



Social norms, diffusion, and women's risk of intimate partner violence in Nepal: Impact assessment of a social and behavior Change communication intervention (Change Starts at home)

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ABSTRACT

Introduction: Intimate partner violence (IPV) is a significant public health, human rights, and development issue. While existing evidence posits that addressing social norms is key to IPV prevention, successful IPV interventions that include a norms approach are limited in number and methodological rigor and rarely include a formal investigation of the diffusion of intervention impact. We contribute novel findings to this intellectual and programmatic space with evidence on a social and behavior change communication (SBCC) intervention (Change Starts at Home) in Nepal designed to prevent IPV and shift social norms towards greater gender equity.

Methods: Participants included 442 married women across 13 communities assessed at three timepoints: before intervention (baseline), at the completion of the core couple's curriculum and edutainment (midline), and at the conclusion of the diffusion curriculum (endline). Generalized estimating equations with propensity-score adjustments were used to determine change in outcomes at midline and endline for two intervention conditions (direct beneficiary, $N = 173$; and resident of the intervention community, $N = 178$) relative to control ($N = 91$). **Results:** IPV victimization significantly decreased in both intervention conditions at midline, with larger reductions in direct beneficiaries. At endline, direct beneficiaries had sustained reduction in IPV relative to control participants. Positive injunctive norms also significantly improved by midline for both intervention groups, whereas improvements in descriptive norms for intervention groups were matched by improvements in the control group at both midline and endline. Several secondary outcomes showed significant improvements for both intervention groups at midline and/or endline, including in-law violence, financial decision-making, communication, and relationship quality, with additional improvements for the direct beneficiaries in attitudes, leadership, GBV advocacy, and diffusion.

Conclusion: This study sheds light on the effectiveness of the Change intervention, the role of addressing social norms in IPV prevention efforts, and the benefits of organized diffusion.

1. Introduction

Intimate partner violence (IPV), defined as emotional, physical, and sexual violence and controlling behaviors perpetrated by an intimate

partner, is a significant public health, human rights, and development issue. Globally, approximately 30% of women aged 15 and older have experienced physical and or sexual IPV at some point in their lifetime (World Health Organization, 2021). Given the high global burden of IPV

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against women, the United Nations endorsed Sustainable Development Goal 5 (SDG5), to empower women and girls, in part by eliminating violence (United Nations, 2015). Existing evidence posits that addressing social norms, unwritten codes of conduct created and maintained by social groups that inform group and individual behavior (Lapinski & Rimal, 2005; Mackie et al., 2015), is key to IPV prevention. To successfully change social norms, there must be some element of social diffusion: changes must spread across the social environment so that a significant proportion of the population embrace the change. Successful IPV interventions that include a norms approach and an explicit focus on diffusion, however, are limited in number and methodological rigor (Bourey, Williams, Bernstein, & Stephenson, 2015; Jewkes, Flood, & Lang, 2015; Spangaro et al., 2021). We contribute novel findings to this nascent intellectual and programmatic space with evidence from an evaluation of a social and behavior change communication (SBCC) intervention (Change Starts at Home (Change)) in Nepal designed to prevent IPV and shift norms toward greater gender equity, reduced acceptance of violence against women, and enhanced acceptability of help-seeking.

2. Background

Social Norms are Drivers of Violence Perpetration. Among the most pervasive drivers of IPV are social norms (Shakya et al., 2018, 2022). In Nepal, women's risk of male-to-female IPV, the predominant form of IPV in Nepal (Ministry of Health and Population, 2023), has been linked to traditional patriarchal norms. Men's dominance over women operates within self-reinforcing norms established by many factors: the South Asian dowry system, the appropriateness of violence to resolve conflict, men's right to discipline or control women's behavior, the acceptability of restrictions on women's mobility and freedom, women's responsibilities to maintain the marriage and family at the expense of their individual well-being, the prioritization of family privacy, the stigma of divorce, and the belief that family honor is linked to women's chastity (Sharma, 2007, Nanda et al., 2012; UNDP, 2014, Ghimire & Samuels, 2017, Clark et al., 2018; Nwokolo, Shrestha, Ferguson, Shrestha, & Clark, 2020).

The 12-month prevalence of psychological, physical, and/or sexual IPV in Nepal was 17% in 2022 with 28% of Nepali women ever reporting one or more of these three forms of IPV (psychological 14%; physical 24%; sexual 8%) (Ministry of Health and Population [Nepal] 2023). Correlates of IPV include low caste, women's employment, income stress, poor marital communication, quarreling, husband drunkenness, witnessing IPV as a child, exposure to in-law violence, and gender inequitable normative expectations (Clark et al., 2019). The Government of Nepal has criminalized IPV, established multi-sectoral support services, and allocated funding for prevention and response; however, these initiatives are under-resourced and poorly implemented (UNFPA, 2020). Most survivors don't seek help from the formal support services due to limited awareness of their rights and available services, stigma and shame that they may experience, and poor-quality services. While attitudes about the acceptability of wife abuse have become less widespread over time, approximately one in five men and women still believe that IPV is acceptable under certain circumstances (Ministry of Health and Population [Nepal] 2023) suggesting that intensification of effort will be needed to reach Sustainable Development Goals on gender equity and similar commitments enshrined in the Nepali constitution.

The Change Starts at Home (Change) intervention was designed to address the need for societal level normative change to prevent IPV. Prior to this current study, two stages of testing included 1.) a cluster randomized controlled trial (c-RCT) of a core couples' curriculum and 2.) a pilot test to develop and test a diffusion curriculum and campaign. Using a mixed methods approach for the c-RCT, the team has shown that IPV is highly prevalent, that gender equitable norms are associated with reduced exposure to violence, and that the Change intervention can result in changes in both norms and behaviors among those most heavily

exposed. Women and men undergoing the couples' curriculum reported an increase in acceptance and practice of gender equity in their marriages and a decrease in acceptance and perpetration of IPV and alcohol abuse. However, the trial did not reduce violence nor improve gender equity among the general community population (defined as a random sample). Intervention exposure was limited in the community and intervention impact did not diffuse beyond those who were most intensively exposed. Building upon these learnings, the team undertook a pilot study to develop a diffusion curriculum and campaign to enhance the intervention's ability to diffuse content beyond direct participants. In the present study, we report the results of a quasi-experiment in which we test the combined (couples' and diffusion) intervention for its ability to prevent IPV and shift social norms toward greater gender equity, lower acceptance of violence against women, and enhanced acceptability of seeking help when it occurs.

Specifically, we test the following research hypotheses.

