

**Change Starts at Home: Baseline report of a trial to prevent intimate partner violence
among married couples in Nepal**

Cari Jo Clark,^{1*} Susi McGhee,² Gemma Ferguson,³ Binita Shrestha,³ Prabin N. Shrestha,³ J.
Michael Oakes,⁴ Jhumka Gupta⁵

¹Hubert Department of Global Health, Rollins School of Public Health, Emory University, 1518 Clifton Road NE, Atlanta GA, 30322, USA, cari.j.clark@emory.edu

²Department of Behavioral Sciences and Health Education, Rollins School of Public Health, Emory University, Atlanta GA, USA, susanne.s.mcgee@emory.edu

³Equal Access International, 1212 Market Street, Suite 200, San Francisco, CA 94102, USA, gferguson@equalaccess.org, bshrestha@equalaccess.org, pshrestha@equalaccess.org

⁴Department of Epidemiology and Community Health, School of Public Health, University of Minnesota, 1300 South 2nd Street, Minneapolis MN, 55454, USA, oakes007@umn.edu

⁵Department of Global and Community Health, College of Health and Human Services, George Mason University, 4400 University Drive, Fairfax, VA 22030, USA, jgupta4@gmu.edu

*Corresponding author

Email: cari.j.clark@emory.edu

Abstract

Husband-perpetrated intimate partner violence (IPV) against wives is highly prevalent in rural Nepal. Social inequities experienced by women and girls, compounded by norms characterized by male dominance increase risk of IPV. To address this problem, the *Change Starts at Home Project* employs a social behavior change communication strategy (SBCC) to shift behavior and norms related to IPV in 36 Village Development Committees in three districts (Chitwan, Kapilvastu, Nawalparasi) in Nepal. The project is being evaluated with a cluster randomized trial (NCT02942433). Data for the manuscript come from baseline surveys of reproductive-aged women randomly selected from the intervention and control communities (N=1440) and female intervention enrollees (N=360). Descriptive statistics were used to identify differences across and within intervention arms and among intervention enrollees and randomly selected participants from the same communities. A total of 1982 individuals were assessed for eligibility resulting in a response rate of 72.65%. The cooperation rate was 84.16%. Results indicate broad sociodemographic similarities on most variables, although a higher percentage of intervention participants were unemployed and a lower percentage had love marriages compared to both study conditions. A smaller percentage of women in the intervention communities reported physical and / or sexual IPV in the prior 12 months (23.89%) than control communities (31.81%) or intervention participants (15.00%). Participants reported favorably to questions inquiring about whether their rights as participants were upheld, however, a minority felt they could discontinue at any time suggesting the need for greater consideration of this aspect of participation in subsequent data collection.

Key Words: Intimate Partner Violence, Nepal, Couples

Introduction

Globally, approximately 30% of women experience intimate partner violence (IPV) in their lifetime (World Health Organization, 2013). Between 26% and one third of Nepali women report lifetime IPV, and over half of women report experiencing some form of violence (e.g. child maltreatment, sexual assault) in their lifetime (Dalal, Wang, & Svanström, 2014; Lamichhane, Puri, Tamang, & Dulal, 2011; Ministry of Health, New ERA, & ICF, 2017; MOHP, 2011). Prevalence of IPV in rural Nepal is estimated to be even higher (Madhu Sudhan Atteraya, Shreejana Gnawali, & In Han Song, 2015), with approximately 52% of young married women reporting violence at the hands of their husbands, and approximately 36% reporting this occurring within the past 12 months (Lamichhane et al., 2011). Approximately a quarter of these young married women reported physical violence and multiple studies in Nepal have determined that between 46% and 75% of their participants reported experiencing marital sexual violence (Lamichhane et al., 2011; Puri, Frost, Tamang, Lamichhane, & Shah, 2012; Puri, Tamang, & Shah, 2011; UNDP, 2014).

While there is no sole cause of IPV, risk is heightened from numerous influential factors at multiple levels. For instance, individual factors include exposure to IPV as a child (Ministry of Health et al., 2017; UNDP, 2014), while partner level factor includes husband alcohol use (Madhu Sudhan Atteraya et al., 2015; Deuba, Mainali, Alvesson, & Karki, 2016; Ministry of Health et al., 2017; Puri et al., 2011; Sharma, 2007), and interpersonal dynamics, such as male-dominated decision-making (Madhu Sudhan Atteraya et al., 2015; Lamichhane et al., 2011). Community and societal factors, such as acceptability of violence against women (Boyle, Georgiades, Cullen, & Racine, 2009; Yoshikawa, Shakya, Poudel, & Jimba, 2014) are also

critical influencers. Further, the interplay between multi-level factors compounds the risk for IPV (Krug, Mercy, Dahlberg, & Zwi, 2002).

