A theory of change for community interventions to prevent domestic violence against women and girls in Mumbai, India [version 2; peer review: 2 approved]

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Abstract
Background: We describe the development of a theory of change for community mobilisation activities to prevent violence against women and girls. These activities are part of a broader program in urban India that works toward primary, secondary, and tertiary prevention of violence and includes crisis response and counselling and medical, police, and legal assistance.

Methods: The theory of change was developed in five phases, via expert workshops, use of primary data, recurrent team meetings, adjustment at further meetings and workshops, and a review of published theories.

Results: The theory summarises inputs for primary and secondary prevention, consequent changes (positive and negative), and outcomes. It is fully adapted to the program context, was designed through an extended consultative process, emphasises secondary prevention as a pathway to primary prevention, and integrates community activism with referral and counselling interventions.

Conclusions: The theory specifies testable causal pathways to impact and will be evaluated in a controlled trial.

Keywords
Domestic violence, gender-based violence, intimate partner violence, theory of change, India, Mumbai
Introduction

Although its pervasiveness and harms have long been addressed by the women’s movement, the importance of violence against women and girls as a public health priority has only been acknowledged relatively recently. The health effects are profound. Violence causes non-fatal or fatal injury; 21% of homicides in southeast Asia are committed by an intimate partner, constituting 60% of all female homicides (compared with 1% of male homicides) (Stöckl et al., 2013). Other harms include sexually transmitted infections, miscarriage, induced abortion, stillbirth, low birth weight, preterm delivery, harmful drug and alcohol use, anxiety and depression, self-harm, suicide, and trans-generational recapitulation of violence (García-Moreno et al., 2015b; WHO and London School of Hygiene and Tropical Medicine, 2010; WHO, 2013). Physical and psychological trauma and fear also lead to mental health problems, limited sexual and reproductive control, somatoform conditions (WHO, 2013), difficulties in seeking healthcare, and lost economic productivity (Solotaroff & Pande, 2014).

Some 30% of women have experienced physical or sexual violence by an intimate partner or sexual violence by a non-partner (WHO, 2013). A recent systematic review suggested that 22% of women in India had survived physical abuse in the past year, 22% had suffered psychological abuse, 7% sexual abuse, and 30% multiple forms of violence (Kalokhe et al., 2017). Non-partner sexual violence is reported regularly in the media (Raj & McDougal, 2014), but culturally sanctioned household maltreatment (Silverman et al., 2016) in the form of emotional and economic domestic violence and abuses of power, control, and neglect have been reported as particularly common in India (Kalokhe et al., 2015).

India was one of 189 signatories to the 1980 Convention on the Elimination of All Forms of Discrimination Against Women (United Nations, 1979). The United Nations declared a response imperative in 2006 (United Nations, 2006), the World Health Organization (WHO) named it a health priority in 2013 (García-Moreno et al., 2015a), and its elimination is a target of the fifth Sustainable Development Goal. The emphasis of the first wave of interventions—driven largely by feminist activism by the women’s movement from the 1960s—was support for survivors of violence, reduction in secondary perpetration, strengthening legal recourse, and advocacy (Ellsberg et al., 2014). This constitutional, rights-based approach led to the consolidation of services such as women’s shelters, counselling, legal advice, and, in India, laws such as the Protection of Women from Domestic Violence Act 2005. A second wave of interventions, again led by civil society organisations, emphasized primary prevention and community activism and took a public health position which emphasized population-based, interdisciplinary, and intersectoral interventions (WHO and London School of Hygiene and Tropical Medicine, 2010).

The Society for Nutrition, Education and Health Action (SNEHA) is a non-government organisation addressing the health needs of women and children in the context of urban informal settlements in India. The program on prevention of violence against women and children follows a socio-ecologic model developed by Heise after the work of Bronfenbrenner (Bronfenbrenner, 1979; Heise, 1998), with an understanding that determinants of violence need to be addressed at a range of levels, within families, communities, and societies. The program aims to develop strategies for primary prevention, ensure survivors’ access to protection and justice, empower women to claim their rights, mobilise communities around ‘zero tolerance’ for violence, and respond to the needs and rights of neglected groups.