1. IPV victimization among intervention participants will significantly decrease, relative to individuals in the control condition;
2. Social norms specific to gender equity and perpetration of IPV will improve among intervention participants compared to control participants;
3. Individuals in intervention communities who are not direct participants in the program will also experience decreases in IPV victimization and improvements in social norms specific to gender equity and perpetration of IPV, though the effect size will be smaller than what is seen among direct intervention participants; and
4. Hypothesized reductions in IPV and improvements in social norms will include improvement in secondary outcomes including reduced in-law abuse, improved relationship quality and skills, increased leadership capacity, and anti-IPV advocacy.

3. Methods

3.1. Overview

The research design is summarized in Fig. 1. Prior to baseline, the study sites were selected, households were enumerated, and key informant interviews with representatives from local Judicial Committees (quasi-judicial local body established to mediate or refer cases to other authorities), mediators, mothers' groups, women's cooperatives, and a local gender-based violence control group were conducted to assess existing prevention activities and response capabilities. We also conducted interviews with married men and women from the community to assess local norms around marriage, decision-making, and the nature and resolution of family disputes to confirm that the intervention content was well aligned to local context. Finally, we conducted qualitative social network interviews with couples to understand the composition and influence of members of men's and women's social networks. At baseline (September 2021), eligible couples and a member of both the husband's and the wife's social network were surveyed. A subset of interviewed couples were chosen to participate in the intervention condition through engagement in Learning and Discussion Groups (LDAG). The intervention activities with couples began in December 2021. Nine months later, at the end of the couples' curriculum, the survey was re-administered (August 2022; midline) and a sub-sample of intervention participants and local government officials were qualitatively interviewed: the former to understand perceptions and experience with the intervention and the latter to investigate status and change in budgeting and programming for violence prevention and response. Nine months later, at approximately the end of the diffusion curriculum, the survey was re-administered and a sub-sample of intervention participants and local government officials were qualitatively re-interviewed (May 2023; endline). Results presented in this manuscript focus on the baseline, midline, and endline surveys.

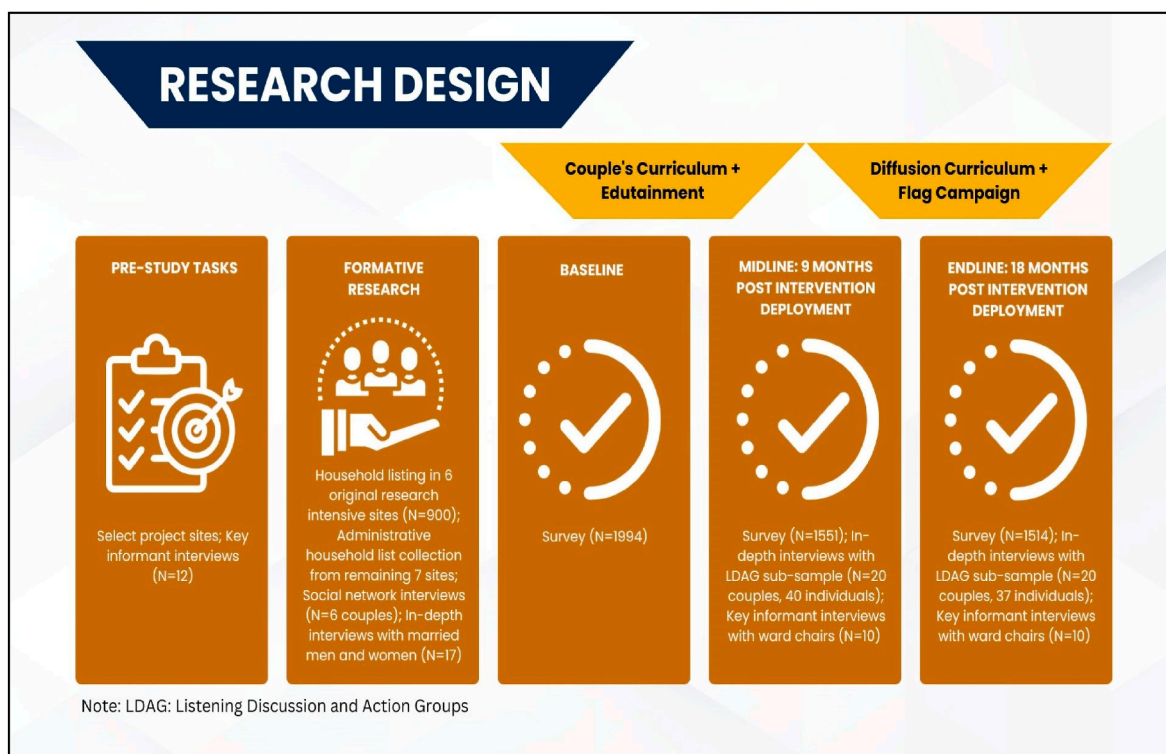


Fig. 1. Change Starts at home research design.

3.2. Site selection

They study took place in Hupsekot and Binayi Tribeni municipalities in Nawalpur district which is in Gandaki province, a province where 19% of reproductive age women report IPV (Ministry of Health and Population [Nepal] 2023). An assessment was undertaken to identify sites eligible for the study. This assessment included sites visits to the municipalities in which information was collected from municipality officials, community leaders, and a review of the municipalities' annual reports as there is limited publicly available information at the tol (village) level. The criteria for the inclusion of tols within the study included: a size of approximately 150–200 households, a predominance of Nepali speakers among the population, perceived high prevalence of inequitable gender norms and child marriage, a low literacy rate, settlement patterns where houses were proximal to one another, diversity in caste and ethnicity, and low out-migration. Ten eligible sites were identified for intervention activities, 3 of which were originally designated as research sites. A household enumeration was undertaken which included questions that allowed the team to identify neighboring tols where residents in the research sites had ties due to family, friends, work, education, health care, or household shopping. The three sites with the greatest number of ties were selected as “control” sites, i.e., sites where programming would not be delivered but which might ultimately be exposed through diffusion. After this process, a decision was made to expand the study to the remaining 7 intervention sites, for a total of 13 tols, 5 in Hupsekot (4 intervention, 1 control) and 8 in Binayi Tribeni (6 intervention, 2 control) (Fig. 2). For these sites, a list of household heads served as the sampling frame (see Fig. 3).

