the field experiment

Table 10 presents the impact of couple counseling interventions on resource allocation to girls and unbiasedness in these allocations.

In column 2, Panel A, the results for mothers reveal that Treatment 1 significantly increased the share of health resources allocated to girls by 1.8 percentage points (pp), though it does not affect the shares allocated to education or general resources. Furthermore, in column 6 of Panel A, Treatment 1 shows an improvement in the unbiasedness of general resource allocation by 9.4 pp. Treatment 2 exhibits a more pronounced effect, significantly enhancing the shares allocated to girls for education by 4,3 pp, and health 2.9 pp. Additionally, Treatment 2 significantly improves unbiasedness in general expenditures by 12.9 pp. The comparison between Treatment 2 and Treatment 1 reveals no significant differences in most areas, except for education, where Treatment 2 has a more substantial impact.

Panel B examines the results for fathers, showing generally weaker and statistically insignificant effects for Treatment 1 across all measures. However, Treatment 2 significantly increases the share of education resources allocated to girls 3.4 pp, while showing no significant impact on health and general resources. The unbiasedness measures for fathers remain unaffected by both treatments. The comparative analysis between Treatment 2 and Treatment 1 indicates no significant differences, aligning with the findings observed for mothers.

Overall, the results suggest that at baseline both female and male participants are more biased towards boys, compared to girls, although women tend to allocate marginally more and exhibit greater unbiasedness. The interventions, particularly Treatment 2, demonstrate effectiveness in promoting gender equity, with treated women showing significant improvements in resource allocation to girls in education and health. These experimental findings highlight the potential of our interventions to foster equitable gender attitudes and outcomes, particularly among girls.

4.4 Additional Mechanisms

The focus on gender equality and reduction of gender stereotypes within families can redistribute domestic responsibilities and improve role modeling, particularly benefiting daughters and fostering a more equitable and empowering environment (Dhar, Jain, and Jayachandran, 2022). This broad enhancement of family social capital and dynamics is especially transformative in patriarchal settings, where rigid gender norms traditionally restrict children's prospects and aspirations.

Additionally, the integration of educative couple counseling with community activities improved household economic behaviors and gender dynamics, facilitating better financial decision-making and resource allocation for children's needs, as evidenced by the lab-in-the-field experiments. This shift is particularly advantageous for girls, who frequently encounter bias in household financial decisions. The interventions also promote a fairer distribution of domestic labor and boost women's labor market participation (Pakrashi et al., 2024), indirectly enhancing adolescent educational and psychosocial outcomes through increased household resources and investment in youth development. Moreover, by diminishing domestic violence and enhancing marital quality via improved conflict resolution and communication skills (Pakrashi et al., 2024), these initiatives foster a more stable and supportive home environment. This stability is crucial for children's mental health and academic suc-

cess, as it reduces stress and provides a nurturing backdrop for development.

4.5 Robustness and Heterogeneity

To validate the robustness of our primary findings, we conducted robustness checks focusing on high social desirability bias, which can skew self-reported psychosocial outcomes.[6] We also took measures to mitigate social desirability bias by blinding data collectors to the treatment status of participants, and by employing objective measures where possible (absenteeism, education expenditure and lab-in-the-field).

The robustness checks with social desirability bias as shown in Table A11 revealed that only Treatment 2 continued to show significant positive effects on adolescents' self-efficacy, self-esteem, parent-child relationship quality, and peer interactions when controlling for social desirability bias. In contrast, the effects of Treatment 1 did not remain significant adjusting for these controls. This suggests that the interactive and practical components of Treatment 2 are crucial in driving the observed psychosocial improvements, highlighting the importance of combining counseling with engaging activities to mitigate biases and achieve genuine behavioral changes.

To further understand the differential impacts of our interventions, we performed heterogeneity analyses by disaggregating the sample across various dimensions: rural versus urban, marginalized versus non-marginalized communities, above versus below poverty line households, and nuclear versus joint family structures. These analyses provide deeper insights into the efficacy of our interventions in different socio-economic contexts.

The heterogeneity analysis by rural and urban settings, as shown in Table A12, indicates that while both populations benefit from the interventions, urban adolescents exhibited

[6]Note: Social desirability score (SDS) is constructed from the 13-item questions following Dhar, Jain, and Jayachandran (2022) which addresses experimental demand effects. Collected at baseline, this measure captures the participant's propensity to give socially desirable answers. An individual is defined as having a high social desirability score (HSDS) if the score is above or equal to the median for the sample score.

slightly larger improvements in parental and peer relations, given the lower base of mental health in urban areas (Hugh-Jones et al., 2022), this heterogeneity though policy relevant, is not surprising. The more pronounced effects in urban areas highlight the critical role of supportive interventions in environments where initial psychosocial health is comparatively lower, thereby enhancing the overall efficacy of the interventions.

To assess the differential impact of the treatments across social strata, we stratified the sample into two categories: marginalized groups, comprising households from Scheduled Castes (SC) and Scheduled Tribes (ST), historically recognized as socially disadvantaged, and non-marginalized groups, including households from the General and Other Backward Classes (OBC). In comparing marginalized and non-marginalized communities, the analysis in Table A13 revealed no significant difference in the impact between the two groups. Both marginalized and non-marginalized adolescents showed similar improvements in psychosocial outcomes. This indicates that the interventions, particularly Treatment 2, are equally effective across different socio-economic groups, promoting equitable improvements in self-efficacy, self-esteem, and relationship quality.

To examine the intervention's impact on households of differing economic status, we introduced a "Below Poverty Line" (BPL) indicator variable. This binary variable is coded as 1 if the respondent's household possesses a BPL ration card, and 0 otherwise. In the analysis of households above and below the poverty line in Table A14, adolescents from below-poverty-line households experienced lower gains in parent-child relationship quality, again driven mainly by Treatment 2. These results suggest that economically disadvantaged families derive less substantial benefits from the intervention, likely due to the greater challenges they face in creating supportive home environments.

Examining impacts based on family structure in Table A15, adolescents from joint families experienced similar improvements in all the measures of psychosocial health compared to

those from nuclear families. However, in the absence of the treatment, we observed lower levels of parental relationships in joint family systems.

Overall, the heterogeneity analysis emphasizes the importance of context-specific interventions. The significant effects observed primarily with Treatment 2 across various socio-economic contexts underline the necessity of integrating practical, engaging components in counseling programs to ensure their efficacy and equitable impact.

5 Conclusion

This study examines the influence of couple-based counseling interventions on adolescent psychosocial well-being and educational outcomes, implemented through a randomized controlled trial in a context of entrenched gender norms. Both interventions—one focused on gender equality and intra-household cooperation, and a second integrating community-based activities—demonstrate meaningful gains in adolescents' self-efficacy, self-esteem, and relational health within families and peer networks. These findings underscore the interventions' effectiveness in addressing gender disparities in psychological and educational development, with especially pronounced benefits for female adolescents. The community-integrated approach (Treatment 2) resulted in additional gains, reducing school absenteeism and promoting greater investment in girls' education.

The study's theoretical framework suggests that improved parental relationships, reduced gender biases, and increased maternal well-being foster environments conducive to adolescent development. This supportive family setting also appears to adjust parental resource allocation in ways that advance gender equity. Evidence from a lab-in-the-field experiment further corroborates these shifts, indicating increased parental investment in daughters' education and health.

An analysis of treatment effects across socio-economic and family structures reveals that

the interventions' benefits extend across various demographic groups, with slightly greater improvements observed in urban and nuclear family settings. This contextual variation highlights the role of local environments in shaping intervention efficacy and underscores the need for continued research to assess the generalizability of these findings across diverse settings.

The broader implications of this RCT suggest that family-centered counseling interventions can serve as scalable strategies to foster youth development in socio-cultural settings where gender norms traditionally restrict adolescents' growth. These insights provide valuable direction for educational and social policies aimed at equitable adolescent development and psychosocial well-being. Embedding these parental counseling programs within existing community frameworks holds promise as a pathway to social reform in areas marked by persistent gender inequities. Incorporating such initiatives into routine engagements—like parent-teacher interactions or community health visits—leverages established educational and healthcare networks, strengthening family support systems. Partnerships with local governments and NGOs could further institutionalize these interventions through community workshops that address parenting and gender attitudes. By aligning with community festivals and gatherings, these workshops could secure widespread acceptance and ensure sustainability. Mobilizing respected community figures to champion these interventions would allow the programs to align with local norms, creating a flexible model for replication across varied cultural contexts.

The findings reveal a significant role for parental counseling in reshaping gender norms, advancing mental health, and creating more equitable educational opportunities. The demonstrated benefits for adolescent girls point to the importance of scaling these interventions within larger initiatives for inclusive development. Moving forward, a focus on cost-effective implementation and solidifying local partnerships will be critical to maximizing the long-term impact on adolescents and their communities.