The program delivers three sets of activities: community mobilisation, crisis counselling and extended response for survivors of violence, and work with police, medical and legal services. Community mobilisation includes group activities and individual voluntarism. Neighbourhood groups of women, men, and adolescents develop awareness, initiate campaigns and local action to support survivors, and build leadership. An emergent cadre of volunteers sanguinis (female friends) identify and support survivors through crisis intervention and case management, linking them with counselling, police, and medical services. This encompasses both primary and secondary prevention. The program runs five community-based and four hospital-based counselling centres. Immediate and longer-term support for survivors of violence is provided by counsellors at each centre. Counsellors take a stepped-care approach to identification, intervention, and referral of survivors of violence with common and severe mental health disorders, including in-house psychologists when required. They also work with medical, legal, and police services, for whom collaborative training programs are regularly conducted. Counsellors collaborate with the police and District Legal Aid Services Authority to assist women in filing legal cases in response to domestic violence, sexual assault and rape, and other matters pertaining to civil and criminal acts.

Our program is comprehensive and aspires to ‘community building’. Its characteristics include horizontal complexity (across sectors), vertical complexity (across socio-ecologic levels), community building (participatory efforts to enhance the capacities of individuals and connections between them and outside resources), political, economic, and infrastructural contextual issues with little power to affect them, flexibility over time, and community saturation (clusters rather than individuals) (Auspos & Kubisch, 2004).

After 15 years of cumulative program development, we wanted to understand how the components of the program fit together, think about the sequence of outcomes and indicators that
we might measure, and evaluate effectiveness. We contemplated expansion and felt a need to crystallise the program for ourselves, for others, and for protocolised rollout. We felt that the service aspects of the program were intrinsic to a rights-based response in the spirit of the Istanbul Convention (Council of Europe, 2011). Community mobilisation is less defined, despite its potential to prevent violence against women and girls (Ellsberg et al., 2014), and the theory of change focused on it for this reason. A theory of change is a hypothetical explanation of how and why an initiative works (Weiss, 1995). It seeks to understand how program activities might lead to outcomes—desired or undesired—by articulating the connections between them (Stein & Valters, 2012). Each program activity is linked with outcomes and each outcome is defined and assigned indicators (Taplin et al., 2013). Like a logic model, a theory of change is a kind of program theory (Rogers et al., 2000), or pragmatic framework (De Silva et al., 2014), in which concepts are linked with empirical findings in steps that are potentially examinable and falsifiable. Shaping evaluation around theories of change has been recommended for a variety of social programs (Chen & Rossi, 1980; Chen, 1994). Evaluators in the field of health promotion were early adopters (Birckmayer & Weiss, 2000), and there has been growing interest in evaluating complex public health interventions (De Silva et al., 2014).

We were particularly interested in developing a theory of change for the prevention of violence against women that fit our specific context of work among informal settlements in urban India.

We developed a program theory of change informed by existing theories around social norms, networks, and behaviour change (Davidoff et al., 2015; Michie et al., 2011), combined with tacit theory based on experience (Birckmayer & Weiss, 2000; Chen & Rossi, 1980; Mason & Barnes, 2007; Weiss, 1997). Our focus was on two general types of behaviour: stimulation of pro-social action and bystander intervention, and identification, support, and secondary prevention for survivors of domestic violence. In this paper, we aim to describe our theory of change.

Methods

Setting

Informal settlements (slums) are features of urbanization in India and have been described in two-thirds of cities and towns. The most recent data is that 41% of Mumbai’s households are in such settlements (Chandramouli, 2011). The latest National Family Health Survey (NFHS-4) suggests that 21% of ever-married women in Maharashtra state, the location of our work, have experienced intimate partner violence in their lifetime (IIPS, 2015). Risk factors for both physical and sexual violence include poverty, exposure to parental violence, childhood maltreatment, limited education, unemployment, young adulthood, mental disorder, substance use, individual acceptance of violence, weak community and legal sanctions, and gender and social norms supportive of violence (WHO and London School of Hygiene and Tropical Medicine, 2010). These risk factors meet in Mumbai’s urban informal settlements, along with population density and stressful living conditions, and their toll in terms of violence is the reason for our activities. UN-HABITAT characterizes them in terms of overcrowding, insufficient housing, insufficient water and sanitation, lack of tenure, and hazardous location (Ministry of Housing and Urban Poverty Alleviation, 2010; United Nations Human Settlements Program (UN-Habitat), 2003). Women and girls in these communities lack both financial and social resources and an understanding of the possibility of relief from endemic violence.

Activities

We developed the theory of change in five overlapping phases. In the first phase (July 2015 to November 2016), an external consultant (Fernandes) met with our teams for counselling and community mobilisation, police and hospital liaison, two clinical psychologists, and a lawyer to understand their experiences, challenges, and perceptions of outcomes. He interviewed seven clients of our crisis and counselling services, six police officers, and five healthcare providers, and conducted focus group discussions with eight members of a community women’s group, 15 members of a men’s group, 17 members of a youth group, and nine adolescents involved in an education program (report available as extended data (Osrin, 2019)).