3.3. Sample

For each of the 6 initially designated research sites (3 intervention and 3 control) which underwent a household listing, a list of eligible couples was generated from which 45 couples were randomly selected. In the seven sites where only lists of household head names were available, we randomly selected 45 households and conducted an

eligibility screening at the time of the household visit. Eligible couples in all sites were aged 18 years or older, spoke Nepali, lived in the household at least 15 days a month, and did not have plans to migrate in the next two years. If no eligible couple lived in the household, then a replacement household was selected from the household listing/list of household heads. If more than one eligible couple lived in the household, then the couple with the younger wife was selected. As part of the baseline survey, all study participants were asked to provide the name and contact information of up to three prominent peers (alters) in their social network. One nominated peer from each study participant was then asked to participate in the survey. Of the 1961 eligible individuals who were approached to participate in the study, 1953 consented to participate (99.5%). The initial sample at baseline included 571 wives (or ego women), 569 husbands (or ego men), and 813 alters (nominated peers), (total $N = 1953$). Of those who completed the baseline survey, a random sample of 200 ego couples (400 individuals) were selected to be approached for recruitment into listening, discussion, and action groups (LDAGs) across the 10 intervention sites. Due to refusals to participate in the intervention, a total of 255 couples were approached before reaching the target of enrolling 200 couples. Due to drop out of intervention participants at the beginning of the intervention, an additional sample of 41 individuals were administered the baseline survey and enrolled into the intervention; however, no alters were interviewed for these individuals due to limited time. The final baseline sample was 1994 participants (592 wives, 589 husbands, 813 alters). The follow-up sample included 509 wives, 429 husbands, 613 alters, (total $N = 1551$) at midline and 505 wives, 390 husbands, and 619 alters (total $N = 1514$) at endline. The eligible sample for the present study was restricted to 442 ego women with complete data at baseline, midline and endline on primary outcomes, which included 173 LDAG members in the intervention communities, 178 community residents of the intervention communities but who were not LDAG members, and 91 women residing in the neighboring control communities.

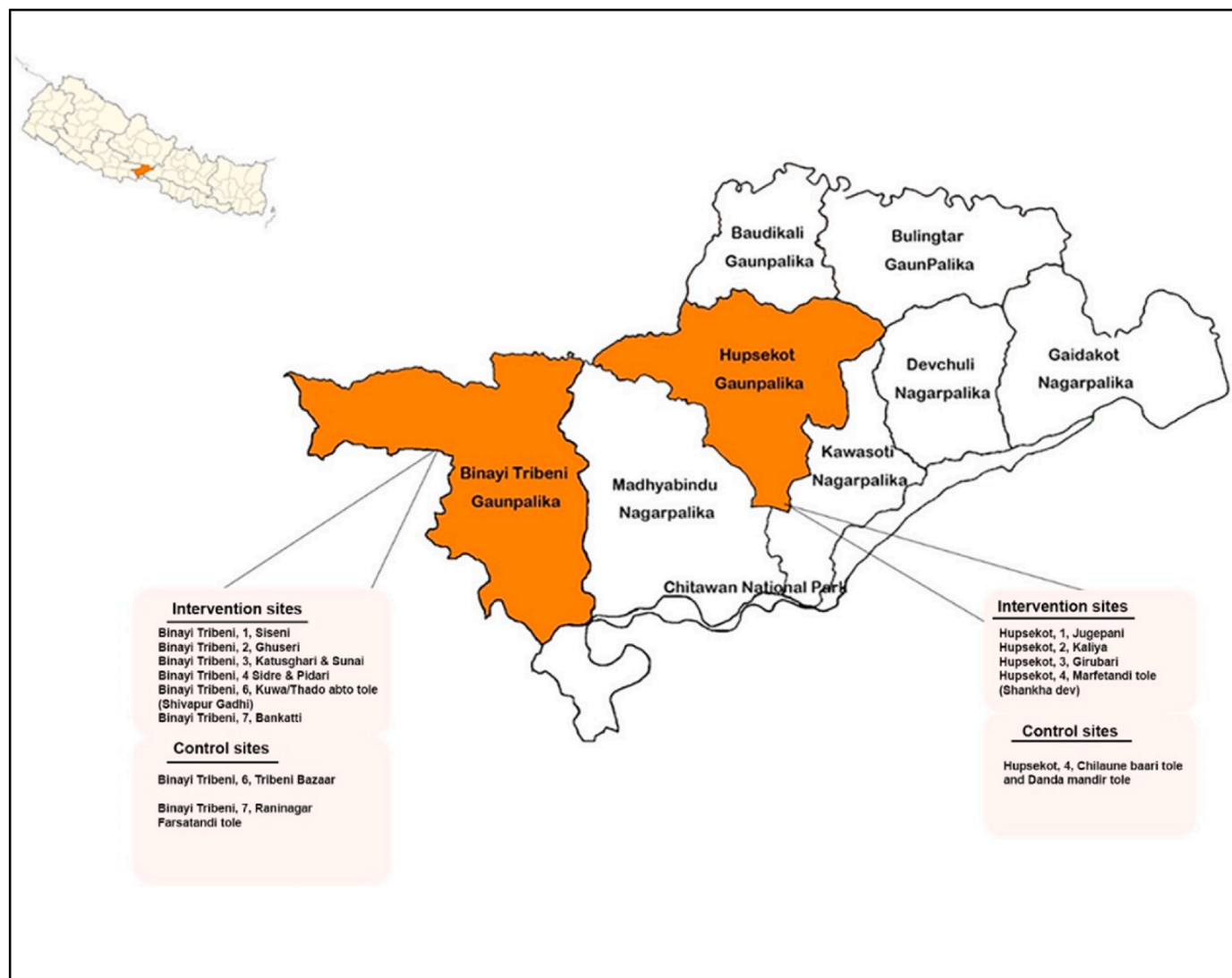


Fig. 2. Selected municipalities for the project activities.

3.4. Intervention

The focus of the IPV prevention strategy is a 40-week couples' curriculum, built around a 39-episode edutainment audio serial-drama whose characters and storyline encourage critical reflection and discussion on harmful gender norms and behaviors that perpetuate IPV, while also modelling new pro-social skills and behaviors. Topics in the curriculum include gender, power, norms, alcohol use, sexual desire and consent, effective communication, joint decision-making, conflict resolution, survivor support, and household roles and responsibilities. The group activities and take-home tasks encourage couples to practice skills and new behaviors with each other, as well as pioneer change within their families and wider communities. Couples meet weekly in gender-segregated groups. Once a month, the men's and women's groups are held jointly and family members are invited quarterly. The groups, known as listening, discussion, and action groups (LDAGs) create a safe space where new knowledge and behaviors can be practiced and integrated into everyday life (Ernst, 2005).

LDAGs also act as a platform through which members learn and practice advocacy and community mobilization skills community and conduct outreach activities in the diffusion phase of the program, which includes an additional 12-session curriculum administered over 8 months. Between sessions, groups use a toolkit (film, episodes from the

radio drama, and a video recording of a community theatre performance) to conduct: 1) discussions with their family and friends; 2) a 'violence free flag campaign' where households are encouraged to raise a specially designed flag to show they agree to publicly take a stand against IPV; 3) public appreciation events for households who have raised a flag; and 4) public meetings (Bhelas) in collaboration with local community groups and government officials to encourage wider community change. The intervention also includes 3 workshops with local leaders/influencers, local government, and local community groups to highlight violence prevention as a viable strategy distinct from response and to encourage coordination with the work of the LDAGs.