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6 Tables & Figures

Table 1: Descriptive Statistics of Psychosocial Health by Gender of Adolescents at Baseline and Endline

Variable	**Girls**				**Boys**				
	Mean	SD	Min	Max	Mean	SD	Min	Max	p-val
Child Psychosocial Outcomes									
Panel (A): **Baseline**									
Self Efficacy	-0.49	1.08	-3.81	2.44	0.46	0.62	-1.51	2.29	0.00
Self Esteem	-0.50	1.06	-4.16	3.46	0.47	0.64	-1.63	2.38	0.00
Parental Relations	-0.52	1.06	-3.84	2.73	0.49	0.60	-1.19	2.22	0.00
Peer Relations	-0.48	1.05	-2.96	2.91	0.46	0.66	-1.29	2.81	0.00
Panel (B): **Endline**									
Self Efficacy	-0.04	0.99	-1.60	2.66	0.04	1.00	-1.67	2.86	0.20
Self Esteem	-0.02	1.03	-2.06	2.55	0.02	0.97	-1.91	2.75	0.52
Parental Relations	-0.05	1.02	-3.04	1.84	0.04	0.97	-3.15	2.70	0.18
Peer Relations	-0.01	1.02	-2.08	2.51	0.01	0.97	-1.97	2.61	0.25
Observations	361			381					
Individuals in RCT	722			762					

Notes: Descriptive Statistics at baseline and endline. 361 females and 381 males. The selection protocol prioritized the eldest child for each of the 900 couples. We did not survey the couples who had children aged 6 or below, and shifted to subsequent siblings when the eldest exceeded 20 years of age (losing 158 couples). The final sample consisted of 742 couples, 361 girls and 381 boys. Note, all psychosocial outcomes are standardized at the aggregated level with mean zero and standard deviation equal to one. All psychosocial outcomes are standardized at the aggregate level to have a mean of zero and a standard deviation of one.

Table 2: Descriptive Statistics by Treatment Group at Baseline

Variable	Treat=0	Treat=1	Treat=2	p(T0vsT1)	p(T0vsT2)	p(T1vsT2)
Self-Efficacy	-0.00	-0.03	0.04	0.81	0.38	0.65
	(0.99)	(1.02)	(0.98)			
Self-Esteem	-0.04	-0.03	0.08	0.88	0.64	0.29
	(1.02)	(0.98)	(0.99)			
Parental Relations	-0.05	0.00	0.05	0.93	0.53	0.60
	(1.05)	(0.99)	(0.95)			
Peer Relations	0.03	0.02	-0.05	0.91	0.74	0.76
	(1.05)	(0.97)	(0.96)			
Days/Month Missed School	3.44	3.70	3.84	0.53	0.92	0.41
	(2.17)	(2.14)	(2.16)			
Missed School Menstruation	0.19	0.19	0.21	0.86	0.71	0.35
	(0.39)	(0.40)	(0.41)			
Education Exp. (Rs.)	425.67	430.82	429.79	0.36	0.98	0.42
	(207.46)	(207.99)	(178.26)			
Child is Girl	0.47	0.50	0.48	0.55	0.40	0.65
	(0.50)	(0.50)	(0.50)			
Child's Age	14.47	14.17	14.68	0.86	0.78	0.80
	(3.92)	(4.05)	(3.94)			
Years of Education	8.38	8.21	8.71	0.67	0.79	0.84
	(4.37)	(4.57)	(4.56)			
Number of Siblings	1.68	1.76	1.73	0.73	0.77	0.69
	(0.80)	(0.91)	(0.93)			
Scheduled Caste	0.16	0.21	0.19	0.25	0.30	0.44
	(0.36)	(0.41)	(0.39)			
Scheduled Tribe	0.07	0.12	0.12	0.29	0.37	0.96
	(0.26)	(0.32)	(0.32)			
Other Backward Caste	0.42	0.38	0.38	0.43	0.45	0.88
	(0.49)	(0.48)	(0.48)			
General	0.31	0.26	0.29	0.32	0.38	0.53
	(0.46)	(0.44)	(0.45)			
Rural	0.49	0.36	0.42	0.07	0.08	0.35
	(0.50)	(0.48)	(0.49)			
Mother's age	36.09	36.12	35.79	0.72	0.93	0.81
	(5.27)	(4.95)	(5.18)			
Father's age	41.46	41.26	41.67	0.89	0.86	0.83
	(8.39)	(8.19)	(8.45)			
Mother's Education	6.93	6.99	6.98	0.80	0.82	0.92
	(5.26)	(5.27)	(5.45)			
Father's Education	7.64	7.88	8.11	0.58	0.44	0.23
	(5.34)	(5.28)	(5.25)			
Joint Family	0.17	0.17	0.14	0.91	0.07	0.08
	(0.38	(0.38)	(0.34)			
Household Size	5.34	5.22	5.18	0.63	0.87	0.31
	(3.04)	(1.80)	(2.05)			

Notes: This table presents baseline descriptive statistics for key variables across the three groups. Means and standard deviations (in parentheses) are shown, along with p-values for the differences between the groups. The p-values compare the Control group with Treatment 1, the Control group with Treatment 2, and Treatment 1 with Treatment 2. Psychosocial outcomes—Self-Efficacy, Self-Esteem, Parental Relations, and Peer Relations—are standardized to have a mean of zero and a standard deviation of one. "Days/Month Missed School" indicates the number of days a child missed school in a month, and "Missed School Menstruation" refers to days girls missed school due to menstruation. Education expenditures are reported in Indian Rupees. Demographic variables include gender, age, and education levels of the child, as well as caste categories (Scheduled Caste, Scheduled Tribe, Other Backward Caste, and General). Household characteristics include family type (Joint Family), household size, and rural residence. The sample consists of 361 females and 381 males, categorized into 248 children in the control group, 250 in Treatment 1, and 244 in Treatment 2. The selection prioritized the eldest child per household, with subsequent siblings included if the eldest exceeded 20 years of age.

Table 3: Descriptive Statistics by Treatment, Endline

	Treat = 0		Treat = 1		Treat = 2	
Variable	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Self Efficacy	-0.20	(1.14)	-0.01	(1.01)	0.23	(0.75)
Self Esteem	-0.24	(1.17)	-0.00	(0.94)	0.25	(0.77)
Parent Relations	-0.24	(1.44)	-0.01	(0.72)	0.26	(0.51)
Peer Relations	-0.21	(1.18)	-0.02	(0.96)	0.24	(0.74)
Child Age	14.47	(3.92)	14.17	(4.05)	14.68	(3.94)
Child Education in Years	8.38	(4.37)	8.21	(4.57)	8.71	(4.56)
Birth Order	1.68	0.94	1.73	0.95	1.65	0.93
Number of Siblings	1.69	0.80	1.76	0.91	1.73	0.87
Days/Month Missed School	2.74	4.14	1.54	3.25	1.17	2.72
Missed School Menstruation	0.18	0.39	0.10	0.30	0.09	0.29
Education Exp. (Rs. Month)	458.79	264.61	488.18	300.11	513.98	336.67
Joint Family (0/1)	0.17	(0.38)	0.17	(0.38)	0.13	(0.34)
Household Size	5.34	(3.04)	5.22	(1.81)	5.18	(2.05)
Mental Health Women (0/1)	0.79	(0.40)	0.91	(0.28)	0.93	(0.24)
Mental Health Men (0/1)	0.79	(0.40)	0.81	(0.39)	0.80	(0.39)
Couple Time Together (0/1)	0.45	(0.13)	0.51	(0.13)	0.68	(0.19)
Couple Relations (1-10)	6.10	(0.80)	7.71	(0.78)	8.89	(0.61)
Couple Communication (0/1)	0.41	(0.44)	0.43	(0.30)	0.63	(0.29)
Gender Stereotype	0.61	0.21	0.84	0.16	0.84	0.15
Anxiety Women	0.58	(0.41)	0.28	(0.31)	0.13	(0.18)
Anxiety Men	0.55	(0.43)	0.53	(0.42)	0.24	(0.29)
Life Satisfaction Women	6.56	(1.56)	7.72	(1.00)	8.14	(1.11)
Life satisfaction men	7.94	(1.01)	8.21	(1.58)	8.23	(1.79)
Joint Decision Education	0.37	0.48	0.76	0.43	0.95	0.20

Notes: **Self-Efficacy** and **Self-Esteem** are derived from standardized averages of responses to survey questions, detailed in Appendix Table A5. **Parent-Peer Relationships** assess the quality of interactions within these groups, standardized across the sample. **Child Age** denotes the age of participants, while **Child Education in Years** quantifies the years of schooling completed. **Birth Order** represents the sequential position of a child within the family's sibling hierarchy. **Number of Siblings** quantifies the total siblings within the household, including both full and half-siblings. **Days/Month Missed School** provides a metric of educational disruption quantified by the average number of school days missed per month. **Missed School Menstruation** is a categorical variable that tracks the response to the question that asks the girl child if she has missed school due to menstrual health issues in the past month. **Log Household Income**, the natural logarithm of household income, normalizes its distribution. The **Joint Family** status indicates whether the household comprises multiple family units. **Household Size** counts all individuals residing within the domicile. **Mental Health**, scaled from 1 (very poor) to 5 (very good), reflects general health status and is recoded into a binary metric. **Couple Relationship** is derived from the row mean of responses to seven binary questions assessing shared activities and communications dynamics between partners. **Couple communication** is based on responses by women about spousal sharing of feelings, ambitions and community. We recode always and often as 1 and sometimes and never as 0. **Life Satisfaction** and **Couple Relationship with Partner** utilize a scale from 0 to 10, with detailed prompts for overall life contentment and partner relationship quality. **Anxiety** is measured from binary responses to feelings of nervousness or sadness, coded from 0 (not at all) to 1 (frequently). The **Gender Stereotypes** variable, based on the sex of the child, is constructed from responses to three normative statements about gender roles to both men and women: (i) daughters and sons should be raised equally? (ii) woman should not only ask daughters to help with household work, (iii) spend more on the education of boys than that of girls. scores from strongly agree to strongly disagree are recoded to 1 for lower stereotypes and 0 for higher stereotypes, reflecting comprehensive household attitudes toward gender.

