Published in final edited form as:

Stud Fam Plann. 2018 March ; 49(1): 41–56. doi:10.1111/sifp.12047.

Can a Gender Equity and Family Planning Intervention for Men change men's gender ideology?: Results from the CHARM cluster randomized controlled trial in rural India

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Abstract

In this paper, we aim to assess the effect of the CHARM, a gender equity and family planning counseling intervention for husbands in rural India, on men's gender ideology. We used a two-armed cluster randomized control trial design and collected survey data from husbands (n=1081) at baseline, 9-months, and 18-months. We used a continuous measure of support for gender equity (i.e. Gender Equitable Men Scale) and a dichotomous measure of equitable attitudes towards women's role in household decision-making. To assess differences on these outcomes, we used generalized linear mixed models. After controlling for socio-demographic factors, men who received the CHARM intervention were significantly more likely than men in the control condition to have equitable attitudes towards household decision-making at 9-month follow-up (AOR 1.83, 95% CI 1.29–2.60); there was a non-significant difference between the groups for the measure of support for gender equity (23.2 vs. 22.0; p=0.08). For household decision-making, differences were not sustained at 18-month follow-up. Given the role of husbands' gender

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Clinical Trials Number: NCT01593943

ideology on women's contraceptive use, the CHARM intervention represents a promising approach for tackling root causes of women's unmet contraceptive needs.

Keywords

Family planning; India; gender; masculinity; trial

Introduction

Unmet need for family planning (FP) is a problem globally, and is particularly acute in India (Alkema, Kantorova, Menozzi, & Biddlecom, 2013). Over 30 million women living in India have unmet need, defined as “women who want to stop or delay childbearing but who are not using any method of contraception to prevent pregnancy” (Alkema et al., 2013) (p. 1643). Numerous studies in India and other international contexts have demonstrated that unmet need for FP is often caused by gender-related attitudes that emphasize men's control over contraceptive decision-making (Barua, Pande, MacQuarrie, & Walia, 2004; M. Greene & Barker, 2011; Pachauri, 2014; Raju S, 2000). Husbands can prevent – through the use of coercive control and/or emotional/physical/sexual violence – their wives from adopting modern contraceptive use or from correctly using a form of contraception (Raj & McDougal, 2015; Silverman & Raj, 2014).

Contraceptive use is subject to gender and power dynamics that shape how decisions are made within a relationship (Blanc, 2001; Stephenson, Bartel, & Rubardt, 2012). Previous research has shown that men's gender ideology (e.g. attitudes about appropriate roles/responsibilities for men and women) is influential on their willingness to use contraceptives with their partner such that men with more traditional attitudes supporting distinct roles and norms for men and women are less likely to support contraceptive use (G. Barker, Contreras, J.M., Heilman, B., Singh, A.K., Verma, R.K., and Nascimento, M., 2011; Mishra et al., 2014; Stephenson et al., 2012). Additionally, men's gender ideology influences the characteristics of their relationships. Men who support a more traditional masculine ideology with different roles for men and women are more likely to be less communicative (G. Barker, Contreras, J.M., Heilman, B., Singh, A.K., Verma, R.K., and Nascimento, M., 2011), more violent (Harrison, O'Sullivan, Hoffman, Dolezal, & Morrell, 2006), and more concerned with being the primary or sole earner in the household (Connell, 1995b). This evidence points to the importance of men's masculine ideology for their relationship dynamics and contraceptive decision-making behaviors.

The concepts of gender ideology and power dynamics within heterosexual relationships are embedded within The Theory of Gender and Power (TGP), which informs the intervention and analyses in the present study (Connell, 1987a, 1995a; Wingood & DiClemente, 2000, 2002). TGP is a social-structural theory that posits that gender-based power dynamics inherent to many heterosexual dyadic relationships due to societally reinforced gender norms can facilitate male control over sexual and reproductive decision-making, including contraceptive use, and some men may even use violence to control their female partners. TGP identifies three social structures that characterize the gendered relationships between

men and women: 1. the sexual division of labor, 2. the sexual division of power, and 3. the structure of cathexis (Connell, 1987a). These three structures shape the gender-power dynamics within romantic relationships and can be applied to family planning and contraceptive use. The sexual division of labor limits women's opportunities to earn wages and encourages males to take on a provider role which in turn gives male partners more economic power to make household decisions. The sexual division of power at the societal level affords men more respect and authority and can result in less decision-making autonomy for women within relationships. Finally, the structure of cathexis imposes the differential behavioral norms for men and women and emphasizes that men should be dominant and women should be deferential to men's authority (Connell, 1987a; Wingood & DiClemente, 2002). Taken together, these three structures shape the gender-power dynamics within romantic relationships and emphasize the importance of both gender ideology and household decision-making dynamics to contraceptive decision-making within husband-wife dyads.