In Nepal specifically, norms characterized by masculine dominance and female submission underpin increased risk for IPV (Clark et al., 2018; Nwokolo, Shrestha, Ferguson, Shrestha, & Clark, under review). Traditional Nepali practices and societal factors, such as younger age at marriage and restricted access to education and employment, impose further vulnerabilities and risk for women and girls (Madhu Sudhan Atteraya et al., 2015; Sharma, 2007). Husbands often endorse traditional gender roles, and their opinions generally hold more weight in marital decision-making (Madhu Sudhan Atteraya et al., 2015; Lamichhane et al., 2011; UNDP, 2014). Additionally, acceptability of partner violence is high in Nepal (Ministry of Health et al., 2017; UNDP, 2014).

To address these issues, the *Change Starts at Home Project* uses a social behavior change communication strategy (SBCC) to shift norms and associated behaviors with the ultimate aim of preventing IPV perpetration among married couples in Nepal. The intervention is being evaluated through a mixed methods 2-armed randomized trial comparing an SBCC strategy to radio programming alone for its impact on physical and / or sexual IPV at 12 and 24 months' post-baseline. The purpose of this manuscript is to describe in detail the recruitment, enrollment, and baseline characteristics of participants in the *Change Starts at Home Project*.

Methods

Overview

The trial was designed to be mixed methods involving the collection of quantitative and qualitative measures over the course of the study. Quantitative measures include surveys with female participants conducted at baseline (March/April 2016, midline (March/April 2017) and end line (July/August 2018). These surveys assessed demographics, knowledge and attitudes,

experience of IPV, marital dynamics and family norms. Qualitative measures (not reported in the current manuscript) included individual in-depth interviews with listening and discussion group (LDG) participants (N=18 couples; 36 individuals) at baseline, midline and end line. In addition, one set of interviews took place halfway through the intervention. The in-depth interviews investigated individual knowledge and attitudes, marital dynamics and family and community norms, as well as change within these areas over time. Focus groups discussions were held with family members and community members, separately, at baseline and will be repeated at end line to identify changes in family-based norms, as well as any impact of project-related activities. This present manuscript is focused on baseline quantitative data from the participants in the community-based sample. Detailed information about the trial design has been published elsewhere (Clark et al., 2017). The conduct of the trial has been approved by institutional review boards of key investigators and the Nepal Health Research Council. Further approval from the District Development Committees was obtained for each district and all participants provided written informed consent.

Intervention

Change is a multi-component SBCC strategy designed to shift attitudes, norms and behaviors that underpin the power imbalances that disfavor women and increase women's vulnerability to husbands' IPV within couples in Nepal. Recognizing the social ecology of change, the intervention (designed and implemented by Equal Access International) engages actors across multiple domains of influence, such as family members and community leaders, in addition to the primary target audience of married reproductive age women and their husbands. As a SBCC strategy, the intervention approaches IPV prevention through three key approaches: advocacy, social mobilization and behavior change communication (C-Change, 2012). The

behavior change communication component is a 9-month, weekly radio drama with listener engagement through interactive voice response (IVR) and short message service (SMS), to which both the intervention and control conditions are exposed. The intervention communities are further engaged in radio Listening and Discussion Groups (LDGs), through which the married male and female participants meet to critically reflect on the content of the radio episode through a curriculum-based process of guided discussion, in-group and home-based activities. LDGs serve as venues for life skills building and act as a platform through which community outreach activities are planned and executed, alongside local leaders who receive training and support to act as advocates in the community for more equitable social norms. The use of multiple modalities is in keeping with current best practices in social norms change (Paluck & Ball, 2010) which recognizes that modifying complex phenomena (such as social norms) requires a multi-faceted approach.

The *Change* communication and mobilization intervention relies on a number of theoretical models including: the Socio-Ecological Model (C-Change, 2012) (conceptualizes the multiple contexts and factors that influence behavior change); the Steps to Behavior Change Framework (Piotrow, Kincaid, Rimon II, & Ward, 1997) and the Integrative Model of Behavior Prediction (Yzer, 2012) (anchors project activities and curriculum to particular stages and entry points toward behavior change), and the Diffusion of Innovations theory (Rogers, 2003) (guides efforts to extend the impact of the intervention beyond those most directly exposed).

Collectively, the theoretical underpinning of the project recognizes that change is a process, although not necessarily a linear process, that occurs within embedded contexts of interpersonal, social and political contexts. The intervention is divided into 3 phases, each lasting 3 months and each delivered via the radio program and the curriculum-based weekly LDG sessions.