Table 4: Treatment Effects on Child Psychosocial Outcomes, Endline

	(1)	(2)	(3)	(4)
Variables	Self-Efficacy	Self-Esteem	Parent Relations	Peer Relation
A: Full Sample				
Treat 1	0.19*	0.25**	0.23	0.19*
	(0.10)	(0.11)	(0.18)	(0.11)
Treat 2	0.44***	0.50***	0.51***	0.46***
	(0.08)	(0.10)	(0.18)	(0.09)
WY FWER p-values (T1)	0.07	0.03	0.33	0.08
WY FWER p-values (T2)	0.00	0.00	0.00	0.00
RI p-values (T1)	0.07	0.04	0.31	0.08
RI p-values (T2)	0.00	0.00	0.00	0.00
p-value T2-T1	0.002	0.003	0.000	0.002
Observations	742	742	742	742
B: Boys				
Treat 1	0.12	0.29**	0.10	0.20
	(0.14)	(0.13)	(0.20)	(0.14)
Treat 2	0.24**	0.40***	0.31	0.39***
	(0.11)	(0.11)	(0.19)	(0.11)
WY FWER p-values (T1)	0.42	0.05	0.71	0.08
WY FWER p-values (T2)	0.03	0.00	0.19	0.00
RI p-values (T1)	0.37	0.03	0.31	0.08
RI p-values (T2)	0.04	0.00	0.20	0.02
p-value T2-T1	0.22	0.29	0.004	0.09
Observations	381	381	381	381
C: Girls				
Treat 1	0.27**	0.21	0.36*	0.18
	(0.13)	(0.14)	(0.21)	(0.14)
Treat 2	0.65***	0.61***	0.73***	0.54***
	(0.12)	(0.14)	(0.21)	(0.14)
WY FWER p-values (T1)	0.04	0.13	0.07	0288
WY FWER p-values (T2)	0.01	0.01	0.00	0.00
RI p-values (T1)	0.04	0.12	0.08	0.30
RI p-values (T2)	0.01	0.00	0.00	0.01
p-value T2-T1	0.002	0.009	0.000	0.001
Observations	361	361	361	361

Notes: Standard errors clustered at the region level are in parentheses. ***p<0.01, **p<0.05, *p<0.1. There are 742 couples at endline. Couple counseling (Treat 1) and Couple counseling Plus Activities (Treat 2) are the two treatment groups, and the Control group is the reference category. Table 4 shows the baseline treatment effects with no control variables. Self-efficacy, self-esteem, parent relations, and peer relations variables are constructed using a standardization process to ensure comparability across different scales. For each of these domains, a composite mean score is first calculated, which combines individual items related to each domain. After calculating these mean scores, each is standardized by subtracting the overall mean and dividing by the standard deviation of the respective composite variable. This standardization adjusts the scores to a common scale with a mean of zero and a standard deviation of one, facilitating direct comparisons across variables and enhancing interpretability in regression analyses. All psychosocial outcomes are standardized to mean zero and SD one.

Table 5: Interactive Treatment Effects on Gender Differences, Endline

	(1)	(2)	(3)	(4)
	Self-Efficacy	Self Esteem	Parent Relations	Peer Relations
Treat 1	0.04	0.19	-0.09	0.05
	(0.15)	(0.15)	(0.19)	(0.15)
Treat 2	0.22*	0.40***	0.25	0.36***
	(0.12)	(0.13)	(0.19)	(0.14)
Girls	-0.28*	-0.06	-0.32*	-0.07
	(0.14)	(0.14)	(0.18)	(0.15)
Treat 1*Girls	0.18	-0.07	0.28	0.01
	(0.18)	(0.18)	(0.20)	(0.18)
Treat 2*Girls	0.35**	0.15	0.45**	0.11
	(0.16)	(0.16)	(0.19)	(0.18)
Mean Difference Treat 1	0.29	0.59	0.13	0.92
Mean Difference Treat 2	0.03	0.21	0.00	0.39
Block Fixed Effects	Y	Y	Y	Y
Observations	742	742	742	742
R-squared	0.192	0.200	0.238	0.202

Notes: Standard errors clustered at the region level are in parentheses. ***p<0.01, **p<0.05, *p<0.1. There are 742 couples at endline. Couple counseling (Treat 1) and Couple counseling Plus Activities (Treat 2) are the two treatment groups, and the Control group is the reference category. Table 5 shows the treatment effects with covariates discussed in the empirical section. **Self-efficacy**, **Self-esteem**, **Parent relations**, and **Peer relations** variables are constructed using a standardization process to ensure comparability across different scales. For each of these domains, a composite mean score is first calculated, which combines individual items related to each domain. After calculating these mean scores, each is standardized by subtracting the overall mean and dividing by the standard deviation of the respective composite variable. This standardization adjusts the scores to a common scale with a mean of zero and a standard deviation of one, facilitating direct comparisons across variables and enhancing interpretability in regression analyses. Control variables include child's age, education, birth order, number of siblings, mother and father's age and education and household income.

Table 6: Treatment Effects on School Absenteeism, Endline

	(1)	(2)	(3)	(4)
	Full Sample	Boys	Girls	Girls (Menstruation)
Miss School or College				
Treat 1	-0.75**	-0.46	-1.21***	-0.15**
	(0.32)	(0.50)	(0.21)	(0.06)
Treat 2	-1.23***	-0.76*	-1.46***	-0.18***
	(0.27)	(0.43)	(0.19)	(0.06)
Control Mean	3.56	1.88	5.14	0.18
WY FWER p-values (T1)	0.03	0.61	0.00	0.05
WY FWER p-values (T2)	0.00	0.07	0.01	0.00
RI p-values (T1)	0.00	0.58	0.00	0.05
RI p-values (T2)	0.00	0.06	0.00	0.00
p-value T2-T1	0.04	0.06	0.16	0.44
Block Fixed Effects	Y	Y	Y	Y
Observations	742	381	361	361
R-squared	0.090	0.128	0.186	0.238

Notes: Standard errors clustered at the region level are in parentheses. ***p<0.01, **p<0.05, *p<0.1. There are 742 children at endline. Couple counseling (Treat 1) and Couple counseling Plus Activities (Treat 2) are the two treatment groups, and the Control group is the reference category. Control variables include child's age, education, birth order, number of siblings, mother and father's age and education and household income. Here, column 1 and 2 show the days of schooling missed by children in the last month (full sample in column 1, boys in column 2 and girls in column 3). Column 4 shows the results from a linear probability model where the outcome variable is 1 if the girl missed school in the last month due to menstruation and 0 if not. **Days/Month Missed School** provides a metric of educational disruption quantified by the average number of school days missed per month. **Missed School Menstruation** is a categorical variable that tracks the response to the question that asks the girl child if she has missed school due to menstrual health issues (yes or no) in the past month.

Table 7: Treatment Effects Household Education Expenses, Endline

	(1)	(2)	(3)	(4)
	Full Sample	Boys	Girls	Treatment Interaction
Education Expenditure (Rs.)				
Treatment 1	4.59	14.43	16.35	-2.37
	(27.13)	(25.29)	(59.50)	(25.47)
Treatment 2	55.01*	41.36	100.84*	15.17
	(31.99)	(35.13)	(60.45)	(36.16)
Girls				-94.45**
				(41.10)
Treat1*Girls				19.15
				(53.24)
Treat 2*Girls				80.09
				(64.45)
Control Mean	458	501	411	
WY FWER p-values (T1)	0.93	0.71	0.91	0.95
WY FWER p-values (T2)	0.09	0.27	0.07	0.77
RI p-values (T1)	0.90	0.78	0.94	0.95
RI p-values (T2)	0.08	0.26	0.06	0.80
p-value T2-T1	0.04	0.16	0.03	0.44
Block Fixed Effects	Y	Y	Y	Y
Observations	742	381	361	742
R-squared	0.051	0.090	0.095	0.064

Notes: Standard errors clustered at the region level are in parentheses. ***p<0.01, **p<0.05, *p<0.1. There are 742 children and households at endline. Couple counseling (Treatment 1) and Couple counseling Plus Activities (Treatment 2), Control group is the reference category. Control variables include mother and father's age and education, household income, birth order and number of siblings. Education expenditure is the amount spent on tuition/uniform and books for the surveyed child in Rs./monthly. In column (4) the *p-value* T2-T1 shows the difference between $Treat1 * Girls$ and $Treat2 * Girls$.