While the Theory of Gender and Power was developed almost 30 years ago based on observations in high-income countries, its concepts have been applied to low-income settings (Panchanadeswaran et al., 2007; Stephenson et al., 2012). For the present study based in rural India, inequitable power dynamics between husbands and wives is common. Recent research from India shows that men husbands are decision-makers and often have control over family planning, especially among rural young couples (IIPS, 2007; Jejeebhoy, Santhya, & Zavier, 2014; Stephenson & Tsui, 2002). Child marriage is relatively common and young wives tend to have husbands who exercise even greater control over family planning. Also, in this area, low contraceptive knowledge and marital communication and negotiation capacities make contraceptive use challenging for women even if they would like to limit childbearing (Jejeebhoy et al., 2014).

Given the importance of gender ideology and gender-power dynamics to contraceptive use, it is important to identify potential strategies for changing men's gender ideology and attitudes about whether or not their wives should be able to make household decisions. 'Gender-transformative' interventions – those that aim to democratize relationships between men and women and change men's gender ideology – have been shown to be effective at changing men's ideology and improving an array of health outcomes (Dworkin, Fleming, & Colvin, 2015; Dworkin, Treves-Kagan, & Lippman, 2013). But, few family planning focused interventions have specifically aimed to transform men's gender ideology and attitudes about household decision-making. One notable exception is the Malawi Male Motivator project which demonstrated effectiveness at changing men's gender ideology and improving contraceptive uptake among men (Dominick Shattuck et al., 2011). In India – home to the largest population of women with unmet contraceptive need (Alkema et al., 2013) and restrictive gender norms that emphasize male decision-making (Pachauri, 2001) – the only such intervention is the CHARM [Counseling Husbands to Achieve Reproductive health and Marital equity] interventions which has previously been shown to increase women's contraceptive use and reduce sexual violence. CHARM is a relatively brief intervention compared to other gender-transformative interventions that have been evaluated (G. Barker, Nascimento, Segundo, & Pulerwitz, 2004; Paul J Fleming, Colvin, Peacock, & Dworkin, 2016; Jewkes et al., 2008). Brief interventions are particularly attractive because it

can be difficult to engage men in time-intensive interventions. The CHARM intervention has never been evaluated to assess whether it has an impact on men's gender ideology or attitudes towards household decision-making.

In this paper, we aim to evaluate CHARM, a three-session gender equity and family planning (GE+FP) counseling intervention delivered by male health care providers to married men, both alone and with their wives, to change men's gender ideology and attitudes towards household decision-making.

Methods

This paper reports the results from a two-armed cluster randomized control trial to evaluate the impact of the CHARM intervention on men's gender ideology. This trial was registered at clinicaltrials.gov (ClinicalTrial.gov, NCT01593943).

Participants:

This paper reports on data collected from men who were recruited as part of married couples (N=1081) from rural areas of Thane district, Maharashtra, India from March to December 2012. Men were surveyed at baseline and 9 and 18-month follow-ups. Of the 1081 men participating in baseline assessment, 85.5% (n=924) and 84.5% (n=913) completed 9-and 18-month follow-up surveys, respectively. Reasons for loss to follow-up were predominantly inability to find participants due to relocation, or refusal due to time constraints. No one withdrew from the study. All available data were included in analyses. We followed the CONSORT checklist; see Figure 1 for CONSORT flow diagram.

Randomization and Masking.

Participating men were recruited from 62 geographic clusters of approximately equal size mapped for the purpose of randomization. Clusters were created based on geographic boundaries, population density (approximately 300 households per cluster), and proximity to public and private health services. Fifty of the 62 clusters were selected based on ease of reach, then randomized to intervention or control conditions using computer-generated random numbers. Clusters were randomly allocated in the month prior to initiation of enrollment. Households within each cluster were screened sequentially for eligibility; recruitment of eligible households was capped at n=25 per cluster. Neither participants nor research staff were masked to treatment condition. See Figure 1 for CONSORT

Procedure.