The workshops and wider advocacy by the program spurred the creation of a network of Violence Free Community Committees (VFCCs) during the diffusion phase. These were not part of the planned intervention but were formed at the urging of local government officials and representatives of community groups who wanted a viable means to receive and deploy already available funding for violence prevention initiatives. A VFCC has now been formed in each of the 10 project wards, the next highest administrative unit above tols, and include membership from a ward-level elected government official, LDAG members, group facilitators, as well as representatives from local women's and mothers' groups, and community-network leaders. The VFCCs receive no financial incentive from the project. See the [Online Supplement 1](#) for a

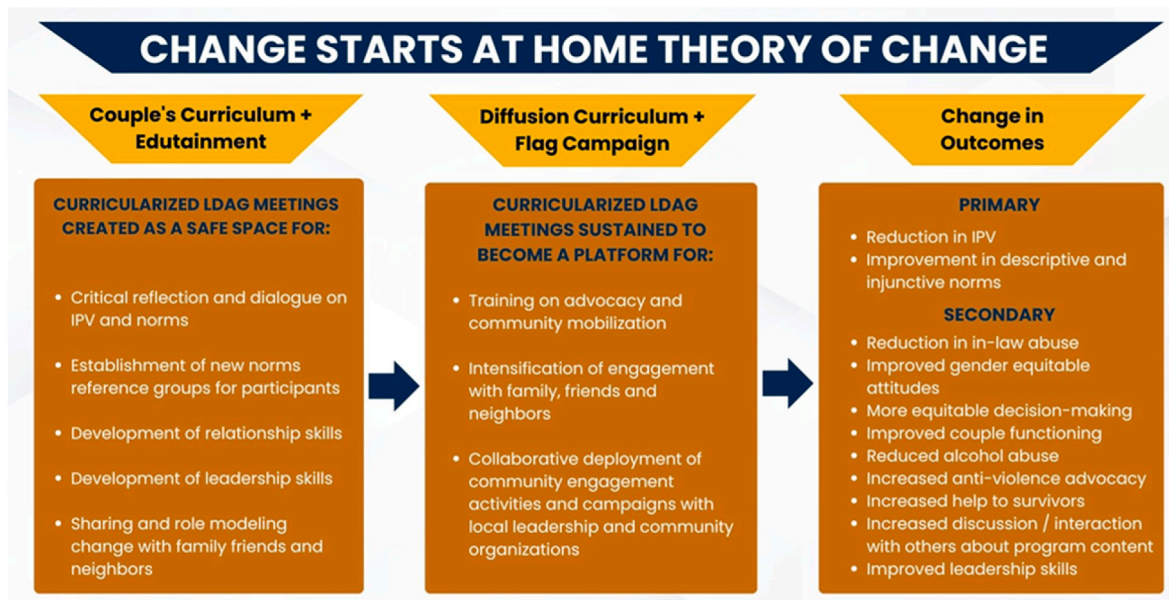


Fig. 3. Change Starts at home theory of Change.

description of the activities, additional detail on the project theory of change, community engagement in the development of the intervention, links to the curricula, and activity engagement.

3.5. Study Endpoints

3.5.1. Primary outcome measures

IPV in the 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 assess the frequency of occurrence (never, once, few, many) of four items measuring psychological IPV, five items measuring physical IPV, and three items measuring sexual IPV. The team undertook a confirmatory factor analysis including the 3 constructs. The model had good fit (RMSEA = 0.05; CFI = 0.99; TLI = 0.99); however, the 3 factors were highly correlated with one another (psychological with physical 0.95; psychological with sexual 0.71, physical with sexual 0.65); therefore, the scale was modeled both as any IPV and separately by type.

A modified 25-item version of the Partner Violence Norms Scale (PVNS) (Clark et al., 2018) was administered to assess **injunctive norms** about acceptable gender roles, the acceptability of violence, and the acceptability of help seeking. Response options were on a 5-point Likert scale ranging from nearly all (1) to none at all (5). A score was created by averaging across the items with higher scores indicating more positive injunctive norms (Cronbach's alpha = .91).

Descriptive norms were measured using nine items assessing the respondent's perceptions about how people behave in the community. Response options were on a 4-point Likert scale from strongly disagree (1) to strongly agree (4). A score was created by averaging across the items with higher scores indicating more negative beliefs about community behavior (Cronbach's alpha = .79).

3.5.2. Secondary outcome measures hypothesized to Be Mechanisms of Change

The measure of **in-law violence** was developed for the *Change* trial, based on prior research highlighting the role of in-laws in women's risk of IPV (Samuels et al., 2017). Three items assessed in-law perpetrated emotional violence, physical violence, and encouragement of IPV. An affirmative response across the three items constituted exposure to in-law abuse, which was modeled dichotomously.

Gender equitable attitudes were measured with 11 items derived

from the Gender-Equitable Men scale (Pulerwitz & Barker, 2008). Respondents answered on a 4-point Likert scale from strongly agree (1) to strongly disagree (4). A score was calculated as the mean across the items, ranging from 1 to 4, with a higher score representing more gender equitable attitudes (Cronbach's alpha = .81).

Effective power was measured with 3 items developed for the original *Change* trial assessing how much say women have in decisions that affect them, women's ability to say no to their husband/family when he/they ask(s) her to do something unreasonable, and how much control women have over their personal safety in the home using a visual aid of a ladder with five rungs, the top being the most effective power, the bottom rung being the least. A mean across the three items was calculated, ranging from 1 to 5, with higher scores representing greater effective power (Cronbach's alpha = .90).

Financial decision-making agency was assessed with an index of 15 items adapted from prior research (Tomar et al., 2021) examining who has the say in 5 financial decisions including: who makes the decision, which was coded 1 if the respondent made the decision alone or jointly with her spouse, or a 0 otherwise; 2) who makes the final decision if there are disagreements, which was coded 1 if the respondent was the final decision-maker, or a 0 otherwise; and 3) how often the respondent has her desired level of control over the decision, coded as 1 if "always" or "usually" and 0 if "rarely" or "never". A sum across the three domains was calculated for each decision, which were then averaged for a decision-making score (range: 0–3) so that higher values indicate higher decision-making agency.

Decision-making regarding sexual activity was assessed with 1-item used in the original *Change* trial asking who has the final say about whether to have sex. Response options to this item include mostly your husband (1), mostly you (2), or both equally (3). If the respondent reports either 2 or 3, she was considered to have participated in decisions regarding sexual activity and assigned a 1, otherwise a 0 was assigned.

Relationship quality and equity was assessed with an 7-item expanded form of an instrument used in prior IPV prevention research in Rwanda (Dunkle et al., 2020) and the original *Change* trial to assess whether the respondent felt respected, trusted, loved and treated as an equal, using a 3-point Likert scale from never (0) to always (2). A score was calculated as a sum across items (range: 0–14) with higher scores indicating greater relationship quality and equity (Cronbach's alpha = 0.90).