Table 8: Treatment Effects on Mental Health of Parents, Endline

	(1)	(2)	(3)	(4)	(5)	(6)
	Mental Health		Anxiety		Life Satisfaction	
	Women	Men	Women	Men	Women	Men
Treatment 1	0.16***	-0.06	-0.21**	0.03	0.73***	0.10
	(0.05)	(0.06)	(0.10)	(0.04)	(0.27)	(0.21)
Treatment 2	0.15***	-0.03	-0.39***	-0.28***	1.44***	0.17
	(0.05)	(0.06)	(0.07)	(0.04)	(0.27)	(0.17)
Control Mean	0.80	0.80	0.58	0.55	6.56	7.94
WY FWER p-values (T1)	0.00	0.43	0.03	0.68	0.00	0.81
WY FWER p-values (T2)	0.00	0.82	0.01	0.00	0.00	0.51
RI p-values (T1)	0.01	0.54	0.03	0.68	0.00	0.75
RI p-values (T2)	0.00	0.62	0.00	0.00	0.00	0.54
p-value T2-T1	0.70	0.55	0.01	0.00	0.00	0.69
Block Fixed Effects	Y	Y	Y	Y	Y	Y
Observations	742	742	742	742	742	742
R-squared	0.124	0.099	0.504	0.140	0.363	0.078

Notes: Standard errors clustered at the region level are in parentheses. ***p<0.01, **p<0.05, *p<0.1. There are 742 children at endline. Couple counseling (Treat 1) and Couple counseling Plus Activities (Treat 2) are the two treatment groups, and the Control group is the reference category. Control variables include mother and father's age and education and household income. **Mental health** is on a scale of 1 (very poor) to 5 (very good) and capture the general health status, which we recode to a binary number (1 for OK , good and very good, and 0 for bad and very bad). The variable **Anxiety** is derived from the row mean of binary variables where responses to the following four questions: (i) feeling nervous or anxious, (ii) not able to stop being anxious, (iii) feeling sad or disappointed, (iv) less interest or enjoyment in working, are coded as 0 if the response is 'not at all' and 1 if the response is 'several days', 'half the days' and 'nearly everyday'. **Life satisfaction** are responses from "All things considered, how satisfied are you with your life (as a whole nowadays)? Pick a number between 0 and 10 to indicate how satisfied you are. The more satisfied you are, the higher the number you should pick.

Table 9: Treatment Effects on Gender Stereotypes and Marital Relation, Endline

	(1)	(2)	(3)
	Gender Stereotype	Couple Relation	Couple Time
Treatment 1	0.25***	1.54***	0.10***
	(0.03)	(0.18)	(0.03)
Treatment 2	0.23***	2.75***	0.27***
	(0.03)	(0.16)	(0.04)
Control Mean	0.62	6.10	0.46
WY FWER p-values (T1)	0.00	0.00	0.00
WY FWER p-values (T2)	0.00	0.00	0.00
RI p-values (T1)	0.00	0.00	0.00
RI p-values (T2)	0.00	0.00	0.00
p value T2-T1	0.53	0.00	0.00
Block Fixed Effects	Y	Y	Y
Observations	742	742	742
R-squared	0.358	0.753	0.466

Notes: Standard errors clustered at the region level are in parentheses. ***p<0.01, **p<0.05, *p<0.1. There are 742 children at endline. Couple counseling (Treat 1) and Couple counseling Plus Activities (Treat 2) are the two treatment groups, and the Control group is the reference category. Control variables include mother and father's age and education and household income. The **Gender Stereotypes** variable, based on the sex of the child, is constructed from responses to three normative statements about gender roles to both men and women: (i) daughters and sons should be raised equally? (ii) woman should not only ask daughters to help with household work, (iii) spend more on the education of boys than that of girls. scores from strongly agree to strongly disagree are recoded to 1 for lower stereotypes and 0 for higher stereotypes, reflecting comprehensive household attitudes toward gender. **Couple Relation** variable is derived from women's response on a scale of 1-10 about couple's (i) understanding, (ii) trust, (iii) cooperation, (iv) emotional connectedness, (v) sharing of feelings, (vi) respect and (vii) helping each other in daily activities. **Couple time** variable is derived from women's response to categorical questions, viz., do you and your spouse (i) spend quality time with each other, (ii) go to market together, (iii) go to movies together, (iv) go out for dinner together, (v) take time to discuss life plans, (vi) take time to discuss family issues.

Table 10: Lab in the field, Treatment Effects on Parental Unbiasedness, Endline

	(1)	(2)	(3)	(4)	(5)	(6)
	Share to girls out of total			Unbiased (Yes==1, No==0)		
	Education	Health	General	Education	Health	General
Panel A: Mother						
Treat 1	0.009	0.018**	-0.009	0.020	0.012	0.094*
	(0.010)	(0.008)	(0.014)	(0.059)	(0.069)	(0.048)
Treat 2	0.043**	0.029*	0.016	0.028	0.064	0.129**
	(0.016)	(0.014)	(0.015)	(0.057)	(0.081)	(0.055)
Control Mean	0.48	0.49	0.50	0.80	0.82	0.66
WY FWER p-values (T1)	0.53	0.03	0.61	0.85	0.93	0.08
WY FWER p-values (T2)	0.04	0.06	0.24	0.64	0.49	0.04
RI p-values (T1)	0. 58	0.03	0.65	0.88	0.92	0.09
RI p-values (T2)	0.02	0.05	0.28	0.67	0.55	0.02
Block Fixed Effects	Y	Y	Y	Y	Y	Y
p-value (T2-T1)	0.00	0.47	0.00	0.86	0.30	0.41
R-squared	0.181	0.172	0.178	0.163	0.136	0.135
Panel B: Father						
Treat 1	0.017	0.013	-0.002	0.063	-0.032	0.056
	(0.021)	(0.016)	(0.019)	(0.078)	(0.091)	(0.068)
Treat 2	0.034*	0.020	0.015	0.072	0.105	0.088
	(0.018)	(0.018)	(0.024)	(0.059)	(0.109)	(0.057)
Control Mean	0.48	0.48	0.50	0.64	0.73	0.56
WY FWER p-values (T1)	0.50	0.53	0.91	0.56	0.84	0.49
WY FWER p-values (T2)	0.08	0.21	0.59	0.18	0.44	0.15
RI p-values (T1)	0. 55	0.58	0.94	0.63	0.79	0.52
RI p-values (T2)	0.07	0.23	0.61	0.17	0.39	0.16
Block Fixed Effects	Y	Y	Y	Y	Y	Y
p-value (T2-T1)	0.27	0.60	0.32	0.90	0.07	0.47
R-squared	0.119	0.100	0.116	0.088	0.077	0.080

Notes: Standard errors clustered at the region level are in parentheses. $***p < 0.01, **p < 0.05, *p < 0.1$ There are 299 randomly selected couples at endline that played the lab-in-the field game. Couple counseling (Treat 1) and Couple counseling plus activities (Treat 2) are the two treatment groups, and the Control group is the reference category. In each of the regressions, we also control for the age of the respondent and his/her partner (in years), education level of the respondent and his/her partner (years of education), caste and religion of the household, rural region dummy, below poverty level ration card dummy, household size, and joint family dummy. All regressions also control for ward-fixed effects. Results from dictator games between boy and girl child of a nearby school for three different causes (education, health and in general). The first three column is the proportion of the total amount (INR 240 or USD $3 which is equivalent of a daily wage of rural UP) given to girls for each of the three different causes (Health, education and general reasons for children in a nearby school) while the dummies in last three columns takes the value 1 if the amount donated to a boy child is equal to that given to a girl child.

7 Online Appendix



Figure A1: Map of Kanpur Nagar in India. Source: Authors compilation.

Notes: The RCT intervention was carried out in the area shaded in black.

Table A1: Balance Check for Sample

	Child =>7 years Sample			Child <7 years sample			
Variable	Obs	Mean	Std. dev.	Obs	Mean	Std. dev.	p-value
Girls	742	0.49	0.50	157	0.49	0.50	
Age	742	15.93	4.83	157	3.64	1.63	***
Years of Education	742	8.33	3.94	157	0.59	0.67	***
SC	742	0.18	0.38	157	0.17	0.37	
ST	742	0.10	0.29	157	0.08	0.28	*
OBC	742	0.41	0.49	157	0.39	0.49	
General	742	0.26	0.44	157	0.26	0.44	
Others	742	0.01	0.09	157	0.03	0.18	**
Log Income	742	9.56	0.41	157	9.55	0.41	
Rural	742	0.41	0.49	157	0.42	0.50	
Mother's age	742	39.61	8.06	157	22.03	2.55	**
Mother's age at marriage	742	19.70	3.24	157	20.44	3.50	
Father's age	742	41.45	8.18	157	25.42	2.92	**

Notes: Summary statistics from Table A1 confirms no attrition bias in the randomization controlled trial. Attrition analysis, focusing on key demographic variables such as gender and age, reveals no significant differences in the distribution of these variables between the selected group and the attrited group. Specifically, the proportion of girls remains consistent at approximately 48.52% in the original group and 49.68% in the attrited group, demonstrating that the gender distribution is not significantly affected by attrition. Furthermore, although age shows a lower mean in the attrited group, this is by design of the study, selecting a specific subgroup, thereby not reflecting a random loss of participants. These findings confirm that the sample remains representative of the larger population, and the potential impact of attrition on the study's results is minimal, preserving the validity of the experimental conclusions.

Table A2: Participation for T1 Only (Counseling Sessions)

Participation Level	No. of Participants (T1 Only)	% of 742 (T1)
Attended all sessions	688	92.7%
Attended three sessions	713	96.1%
Attended two sessions	735	99.1%
Attended one session	742	100.0%
Did not attend any session	0	0.0%
Total Participants	**742**	**100%**

Note: This table details participation levels for Treatment 1 (T1), in which couples attended four counseling sessions aimed at addressing themes of gender inequality, stereotypes, discrimination, and fostering trust and cooperation within households. The table provides a breakdown of attendance, ranging from couples who attended all sessions to those who participated in only one session. Among the 742 participants in Treatment 1, the majority (92.7%) attended all sessions, while nearly all (99.1%) attended at least two. Importantly, our intervention protocol required counselors to review missed content with couples who had been absent from earlier sessions. This continuity measure ensured that any prior topics were discussed before progressing to new material. For example, if a participant missed the first session, the counselor began the second session by revisiting the missed content before covering new topics. This approach was implemented consistently across all four sessions, allowing all participants to benefit from the complete curriculum regardless of attendance gaps. Overall, these protocols maintained session integrity and engagement, contributing to the robustness of our findings.