Trained male-female research teams approached identified households for recruitment. Age-eligible couples indicating interest and willingness to participate provided written informed consent and were screened privately for eligibility. Eligible couples: 1) included husbands aged 18–30 years and their wives, 2) were fluent in Marathi (native language of Maharashtra), and 3) resided together for the past three months with no intent to relocate in the next 2 years. Couples reporting infertility, surgical sterilization, or exhibiting serious cognitive or health impairment were excluded. Both members of the couple had to provide consent and indicate eligibility and willingness to participate in this study. The current paper

reports only results from participating men. Once eligibility was ascertained, men participated in the baseline survey in a private location separate from their wives. All men, subsequent to baseline assessment, were provided with basic information regarding family planning and local public health system family planning services.

Following the baseline assessment protocol, husbands from intervention clusters were linked to male village health care providers (VHPs) trained to implement the CHARM intervention. Follow-up surveys of all men were conducted again at 9 and 18-month follow-ups. No monetary incentive was provided for study or program participation.

All procedures were reviewed and approved by the Institutional Review Boards of University of California at San Diego, Population Council and India's National Institute for Research in Reproductive Health.

CHARM Intervention—The intervention involved three gender, culture and contextually-tailored family planning and gender equity (FP+GE) counseling sessions delivered by trained male village health care providers (VHPs) to married men (sessions 1 and 2) and couples (session 3) in a clinical setting, or if required, near or in the participant's home. Session 1 typically lasted about 40 minutes and sessions 2 and 3 were intended to be slightly shorter. A desk-sized CHARM flipchart was used by VHPs to provide men and couples with pictorial information on family planning options, barriers to family planning use including gender equity-related issues (e.g., son preference), the importance of healthy and shared family planning decision-making, and how to engage in respectful marital communication and interactions (inclusive of no spousal violence in the men's sessions). The CHARM intervention was designed to involve men reaching men to improve family planning. CHARM providers were allopathic (n=9) and non-allopathic (n=13) village health care providers (VHPs) and were trained over three days on FP counseling, GE and IPV issues, and CHARM implementation.

The three session CHARM model was developed to provide FP+GE counseling within a short timeframe, three sessions within three months, due to limited access to working men. Two sessions were included for men to allow rapport-building for discussion of more sensitive topics such as spousal violence in Session 2. The Couple Session was designed to reinforce messaging to men and support joint family planning decision-making. Findings from pilot testing suggested difficulty with retention and thus we provided all core FP+GE information (i.e., contraceptive options and safety, importance of joint and respectful FP decision-making among couples) in Session 1 and making Sessions 2 & 3 optional reinforcements. Only about half of men in the intervention group received all three session (see more detail below).

The portion of the CHARM intervention related to gender equity was informed by the Theory of Gender and Power (TGP) (Connell, 1987b). Drawing upon this theory, counseling on gender equity and equitable decision-making, particularly if the counseling was delivered by a respected male, could be useful in transforming men's attitudes towards gender equity and household decision-making. The concepts delivered in the CHARM intervention were intended to address each of the three social structures identified in TGP that characterize the

gendered relationships between men and women: 1. the sexual division of labor, 2. the sexual division of power, and 3. the structure of cathexis. Specifically, the intervention addresses the sexual division of labor (i.e. men have more economic power to make household decisions) by specifically having the facilitator challenge men's ideas that they should hold the power to make decisions related to child-bearing and encourage them to share that power with their wife. The intervention addresses the sexual division of power (i.e. society affords men more respect and authority) by having the male facilitator demonstrate and encourage respectful communication about family planning with their wife and specifically discourage marital violence. Finally, the intervention address the structure of cathexis (i.e. different behavioral norms for men and women) by discussing with men the role of mother-in-laws, parents, and other members of society in creating and enforcing family planning norms and using strategic discussions with the man to break down some of the norms that discourage equitable decision-making. Specific elements of the gender equity counseling were based on formative qualitative research and included normative expectations of pregnancy early in marriage, son preference, lack of male responsibility in family planning, and greater male control of family planning decision-making (Ghule et al., 2015). For more information on the CHARM intervention components, see Table 1 and Yore et al. (2016).

Control Condition—Men in the control condition were notified of available public health family planning services and their wives were referred to government health system FP services.

Measures—Sociodemographics (e.g., age, education, caste) were assessed for men via single item measures.

The primary independent variable was *treatment group*, CHARM or control. *Dose* analyses were also conducted in which intervention participants were classified as receiving: no session attendance, only male session attendance (one or both), and male and couple session attendance. No participants attended the couple session without previously attending at least one male-only session. While the intervention was designed to be three sessions, actual session attendance differed. Of 469 CHARM-assigned participants, 8.7% (n=41) attended no sessions, 13.4% only attended session 1, 25.4% (n=119) attended the first two sessions, and 52.5% (n=246) attended all three sessions. For dose analyses, we use the following three categories: (1) men who attended no sessions (control participants were included in this category), (2) men who attended only sessions 1 or 1 and 2 (i.e. male-only sessions), and (3) men who attended all three sessions.