Sample

Twelve village development committees (VDC) per district (total of 36 clusters) were selected where it was feasible to carry out project activities, keeping in mind geographic location to reduce likelihood of contamination. Using publicly available data from the Central Bureau of Statistics, each VDC was pair-matched based on factors including female literacy rates, caste and primary language. Within the VDC, two wards were randomly selected using probability proportionate to size methodology among eligible wards. Eligible wards were defined as having a total household population between 100 and 550, a size assumed appropriate for project activities. Within each ward, a VDRC representative visited ward subdivisions that comprised 15-20 households to compile a list of households and identify those containing eligible couples. To support this work, the local partner representative drew on information from key informants (e.g. female village health workers) and existing lists and documents, where available. These household lists were aggregated at the ward level to create the project's sampling frame. Households were eligible if they included a married woman between 18 and 49 years of age, who resided most of the year with their husband (18 years and above). Couples were rendered ineligible if they did not speak Nepali, had a physical or cognitive impairment or were planning to relocate within 2 years. Using the sampling frame, simple random sampling was used to select 40 women from each VDC, comprising 20 from each ward for the community-based survey (N=1440). Ten couples were also selected for the weekly LGD sessions with an emphasis on individuals who lived nearby the likely site of the LDG group, met the eligibility criteria, and were willing to commit to weekly participation for 9 months (N=360 couples).

Measures

Socio-demographic and health variables assessed included age at marriage in years, type of marriage (love marriage with and without parental blessing and arranged marriage with and without participant's blessing), and the participants and their husband's educational levels (categorized as none, primary, some secondary, and School Leaving Certificate). Survey respondents were also asked if they and their husbands had earned money for work or trade during the past 12 months and whether they or their husband frequently felt stressed because of not having enough income (dichotomous). Taking into account previous research in Nepal which found lower caste and religious minority status to be associated with a higher risk of IPV, Caste / ethnicity was categorized into upper caste and relatively advantaged Janajatis, disadvantaged non-Dalit and Janajatis, and Dalit and religious minorities as (M. S. Atteraya, S. Gnawali, & I. H. Song, 2015). Depressive symptoms were assessed with the PHQ-8 which has been validated in Nepal (Kohrt, Luitel, Acharya, & Jordans, 2016; Kroenke et al., 2009). Higher scores indicated greater depressive symptomatology. The Cronbach's alpha for this scale was 0.88. Disability status was assessed with five items of the Washington Group on Disability Statistics' (Washington Group on Disability Statistics, 2017) Short Set six-item scale. Respondents were asked if they had no difficulty, some difficulty, a lot of difficulty or cannot do at all, the following: see, even if wearing glasses; hear; walk or climb steps; remember or concentrate; and speak. Using the recommended scoring function for the Washington Group, a respondent was considered disabled if she reported, to any of the tasks, a lot of difficulty or an inability to do the task at all (Washington Group in Disability Statistics, 2017). Cronbach's alpha for this scale was 0.42.

Gender equitable attitudes were measured with 10 items derived from the Gender-Equitable Men scale (Pulerwitz & Barker, 2008). A score was calculated as the mean across the items, with a higher score representing more gender equitable attitudes. Cronbach's alpha for this scale was 0.83. Agency was measured from two complementary perspectives, control and effective power (Alkire, 2008). Control was assessed as decision-making agency (Alkire, 2008), one of the most frequently assessed forms of agency (Alkire, 2008; Kabeer, 1999), including in Nepal (Acharya, Bell, Simkhada, van Teijlingen, & Regmi, 2010). The measure included three items from the UN Multi-Country Study on Men and Violence (Fulu, 2013) covering who has the final say in decisions related to the health of women in the family and how the family spends money on food and clothing and large investments. Response options included mostly the respondent's husband (1), mostly the respondent (2), the respondent and her husband equally (3), and someone else (4). If a respondent indicated responded 2 or 3, she was considered to have participated in that decision. A household decision-making score was calculated as a count across the three items with higher scores indicating greater participation in household decision-making. As the intervention was developed to prevent physical and sexual IPV, one additional item was developed for the study to measure respondent's say in whether or not to engage in sexual relations with her husband in the same format as the other decision-making variables. Response options to this item included mostly the husband (1), mostly the respondent (2), or both equally (3). Similar to the above item, if the respondent reported either 2 or 3, she was considered to have participated in decisions regarding sexual activity. A measure of effective power was developed for this study comprising three items measuring how much say the respondent had in decisions that affect her, her ability to say no to her husband when he asked her to do something unreasonable, and how much control she had over her personal safety in the

home. While these are only a few facets of a much broader concept (Alkire, 2008), the three chosen were considered to be core elements impacted by IPV. Respondents were presented with a ladder, which is a visual aid that has been used in prior measures of empowerment (Narayan, 2005) to provide a visual representation of each item's rating scale. The ladder was presented for each of the 3 items and contained five rungs, the top being the most effective power, the bottom rung being the least. A mean across the three items was calculated with higher scores representing greater agency. Cronbach's alpha for this scale was 0.83.

The frequency of communication between the respondent and her husband in the prior week (never, once, few, many times) was assessed with items from the World Health Organization's Multi-Country Study on Health and Domestic Violence Against Women (WHO MCS) (World Health Organization, 2005). Topics assessed included "things that happened to him during the day", "things that happened to you during the day," "his worries or feelings," and "your worries or feelings." The score was calculated as the mean across the items. The Cronbach's alpha for this scale was 0.90. The frequency of quarreling (never, sometimes, often) and husband's inebriation (never, once a month or less, at least weekly) were assessed with one item each from the WHO MCS (World Health Organization, 2005) and modeled continuously. Conflict resolution was assessed with items adapted from the Relationship Self Efficacy Beliefs' Scale (Lopez, Morua, & Rice, 2007) inquiring about the ease at which the respondent and her husband work out every day problems together and talk openly and directly about a topic on which they disagree. Response options to both were not easily at all (0), somewhat easily (1) and very easily (2). An average across the two items represented greater capacity to resolve conflicts.