The frequency of **quarreling** was assessed with 1 item from the World Health Organization' Multi-Country Study on Health and Domestic Violence Against Women (WHO MCS). (World Health Organization, 2005). Response options were on a 3-point Likert scale ranging from "rarely (0)" to "often (2)". The item was modeled as an ordered categorical variable.

Communication between the husband and wife in the prior week (never, once, few, many times) was assessed with a modified 5-item version from the WHO MCS (World Health Organization, 2005). Response options were on a 4-point Likert scale ranging from "never (0)" to "many times (3)." The score was calculated as the mean across the items, range 0–3, so that higher scores indicate greater communication (Cronbach's alpha = .90).

Conflict resolution was assessed with 2 items adapted from the Relationship Self Efficacy Beliefs' Scale (Lopez et al., 2007) inquiring about the ease with which the wife and husband work out everyday problems together and talk openly and directly about a topic on which they disagree. Response options were on a 3-point Likert scale ranging from "not easily at all (0)" to "very easily (2)". An average across the two items represents greater capacity to resolve conflicts.

Alcohol abuse was assessed with an item from the WHO MCS (World Health Organization, 2005) assessing the frequency with which the respondent saw her spouse drunk. Response options were on a 5-point Likert scale ranging from "Never (0) to "Every day or nearly every day" (4). The item was modeled as an ordered categorical variable.

Leadership competence was assessed with 5 items from the Sociopolitical Control Scale (Peterson et al., 2011). Items investigate the individuals' perception about their leadership traits and the degree to which community members look to the individual for advice and leadership. Items were rated using a 4-point Likert scale ranging from 1) strongly disagree to 4) strongly agree. A mean score across items, range 1–4, represents higher leadership competence (Cronbach's alpha = 0.88).

GBV advocacy was assessed with 4 items measuring whether in the prior 12 months the respondent had joined others to address GBV in the community, had spoken out about GBV with a family, friend or neighbor, spoken to authorities or government organizations about GBV, or attended a public event on GBV. An affirmative response to any of the items indicated the presence of GBV advocacy, which was modeled dichotomously.

Help-providing in the past 12 months was assessed with an item developed for the *Change* trial measuring whether the respondent "personally tried to help a married woman who had been beaten or otherwise hurt by her husband." The item was modeled dichotomously.

The frequency of communicating anti-violence against women messaging to others (diffusion) was measured with 4 items assessing who the respondent had spoken to about anti-violence against women messaging heard through radio programming, television announcements, street theatre, and community leaders. For each form of media, we asked the respondents about 27 different types of potential message recipients. The variable was dichotomized to identify those who had answered yes to any of the 27 different message recipients as someone who spread anti-violence against women messaging or someone who had not.

Exposure to the following *Change* activities, by either the respondent or their spouse, was assessed to determine engagement with program elements: watching or listening to Samajhdari on the radio, television, or in community theatre; attending listening and discussion groups as either a regular member or guest; and attending workshops, community forums, or community events.

3.5.3. Socio-demographics

Several socio-demographic variables were assessed including age in years, highest completed education level of participant and participant's husband, caste/ethnicity, birth location, employment of participant and

participant's husband, asset score, income stress, age at marriage in years, marriage type, number of children, and community group involvement.

3.5.4. Analysis

Using survey data from baseline, midline, and endline, we first examined the distribution of all variables at each time point, by study condition, and change in these measures over time. To examine program impact, we fit generalized linear models within a generalized estimating equation (GEE) framework to account for clustering within person over time and within study site. As study clusters are not randomized to intervention and control, we used multinomial logistic regression to calculate propensity scores including variables that are theoretically associated with the outcome variables among the sociodemographic variables assessed prior to the administration of the intervention. This approach generated 3 scores representing the estimated predicted probabilities of assignment to each treatment group which total to 1.00 for each respondent (Spreeuwenberg, Bartak et al., 2010) We chose to use direct adjustment of the multiple propensity scores as this method was shown to best correct for bias in a simulation of cluster randomized trials, albeit the evaluation was undertaken among cRCTs with low incidence binary outcomes (Leyrat et al., 2014). To test for the impact of propensity score adjustment on the balance of the baseline sample, we fit multinomial regression models in which each of the sociodemographic variables were regressed on intervention condition first without then with adjustment for the propensity scores (Table 1). Following the guidance of Spreeuwenberg et al. (2010) we entered two of the three propensity scores into the GEE models along with an interaction term including the two variables. We also interacted each of these variables (2 propensity scores and their interaction) with time to account for potential differences in the impact of confounders on outcome change in addition to intervention condition, time, and an interaction between condition and time.

3.5.5. Ethics

The study follows global best practices in the collection of data on violence against women (World Health Organization, 2001, p. 33) and was approved by the Nepal Health Research Council and the (Institutional Review Board at Emory University). All participants gave written informed consent and re-consented at each time data collection time point.

4. Results

4.1. Differences between conditions at baseline

Over half (56.3%) of the female ego study participants were recruited from Binaya Tribeni Municipality. On average, study participants were 35.4 ($SD = 8.3$) years of age, married at age 18.4 ($SD = 2.9$), had 2.2 children ($SD = 1.2$), had 5.2 years of education ($SD = 4.3$), and had a spouse with 7.1 years of education ($SD = 3.6$). Most (61.8%) were of an indigenous ethnicity (Janajati—outside the Hindu caste system) and were born in another rural area (50.2%). The majority worked in agriculture (62.9%), had spouses that worked in agriculture (52.7%), and reported income stress (77.2%). The vast majority were also members of a community group (82.6%), most frequently a savings group. Respondents in the LDAGs and community-members in these intervention communities were more like one another than either group was to the control group participants (Table 1). The intervention participants (LDAGs and community members) had a larger percentage of respondents who were of Janajati ethnicity, born in another rural area, worked in agriculture, had a spouse that worked in agriculture, and married for love without the family's blessing. The intervention community participants also had a lower asset score and educational attainment.

Table 1
Sociodemographic Characteristics of women participants by study condition, baseline (N = 442).