To begin the second phase, we convened a three-day research workshop (August 2015) with nine team members and four researchers in the field of violence against women and girls, anthropology, ethics, and public health. The discussions were primarily about outcomes: whether the impact towards which the theory of change would be directed was a reduction in violence against women and girls, gender-based violence, intimate partner violence, domestic violence, or violence perpetrated by others outside the home. The decision, supported by subsequent discussions, was to focus on domestic violence against women and girls.

The third phase, bracketed by workshops at the beginning and end involving members of the core team, data collectors, and SNEHA researchers, interrogated the first draft of the theory of change in terms of program experience and ethics. Participants discussed and refined potential outcomes, how they were related to preventing violence, and how they could be measured. This was accompanied by two activities: an action documentation exercise and a study on gender norms around domestic violence (Daruwalla et al., 2017). In order to understand what kinds of individual and collective action people might take, and therefore to align our expectations in the theory of change with potential reality, the action documentation exercise recorded community mobilisation team members’ experiences of the kinds of action that community members had undertaken in the past. It yielded 76 actions, documented as extended data (Osrin, 2019). Adverse effects were also documented (although flare-ups in communities might actually suggest that the program was having an effect).

Table 1 provides examples of actions, categorising them as individual, collective, or individual followed by collective,
### Table 1. Illustrative examples of past actions described in a documentation exercise.

| Incident and action | Individual or collective | Ecologic level | Form of violence | Intervention function* |
|---------------------|--------------------------|----------------|-----------------|------------------------|
| A community organiser persuaded a survivor of violence to seek help in a situation in which her husband was a local crime lord. | Individual | Home | Physical | Education, Persuasion, Enablement |
| A *sangini* helped a bride-to-be deal with dowry demands from the groom's family by explaining the law and her rights and then discussing them with the family. | Individual | Home | Economic | Education |
| A woman told a community organiser that her neighbour was being beaten and locked in the house by her partner. The community organiser organised campaigns in the area and gathered a group who visited the house repeatedly, heard the woman inside, and got the police to effect entry. The woman and her partner were counselled by our organisation and continue to live together. | Individual to Collective | Home | Physical | Education, Persuasion, Enablement |
| A *sangini* intervened when a couple were fighting in the street, accompanied by their two young children. They had doused themselves in kerosene and were threatening to set fire to themselves. Other residents appeared and the *sangini* called the police. The couple returned later to thank the *sangini*. | Individual to Collective | Home | Physical | Persuasion, Coercion |
| A *sangini* heard her neighbour's seven-year-old daughter shouting for help when a local man attempted to rape her. She gained access to the house, prevented him from leaving, and called for help. A group of neighbours took him to the police station, where he was arrested. | Individual to Collective | Home | Sexual | Coercion |
| A woman fled to her mother's home after her partner hit her, but he came after her and attacked both her and her mother. They shouted for help and other group members detained the man and called the police, who arrested him. The couple are in a counselling program. | Collective | Home | Physical | Coercion, Education |
| Counsellors convinced representatives of a community body that a woman who separated from her violent husband could accept alimony without shame | Collective | Home | Economic | Education, Persuasion |
| A young married woman was being harassed by two gang members. When she rejected their advances, they beat her up, set her on fire and locked her in her house. At the public mourning after her death, a large group of relatives and friends banded together and sought help from our organisation to form a group. Our organization communicated with both the group and the police to make sure that process was followed and the perpetrators were jailed. | Collective | Neighbourhood | Sexual | Persuasion, Coercion |
| A *sangini* led a women's group to repeatedly confront a group of drug users who were harassing women. The harassment stopped and the *sangini* became a community leader in a male-dominated area. | Collective | Neighbourhood | Sexual | Persuasion, Modelling |
| Groups worked together to clean up localities, so successfully that the municipality made an educational video about them. | Collective | Neighbourhood | Environmental | Modelling |
| Groups called public meetings and deputations to the municipal corporation in order to have the local water supply fixed. | Collective | Neighbourhood | Environmental | Modelling, Persuasion |

*Education, Persuasion, Enablement, Coercion, Incentivisation, Training, Modelling, Environmental restructuring, Restrictions (Michie et al., 2011)*

whether an action was in the home or the neighbourhood, and the type of violence to which it was a response. The core team selected stories purposively to illustrate combinations of these categories. Individual action was often backed by the notional and practical security of being a member of a community group and having connections with a supportive organisation, using these connections as action escalated. Apart from help from our own organisation, and from periodic referral for skilled legal help and services for alcohol and drug dependency, the police force was a prominent institutional link. Although our commitment is to preventing domestic violence, both individual and collective actions often responded to incidents in the neighbourhood. Different kinds of violence – and particularly sexual violence in public spaces – coexist and response to each is both a source of confidence and a step toward a belief in collective efficacy. Likewise,
groups often undertook collective action to improve their environment and we see this as contributing to a sense of collective efficacy and community building.