Table A3: Participation for T2 Group in Counseling and Additional Community-Based Activities (T1 Component)

Participation	No. (T2 - T1 Sessions)	% of 742 (T2 - T1 Sessions)
Attended all sessions	693	93.4%
Attended three sessions	719	96.9%
Attended two sessions	735	99.1%
Attended one session	742	100.0%
Did not attend any session	0	0.0%
Total Participants	**742**	**100%**

Note: This table summarizes attendance in the counseling sessions for participants in Treatment 2 (T2) who also participated in the core counseling component of Treatment 1. The four counseling sessions covered themes on gender inequality, gender stereotypes, gender discrimination, and fostering trust and cooperation, identical to the content provided to the Treatment 1 group. Among the 742 participants in the T2 group, 93.4% attended all sessions, while nearly all participants (99.1%) attended at least two sessions. The continuity protocols established for Treatment 1 were also applied here, ensuring that any participant who missed a session received a review of prior content before advancing to new material.

Table A4: Participation for T2 Additional Community-Based Activities

Participation	No. in Session 1 Activities	% of 742	No. in Session 2 Activities	% of 742
Attended all activities	698	94.1%	705	95.0%
Attended three activities	720	97.0%	731	98.5%
Attended two activities	735	99.1%	740	99.7%
Attended one activity	742	100.0%	742	100.0%
Did not attend any activity	0	0.0%	0	0.0%
Total Participants	**742**	**100%**	**742**	**100%**

Note: This table presents the attendance rates for Treatment 2 participants across two sets of community-based activities, designed to reinforce the core counseling themes introduced in the earlier sessions. Session 1 activities included interactive games and exercises aimed at fostering teamwork, empathy, and cooperation among couples, while Session 2 activities extended these concepts to encourage more active gender-equitable engagement within a community setting. Among the 742 participants in Treatment 2, 94.1% attended all activities in Session 1, with slightly higher attendance in Session 2 at 95.0%. Nearly all participants (99.7%) attended at least two activities in each session. These high participation levels reflect the strong commitment fostered by structured community involvement, supported by logistical planning, timely reminders, and incentives in the form of household items, which encouraged consistent engagement. The absence of any non-participation across sessions highlights the program's accessibility and community support in maintaining high attendance. Overall, the increased attendance in Session 2 activities underscores the cumulative impact of ongoing community engagement in sustaining participant interest and promoting enduring change.

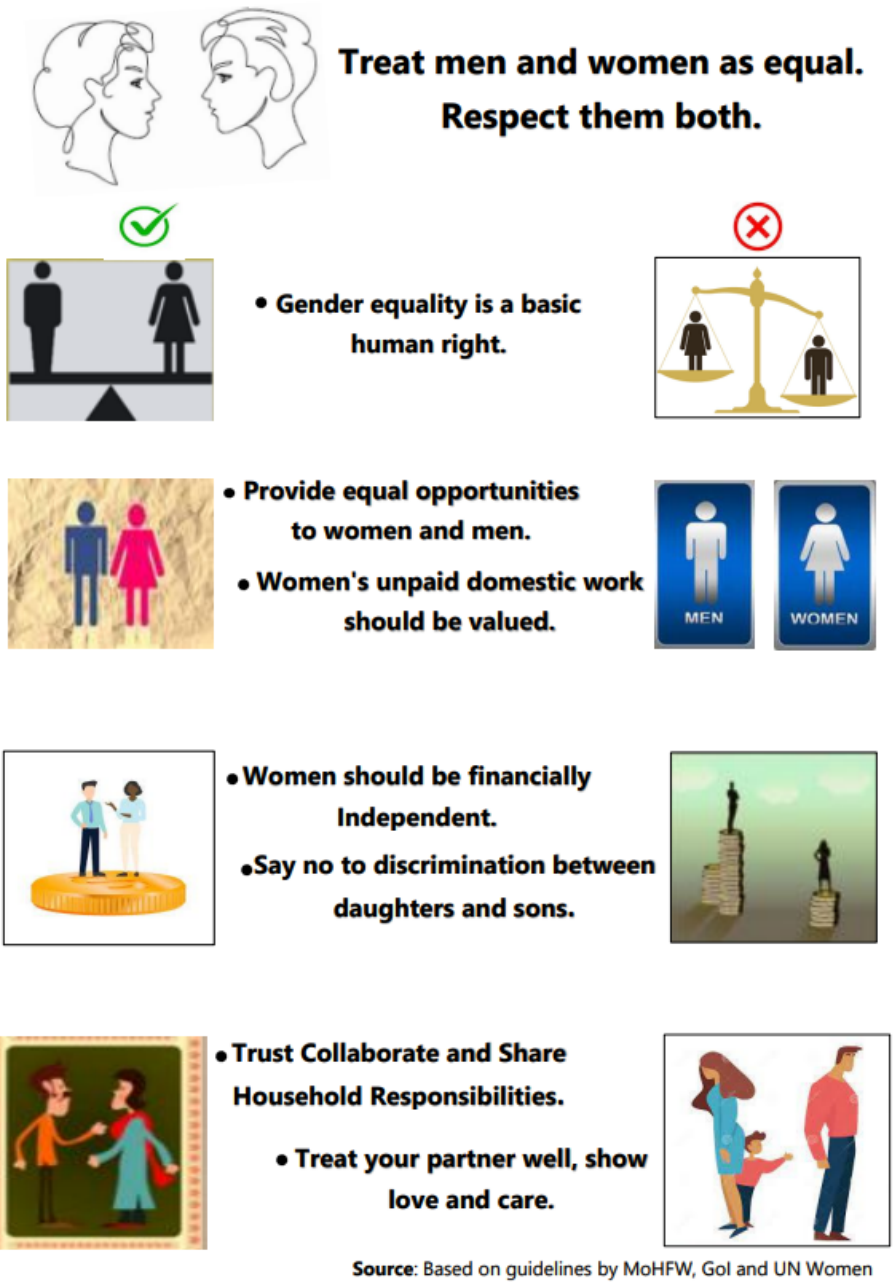


Figure A2: Educative Counseling poster shared with treated household

Notes: A Hindi language version of this poster was affixed to the interior walls of the treated households. Based on guidelines from the Ministry of Health and Family Welfare (MoHFW), Government of India (GoI), and UN Women, the poster adhered to recognized standards and best practices in promoting gender equity.

Appendix A: Detailed Description of Treatment Interventions

A1: Treatment 1: Standard Educative Couple Counseling

Objective: The primary aim is to enhance couples' awareness of gender inequality, stereotypes, and discrimination. The counseling focuses on promoting support and cooperation in household decision-making, fostering a more equitable home environment.

Structure: The counseling program comprises four sessions, each lasting approximately 40-45 minutes. These sessions are structured to provide both theoretical understanding and practical strategies for couples to implement gender equity in their daily lives.

Session Breakdown

Session 1: Gender Inequality

Content: This session introduces the concept of gender equality, discussing its importance and impact on family life. It covers the fundamental rights and opportunities that should be equally accessible to both men and women. The session also explores the negative consequences of gender inequality, particularly on children's well-being and development.

Activities:

- *Informative Discussions*: Explanation of gender equality principles, highlighting the necessity of equal opportunities in education, employment, and household responsibilities.
- *Video Presentation*: A video showcasing examples of gender inequality in everyday life. The video aims to stimulate discussion and reflection on how such inequalities manifest in participants' own experiences.

Case Study Example:

> "A daughter is expected to assist with household chores after school, while her brother is encouraged to focus on his studies. This case study discusses the long-term implications of such unequal expectations on the educational and professional achievements of both siblings."

Session 2: Gender Stereotypes

Content: This session delves into common gender stereotypes and their detrimental effects. It emphasizes the importance of challenging these stereotypes to create an inclusive and supportive environment for all family members.

Activities:

- *Verbal Discussions*: Participants are encouraged to share their perceptions of gender roles and discuss how these views might limit opportunities for both men and women.

Video Example:

> A video depicting a woman successfully leading a community project, challenging the stereotype that leadership is a predominantly male trait.

Session 3: Gender Discrimination

Content: The focus of this session is on identifying and addressing gender discrimination. Participants learn about the different forms discrimination can take and the ways it affects individual rights and opportunities.

Activities:

- *Case Study Discussions*: Couples are presented with real-life scenarios where gender discrimination occurs. They discuss the causes, consequences, and potential solutions to these issues.

Case Study Example:

> "A woman is discouraged from pursuing higher education because her family prioritizes her brother's education and believes that she should prepare for marriage instead. The discussion focuses on the societal and familial norms that perpetuate such discrimination."

Session 4: Trust, Respect, and Cooperation

Content: This final session centers on building and maintaining a healthy and respectful marital relationship. It highlights the importance of trust and cooperation in creating a supportive environment, which is crucial for the overall well-being of the family.