	Control	Community	LDAG ^a	P-value	P-value
				Before PS adjustment	After PS adjustment
Number of Communities	3	10	10		
Number of Respondents	91	178	173		
Socio-Demographics					
Municipality, % (n)				.36	>.99
Binayi Tribeni	61.5 (56)	57.3 (102)	52.6 (91)		
Hupsekot	38.5 (35)	42.7 (76)	47.4 (82)		
Age, M (SD)	36.3 (8.1)	34.4 (8.7)	35.9 (8.1)	.11	.91
Caste, % (n)				<.01	>.99
Brahmin/Chhetri (hill)	12.1 (11)	9.0 (16)	14.5 (25)		
Brahmin/Chhetri (terai)	29.7 (27)	6.2 (11)	4.1 (7)		
Janajati	40.7 (37)	69.7 (124)	64.7 (112)		
Dalit (hill/terai)	8.8 (8)	12.8 (22)	12.1 (21)		
Muslim/Other terai/Madhes	8.8 (8)	3.9 (5)	4.6 (8)		
Birth Location, % (n)				.44	>.99
This community/town	29.7 (27)	27.5 (49)	29.5 (51)		
Other rural area	41.8 (38)	54.5 (97)	50.3 (87)		
Other town/city	20.9 (19)	14.6 (26)	15.6 (27)		
Other country	7.7 (7)	3.4 (6)	4.6 (8)		
Education, M (SD)	6.3 (4.5)	4.9 (4.2)	5.0 (4.2)	.02	.99
Spouse Education, M (SD)	7.7 (3.9)	7.2 (3.5)	6.7 (3.6)	.10	.95
Employment, % (n)				<.01	.99
None	41.8 (38)	22.5 (40)	14.5 (25)		
Agriculture	38.5 (35)	68.0 (121)	70.5 (122)		
Other	19.8 (18)	9.6 (17)	15.0 (26)		
Spouse Employment, % (n)				<.01	.99
None	0.0 (0)	0.0 (0)	1.2 (2)		
Agriculture	33.0 (30)	55.6 (99)	60.1 (104)		
Other	67.0 (61)	44.4 (79)	38.7 (67)		
Asset Score, M (SD)	0.3 (1.0)	0.1 (1.0)	-0.2 (0.8)	<.01	.89
Income stress, % (n)	80.2 (73)	76.4 (136)	76.3 (132)	.74	.84
Age at Marriage, M (SD)	18.9 (3.1)	18.2 (2.7)	18.4 (2.9)	.15	.97
Marriage Type, % (n)				.04	>.99
Love marriage with family's blessing	8.8 (8)	15.7 (28)	12.1 (21)		
Love marriage without family's blessing	29.7 (27)	42.7 (76)	40.5 (70)		
Arranged by family with consent	59.3 (54)	37.1 (66)	45.1 (78)		
Arranged by family without consent	2.2 (2)	4.5 (8)	2.3 (4)		
Number of Children, M (SD)	2.2 (1.1)	2.1 (1.2)	2.3 (1.1)	.46	.95
Community Group involvement, % (n)	83.5 (76)	83.2 (148)	81.5 (141)	.89	.97

Notes.

^a Listening, discussion, and action group member.

Table 2
Propensity score adjusted estimate of Change from baseline to midline (T2) and endline (T3) in outcomes relative to control, N = 442.

Outcomes	Comm x T2		LDAG x T2		Comm x T3		LDAG x T3	
	Estimate	SE	Estimate	SE	Estimate	SE	Estimate	SE
Primary Outcomes								
IPV ^a	-0.33	0.08	-0.39	0.09	-0.16	0.08	-0.28	0.08
Psychological IPV ^a	-0.32	0.07	-0.35	0.08	-0.19	0.07	-0.26	0.07
Physical IPV ^a	-0.20	0.06	-0.25	0.06	-0.15	0.05	-0.19	0.06
Sexual IPV ^a	-0.31	0.07	-0.27	0.07	-0.22	0.07	-0.19	0.07
Negative descriptive norms	0.01	0.08	-0.08	0.09	0.00	0.09	-0.13	0.09
Positive injunctive norms	0.46	0.11	0.49	0.12	-0.05	0.12	0.06	0.12
Secondary Outcomes								
In-law violence ^a	-0.08	0.05	-0.14	0.05	-0.12	0.05	-0.16	0.06
Gender equitable attitudes	0.17	0.09	0.30	0.10	0.10	0.08	0.21	0.08
Effective power	-0.19	0.21	0.02	0.21	-0.07	0.21	0.12	0.20
Financial decision-making	0.39	0.14	0.43	0.14	0.26	0.13	0.33	0.12
Sexual decision-making ^a	0.21	0.08	0.21	0.09	0.11	0.08	0.15	0.08
Relationship quality	1.59	0.46	2.03	0.51	0.80	0.49	1.04	0.51
Quarreling**	-0.07	0.42	0.58	0.43	0.11	0.43	0.18	0.44
Communication	0.31	0.13	0.28	0.13	0.27	0.15	0.25	0.15
Conflict resolution	-0.01	0.10	0.06	0.10	0.08	0.10	0.03	0.10
Alcohol abuse**	-0.78	0.31	-0.47	0.30	0.17	0.40	0.41	0.40
Leadership	0.15	0.10	0.32	0.10	0.05	0.11	0.40	0.11
GBV advocacy ^a	-0.04	0.06	0.31	0.07	-0.17	0.07	0.22	0.07
Help-providing ^a	-0.04	0.05	0.02	0.05	-0.04	0.04	0.03	0.05
Diffusion ^a	-0.18	0.07	0.13	0.07	0.04	0.08	0.35	0.08

Notes.

**Modeled using a cumulative logit link. Estimates significant at the p-value of <0.05 are bolded.

^a Modeled using a linear link to obtain change in prevalence compared to control.

4.2. Exposure to the intervention and adjusted changes from baseline to midline and endline in outcomes

According to control participants, 20% were exposed to Change activities, most often the community theatre. Not quite a half of the community sample (42%) reported exposure, which was most frequently the radio program, community theatre presentation, LDAG meetings and community events. The LDAG sample was almost entirely exposed (93%) with the most frequent recalled activities being like the community sample with the addition of workshops by local leaders (see [Online Supplement 1](#)).

Primary outcomes. Overall, participants in the intervention communities demonstrated significant improvement across most primary and secondary outcomes from baseline to midline, controlling for baseline differences between the groups ([Table 2](#)). IPV decreased by 33% and 39% for community and LDAG participants respectively relative to participants in the control sites. Psychological IPV decreased by 32% and 35%, sexual IPV by 31% and 27%, and physical IPV by 20% and 25% for community and LDAG participants relative to controls. Positive injunctive norms also significantly improved for both community and LDAG with an effect size of over 0.5 *SD*. Changes in negative descriptive norms for intervention participants were not significant relative to controls.

Improvements in IPV outcomes from baseline to endline for the intervention conditions were generally significant but attenuated relative to changes from baseline to midline. These reduced effect sizes at endline are driven by decreases in IPV rates for the control group from baseline to endline rather than by increases in IPV rates for the intervention groups from midline to endline (see [Online Supplement 2](#) for a description of unadjusted changes). Further, the LDAG group had larger adjusted reduction in IPV rates than the community group. A similar pattern was observed for positive injunctive norms; increases in positive injunctive norms in the control group from midline to endline rendered the relative improvements in positive injunctive forms for the intervention conditions nonsignificant.

Secondary outcomes. From baseline to midline, several secondary outcomes exhibited significant improvement for the intervention groups compared to the control group. Gender equitable attitudes, sexual decision-making, financial decision-making, relationship quality and equity, and communication showed improvement for both intervention groups at midline. The LDAG group additionally improved on in-law violence, leadership, and GBV advocacy relative to the control group; the community group showed no significant change on these outcomes at midline.