We also tried to classify behaviour change according to the Capability, Opportunity, and Motivation model (COM-B), a theoretical approach that we will use in subsequent process evaluation. Developed to inform public health programming, the COM-B model specifies nine functions by which an intervention might stimulate change: education, persuasion, incentivisation, coercion, training, restriction, environmental restructuring, modelling, and enablement. The examples in Table 1 point to education (awareness of the problem of violence and potential approaches to addressing it), persuasion (of either perpetrators or community bodies), coercion (primarily of perpetrators, and often through linkages with the police), and modelling (of exemplary successful actions by individuals and groups) as prominent functions.

The fourth phase involved collective adjustment of the theory of change. The program core team (six SNEHA program and research members and one UCL researcher) met 15 times to work on the theory, for 2-3 hours each time. During these meetings, we used ‘backward mapping’, in which we started with agreed outcomes and then stepped backwards sequentially to understand the necessary preconditions to meet them. This was accompanied by examination of assumptions and rationales, a strategic weighing of possible interventions, and the development of indicators with which to test the causal sequence (Taplin & Clark, 2012). At the end of this phase, we presented, discussed, and adjusted the emerging theory in four workshops. We invited external activists, academics, and practitioners in Mumbai, our program base (April 2016), Delhi, where policy and advocacy expertise is concentrated (July 2016), and London, our collaborative academic base (July 2016). A summary of these meetings is available as extended data (Osrin, 2019).

In order to make sure we had not missed anything, the fifth phase involved a more formal review of mechanisms in the literature (PROSPERO 2018 CRD42018093695 Available from: https://www.crd.york.ac.uk/prospero/display_record.php?ID=CRD42018093695; a full review is forthcoming). We carried out a search for theories of change, logic models, or conceptual models of population-based interventions to prevent domestic violence. We included articles in English and excluded studies from high-income settings according to World Bank classifications. We limited the search to articles published between January 1960 and November 2018. We used Boolean combinations of the terms (“theory of change” OR “logic model” OR “conceptual model”) AND (“intimate partner violence” OR “domestic violence” OR “violence against women” OR “sexual violence” OR “physical violence” OR “economic violence” OR “emotional violence” OR “gender-based violence”) to search for articles on PubMed, Scopus, Web of Science, Google Scholar and Google sites. To limit the scope of the search, we inspected only the first 10 pages of Google Scholar and Google searches. We also read published impact evaluations listed in existing evidence reviews of interventions seeking to reduce domestic violence (Bourey et al., 2015; Ellsberg et al., 2014; Gibbs et al., 2017; Marshall et al., 2018; Yount et al., 2017).

Ethical approval

Approval for research associated with the development of the theory of change was given by the Ethicos Independent Ethics Committee (ref: 3rd December 2015). Participants in interviews and focus groups provided written consent to use of anonymised information.

Results

Primary and secondary intervention

Figure 1 summarises the emerging theory of change over a sequence of human resources or inputs, changes or outputs, and outcomes. The assumptions underlying the model are numbered and the activities of people involved are numbered and linked with a summary in Table 2. Raw data from interviews and focus groups are available (Osrin, 2017).

The theory of change narrative is that people involved in our intervention take action to help survivors of violence make informed choices, and to increase community awareness of violence against women and girls and the possibility of change. As a result of these activities, survivors and potential perpetrators understand the nature of violence. Survivors make decisions, potential perpetrators think again, and other people understand both the nature of violence and that action is possible. People stand up against violence against women and girls, individually and collectively, and community members think and act to help survivors. Families and communities stop accepting violence and strengthen community structures that support a conviction that it is intolerable. Institutional support from non-government organisations, the police, medical practitioners, and lawyers is accessible and functional and families and communities free themselves of violence against women and girls.