Activities:

- *Informative Discussions*: Couples learn about the key elements of a successful relationship, including mutual respect, trust, and cooperation. The session emphasizes how these elements can positively influence the upbringing of children and the overall family dynamics.

Video Example:

> A video featuring a couple sharing their experiences of building a supportive and cooperative relationship, highlighting how these practices have positively impacted their children's development.

General Instructions for Counselors: Counselors are instructed to use clear and simple language, ensuring that all participants fully comprehend the content discussed. They are encouraged to foster an open and respectful dialogue, allowing couples to express their thoughts and feelings. Each session concludes with a summary and feedback segment, where couples can share their learnings and any changes they plan to implement in their daily lives.

Follow-Up: After the completion of the counseling sessions, counselors provide follow-up support to reinforce the lessons learned and to address any ongoing challenges. This includes periodic check-ins and additional resources for couples seeking further guidance.

Additional Resources:

- *Reading Materials*: Pamphlets and booklets on gender equality, effective communication in relationships, and parenting strategies.

- *Community Support*: Information about local support groups and community resources available for families.

A2: Treatment 2: Couple Counseling Plus Activities

Objective: This treatment builds upon the standard counseling sessions of Treatment 1 by incorporating interactive activities designed to further reinforce the lessons learned. These activities aim to enhance cooperation, challenge gender norms, and strengthen relationship dynamics through practical engagement.

Structure: Treatment 2 includes all elements of Treatment 1, with additional activities conducted over two days. These activities are intended to provide couples with hands-on experience in applying the principles discussed during the counseling sessions.

Day 1 Activities

Activity 1: Chapati Making Competition

- *Objective:* To challenge traditional gender roles and promote teamwork in domestic tasks.
- *Description:* Couples are tasked with making chapatis, aiming to produce as many well-formed chapatis as possible within a set time. This activity highlights the importance of cooperation and challenges the stereotype that cooking is solely a woman's responsibility.
- *Scoring:* Points are awarded based on the number and quality of chapatis made. The exercise concludes with a discussion on the experience, focusing on the dynamics of sharing household responsibilities.

Activity 2: Role Playing - Leadership and Community Improvement

- *Objective:* To encourage participants to think critically about gender roles and leadership.
- *Description:* Each partner is asked to propose two changes they would implement if they were in a position of power to improve their community. This exercise is aimed at breaking down stereotypes about leadership capabilities associated with gender.
- *Discussion:* Following the activity, couples discuss the importance of gender equality in leadership and the positive impact diverse perspectives can bring to community development.

Activity 3: Blind Direction Game

- *Objective:* To build trust and improve communication between partners.
- *Description:* One partner is blindfolded and guided by the other to complete a simple task, such as reaching a designated spot. This exercise underscores the importance of clear communication and trust in a relationship.

Activity 4: "Yes And" Improvisation Game

- *Objective:* To enhance cooperation and creative thinking.
- *Description:* Couples participate in an improvisation exercise where they must build on each other's statements, starting each response with "Yes, and...". This game fosters a collaborative mindset and helps partners practice supportive and constructive communication.

Day 2 Activities

Activity 1: Pillow Covering Game

- *Objective:* To promote teamwork in completing household tasks.
- *Description:* Couples work together to cover as many pillows as possible within a set time. This game is designed to encourage sharing of responsibilities and to demonstrate that domestic work can be done efficiently when shared.

Activity 2: Dumb Charades / Lip Reading Game

- *Objective:* To enhance understanding and non-verbal communication between partners.
- *Description:* One partner mimics or mouths words while the other tries to guess what is being communicated. This game highlights the importance of non-verbal cues in communication and promotes empathy.

Activity 3: Balloon/Ball Game

- *Objective:* To demonstrate the value of cooperation and coordination.
- *Description:* Couples work together to keep a balloon or ball in the air without letting it touch the ground. This activity emphasizes the importance of teamwork and mutual support in achieving common goals.

Activity 4: Dustbin Ball Throw

- *Objective:* To foster cooperation with a competitive element.
- *Description:* One partner throws balls into a dustbin while the other provides directions and support. This game illustrates the need for cooperation and strategic thinking in a playful context.

Follow-Up: Similar to Treatment 1, counselors provide follow-up support to ensure the lessons learned are integrated into daily life. This includes additional sessions or resources for couples who may need further guidance.

General Guidelines for Counselors: Counselors are encouraged to foster an open, respectful, and engaging environment during activities. They should provide clear instructions and facilitate discussions that help couples reflect on their experiences and learnings.

Additional Resources:

- *Instructional Videos*: Additional videos demonstrating the activities and their objectives.
- *Guidebook*: A manual with detailed explanations of the games, their purposes, and tips for effective participation.

Table A5: Measures of psychosocial welfare, India and Ethiopia

Measures of Psycho-social Welfare			
Self-efficacy	*Self-esteem*	*Parent relations*	*Peer relations*
1. I can always manage to solve difficult problems if I try hard enough.	1. I do lots of important things.	1. I like my parents.	1. I make friends easily.
2. If someone opposes me, I can find the means and ways to get what I want.	2. In general, I like being the way I am.	2. My parents like me.	2. I am popular with kids of my own age.
3. It is easy for me to stick to my aims and accomplish my goals.	3. Overall, I have a lot to be proud of.	3. My parents and I spent a lot of time together.	3. Most other kids like me.
4. I am confident that I could deal efficiently with unexpected events.	4. I can do thing as well as most people.	4. My parents understand me.	4. Other kids want me to be their friend.
5. Thanks to my resourcefulness, I know how to handle unforeseen situations.	5. Other people think I am a good person.	5. My parents are easy to talk to.	5. I have more friends than most other kids.
6. I can solve most problems if I invest the necessary effort.	6. A lot of things about me are good.	6. My parents and I have a lot of fun together.	6. I have lots of friends.
7. I can remain calm when facing difficulties because I can rely on my coping abilities.	7. I am as good as most other people.	7. I get along well with my parents.	7. I am easy to like.
8. When I am confronted with a problem, I can usually find solutions.	8. When I do something, I do it well.	8. If I have children of my own, I want to bring them up like my parents raised me.	8. I get along with other kids easily.
9. If I am in trouble, I can usually think of a solution.			
10. I can usually handle whatever comes my way.			

Source: Authors' elaboration from the Young Lives Survey (YLS) and reports, 2013-2016 (Portela and Yorke, 2018). The YLS is a longitudinal study investigating childhood poverty in Ethiopia, India, Peru, and Vietnam. The psychosocial measures used in this table are adapted from the YLS child questionnaire, which includes a comprehensive assessment of self-efficacy, self-esteem, parent-child relationships, and peer relations. These dimensions were specifically designed to capture the multifaceted nature of children's psychosocial welfare in diverse socio-economic contexts. The survey items were developed based on established psychological scales and were validated through extensive piloting in the field to ensure cultural relevance and reliability.

Table A6: Balance Test by Selection for Participation in Lab Experiment

	(1)	(2)	(3)	(4)	(5)
	No Activities		Activities		
	Mean	Std. dev.	Mean	Std. dev.	p value
Girls	0.49	0.50	0.48	0.50	0.72
Child's Age	14.58	3.92	14.15	4.08	0.18
Child's Education	8.64	4.49	8.01	4.51	0.28
Scheduled Caste	0.20	0.40	0.17	0.37	0.24
Scheduled Tribe	0.13	0.33	0.07	0.25	0.02
Other Backward Caste	0.40	0.49	0.40	0.49	0.89
General Caste	0.26	0.44	0.36	0.48	0.13
Log Household Income	7.91	0.50	7.95	0.55	0.95
Rural	0.45	0.50	0.40	0.49	0.22
Mother's Age	35.94	4.94	36.20	5.53	0.50
Mother's Age at First Marriage	19.72	3.10	20.23	3.54	0.05
Father's Age	41.77	8.40	40.82	8.17	0.15
Birth Order	1.71	0.96	1.65	0.93	0.42
Number of Siblings	1.73	0.89	1.74	0.83	0.81
Household Size	5.24	1.90	5.28	3.11	0.81
Observations	443		299		

Notes: This table presents a balance test comparing participants and non-participants in the lab experiment. Columns (1) and (2) report the mean and standard deviation for the group with no activities, while columns (3) and (4) do the same for the group with activities. Column (5) reports the p-value for the difference in means between the two groups. The sample consists of children aged 6-18 years. The variables include demographic characteristics and socio-economic status indicators. The asterisks *, **, and *** indicate significance at the 10%, 5%, and 1% levels, respectively.

Table A7: Descriptive Statistics for Follow-up and Endline Variables by Gender

Variable	**Obs**	**Mean (Follow-up)** (SD)	**Mean (Endline)** (SD)	**T-test (t, p-value)**
Boys (cg = 0)				
Self-Efficacy	381	0.14	0.05	t = 1.36, p = 0.17
		(1.07)	(1.00)	
Self-Esteem	381	0.08	0.02	t = 0.82, p = 0.41
		(1.00)	(0.97)	
Parental Relations	381	0.12	0.05	t = 1.10, p = 0.27
		(1.04)	(0.97)	
Peer Relations	381	0.06	0.02	t = 0.61, p = 0.54
		(1.03)	(0.97)	
Girls (cg = 1)				
Self-Efficacy	361	-0.15	-0.05	t = -1.54, p = 0.12
		(0.89)	(0.99)	
Self-Esteem	361	-0.08	-0.02	t = -0.82, p = 0.41
		(0.99)	(1.03)	
Parental Relations	361	-0.13	-0.05	t = -1.16, p = 0.24
		(0.93)	(1.03)	
Peer Relations	361	-0.06	-0.02	t = -0.63, p = 0.53
		(0.96)	(1.03)	

Notes: The table presents descriptive statistics for follow-up and endline variables (standardized) by gender. For both boys and girls, the t-statistics and p-values indicate that there are no statistically significant differences between follow-up and endline phases across all variables. The lack of significant differences suggests that the effects observed during the endline phase were sustained through the follow-up phase. This implies that the interventions had long-lasting effects, with no significant attenuation in self-efficacy, self-esteem, parental relations, or peer relations over time. Sustained effects across both genders suggest that the program was equally effective in maintaining behavioral and attitudinal changes from the follow-up to the endline.