Physical and / or sexual IPV in prior 12 months was measured with the standard items employed through the What Works to Prevent Violence Global Program (What Works to Prevent Violence Global Program, 2015). Items assessed the frequency of occurrence (never, once, few, many) of five items measuring physical IPV and three items measuring sexual IPV. Reported occurrence of any item in the prior 12 months constituted exposure to IPV. Cronbach's alpha for the scale was 0.90. The measure was modeled dichotomously as exposure to any of the physical or sexual IPV experiences in past 12 months compared to no experience in the prior 12 months. Emotional IPV was assessed via the WHO MCS.¹ This four-item scale asked whether the husband had insulted or made her feel bad, belittled or humiliated her in front of other people, done things to scare or intimidate her, and threatened to hurt her or someone she cares about in the past 12 months. Cronbach's alpha (0.85). Financial violence was assessed with three items from United Nations Multi-country Study on Men and Violence (Fulu, 2013) measuring whether in the past 12 months, the respondent's husband had prohibited her from getting a job, going to work, trading or earning money; took her earnings or valuables such as jewelry against her will; or kept money from his earnings for alcohol, tobacco or other things for himself when it was hard to afford household expenses. A positive response to any of these items consisted financial violence.

The measure of in-law violence was developed for this study but based on research in South Asia, including Nepal, highlighting the role of in-laws in women's risk of IPV (Samuels, Jones, & Gupta, 2017) and prior research measuring in-law violence (Clark, Silverman, Shahrouri, Everson-Rose, & Groce, 2010). The participant was considered to have experienced violence by an in-law if she responded affirmatively to items assessing emotional (called names,

¹ World Health Organization. WHO multi-country study on women's health and domestic violence against women: summary report of initial results on prevalence, health outcomes and women's responses. Geneva: World Health Organization; 2005.

insulted, humiliated or prevented from leaving the home) or physical (hit, kicked, punched or otherwise physically hurt) abuse, or reported that her husband's family encouraged him to hit, kick, punch, or otherwise physically hurt her. An affirmative response across the three items constituted exposure to in-law abuse, which was modeled dichotomously. A measure of help-seeking was developed for the study assessing whether a respondent who had experienced physical and / or sexual IPV in the prior 12 months had sought help from sources ranging from friends, family, and a variety of formal and informal support sources. The variable was dichotomized as sought help from any source or did not seek help from any source. Frequency of exposure in the past 12 months to anti-VAWG messaging from four sources (radio, television, street theatre and religious or community leader) was assessed with one item each. Response options included never (0), a few times (1), at least once a month (2), at least once a week (3), and daily (4). Items were dichotomized. Finally, research ethics and participant reaction to the study was assessed with six items from the Reactions to Research Participation Scale (Newman, Willard, Sinclair, & Kaloupek, 2001) assessing: voluntary participation, ability to stop participating, emotional reaction, meaningfulness of participation to self and others, willingness to participate again knowing how the experience would be. Items were measured dichotomously.

Analytic strategy

The response and cooperation rates were calculated using standard definitions of the American Association for Public Opinion Research. (The American Association for Public Opinion Research, 2016) The response rate was defined as

$$\text{Interviewed } \partial \wedge \text{complete} \div \text{Interviewed } \partial \wedge \text{complete} + \text{Refusals} + \text{Noncontacts} + \text{Other} + \text{Unknown}.$$

The cooperation rate was defined as

$$\text{Interviewed } \partial \wedge \text{complete} \div \text{Interviewed } \partial \wedge \text{complete} + \text{Refusals} + \text{Other}.$$

Descriptive and

comparative analyses were performed to explore the data by study condition. An additional comparison was made of those who were enrolled in an LDG to examine potential differences between LDG enrollees and the two community samples. Continuous variables were presented as means and standard deviations and categorical data as frequencies and proportions. SAS 9.4 statistical software was used to manage and analyze all quantitative data.

Results

Figure 1 describes the recruitment of VDCs and individuals into the trial. Overall, all of the originally purposefully selected VDCs or randomly selected wards within those VDCs participated as recruited. At the individual level, 1440 community-based participants were successfully recruited for the baseline survey. A total of 1982 individuals were assessed for eligibility resulting in a response rate of 72.65%. The cooperation rate was 84.16%. The majority of those included in the “other” category were out of the study site during data collection. Data were not collected on the number of potential LDG participants who were invited to participate but ultimately chose not to.