In this formulation, community mobilisation has two general aims: primary prevention through development of awareness of the importance and iniquity of violence against women, accompanied by knowledge of rights and law, and secondary prevention through increased identification of survivors and individual and collective action to support them. Prevention encompasses a range of interventions aiming to reduce risks or threats to health and wellbeing, grouped into three categories: primary, secondary, and tertiary. We believe that all three – particularly primary and secondary prevention - lead to reduction of violence at individual, relationship, and community levels. Primary prevention is exemplified by previous trials in which interventions have focused on increasing community awareness of violence against women, inequitable gender norms, and women’s rights. Primary prevention not only targets specific causes and risk factors for violence against women and girls, but also aims to promote healthy behaviours, increase knowledge of rights and entitlements, and improve women’s capacity to resist violence.

Secondary prevention usually describes interventions to support women survivors of violence in order to prevent
and youth working together to bring about individual and collective change with the ultimate aim of reducing domestic violence. The theory suggests that community mobilisation encourages transformation of participants and pro-social action prevents violence against women and girls, as well as bystander intervention, while local support and response, crisis counselling, medical, psychosocial, police and legal support contribute to the identification and support of survivors of violence. Visible instances of support and justice for survivors are thought to encourage greater community activism, thus completing a positive feedback loop between primary prevention (through community mobilisation) and secondary prevention (through institutional support for survivors). The detailed steps are described below.

Resources and interventions
First, the program inputs comprise salaried counsellors, community mobilisers, community volunteers and groups of women, men, and youth who join groups. Table 2 summarises expected roles for each type of individual, keyed numerically with Figure 1.
|   | Community interventions to prevent violence against women and girls. |
|---|---|
| **1 Community mobilisation and group formation** | **Table 2.** |
| **Community organisers** | ● Identify community members who want to join groups of women, men, and young people  
● Convene and facilitate groups  
● Share experiences and deliver modules on gender norms, understanding violence against women and girls, vulnerabilities to it and appropriate responses, rights, and negotiation skills  
● Identify women who want to become volunteer **sanginis** |
| **Community volunteer **sanginis** | ● Identify incidences of violence against women  
● Assess safety, provide initial counselling and information on rights and law to survivors  
● Record incidents, negotiate action, and intervene to ameliorate conflict  
● Arrange referral to SNEHA  
● Organise temporary shelter and childcare  
● Support survivors in accessing family interventions and police or health services  
● Locate perpetrators of violence and negotiate with them and families  
● Conduct community follow-up  
| **Community organisers, officers, coordinators** | ● Support **sanginis** in their field activities  
● Provide support to survivors of violence and coordinate family interventions  
● Arrange referral to SNEHA, police, or health services  
● Coordinate and undertake community follow-up  
● Act as main contact between community and counselling teams, and communicate with stakeholder networks  
| **Groups of women, men, and young people** | ● Identify incidences of violence and inform **sanginis** and community officers  
● Intervene to ameliorate conflict  
● Arrange referral to SNEHA  
● Support survivors of violence in accessing family interventions and police or health services  
● Locate perpetrators of violence and negotiate with them and families  
| **Counsellors** | ● Provide crisis counselling and intervention services  
● Counsel survivors of violence and their families  
● Make home visits for crisis intervention, family discussions, and follow-up  
● Organise referral to police, health and legal services and negotiate with them  
● Assess survivor mental health and refer for therapy  
| **2 Crisis intervention, counselling and legal support for survivors** |  
| **Community organisers, officers, coordinators** |  
| **Groups of women, men, and young people** |  
| **Community volunteer **sanginis** |  
| **Community action and system liaison** |  
| **Community organisers, officers, coordinators** | ● Organise and participate in community campaigns and support visible collective action  
● Liaise with police and health providers and negotiate with community bodies  
| **Groups of women, men, and young people** | ● Participate in community campaigns and contribute to visible collective action  
● Liaise with police and health providers and negotiate with community bodies  
● Negotiate with municipal representatives for infrastructure and entitlements  
| **Community volunteer **sanginis** | ● Support and participate in community campaigns and contribute to visible collective action  
● Liaise with police and health providers and negotiate with community bodies  

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in three categories. Mobilisation is primarily the remit of community organisers who identify potential group members, bring them together, and facilitate a sequence of modules and discussions. Group sessions aim to build a political agenda for change that privileges women’s interests and looks to transform gender and social power relations. Our group-work module follows a sequence over three years. The first year emphasises awareness of violence, gender norms, women’s rights and entitlements, and the importance and strength of women’s collectives in addressing violence against women and girls. The second year emphasises action, be it individual or collective. The third year emphasises leadership and group members are encouraged to take on prominent roles in the community. Generally, women who are proactive, articulate, have a social network in their neighbourhoods, and are willing to devote time to the issue are recommended as volunteer activists by groups and invited to become sarginis.