We use two primary outcome variables, measured at each time point: (1) Gender Ideology and (2) Equitable Attitudes towards Household Decision Making. *Gender Ideology* was measured was treated as a continuous variable and measured using the Gender Equitable Men (GEM) Scale (Pulerwitz & Barker, 2008). The GEM Scale was originally developed in Brazil but has been adapted for use in India (Verma et al., 2006). A large proportion of the participants in the Verma et al. (2006) in India were migrants from Maharashtra and thus we used the exact same scale in Marathi that was used in that previous study. Men were read 24 statements related to sexual and reproductive health, sexual relations, domestic violence,

domestic responsibilities, and homophobia and asked if they “agree,” “partially agree,” or “do not agree” with the statement. The original 24-item scale had a Cronbach’s alpha of 0.86 (0.70 using our sample), but was never previously validated using factor analysis (Verma et al., 2006). There have been many iterations of the GEM scale worldwide (P. J. Fleming et al., 2015; Levto, Barker, Contreras-Urbina, Heilman, & Verma, 2014; Shattuck et al., 2013), including the original version that conceptualized two sub-scales (equitable gender norms and inequitable gender norms) (Pulerwitz & Barker, 2008). Upon conducting an exploratory factor analysis using Stata (version 13.1), we found that a single factor structure was most suitable to the data. Solutions with two or more factors did not make sense conceptually and did not separate inequitable items vs. equitable items. Additionally, the items loaded poorly or double-loaded when there was two or more factors, even when attempting to drop several problematic items. For the one-factor structure, we dropped 12 items that loaded poorly (<0.2) on the factor. The final 12-item one-factor scale had a Cronbach’s alpha of 0.76 and an overall Kaiser-Meyer-Olkin measure of sampling adequacy of 0.82. (Full factor analysis results are available upon request). We scored responses as: Less equitable=1, moderate equitable=2, and most equitable=3. Thus, there was a possible range of 12–36 (least equitable to most equitable).

Equitable Attitudes Towards Household Decision-Making was treated as a dichotomous variable and used items from the Demographic and Health Surveys. Men were asked who should have the final say in household decisions on major household purchases, purchases of daily household needs, visiting wife’s family or relatives, what to do with money wife earns from work, and how many children to have. If the man reported that the wife should share or have final say on each of those five items, he was considered to have ‘Equitable Attitudes Towards Household Decision-Making.’ All other men were considered to have Inequitable Attitudes.

Outcome analyses—Bivariate analyses were conducted to assess differences on demographics and outcomes at baseline: 1) by treatment group, 2) for those lost to study follow-up, and 3) for CHARM participants lost to intervention.

The two outcomes of interest, gender ideology and attitudes towards household decision-making, were assessed via generalized linear mixed models (GLMMs), using cluster as a random effect and with time, treatment group (CHARM vs control), and the time by treatment interaction as fixed effects. Adjusted models controlled for men’s age and education, and caste or tribe. A $p<0.15$ assessed significant time by treatment interactions (Selvin, 1996). Simple main effects were reported in order to describe the size of differences over time and between groups. All other analyses were evaluated for significance at $p < 0.05$. All analyses included both intent to treat and dose analyses approaches and were conducted using SAS (SAS Institute, Version 9-4, Cary, NC, USA).

Results

A total of 1081 men were enrolled in our study, with 469 receiving the CHARM intervention and 612 in the control group. Men in both the intervention and control group were an average of 26 years old (Standard Deviation (SD): 2.7) and had 8 years of schooling (SD:

7.0). The majority of men in both groups were in a scheduled caste/tribe (i.e. the most marginalized group). See Table 2 for socio-demographics characteristics.

At baseline, men's scores on the GEM Scale ranged between 12 (least equitable) and 36 (most equitable). The average was 17.9 (SD: 4.7) and there was no significant difference between control and intervention groups at baseline. Of all men at baseline, 62% agreed or partially agreed that 'there are times when a woman deserves to be beaten' and 71% agreed/partially agreed that 'it is a woman's responsibility to avoid getting pregnant.' In terms of men's attitudes towards household decision-making, 44% of all men at baseline believed that a wife should have a say in all household decisions. Of all men at baseline, 25% felt that the husband alone should make decisions about visiting the wife's family/relatives and 12% felt that the husband alone should decide on how many children to have. See Table 3 for all twelve GEM Scale items and Household Decision-Making items.