Table 1 describes the sociodemographic and health characteristics of the community-based samples representing the intervention and control communities and the LDG participants. Overall the intervention and control communities were quite similar. LDG members showed more differences compared to both study conditions. A higher percent of LDG members were unemployed and fewer LDG members have had love marriages with their family’s blessing and exhibited slightly fewer depressive symptoms, although symptoms were very low across all groups. Overall, the three groups were relatively comparable given the sociocultural diversity of Nepal.

Table 2 describes the primary and secondary outcomes and ethical and safeguarding items included in the baseline questionnaire. Despite broad sociodemographic similarities in the

sample, the difference across conditions in the primary outcome is noteworthy. A smaller percentage of women in the intervention communities reported physical and / or sexual IPV in the prior 12 months (23.89%) than control communities (31.81%). Other differences of note include a higher percentage of women in the control condition reporting decision-making around sexual relations with their husbands (66.48% vs. 60.69%, respectively) and differences in the lowest two categories of husband drunkenness across conditions, although similarity between conditions in the highest frequency category. A greater proportion of women in the control communities were exposed at baseline to anti-VAWG messages, especially from television. The distribution of most other variables was broadly similar across study conditions.

Differences between the LDG participants and the two community samples include a lower percentage who reported IPV in the prior 12 months (15.00%), a higher percentage who reported decision-making around sexual relations (75.83%), a higher percentage who reported that their husband was never drunk (73.3% vs 68.47% among intervention participants vs 62.08% among control participants), a smaller percentage who sought help for IPV in the past 12 months and a smaller percentage had been exposed to anti-VAWG messages via street theaters and from religious or community leaders.

Table 2 also describes findings from the administration of items monitoring safety and research ethics. Between conditions, fewer felt they could stop participating at any time in the control group (6.24% vs 10.12%) and a higher proportion reported experiencing intense emotions (14.33% vs 9.82%). A similar proportion of respondents in both conditions reported that their choice to participate was freely made (>97%), that participation meaningful to themselves and others (>96%), and that they would participate again knowing what the experience would be like (>98%). The LDG participants were similar to both conditions on all of

these factors. A smaller percentage of LDG participants felt they could discontinue participation at any time (3.33%) and fewer reported experiencing intense emotions, especially compared to the control condition (7.78% vs 14.33%).

Discussion

Despite various efforts to increase rights and protection for Nepali women and girls, IPV remains a significant concern in Nepal, particularly in the Terai region. To address this problem, the *Change Starts at Home Project* engages couples to reduce and prevent IPV through a relationship skills building and norms-change intervention. Among numerous novel aspects of this study, to our knowledge this is the first primary prevention trial in Nepal to address IPV.

The study's response rate of 72.65% and cooperation rate was 84.16% are acceptable and the broad comparability of the sample across the two conditions is reassuring that comparable samples have been recruited. This is also true for the LDGs, where more differences are expected given the additional commitment to participate for nine months. LDG participants, however, were not so different as to be entirely dissimilar from other groups. In fact, unless participant dissimilarities entirely inhibit comparison, some difference may be beneficial as these participants serve as change agents within their communities. Further, due to considerable sociodemographic similarities across groups, being completely dissimilar is unlikely.

The prevalence of physical and / or sexual IPV within the past 12 months varied across groups. While significantly lower for LDG participants (15.00%) and somewhat lower for women residing in intervention communities (23.89%) compared to control group communities (31.81%), all are larger than the estimates for the Terai region (13.8%) reported in the Demographic and Health Survey fielded the same year as our baseline assessment (Ministry of Health et al., 2017). The *Change Starts at Home* estimates for emotional violence are also 3 to 4 times those of the DHS (Ministry of Health et al., 2017). While prevalence estimates from

violence-focused surveys compared to the more broadly maternal and child health focused DHS is expected given prior research (Ellsberg, Heise, Pena, Agurto, & Winkvist, 2001), our study's higher prevalence estimates suggest a degree of validity along with the fact that our study's findings fit within the broad range of estimates of other Nepal-based studies (Madhu Sudhan Atteraya et al., 2015; Lamichhane et al., 2011; MOHP, 2011; Puri et al., 2012; Puri et al., 2011; UNDP, 2014) and are in line with the high prevalence of male-dominant norms.

Finally, monitoring safety and the process of adhering to ethical standards is an essential component of all ethically oriented research. Findings from this study are largely similar to research on violence and other forms of trauma that has found that while some questions may result in an emotional response, the opportunity to participate is often meaningful, and for some cathartic (Clark, Shahrouri, & Halasa, 2010). Collectively, respondent reports about their participation confirm the lack of harm, and adherence to research participants' rights. However, the finding that participants did not feel free to stop participating at any time is noteworthy and requires sustained attention to ensure that voluntary participation is matched with an equally strong understanding of participants' rights to disengage at any time without penalty. This study has taken steps to reaffirm this right throughout study activities; however in LMICs, there may be underlying inequities influencing voluntariness, which warrant extra consideration (Smith, Morrow, & Ross, 2015). Analysis of midline and end line data will be essential to know if this shortcoming has been rectified and highlights the value in monitoring not just for harm, but also for adherence to a range of ethical principles that we as researchers commit ourselves to upholding.