From baseline to endline, gender equitable attitudes and relationship quality and equity no longer showed significant improvement for the community group and showed significant but attenuated improvement for the LDAG group relative to the control group. These reduced effects were mostly driven by improvements in the control group at endline rather than worsening outcomes for the intervention groups at endline ([Online Supplement 2](#)). GBV advocacy also showed positive effects for the LDAG group and negative effects for the community group, driven by gains in the control group rather than reductions in the intervention groups.

Financial decision-making showed sustained improvements at endline for both intervention groups. Reductions in in-law violence were stronger at endline than midline, relative to baseline, for both intervention conditions. Improvements in sexual decision-making and communication scores in the intervention groups from baseline to endline were attenuated relative to improvements at midline. Women's effective power, quarreling, conflict resolution, and help-providing showed no significant changes at midline or endline, adjusting for the control group and differences between the three groups at baseline. Leadership and diffusion both had stronger effects at endline for the LDAG group than at midline.

5. Discussion

This novel study presents promising evidence of the effectiveness of a theoretically grounded intervention that has benefited from 7 years of testing in Nepal. This study contributes to the growing literature on intentional efforts to change social norms, address gender inequity, and improve relationship skills as a route to IPV reduction. Particularly novel among IPV prevention interventions is the intentionality of the diffusion strategy and curriculum. The continuing improvement in the LDAG group on leadership and diffusion through endline, and the generally graded degree of benefit in the intervention conditions relative to the controls demonstrates the benefit of an intentional, curriculum-focused investment in the diffusion of intervention impact. Evidence of impact among key elements of the theory of change (secondary outcomes) adds weight to the observed changes in primary outcomes, suggesting that most of the proposed pathways are being activated as intended. While further investigation is needed to understand why large changes occurred in the control condition in the latter half of the program when self-reported exposure to intervention programming was only 20%, the spread of programming to the control sites and the establishment of VFCCs bodes well for continued expansion of intervention exposure.

We hypothesize that the keys to the project's success include elements shared with other successful interventions such as: a long duration and intensity; a well-honed, evidence-based theory of change; the use of multiple and mutually reinforcing intervention components; a gender transformative approach; the use of programming tailored to the audience; a focus on the root causes of IPV; and the engagement of couples, families, and other local stakeholders to create an enabling and positively reinforcing environment for change ([The Equality Institute](#)). The facilitators in this project are chosen with well-honed criteria and are provided with ongoing support and training throughout the intervention, a best practice when intervening using group work. Further, the use of edutainment in this study is grounded in and coordinated with opportunities for dialogue, critical reflection, interpersonal and collective action, which are core features of effective SBCC programming ([Papa & Singhal, 2009](#)). The radio program itself was played within the LDAG groups which provides a more standardized approach to core message delivery than purely curriculum-guided efforts which rely heavily on the knowledge and skill set of group facilitators. The radio program was also broadcast within the wider community which supports an enabling environment as members of the greater community are also exposed to the content.

Another important aspect of the project is its engagement of local government, community leaders, and local community groups alongside LDAG members and committees. The consistent engagement and focus on prevention promotion programming, as a compliment to direct response to violent events, lent itself to creating an environment where diverse stakeholders felt compelled to organize themselves into VFCCs. The VFCC's had the overall aim of formalizing themselves into committees to enable them to receive government and other locally available funds for violence prevention work. The formation of the VFCCs can be viewed as a sustainability-enhancing process which was enabled by project workshops and community and government engagement. It is too soon to tell if the committees will flourish and continue to diffuse, but to date the evidence is promising.

Limitations and Strengths. These promising findings must be interpreted considering the study's limitations. The intervention targets women's risk of IPV in heterosexual relationships which limits the generalizability of study findings to heterosexual couples and male-to-female violence. While relatively small, the study's size enabled a deeper investigation into the communities than might otherwise be the case; however, the study size and inability to randomize resulted in unbalanced intervention and control sites requiring the use of propensity scores. The study, like almost all IPV prevention studies, relies on self-report. We have relied on well-honed measurement tools and used data collection techniques known to establish rapport and safety to

enhance accurate reporting.

Research and program implications. Study findings suggest that further testing, using a randomized design over a larger and more diverse set of communities is warranted to examine the degree to which the programming can be scaled. Given promising findings, a future assessment of cost-effectiveness would provide information that can be used to assess value for money. Study findings suggest that the intervention components are working generally as planned; however, inactivated pathways warrant further investigation to understand whether the intervention is not intensive enough in those domains or if measurement has not detected change that has occurred. The organic development of the VFCCs demonstrates progress toward institutionalization and sustainability. Following up this process with an implementation science focus would provide information about successes and challenges the committees face in their efforts to fund and deploy Change. Finally, further investigation is needed into change in the control conditions and the degree to which the intervention can be credited with the change. While diffusion of programming is a particular goal of the intervention, and the timing of the change in the control conditions matches with the diffusion phase of the curriculum, the size of the change relative to self-reported exposure suggests that other forces may be at work such as other programming or self-reflection from having taken the violence-focused survey. A newly funded follow-up data collection scheduled for later this year will shed light this issue.

Conclusion. This study underscores the potential of a meticulously designed intervention in Nepal to reduce IPV and promote and diffuse behavioral and social change. The curriculum-based approach, bolstered by seven years of testing, demonstrates its effectiveness in addressing gender inequity, transforming social norms, preventing IPV, and enhancing relationship skills. While the study's limitations call for a larger randomized trial and a deeper exploration of unexpected size of the control group changes, the promising results point towards a valuable path in the ongoing effort to combat IPV and foster violence-free communities. These findings offer actionable insights for policymakers and practitioners seeking evidence-based strategies to address IPV on a broader scale and novel community-based approaches to program sustainability.

Ethical statement

The study follows global best practices in the collection of data on violence against women (World Health Organization, 2001, p. 33) and was approved by the Nepal Health Research Council and the Institutional Review Board of Emory University. All participants gave written informed consent and re-consented at each time data collection time point.

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CRediT authorship contribution statement

Cari Jo Clark: Conceptualization, Formal analysis, Funding acquisition, Investigation, Methodology, Project administration, Resources, Software, Supervision, Visualization, Writing – original draft, Writing – review & editing. **Gemma Ferguson:** Conceptualization, Funding acquisition, Project administration, Writing – original draft, Writing – review & editing. **Soham Subedi:** Investigation, Project administration, Supervision, Writing – review & editing. **Arti Lad:** Investigation, Project administration, Supervision, Writing – review & editing. **Alexandria Ree Hadd:** Data curation, Formal analysis, Software, Visualization, Writing – original draft, Writing – review & editing. **Binita Shrestha:**

Conceptualization, Funding acquisition, Investigation, Project administration, Supervision, Writing – review & editing. **Abbie Shervinskic:** Data curation, Investigation, Software, Writing – original draft, Writing – review & editing. **Shweta Tomar:** Methodology, Writing – review & editing. **Holly Baker:** Conceptualization, Funding acquisition, Methodology, Project administration, Resources, Writing – review & editing.