Along with group members, community organisers also identify survivors of violence and help group members to respond. Organisers are initiators and points of contact for involvement of counsellors and follow-up with survivors. They facilitate community events and campaigns and liaise with medical, police, and legal services. Counsellors are based close to communities and conduct crisis intervention, counselling, and home visits, as well as providing institutional support. Group members become involved in campaigns and identify and support survivors of violence. After about one year of group activity, sarginis emerge and are trained to identify and support survivors, as well as in communication and liaison with services. Community organisers work closely with sarginis whom they identify and mentor.

Changes
Second, the theory proposes three forms of local change: an increase in identification of and support for survivors of violence, changes in the beliefs and actions of group participants and volunteer sarginis, and broader changes in communities. Survivors are able to view their experience in a broader context, get help when they feel they need it, and take action to improve their situation. This visible secondary prevention leads to community awareness, increased identification and consultation, and a broad base of support. Participation in groups leads to changes in members and awareness of gender issues. This yields action in terms of individual and collective efficacy based on precedent, and visibility in the community for groups and individuals who take on leadership and volunteer roles.

Outcomes
Third, group and individual activities, linked with tangible service provision and successful interactions with counsellors, the police, and lawyers, lead to increased disclosure of violence. We believe that changes in attitudes are more likely to follow changes in behaviour than the other way around. Although there is a place for awareness and attitudinal change, our programmatic experience suggests that changes in social norms and attitudes can be accelerated by visible instances of successful response to the needs of survivors of violence. These responses themselves reduce the prevalence of domestic violence through secondary prevention, but the accompanying awareness and belief in rights and recourse is a form of primary prevention. Our main emphasis is on domestic violence, but it is conceivable that changes in community norms and bystander intervention will also reduce the likelihood of non-partner sexual violence outside the home.

Undesirable changes
Finally, the intervention might lead to a number of changes for the worse in homes and communities (Chen & Rossi, 1980). These are based on program experience and have been called ‘dark logic’ in the context of program theory (Bonell et al., 2015). Community interventions might lead to an increase in violence against women and girls as gender norms are transgressed and people push back against existing controls on women’s behaviour. This could be a short-term negative effect. Conversely, growing opposition to violence might lead to vigilantism and precipitate action and punishment meted out to either survivors or people who were not perpetrators. For example, after a group session on ration rights, a men’s group member called for a violent protest. Awareness of the problem of non-partner sexual violence might lead families to set limits to women’s mobility, and awareness of community and legal sanctions might lead perpetrators to modify the kind of violence they use. As concerns surface, it is conceivable that group members, volunteer sarginis, community organisers, counsellors, or the families of survivors of violence might face threats or exclusion. At one point, ration shopkeepers threatened a sit-in outside our organisation’s office because of our help with complaints. The unexpectedly positive effect of this negative response was that more people volunteered to join the organisation. Finally, the program’s focus on personal development and leadership might support people with personal agendas not entirely aligned with its aims, or might lead to favouritism. An example is a case in which a women’s group member stood out as a leader. She started her own group, which undertook several successful actions, but took community action on herself and would not allow others to lead. Eventually, community members would not participate in an electricity campaign and when she moved out of the area nobody took her work forward.

General theory
Three areas of disciplinary theory meet in the ideas that underlie our program theory: social norms theory (already prominent in prevention of violence against women), network theory (prominent in political science, economics, and latterly in public health), and behaviour change theory (prominent in behavioural psychology and public health).

Our ideas about norms are informed by integrated theory with a feminist perspective (Heise, 1998), which also underlies our organizational approach to working with survivors of violence. Beyond the need to work with families, we aim to ensure that no further harm is done to women, who remain the focus and whose views and making of meaning are prioritized. We believe that violence against women deserves attention as a gendered phenomenon beyond family violence (Lawson, 2012), and that gender needs to be in the foreground (Dobash & Dobash, 1979; Gelles, 1985). Our attempts to achieve gender transformative change are particularly
indebted to theory around asymmetric distribution of power between genders (Rodrigues-Menés & Safranoff, 2012), and hegemonic patriarchy (Connell, 1987; Connell, 1995).