Limitations

The measures taken in this study were self-report and therefore may be influenced by social desirability bias. This is furthered by the highly sensitive and potentially stigmatizing

nature of information participants were asked to share with researchers. There are no publically available data at the ward-level against which to compare the sociodemographic characteristics of the samples. The broad similarity across the groups minimizes this concern and ultimately, the study design prioritizes internal validity over external validity. Finally, the most vulnerable women were not included in this study given the need, particularly for LDG participants, to enroll with their husbands.

Conclusion

Globally, and in Nepal specifically, IPV remains a considerable public health problem with far reaching health consequences. To address this problem, the *Change Starts at Home Project* aims to shift norms and behaviors, and ultimately prevent marital IPV through an SBCC intervention. This paper described recruitment and enrollment methods for the study and analysis of data to determine participant characteristic at baseline. Results suggested broad similarities across comparison groups. As anticipated, there were more differences among the LDG cohort; however, not so different as to render them incomparable to the comparison groups. Rather, variance within groups may influence programmatic impact and further poise some couples to serve as agents of change within their communities.

Compliance and Ethical Standards

Funding: This manuscript has been funded by a grant (#P06254) from UK aid from the UK government, via the What Works to Prevent Violence Against Women and Girls? Global Programme (www.whatworks.co.za). The funds were managed by the South African Medical Research Council. The views expressed do not necessarily reflect the UK government's official policies.

Disclosure of potential conflicts of interest: the authors have no conflicts of interest to disclose

Ethical approval: Institutional Review Board (IRB) approval was received from Emory University (IRB00091115), the University of Minnesota (1601S82063), George Mason University (802242-1), and the Nepal Health Research Council (178/2015). Permission was also received from the District Development Committees representing Nawalparasi, Kapilvastu and Chitwan. Written informed consent was obtained from all participants.

References

- Acharya, D. R., Bell, J. S., Simkhada, P., van Teijlingen, E. R., & Regmi, P., R. (2010). Women's autonomy in household decision-making: a demographic study in Nepal. *Reproductive Health*, 7(15), 1-12.
- Alkire, S. (2008). *Concepts and Measures of Agency*. Retrieved from Oxford:
<https://ophi.org.uk/working-paper-number-09/>
- Atteraya, M. S., Gnawali, S., & Song, I. H. (2015). Factors associated with intimate partner violence against married women in Nepal. *Journal of interpersonal violence*, 30(7), 1226-1246.
- Atteraya, M. S., Gnawali, S., & Song, I. H. (2015). Factors associated with intimate partner violence against married women in Nepal. *J Interpers Violence*, 30(7), 1226-1246.
doi:10.1177/0886260514539845
- Boyle, M. H., Georgiades, K., Cullen, J., & Racine, Y. (2009). Community influences on intimate partner violence in India: Women's education, attitudes towards mistreatment and standards of living. *Social science & medicine*, 69(5), 691-697.
- C-Change. (2012). *C-Modules: A Learning Package for Social and Behavior Change Communication (SBCC)*. Retrieved from Washington, DC:
https://www.c-changeprogram.org/sites/default/files/sbcc_module0_intro.pdf
- Clark, C. J., Ferguson, G., Shrestha, B., Shrestha, P. N., Oakes, J. M., Gupta, J., . . . Yount, K. M. (2018). Social norms and women's risk of intimate partner violence in Nepal. *Soc Sci Med*, 202, 162-169.
doi:10.1016/j.socscimed.2018.02.017
- Clark, C. J., Shahroui, M., & Halasa, L. (2010). *Participant Reaction to Domestic Violence Research in Jordan*. Retrieved from Montecatini Terme, Italy:
- Clark, C. J., Silverman, J. G., Shahroui, M., Everson-Rose, S., & Groce, N. (2010). The role of the extended family in women's risk of intimate partner violence in Jordan. *Soc Sci Med*, 70(1), 144-151. doi:10.1016/j.socscimed.2009.09.024