Declaration of competing interest

None.

Data availability

Data will be made available on request.

Appendix A. Supplementary data

Supplementary data to this article can be found online at <https://doi.org/10.1016/j.ssmph.2023.101583>.

References

- Bourey, C., Williams, W., Bernstein, E. E., & Stephenson, R. (2015). Systematic review of structural interventions for intimate partner violence in low-and middle-income countries: Organizing evidence for prevention. *BMC Public Health*, 15(1), 1–18.
- Clark, C. J., Ferguson, G., Shrestha, B., Shrestha, P. N., Batayeh, B., Bergenfeld, I., et al. (2019). Mixed methods assessment of women's risk of intimate partner violence in Nepal. *BMC Women's Health*, 19(1), 20.
- Clark, C. J., Ferguson, G., Shrestha, B., Shrestha, P. N., Oakes, J. M., Gupta, J., et al. (2018). Social norms and women's risk of intimate partner violence in Nepal. *Social Science & Medicine*, 202, 162–169.
- Dunkle, K., Stern, E., Chatterji, S., & Heise, L. (2020). Effective prevention of intimate partner violence through couples training: A randomised controlled trial of Indashyikirwa in Rwanda. *BMJ Global Health*, 5(12), Article e002439.
- Ernst, F. A. (2005). Speaking of health: Assessing health communication, strategies for diverse populations. *Journal of the National Medical Association*, 97(6), 846.
- Ghimire, A., & Samuels, F. (2017). *Understanding intimate partner violence in Nepal: Prevalence, drivers and challenges*. London: Overseas Development Institute, Nepal Institute for Social and Environmental Research.
- Jewkes, R., Flood, M., & Lang, J. (2015). From work with men and boys to changes of social norms and reduction of inequities in gender relations: A conceptual shift in prevention of violence against women and girls. *Lancet*, 385(9977), 1580–1589.
- Lapinski, M. K., & Rimal, R. N. (2005). An Explication of social norms. *Communication Theory*, 15(2), 127–147.
- Leyrat, C., Caille, A., Donner, A., & Giraudeau, B. (2014). Propensity score methods for estimating relative risks in cluster randomized trials with low-incidence binary outcomes and selection bias. *Statistics in Medicine*, 33(20), 3556–3575.
- 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.
- Mackie, G. M. F., Shakya, H., & Denny, E. (2015). *What are social norms? How are they measured?* New York: UNICEF and UCSD.
- Ministry of Health and Population [Nepal], N. E., and ICF. (2023). *Nepal demographic and health survey 2022. Kathmandu, Nepal*. [Nepal]: Ministry of Health and Population.
- Nanda, P., Gautam, A., Verma, R., Thu Hong, K., Giang Linh, T., Puri, M., et al. (2012). *Study on gender, masculinity and son preference in Nepal and Viet Nam* (Vol. 98). New Delhi: International Center for Research on Women.
- Nwokolo, C. A., Shrestha, P. N., Ferguson, G., Shrestha, B., & Clark, C. J. (2020). Contextual attributes of the family and community that encourage or hinder the practice of intimate partner violence in Nepal. *South Asian Journal of Law, Policy, and Research*, 1(1), 41–66.
- Papa, M. J., & Singhal, A. (2009). How entertainment-education programmes promote dialogue in support of social change. *Journal of Creative Communications*, 4(3), 185–208.
- Peterson, N. A., Peterson, C. H., Agre, L., Christens, B. D., & Morton, C. M. (2011). Measuring youth empowerment: Validation of a sociopolitical control scale for youth in an urban community context. *Journal of Community Psychology*, 39(5), 392–605.
- 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.
- Samuels, F., Jones, N., & Gupta, T. (2017). *Tackling intimate partner violence in South Asia: Why working with men and boys matters for women*. London: Overseas Development Institute.
- Shakya, H. B., Cislighi, B., Fleming, P., Levto, R. G., Boyce, S. C., Raj, A., et al. (2022). Associations of attitudes and social norms with experiences of intimate partner violence among married adolescents and their husbands in rural Niger: A dyadic cross-sectional study. *BMC Women's Health*, 22(1), 1–11.

- Shakya, H. B., Perkins, J. M., Traeger, M., Tsai, A. C., Bangsberg, D. R., Kakuhikire, B., et al. (2018). Social network correlates of IPV acceptance in rural Honduras and rural Uganda. *SSM-Population Health*, 4, 236–243.
- Sharma, S. (2007). Domestic violence in Nepali society: Root Cause and Consequences A research report. *Kathmandu: Social Inclusion Research Fund (SRIF/SNV)*.
- Spangaro, J., Toole-Anstey, C., MacPhail, C. L., Rambaldini-Gooding, D. C., Keevers, L., & Garcia-Moreno, C. (2021). The impact of interventions to reduce risk and incidence of intimate partner violence and sexual violence in conflict and post-conflict states and other humanitarian crises in low and middle income countries: A systematic review. *Conflict and Health*, 15, 1–19.
- Spreuunenberg, M. D., Bartak, A., Croon, M. A., Hagenaars, J. A., Busschbach, J. J., Andrea, H., et al. (2010). The multiple propensity score as control for bias in the comparison of more than two treatment arms: An introduction from a case study in mental health. *Medical care*, 166–174.
- The Equality Institute (no date). *Piecing together the evidence on social norms and violence against women*. Melbourne, The Equality Institute.
- Tomar, S., Johns, N., Challa, S., Brooks, M. I., Aliou, S., Abdoul-Moumouni, N., et al. (2021). Associations of age at marriage with marital decision-making agency among adolescent Wives in rural Niger. *Journal of Adolescent Health*, 69(6), S74–S80.
- UNDP. (2014). *Nepali Masculinities and gender-based violence*.
- UNFPA. (2020). *Gender based violence prevention and response project (GBVPR) phase II: Programme Document*.
- United Nations. (2015). *Transforming Our World: The 2030 Agenda for sustainable development*. New York, United Nations. A/RES/70/1.
- What Works to Prevent Violence Global Program. (2015). *Standard outcomes for assessment of intimate partner violence, 1.0*.
- World Health Organization. (2001). *Putting women first: Ethical and safety Recommendations for research on domestic violence against women*. Geneva: WHO.
- 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*. Geneva: World Health Organization.
- World Health Organization. (2021). *Violence against women prevalence estimates, 2018: Global, regional and national prevalence estimates for intimate partner violence against women and global and regional prevalence estimates for non-partner sexual violence against women*.