Our thinking on potential mechanisms has been influenced by social norms theory, and particularly by discussions of the need to transform gender norms as a route to addressing violence against women (Alexander-Scott et al., 2016). This is particularly relevant because we are concerned about the forms of violence that constitute gender-based household maltreatment: emotional and economic violence, control and neglect. Our previous work suggested that we might focus on three ideas about norm change (Daruwalla et al., 2017). The first is to make use of the mismatch between descriptive and injunctive norms. A descriptive norm describes beliefs about what other people do (Bicchieri, 2006; Cialdini et al., 1991; Muldoon et al., 2014), while an injunctive norm describes beliefs about what other people think one ought to do (Bicchieri, 2006; Cialdini et al., 1991). Descriptive norms intolerant of violence are likely to be magnets for behaviour and if we are able to show examples of non-violent interaction we might be able to influence people’s perception of what is actually prevalent in the community. This is helped by our second idea, which is that injunctive norms disapprove (at least in principle) of violence. How to spread awareness of this turns on the reference group - the people surrounding an individual from whom she takes her cue (Levy Paluck et al., 2010) - and our third idea is to expand the currently limited reference groups around individuals so that they can process a larger pool of opinion on norms intolerant of violence.

When we ‘expand a reference group’, we are basically saying that individuals meet and engage with more people, and this evokes ideas from network or social capital theory (Putnam, 1995). Another way of seeing the new connections between people that develop in community groups is as weak ties or bridging social capital, in contradistinction to the (hierarchical) strong ties or bonding social capital that the family circle typifies (Granovetter, 2005; Patulny & Svendsen, 2007). Added to this is the idea of linking social capital between, for example, community members and institutions that might help them to address violence against women (Szreter & Woolcock, 2004), a process explicit in our theory of change. So, although community mobilisation is a way to address violence against women, it can be seen equally as a community building or social capital endeavour (see Szreter & Woolcock, 2004 for an anatomisation of the debates around social capital and public health).

We use the Capability, Opportunity, and Motivation model (COM-B) to think about individual behaviour change, particularly in terms of the functions of interventions that it summarises (Michie et al., 2011). The program aims to increase the capability of participants to understand violence against women, identify survivors, and take supportive action, with knowledge of law and rights, decision-making and negotiation skills, self-efficacy, and collective efficacy. This it does predominantly through education, training, enablement, and modelling (first by program staff and then by community members). It presents opportunities to engage with others, learn, develop confidence and leadership, and connect with supportive non-government and government organisations; again predominantly through education, training, enablement, and modelling. Motivation comes from the development of belief in preventing violence against women and children, increased by education, persuasion, enablement, training, and modelling. From the point of view of potential perpetrators of violence, the primary functions are persuasion, coercion, and education, accompanied (we hope) by awareness and change in attitude brought about by education and modelling and reduced opportunity for violent behaviour.

Discussion

Our theory of change differs from existing theories of change in a number of ways: it is adapted for the program’s context; it was designed through an extended consultative process from 2015 to 2017; it places major emphasis on secondary prevention as a pathway to primary prevention; it integrates community activism with referral and counselling interventions; and it makes explicit specific testable causal pathways to impact, which will be evaluated within the context of an on-going cluster-randomised controlled trial. While some previous theories of change share some of these characteristics, to our knowledge, no previous theory has had them all.

This article describes the theory of change behind a comprehensive community-based intervention to prevent violence against women through primary and secondary prevention. It took 22 months to develop the theory and involved primary data collection with multiple stakeholders, multiple workshops with critical commentators, and many team meetings. This long and careful process of theory building has resulted in a theory that improves on existing theories of change for the prevention of violence against women in a few ways.

First, the theory highlights the interconnectedness of primary and secondary prevention through a positive feedback loop. Community members become capable and motivated to identify and refer survivors to crisis counselling and institutions; in turn, successful resolution of cases of violence with institutional actors - non-government organisations, the police, medical practitioners, and lawyers - raise awareness and strengthen community members’ confidence in their own activism. Community activism still takes place through individual outreach, group discussion and reflection, or community-wide campaigns, but it is closely linked to support from local counselling and legal aid centres. This model contrasts with previous theories of change, which have tended to place their main emphasis on primary prevention through community activism and capacity building to develop awareness of burden, rights, law, and recourse (Abramsky et al., 2016; Falb et al., 2016; Pettifor et al., 2015; Wagman et al., 2015).

Second, the theory was fully adapted to the local context of urban informal settlements in India, while previous theories of change have predominantly been developed for a Sub-Saharan African context (Abramsky et al., 2016; Falb et al., 2016; Pettifor et al., 2015; Wagman et al., 2015) with the notable
exception of a single study in Nepal (Clark et al., 2017). Many elements of the current theory of change reflect previous experience over the past 15 years of program activity.