- Clark, C. J., Spencer, R. A., Shrestha, B., Ferguson, G., Oakes, J. M., & Gupta, J. (2017). Evaluating a multicomponent social behaviour change communication strategy to reduce intimate partner violence among married couples: study protocol for a cluster randomized trial in Nepal. *BMC Public Health*, *17*(1), 75. doi:10.1186/s12889-016-3909-9
- Dalal, K., Wang, S., & Svanström, L. (2014). Intimate partner violence against women in Nepal: an analysis through individual, empowerment, family and societal level factors. *Journal of research in health sciences*, *14*(4), 251-257.
- Deuba, K., Mainali, A., Alvesson, H. M., & Karki, D. K. (2016). Experience of intimate partner violence among young pregnant women in urban slums of Kathmandu Valley, Nepal: a qualitative study. *BMC women's health*, *16*(1), 11.
- Ellsberg, M., Heise, L., Pena, R., Agurto, S., & Winkvist, A. (2001). Researching domestic violence against women: methodological and ethical considerations. *Studies in Family Planning*, *32*(1), 1-16.
- Fulu, E., Warner, X., Miedema, S. and Liou, C. (2013). *Toolkit for Replicating the UN Multicountry Study on Men and Violence: Understanding Why Some Men Use Violence against Women and How We Can Prevent It*. Retrieved from Bangkok:
- Kabeer, N. (1999). Resources, agency, achievements: reflections on the measurement of women's empowerment. *Development and Change*, *30*, 435-464.
- Kohrt, B. A., Luitel, N. P., Acharya, P., & Jordans, M. J. (2016). Detection of depression in low resource settings: validation of the Patient Health Questionnaire (PHQ-9) and cultural concepts of distress in Nepal. *BMC Psychiatry*, *16*, 58. doi:10.1186/s12888-016-0768-y
- Kroenke, K., Strine, T. W., Spitzer, R. L., Williams, J. B., Berry, J. T., & Mokdad, A. H. (2009). The PHQ-8 as a measure of current depression in the general population. *J Affect Disord*, *114*(1-3), 163-173. doi:10.1016/j.jad.2008.06.026
- Krug, E. G., Mercy, J. A., Dahlberg, L. L., & Zwi, A. B. (2002). The world report on violence and health. *The Lancet*, *360*(9339), 1083-1088.

- Lamichhane, P., Puri, M., Tamang, J., & Dulal, B. (2011). Women's status and violence against young married women in rural Nepal. *BMC women's health*, *11*(1), 19.
- Lopez, F. G., Morua, W., & Rice, K. G. (2007). Factor Structure, Stability, and Predictive Validity of College Students' Relationship Self-Efficacy Beliefs. *Measurement and Evaluation In Counseling and Development*, *40*, 80-96.
- Ministry of Health, New ERA, & ICF. (2017). *Nepal Demographic and Health Survey 2016*. Retrieved from Kathmandu:
- MOHP, M. o. H. a. P. (2011). *Demographic Health Survey, Nepal*. Retrieved from
- Narayan, D. (2005). *Measuring Empowerment: Cross-Disciplinary Perspectives*. Retrieved from Washington, DC:
- Newman, E., Willard, T., Sinclair, R., & Kaloupek, D. (2001). Empirically supported ethical research practice: the costs and benefits of research from the participants' view. *Account Res*, *8*(4), 309-329.
- Nwokolo, C. A., Shrestha, P. N., Ferguson, G., Shrestha, B., & Clark, C. J. (under review). Contextual Attributes of the Family and Community that Encourage or Hinder the Practice of Intimate Partner Violence in Nepal.
- Paluck, E., & Ball, L. (2010). *Social norms marketing aimed at gender based violence: A literature review and critical assessment*. Retrieved from New York:
- Piotrow, P. T., Kincaid, D. L., Rimon II, J. G., & Ward, R. (1997). *Health communication : lessons from family planning and reproductive health*. Westport, CT: Praeger.
- Pulerwitz, J., & Barker, G. (2008). Measuring attitudes toward gender norms among young men in Brazil: Development and psychometric evaluation of the GEM Scale. *Men and Masculinities*, *10*, 322—338.
- Puri, M., Frost, M., Tamang, J., Lamichhane, P., & Shah, I. (2012). The prevalence and determinants of sexual violence against young married women by husbands in rural Nepal. *BMC research notes*, *5*(1), 291.

- Puri, M., Tamang, J., & Shah, I. (2011). Suffering in silence: consequences of sexual violence within marriage among young women in Nepal. *BMC Public Health*, 11(1), 29.
- Rogers, E. M. (2003). *Diffusion of Innovations* (5th ed. ed.). New York: Free Press.
- Samuels, F., Jones, N., & Gupta, T. (2017). *Tackling intimate partner violence in South Asia: why working with men and boys matters for women*. Retrieved from London:
<https://www.odi.org/sites/odi.org.uk/files/resource-documents/11342.pdf>
- Sharma, S. (2007). Domestic violence in Nepali society: Root Cause and Consequences A research report. *Kathmandu: Social Inclusion Research Fund (SRIF/SNV)*.
- Smith, P. G., Morrow, R. H., & Ross, D. A. (2015). *Field trials of health interventions: a toolbox* (3rd ed.). New York: Oxford University Press.
- The American Association for Public Opinion Research. (2016). *Standard Definitions: Final Dispositions of Case Codes and Outcome Rates for Surveys*. Retrieved from
- UNDP. (2014). Nepali Masculinities and Gender-Based Violence
- Washington Group in Disability Statistics. (2017). *Analytic Guidelines: Creating Disability Identifiers Using the Washington Group Short Set (WG-SS) SPS Syntax*. Retrieved from
<http://www.washingtongroup-disability.com/wp-content/uploads/2016/12/WG-Document-5-Analytic-Guidelines-for-the-Washington-Group-Short-Set.pdf>
- Washington Group on Disability Statistics. (2017). Short set of disability questions. Retrieved from <http://www.washingtongroup-disability.com/washington-group-question-sets/short-set-of-disability-questions/>
- What Works to Prevent Violence Global Program. (2015). *Standard Outcomes for Assessment of Intimate Partner Violence*. Retrieved from
- World Health Organization. (2005). *WHO multi-country study on women's health and domestic violence against women: summary report of initial results on prevalence, health outcomes and women's responses*. Retrieved from Geneva:

World Health Organization. (2013). *Global and regional estimates of violence against women: prevalence and health effects of intimate partner violence and non-partner sexual violence*.