For our intent to treat analyses, adjusting for men's age, education, and caste/tribe, time by treatment interactions demonstrated that CHARM had a significant effect on men's attitudes towards household decision-making ($p < 0.01$) but a non-significant effect on men's gender ideology ($p = 0.11$) (See Table 4). Analyses of simple main effects for each time point indicated that, while there were no significant differences between treatment groups on equitable attitudes towards household decision-making at baseline, men in the intervention group were significantly more likely to report equitable attitudes towards household decision-making at 9-month follow-up than men in the control group (Adjusted Odds Ratio (AOR): 1.83, 95% CI: 1.29–2.60). By 18-month follow-up these significant effects were lost (AOR: 1.04, 95% CI: 0.73 – 1.49). Analyses of simple main effects while adjusting for socio-demographic factors at each time point for gender ideology showed that there were no significant differences in mean GEM Score at baseline between men in the intervention and control groups (mean difference: 0.10, SE: 0.48, $p = 0.84$). At 9-month follow-up, men in the intervention group had a higher mean GEM Score (mean difference: 0.88, SD: 0.50) representing greater support for gender equity, but this difference was non-significant ($p = 0.08$). There were no significant differences in mean GEM Score at 18-month follow-up (mean difference: -0.06, SD: 0.50, $p = 0.90$).

Dose analyses revealed a significant time by treatment interaction effect was seen for men's attitudes towards household decision-making ($p < 0.01$). For equitable attitudes towards household decision-making at 9-month follow-up adjusting for control variables, men who only attended male sessions had 1.94 times the odds of having equitable attitudes compared to men who received no sessions (95% CI: 1.19–3.17) and men who attended the male *and* couple sessions had 1.76 times the odds of having equitable attitudes compared to men with no sessions (95% CI: 1.17–2.64). Again, effects were lost by 18 month follow-up. Adjusting for men's age, education, and caste/tribe, there was not a dose by time interaction effect on men's gender ideology ($p = 0.55$) and there were no significant differences across groups on gender ideology at baseline, 9-month follow-up, and 18-month follow-up when comparing men who participated in only the male sessions, or in the male *and* couple sessions, relative to those receiving no CHARM sessions. See Table 5 for all dose by time analyses.

Discussion

In this paper, we found that the brief CHARM intervention resulted in significant increases in the proportion of men with equitable attitudes towards household decision-making, but that these effects were not sustained longer term. In this section we interpret these results and discuss the potential of this brief intervention for future use to change gender-related attitudes and family planning behaviors.

Given the role of men's gender ideology and household decision-making dynamics on women's contraceptive use, the CHARM intervention represents a promising approach for tackling some of the root causes of women's unmet contraceptive needs. However, future iterations of this intervention may need to adjust certain strategies for maximum impact. For example, we found a marginally non-significant impact on men's gender ideology ($p=0.08$). This is likely because the intervention focused more on power dynamics within the household dyad and future versions of this intervention could incorporate elements on gender roles more generally. Additionally, men who only attended the male sessions and did not additionally attend the couple session were the most likely to have equitable attitudes towards household decision-making. This is counterintuitive because they received less intervention than men in the male *and* couple sessions group. It may be that content was delivered or interpreted differently in the presence of women or that men who were willing to go to couples sessions differed in some systematic way from men who only attended the male sessions. For example, participating men who did not attend the couples session may have been respectful of their wife's decision to refuse participation while men who did attend couples sessions forced their partners to attend. Future implementation will need to consider and assess whether these dynamics were factors contributing to this finding.

There is evidence to suggest that male-only groups can facilitate safe spaces among men to challenge gender norms and transform their gender ideology (Dworkin et al., 2015; Freire, 2000). However, our intervention was informed by emerging evidence that suggests it is best to work with men and women both together and separately to achieve changes in gender norms (M. E. Greene & Levack, 2010). Future implementation of the CHARM intervention will need to assess these differences in more detail and determine if only male sessions will have optimal impact or the couple sessions can be modified to enhance the impact of the male sessions.