Table A8: Summary Statistics of Psychosocial Outcomes by Treatment Group, Follow-up

Variable	**Control Group**	**Treat 1**	**Treat 2**	**p(t0-t1)**	**p(t1-t2)**	**p(t0-t2)**
Self-Efficacy	-0.09	0.01	0.08	0.35	0.29	0.06
	(1.30)	(0.94)	(0.63)			
Self-Esteem	-0.13	0.02	0.11	0.12	0.15	0.01
	(1.34)	(0.86)	(0.64)			
Parental Relations	-0.09	0.00	0.09	0.36	0.06	0.06
	(1.54)	(0.64)	(0.40)			
Peer Relations	-0.11	-0.00	0.11	0.28	0.08	0.02
	(1.35)	(0.87)	(0.61)			
Observations	248	250	244			

Notes: The table presents the mean and standard deviation of each variable for three treatment groups: control group (t0), treatment 1 (t1), and treatment 2 (t2). Columns p(t0-t1), p(t1-t2), and p(t0-t2) show the p-values from t-tests comparing the means of the respective groups. Results presented in Table A8, based on follow-up data, highlight the longer-term impacts of the interventions. Notably, Treatment 2 has more significant and sustained effects on psychosocial outcomes compared to Treatment 1. For instance, self-esteem and peer relations show significant improvements in the longer term, with p-values of 0.01 and 0.02, respectively, when comparing the control group to Treatment 2. These results suggest that over time, Treatment 2 has a more pronounced and lasting positive impact on psychosocial well-being than Treatment 1, which exhibits more modest and statistically insignificant effects in most cases.

Table A9: Regression Results by Treatment and Gender: Follow up survey

	(1)	(2)	(3)	(4)
Variables	Self-Esteem	Self-Efficacy	Parent Relations	Peer Relations
Panel (A): Full Sample				
Treatment 1	0.09	0.16	0.10	0.11
	(0.11)	(0.11)	(0.18)	(0.11)
Treatment 2	0.17*	0.25**	0.19	0.23**
	(0.09)	(0.10)	(0.18)	(0.10)
Observations	742	742	742	742
R-squared	0.005	0.011	0.006	0.009
Panel (B): Boys				
Treatment 1	0.04	0.19	0.11	0.17
	(0.15)	(0.14)	(0.21)	(0.16)
Treatment 2	0.03	0.20*	0.12	0.23*
	(0.12)	(0.12)	(0.20)	(0.13)
Observations	381	381	381	381
R-squared	0.000	0.009	0.003	0.009
Panel (C): Girls				
Treatment 1	0.17	0.13	0.10	0.05
	(0.13)	(0.14)	(0.19)	(0.13)
Treatment 2	0.33***	0.31**	0.26	0.23*
	(0.12)	(0.14)	(0.19)	(0.13)
Observations	361	361	361	361
R-squared	0.023	0.017	0.013	0.010

Notes: This table reports the estimated impacts of two treatment arms (Treatment 1 and Treatment 2) on four psychosocial outcomes: Self-Efficacy (seleff), Self-Esteem (seles), Parental Relations (parent), and Peer Relations (peer). The estimates are based on follow-up data collected in July/August 2024, approximately one year after the endline survey. Results are presented for the full sample (Panel A), as well as disaggregated by gender for boys (Panel B) and girls (Panel C). Standard errors are reported in parentheses. Statistical significance is denoted as follows: $*p < 0.1$, $**p < 0.05$, and $***p < 0.01$. All models control for baseline characteristics. The specifications align with those used in Table 4.

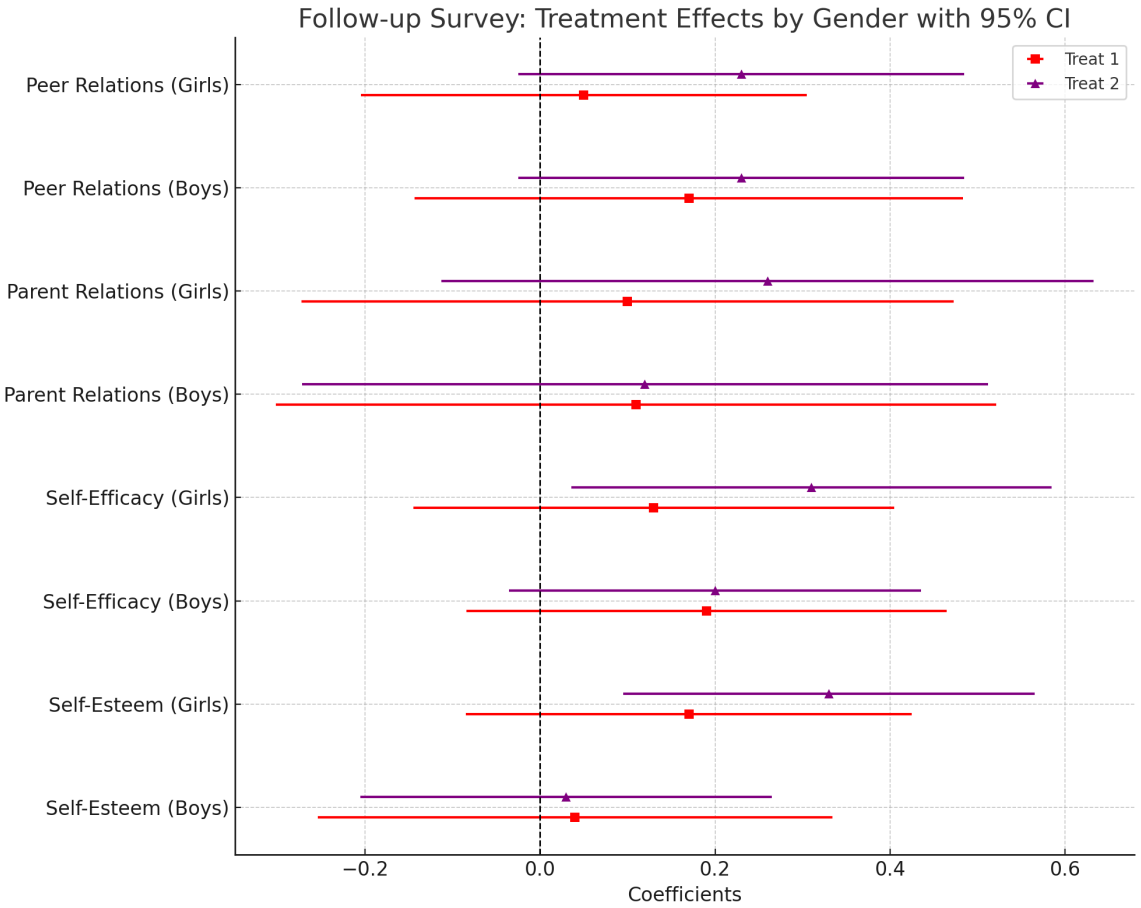


Figure A3: Treatment Effects: Follow-up Survey

Note: Coefficients are measured in Standard Deviations (SD), Unadjusted for covariates. Standard Errors in bars at 5% level of significance.

Table A10: Interactive Treatment Effects on Gender Differences, Follow-up

Variables	Self-Efficacy	Self-Esteem	Parent Relations	Peer Relations
Treat 1	-0.01	0.17	-0.02	0.06
	(0.15)	(0.15)	(0.19)	(0.16)
Treat 2	-0.04	0.18	0.07	0.19
	(0.12)	(0.12)	(0.18)	(0.14)
Girls	-0.45***	-0.17	-0.32*	-0.10
	(0.16)	(0.15)	(0.18)	(0.16)
Treat 1*Girls	0.14	-0.07	0.01	-0.09
	(0.19)	(0.18)	(0.19)	(0.18)
Treat 2*Girls	0.30*	0.14	0.22	0.02
	(0.18)	(0.17)	(0.19)	(0.19)
Mean Difference Treat 1	0.45	0.71	0.94	0.61
Mean Difference Treat 2	0.09	0.42	0.23	0.83
Block Fixed Effects	Y	Y	Y	Y
Observations	742	742	742	742
R-squared	0.072	0.060	0.138	0.058

Notes: The table reports the estimated effects of Treatment 1 and Treatment 2 on four psychosocial outcomes: Self-Efficacy, Self-Esteem, Parent Relations, and Peer Relations. The interaction terms between treatment and gender (girls=1) are also included. Standard errors are in parentheses. Statistical significance is denoted as follows: $*p < 0.1$, $**p < 0.05$, $***p < 0.01$. The analysis includes block (ward) fixed effects. Mean differences for treatments and gender interaction are also provided.