Retrieved from Geneva:

Yoshikawa, K., Shakya, T. M., Poudel, K. C., & Jimba, M. (2014). Acceptance of wife beating and its association with physical violence towards women in Nepal: a cross-sectional study using couple's data. *PloS one*, 9(4), e95829.

Yzer, M. C. (2012). The integrated model of behavioral prediction as a tool for designing health messages
In H. Cho (Ed.), *Designing Messages for Health Communication Campaigns: Theory and Practice* (pp. 21-40.). Thousand Oakes, CA: Sage.

Table 1. Socio-Demographic and Health Characteristics of the Survey Sample by Condition (N=1800).

	Intervention N=720	Control N=720	LDG N=360
Socio-Demographics and Health			
Caste/Ethnicity	%	%	%
Uppercaste and relatively advantaged Janajatis	47.43	45.69	45.53
Disadvantaged non-Dalit and Janajatis	45.06	45.97	43.85
Dalit and religious minorities	7.51	8.33	10.61
Respondent educational level			
None	30.14	31.67	32.50
Primary	22.36	25.28	28.06
Some secondary	28.33	24.31	22.78
SLC and above	19.17	18.75	16.67
Husband educational level			
None	13.63	15.18	12.81
Primary	21.28	22.56	22.84
Some secondary	36.58	33.43	37.05
SLC and above	28.51	28.83	27.30
Respondent employed in past 12 months (yes)	44.09	55.15	41.23
Husband employed in past 12 months (yes)	89.85	91.79	87.74
Age at marriage, mean (sd)	18.03 (3.57)	17.64 (3.08)	17.92 (3.34)
Marriage type			
Love marriage with your family's blessing	11.53	11.25	5.83
Love marriage without your family's blessing	14.86	17.92	16.94
Arranged by family with my consent	63.47	61.39	69.17
Arranged by family without my consent	10.14	9.44	8.06
Household financial stress (yes)	43.53	46.80	43.73
Socio-Demographics and Health			
Depressive symptoms	1.86 (2.87)	2.11 (3.22)	1.34 (2.05)
Disability (yes)	4.03	5.97	4.72

Table 2. Outcomes, Ethics and Safety of the Survey Sample by Condition (N=1800).

	Intervention N=720	Control N=720	LDG N=360
Primary			
Physical and /or sexual IPV in prior 12 months (% yes)	23.89	31.81	15.00
Secondary			
Gender equitable attitudes, mean (sd)	1.89 (0.45)	1.88 (0.49)	1.96 (0.54)
Respondent agency, mean (sd)	4.11 (0.90)	4.15 (0.79)	4.29 (0.71)
Household decision-making score, mean (sd)	1.97 (1.24)	2.08 (1.20)	2.22 (1.14)
Decision-making regarding sexual relations	60.69	66.48	75.83
Communication with husband, mean (sd)	1.92 (0.83)	1.91 (0.89)	1.81 (0.81)
Conflict resolution	1.14 (0.44)	1.10 (0.48)	1.04 (0.39)
Frequency of quarreling with husband			
Rarely	32.92	32.92	32.78
Sometimes	63.47	62.50	65.00
Often	3.61	4.58	2.22
Frequency of husband's drunkenness			
Never	68.47	62.08	73.33
Once a month or less	15.42	21.81	12.22
At least weekly	16.11	16.11	14.44
Emotional IPV in past 12 months (% yes)	28.61	32.78	22.22
Financial IPV (% yes)	18.75	18.19	13.61
Help-seeking for IPV (% yes)	30.81	31.44	14.81
In-law emotional or physical violence / instigation of IPV (% yes)	10.89	10.69	8.89
Exposure to messages on VAWG (% yes)			
Radio	68.86	72.76	67.72
Television	57.08	67.75	58.14
Street theatre	18.50	18.33	12.50
Leader	24.62	22.64	14.44
Safety and Ethics			
Free choice to participate (% yes)	97.47	99.01	97.22
Felt could stop participating at any time (% yes)	10.12	6.24	3.33
Experienced intense emotions (% yes)	9.82	14.33	7.78
Thought participating personally meaningful (% yes)	96.13	97.44	96.94
Thought participating would be useful to others (% yes)	97.62	97.87	96.94
Would participate again knowing what they know now (% yes)	98.51	99.15	97.78

Note: Safety and Ethics items missing between 63 and 65.

Figure 1. Change Starts at Home Flow Diagram: Baseline