The CHARM intervention shows significant impact on attitudes towards household decision-making at 9-months post-intervention, but those significant results were not sustained at the 18-month follow-up. This represents a key question for the field related to how to make long-term impact. Understandably, our brief CHARM intervention did not have the long-term change sought by interventions. This suggests that intervention implementers need to be thoroughly connected to communities and community organizations so they can continue to engage on the topics after the actual intervention period. Reminders or refreshers for program participants may be sufficient to carry the short-term impacts into longer term change. Future implementation of the CHARM intervention and similar interventions should explore the option of adding 'refresher' sessions after implementation of the main intervention. But, examination of our data also suggest that the proportion of men who

received the intervention and had equitable ideology/attitudes remained high at 9-month and 18-month; men in the control demonstrated an increase in equitable ideology/attitudes at 9-months and again at 18-months. This may be evidence of a testing effect, contamination between control and interventions participants, or could be the result of increased support for gender equity in both communities similar to worldwide secular trends (Inglehart & Norris, 2003). It is promising to see that equitable attitudes increased among all men, but future research will need to better assess the extent to which these changes can be attributed to participation in our study, participation in our intervention, or other causes.

The evidence presented in our paper, as well as evidence from other recent research elsewhere (D. Shattuck et al., 2011), demonstrate that gender-transformative programming could be successfully implemented to positively impact a key determinant of family planning outcomes: gender-power dynamics. While research and interventions on family planning have often led the way in ‘male involvement’ (Green, Cohen, & Belhadj-El Ghouayel, 1995; Helmer, 1996) and research on the role of gender norms on key outcomes (Bawah, Akweongo, Simmons, & Phillips, 1999; McDonald, 2000), few family planning-focused interventions seek to work with men to reshape gender-power relations and increase support for gender equity. Given the ample evidence that men and norms of masculinity play a critical role in women’s contraceptive use and family planning outcomes (Barua et al., 2004; M. Greene & Barker, 2011; Pachauri, 2014; Raj & McDougal, 2015; Raju S, 2000; Silverman & Raj, 2014), the field could adopt gender-transformative strategies that have been used elsewhere to prevent HIV transmission and violence perpetration (Dworkin et al., 2015; Dworkin et al., 2013). Interventions like CHARM and the Malawi Male Motivator project are just initial steps to integrate gender-transformative approaches more fully into family planning interventions (D. Shattuck et al., 2011), future research needs to continue refining and rigorously evaluating these approaches so that they can be disseminated more broadly.

The most prominent gender-transformative interventions for men (e.g. One Man Can, Program H) are typically time and resource intensive and involve many workshops and sessions with participants (G. Barker et al., 2004; Paul J Fleming et al., 2016). In contrast, CHARM was relatively brief: it only included three sessions, each of which was relatively brief. While our findings on the effect of CHARM on gender-related attitudes is not fully conclusive, our findings do suggest that a brief gender-transformative intervention could be successful at changing men’s beliefs. Even though ideas about gender role and gender norms are entrenched and reinforced from an early age, they may be still be amenable to change with an effective brief intervention. Brief interventions have been used in other health domains and have shown to have a short-term impact on other seemingly intractable health issues like substance use and addiction (Bien, Miller, & Tonigan, 1993; Dunn, Deroo, & Rivara, 2001). Since the gender components of our intervention focused mostly on power dynamics within the household, we saw short-term impact on household decision-making. Future research should explore whether a brief gender-transformative intervention focused on gender ideology and gender roles more broadly could similarly have short-term impact on gender ideology (i.e. GEM scale). Short-term impact is a necessary first step, but identifying what types of ongoing support or refreshers might sustain impact over the long-

term will be an important topic for future research on brief gender-transformative interventions.

While CHARM represents a promising approach for changing men's attitudes, future implementation should work on improving the model of this brief intervention. Specifically, it will be key to add components after the initial three-month period as refreshers. It is possible that a community-wide media campaign could serve this reinforcement purpose, or the facilitator may need to visit the man again to review what was discussed. Additionally, future iterations should consider using a home and/or work visit model rather than having men primarily come into the clinic. A significant proportion of men did not attend all the sessions and thus, to capture more men, the implementers may need to go to where the men are. Finally, to further community-level change in gender norms – in addition to the men's own changes – implementation could include a fourth session that incorporates mother-in-laws or other key influencers in men's lives so that the process of change is supported by members of his social network.

Conclusions

Unmet need for family planning is an urgent issue in India and other settings across the globe. Ample evidence has shown the important role that gender norms and household power dynamics play in women's ability to adopt modern contraceptive use and shown the important role that men play in these decisions. Brief but focused interventions that break down these harmful gender norms and power dynamics may play an important role in decreasing unmet need for family planning. Future work should begin exploring how to incorporate these strategies more fully into family planning work and identifying how to sustain these changes over time.