Table A11: Treatment effects at endline (psychosocial outcomes) by social desirability bias

	(1)	(2)	(3)	(4)
	Self-Efficacy	Self-Esteem	Parent Relations	Peer Relations
Treatment 1	0.03	0.12	0.11	-0.04
	(0.15)	(0.17)	(0.24)	(0.16)
Treatment 2	0.26*	0.40***	0.49**	0.28*
	(0.13)	(0.15)	(0.23)	(0.16)
SDS High	-0.20	-0.10	-0.09	-0.24*
	(0.13)	(0.15)	(0.22)	(0.14)
Treatment 1*SDS High	0.15	0.06	-0.17	0.13
	(0.18)	(0.19)	(0.25)	(0.17)
Treatment 2*SDS High	0.22	0.14	-0.11	0.23
	(0.17)	(0.20)	(0.27)	(0.19)
Block Fixed Effects	Y	Y	Y	Y
Observations	742	742	742	742
R-squared	0.189	0.197	0.234	0.203

Notes: Standard errors clustered at the region level are in parentheses. ***p<0.01, **p<0.05, *p<0.1. There are 742 children at endline. Couple counseling (Treat 1) and Couple counseling Plus Activities (Treat 2) are the two treatment groups, and the Control group is the reference category. **Self-efficacy**, **Self-esteem**, **Parent relations**, and **Peer relations** variables are constructed using a standardization process to ensure comparability across different scales. For each of these domains, a composite mean score is first calculated, which combines individual items related to each domain. After calculating these mean scores, each is standardized by subtracting the overall mean and dividing by the standard deviation of the respective composite variable. Social desirability score (SDS) is constructed from the 13-item questions following Crowne and Marlowe (Dhar, Jain, and Jayachandran, 2022) which addresses experimental demand effects. Collected at baseline from the children 7 years or above, this measure captures the participant's propensity to give socially desirable answers. An individual is defined as having a high social desirability score (HSDS) if the score is above or equal to the median for the sample score. The 13-items are: (i) It is sometimes difficult for me to continue with my work if I am not encouraged, (ii) I sometimes get angry when I don't get my way, (iii) On some occasions, I have given up because I thought too little of my potential, (iv) There have been times when I felt like rebelling against those in power, (v) No matter who I'm talking to, I'm always a good listener, (vi) There have been occasions when I have taken advantage of someone, (vii) When I make a mistake, I am always ready to admit it, (viii) I sometimes try to get over instead of forgiving and forgetting, (ix) I am always polite, even to those who disagree, (x) I am never offended when people express views very different from mine, (xi) I am sometimes annoyed by people who ask me for favors, (xii) Sometimes I am very jealous of the good fortune of others and (xiii) I have intentionally said something to hurt someone's feelings. Control variables included in the model: mother and father's age and education levels, household income, child's age and education level, birth order and number of siblings.

Table A12: Treatment effects at endline (psychosocial outcomes) by rural/urban regions

	(1)	(2)	(3)	(4)
	Self-Efficacy	Self-Esteem	Parent Relations	Peer Relations
Treatment 1	0.28*	0.34**	0.38	0.24
	(0.15)	(0.16)	(0.25)	(0.16)
Treatment 2	0.49***	0.58***	0.78***	0.56***
	(0.12)	(0.14)	(0.25)	(0.14)
Rural	0.23*	0.28*	0.51*	0.30**
	(0.12)	(0.14)	(0.27)	(0.13)
Treatment 1*Rural	-0.23	-0.24	-0.59**	-0.29
	(0.20)	(0.20)	(0.28)	(0.20)
Treatment 2*Rural	-0.19	-0.18	-0.69**	-0.28*
	(0.17)	(0.18)	(0.27)	(0.16)
Block Fixed Effects	Y	Y	Y	Y
Observations	742	742	742	742
R-squared	0.190	0.201	0.245	0.204

Notes: Standard errors clustered at the region level are in parentheses. ***p<0.01, **p<0.05, *p<0.1. There are 742 children at endline. Couple counseling (Treat 1) and Couple counseling Plus Activities (Treat 2) are the two treatment groups, and the Control group is the reference category. **Self-efficacy**, **Self-esteem**, **Parent relations**, and **Peer relations** variables are constructed using a standardization process to ensure comparability across different scales. For each of these domains, a composite mean score is first calculated, which combines individual items related to each domain. After calculating these mean scores, each is standardized by subtracting the overall mean and dividing by the standard deviation of the respective composite variable.

Table A13: Treatment effects at endline (psychosocial outcomes) by marginalized non-marginalized caste

	(1)	(2)	(3)	(4)
	Self-Efficacy	Self-Esteem	Parent Relations	Peer Relations
Treatment 1	0.15	0.17	0.08	0.14
	(0.12)	(0.13)	(0.18)	(0.12)
Treatment 2	0.36***	0.46***	0.49**	0.42***
	(0.11)	(0.12)	(0.19)	(0.12)
Caste Marginalized	-0.04	0.02	-0.02	0.11
	(0.22)	(0.23)	(0.27)	(0.21)
Treatment 1*Marginalized	-0.04	-0.03	-0.07	-0.28
	(0.23)	(0.25)	(0.29)	(0.23)
Treatment 2*Marginalized	0.11	0.04	-0.05	-0.02
	(0.25)	(0.25)	(0.29)	(0.24)
Block Fixed Effects	Y	Y	Y	Y
Observations	742	742	742	742
R-squared	0.188	0.196	0.230	0.202

Notes: Standard errors clustered at the region level are in parentheses. ***p<0.01, **p<0.05, *p<0.1. There are 742 children at endline. Couple counseling (Treat 1) and Couple counseling Plus Activities (Treat 2) are the two treatment groups, and the Control group is the reference category. **Self-efficacy**, **Self-esteem**, **Parent relations**, and **Peer relations** variables are constructed using a standardization process to ensure comparability across different scales. For each of these domains, a composite mean score is first calculated, which combines individual items related to each domain. After calculating these mean scores, each is standardized by subtracting the overall mean and dividing by the standard deviation of the respective composite variable. Marginalized caste groups are scheduled castes and scheduled tribes and non-marginalized caste groups are general, other backward castes and all others.

Table A14: Treatment effects at endline (psychosocial outcomes) by households above or below poverty line

	(1)	(2)	(3)	(4)
	Self-Efficacy	Self-Esteem	Parent Relation	Peer Relations
Treatment 1	0.13	0.16	0.13	0.04
	(0.13)	(0.15)	(0.20)	(0.14)
Treatment 2	0.39***	0.51***	0.62***	0.45***
	(0.12)	(0.13)	(0.21)	(0.14)
BPL	-0.15	-0.07	0.32	-0.16
	(0.15)	(0.18)	(0.22)	(0.13)
Treatment 1*BPL	-0.14	-0.05	-0.23	-0.06
	(0.24)	(0.29)	(0.27)	(0.21)
Treatment 2*BPL	-0.03	-0.16	-0.55**	-0.12
	(0.20)	(0.22)	(0.26)	(0.17)
Block Fixed Effects	Y	Y	Y	Y
Observations	742	742	742	742
R-squared	0.190	0.198	0.237	0.204

Notes: Standard errors clustered at the region level are in parentheses. ***p<0.01, **p<0.05, *p<0.1. There are 742 children at endline. Couple counseling (Treat 1) and Couple counseling Plus Activities (Treat 2) are the two treatment groups, and the Control group is the reference category. **Self-efficacy**, **Self-esteem**, **Parent relations**, and **Peer relations** variables are constructed using a standardization process to ensure comparability across different scales. For each of these domains, a composite mean score is first calculated, which combines individual items related to each domain. After calculating these mean scores, each is standardized by subtracting the overall mean and dividing by the standard deviation of the respective composite variable. BPL is a dummy variable that represents household poverty through the ownership of a below poverty line card.

Table A15: Treatment effects at endline (psychosocial outcomes) for children living in a joint family

	(1)	(2)	(3)	(4)
	Self-Efficacy	Self-Esteem	Parent Relations	Peer Relations
Treatment 1	0.11	0.14	-0.01	0.00
	(0.13)	(0.12)	(0.17)	(0.13)
Treatment 2	0.38***	0.46***	0.40**	0.39***
	(0.10)	(0.11)	(0.18)	(0.11)
Joint	-0.00	-0.03	-0.36*	-0.18
	(0.11)	(0.15)	(0.21)	(0.15)
Treatment 1*Joint	0.10	0.15	0.23	0.28
	(0.23)	(0.22)	(0.25)	(0.25)
Treatment 2*Joint	0.06	0.12	0.31	0.13
	(0.21)	(0.24)	(0.25)	(0.25)
Block Fixed Effects	Y	Y	Y	
Observations	742	742	742	742
R-squared	0.187	0.197	0.235	0.201

Notes: Standard errors clustered at the region level are in parentheses. ***p<0.01, **p<0.05, *p<0.1. There are 742 children at endline. Couple counseling (Treat 1) and Couple counseling Plus Activities (Treat 2) are the two treatment groups, and the Control group is the reference category. **Self-efficacy**, **Self-esteem**, **Parent relations**, and **Peer relations** variables are constructed using a standardization process to ensure comparability across different scales. For each of these domains, a composite mean score is first calculated, which combines individual items related to each domain. After calculating these mean scores, each is standardized by subtracting the overall mean and dividing by the standard deviation of the respective composite variable. Joint family is a dummy variable representing a child's residence in a joint (integrated)/non-nuclear family.