Acknowledgements:

Preparation of this manuscript was supported by a NIDA Training Grant (T32 DA023356)

Funding: National Institutes of Health, US (Grant number: RO1HD61115); Department of Biotechnology, Government of India (Grant #BT/IN/US/01/BD/2010).

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Figure 1.
CHARM CONSORT Figure

CHARM Intervention modules and delivery schedule, components related to Theory of Gender and Power in bold

Table 1.

Session	Content focus	Strategies
Individual Session 1 (Male) 40 min	<ul style="list-style-type: none"> Assess client's FP* knowledge and goals; provide overview of FP options and their availability. Assess man's fertility goals-desire for more children, planned timing for (more) children, expectations of children early in marriage or sons; consider role and expectations of parents Provide info on maternal and child health benefits of contraception and birth spacing, as well as delayed first childbirth, particularly for adolescent wives Assess sex risk of man; extramarital sex; provide basic HIV/STI prevention information Briefly assess if man has discussed FP with wife; assess & encourage joint FP decision-making Highlight importance of male involvement in FP, safe motherhood and happy family life. Review again client's FP goals; offer condoms, encourage consideration of pill 	<ul style="list-style-type: none"> Assessment Dialogue Education FP Goal Setting & Action Plan Provision of Condoms and/or Pill
Individual Session 2 (Male, optional) 20 min	<ul style="list-style-type: none"> Assess client's FP goals; review FP options to support these goals Review previously identified barriers to FP uptake-desire for more children or for sons, expectations of parents, negative attitudes toward contraception; Process barriers with client Assess if man has discussed FP with wife; practice how to communicate about FP with wife Assess marital violence and sexual communication; reinforce non-use of violence and respectful communication; encourage joint FP decision making with wife Highlight importance of male involvement in FP, safe motherhood and happy family life. Review again client's FP goals; offer condoms, encourage consideration of pill 	
Couple Session 3 (optional) 20 min	<ul style="list-style-type: none"> Assess couple's FP goals; review FP options to support these goals Discuss barriers to FP uptake-desire for more children or for son (son preference), expectations of parents, negative attitudes toward contraception; Process barriers with couple Assess joint decision-making on FP; support joint communication on FP; respect for wives Highlight importance of male involvement in FP, safe motherhood and happy family life. Review again couple's FP goals; offer condoms and pill 	

* FP= Family Planning; Note: To be delivered in a three month timeframe, ideally.

Table 2. Characteristics of CHARM male participants for the total sample and by treatment condition (N=1081 couples)

	Total Sample (N = 1081)	Intervention (n = 469)	Control (n = 612)
	% (n)	% (n)	% (n)
Age [*]	26.2 (2.7)	26.4 (2.6)	26.0 (2.7)
Mean (SD)			
Highest Schooling attained	7.9 (7.0)	8.1 (6.6)	7.6 (7.3)
Caste or Tribe			
Scheduled caste	6.8 (73)	7.3 (34)	6.4 (39)
Scheduled tribe	66.1 (714)	62.5 (293)	68.8 (421)
Other backward class	18.8 (203)	22.6 (106)	15.9 (97)
None/Other	8.4 (91)	7.7 (36)	9.0 (55)
OUTCOMES:			
GEM Score Mean (SD)			
Baseline	17.9 (4.7)	18.1 (4.7)	17.7 (4.7)
9 month [*]	22.5 (5.5)	23.2 (5.5)	22.0 (5.5)
18 month	25.0 (6.2)	25.1 (6.2)	24.9 (6.2)
Equitable Household Decision-Making (Wife should be involved in all decisions)			
Baseline	44.1 (461)	42.4 (193)	45.4 (268)
9 month [*]	71.3 (595)	77.8 (274)	66.5 (321)
18 month	73.5 (557)	73.8 (256)	73.2 (301)

^{*} Significant difference between intervention and control groups ($p < 0.05$)

Table 3.

Endorsement (agreed or partially agree) of Gender Equitable Men (GEM) scale items and Attitudes towards Household Decision-making among husbands in Maharashtra, India (N=1081)

	Baseline N=1076	9-month Follow-up N=917	18-month Follow-up N=913
GEM SCALE	% (N)	% (N)	% (N)
It is the man who decides what type of sex to have.	84.7 (911)	58.2 (534)	31.1 (284)
Men need sex more than women do.	86.3 (928)	67.6 (620)	48.7 (445)
You don't talk about sex, you just do it.	79.7 (858)	67.7 (621)	39.2 (358)
Men are always ready to have sex.	88.6 (953)	72.2 (662)	49.3 (450)
There are times when a woman deserves to be beaten.	62.4 (671)	54.7 (502)	59.4 (542)
If a woman cheats on a man, it is okay for him to hit her.	82.0 (882)	81.0 (743)	70.7 (645)
It is okay for a man to hit his wife if she won't have sex with him.	33.9 (365)	9.6 (88)	9.2 (84)
A woman should tolerate violence in order to keep her family together.	85.9 (924)	65.1 (597)	73.8 (674)
A woman's most important role is to take care of her home and cook for her family.	96.6 (1039)	93.7 (859)	85.4 (780)
Changing diapers, giving kids a bath, and feeding the kids are the mother's responsibility.	93.2 (1003)	88.3 (810)	75.5 (689)
A man should have the final word about decisions in his home.	87.5 (941)	68.9 (632)	59.6 (544)
It is a woman's responsibility to avoid getting pregnant.	71.0 (764)	41.9 (384)	30.9 (282)
ATTITUDES TOWARDS HOUSEHOLD DECISION-MAKING	% (N)	% (N)	% (N)
Husband alone should decide on major household purchases	23.3 (251)	9.6 (88)	8.25 (75)
Husband alone should decide on purchases of daily household needs	20.4 (220)	14.5 (133)	13.0 (119)
Husband alone should decide on visits to wife's family or relatives	24.8 (266)	8.7 (80)	6.8 (62)
Husband alone should decide on what to do with the money the wife earns from her work	15.5 (163)	2.8 (23)	1.5 (11)
Husband alone should decide on how many children to have	12.3 (132)	1.9 (17)	1.9 (17)

Table 4.

Intent to treat simple main effects for adjusted linear GLMM assessing effects of CHARM intervention on GEM Score and Equitable Attitudes towards Household Decision-making (N=1081)

	Intervention (n = 469)	Control (n = 612)	Intervention vs. Control	Time x Group Interaction
	mean (SD)	Mean (SD)	Mean Difference (SE) [/] , p	p-value
GEM Score				0.11
Baseline	18.1 (4.7)	17.7 (4.7)	0.10 (0.48), p=0.84	
9 month	23.2 (5.5)	22.0 (5.5)	0.88 (0.50), p=0.08	
18 month	25.1 (6.2)	24.9 (6.2)	-0.06 (0.50), p=0.90	
Equitable Attitudes towards Household Decision-making	% (n)	% (n)	AOR[/] (95% CI)	<0.01
Baseline	42.4 (193)	45.4 (268)	0.90 (0.67 – 1.21)	
9 month	77.8 (274)	66.5 (321)	1.83 (1.29 – 2.60) ^{**}	
18 month	73.8 (256)	73.2 (301)	1.04 (0.73 – 1.49)	

[/] Adjusted for husband's age, husband's education and caste/tribe.

^{**} p<0.01

^{*} p<0.05

⁺ p<0.10

Table 5.

Simple main effects for adjusted logistic GLMM assessing effects of CHARM intervention on equitable ideology; by actual session participation (N=1081)

	Male and Couple (n = 246)	Male Only (n = 182)	No sessions (n = 653)	Male and Couple vs. No sessions	Male only vs. No sessions	Dose x Time Interaction
	Mean (SD)	Mean (SD)	Mean (SD)	Mean Difference (SE) [/] , p	Mean Difference (SE) [/] , p	p-value
GEM Score						0.55
Baseline	18.1 (4.7)	18.1 (4.7)	17.7 (4.7)	0.00 (0.48), p=0.99	-0.03 (0.53), p=0.96	
9 month	23.0 (5.6)	23.5 (5.5)	22.1 (5.5)	0.58 (0.50), p=0.25	0.86 (0.57), p=0.13	
18 month	25.2 (6.3)	25.2 (5.9)	24.9 (6.2)	0.05 (0.51), p=0.92	-0.05 (0.55), p=0.92	
Equitable Attitudes towards Household Decision-making				AOR[/] (95% CI)	AOR[/] (95% CI)	<0.01
Baseline	41.3 (99)	45.2 (80)	44.9 (282)	0.87 (0.62 – 1.21)	1.03 (0.71 – 1.49)	
9 month	77.7 (157)	78.9 (101)	66.7 (337)	1.76 (1.17 – 2.64)	1.94 (1.19 – 3.17)	
18 month	68.9 (126)	78.1 (107)	74.0 (324)	0.78 (0.52 – 1.17)	1.28 (0.79 – 2.08)	

[/] Adjusted for husband's age, husband's education and caste/tribe.

* p<0.05

+ p<0.10