Third, the theory provides greater specificity than previous theories. These can broadly be categorised into three types: quasi-linear logic models (Clark et al., 2017; Wagman et al., 2015), stages of change models (Abramsky et al., 2014; Falb et al., 2014; Michau, 2007), and ecological models (Abramsky et al., 2016; Michau et al., 2015). Ecological models tend to see violence reduction as arising from the simultaneous operation of a large number of activities and processes at individual, household, and community levels which interact in unspecified ways. Stages of change models view violence prevention activities as progressing in stages from community entry to awareness-raising to behaviour change, but do not always specify why or how communities progress from one stage to the next. Quasi-linear logic models present intervention processes as a block of activities leading via a block arrow to another block of changes and outputs. Such models often lack clarity on the exact 'context-mechanism-outcome configurations' (Pawson & Tilley, 1997) that are expected to occur. The current theory of change lists the pre-conditions that need to be fulfilled for each component of the theory to 'work', the causal connections between each component, as well as any adverse effects that may arise. A similar approach has been taken in the development of Sonke CHANGE, a cluster randomised controlled trial in periurban Johannesburg, South Africa. The Sonke Gender Justice intervention involves workshops and community action teams working predominantly with men with an emphasis on changing harmful gender norms and prevailing hegemonic masculinity. The program theory of change proposes that community action and advocacy to promote equitable gender norms and non-violent masculine attitudes and practices will lead to enhanced critical consciousness, collective efficacy and action, and better social cohesion and trust. These will lead in turn to self-efficacy to take action, reduced influence of harmful gender norms, and an enabling environment for policy implementation (Christofides et al., 2018).

Theories of change are necessarily provisional, and may not be right, but they still serve useful functions as guides to evaluation (Birckmayer & Weiss, 2000). By providing a theoretical framework for collecting and analysing data, they can help overcome problems intrinsic to “omnibus data” (Auspos & Kubisch, 2004) that are insufficiently directional to test theory (Weiss, 1997). The current theory of change has allowed us to understand our program, consider the necessity of specific components, and be specific about intermediary changes (Birckmayer & Weiss, 2000). It also helped to clearly articulate program objectives across a range of team members—community organisers, qualitative and quantitative evaluators, anthropologists, economists, medical practitioners, psychologists, and legal advisors—with stakes in the program (Mason & Barnes, 2007). In turn, this has helped to draw lessons from experience, conduct strategic planning, communicate the working of SNEHA's program to other people, and select outcomes and indicators for monitoring and evaluation.

We are currently doing a cluster randomised controlled trial of a scalable set of interventions, specifying components and evaluating effectiveness in direct response to the theory of change. Previous evaluations have presented program theories which were subsequently only partially used for evaluation purposes. For example, many individual proposed mediators of intervention effect remain untested. Changes in policymakers, community leaders, and professionals’ attitudes, knowledge and beliefs about violence against women and girls are often hypothesised as mediators of intervention effect, but they have rarely been measured or reported (Abramsky et al., 2016; Wagman et al., 2015). Similarly, policy change at national or sub-national levels is often included in the theory of change, but excluded in the intervention impact evaluation (Abramsky et al., 2016; Clark et al., 2017; Wagman et al., 2015). For example, Falb et al. (2016) hypothesised that their intervention would increase the human, social, physical, and financial assets of girls, but focused on human and social assets in their outcome evaluation. A recent review of 62 studies of theory-informed evaluation in public health noted that integration of theory into randomised controlled trials was often limited (Breuer et al., 2016). We intend to measure and evaluate all aspects of our theory of change in our cluster randomised controlled trial.

A potential criticism of a theory of change is that the connections between specific activities and outcomes are often insufficiently understood, a challenge that we call the block and arrow problem. Given our theory's provisional nature, we hope to open up the blocks to understand the ways in which their components ‘work’. This is clearly difficult in a complex system with multiple inputs and emergent phenomena, but can be divided into three projects. The first project involves the stuff of process evaluation: to understand what was delivered, how well, what was received, and by whom. An evaluation framework is in place to address these questions both qualitatively and quantitatively in terms of reach, efficacy, adoption, implementation, and maintenance (the RE-AIM framework (Glasgow et al., 1999), which we have used before (Shah More et al., 2013)). The second project is to understand whether each of the components of the three boxes describing change happens. We hope to evaluate this quantitatively through an electronic intervention monitoring system and simultaneous qualitative observation and interview: each of the changes listed in the boxes has been taken as an indicator. For example, we will track bystander intervention quantitatively and through case studies. We will enumerate identification of survivors and their subsequent communication with medical, police, and legal services. We will conduct qualitative and quantitative assessments of people's understanding of violence and the degree to which it ceases to be thought of as a private family matter. We will...
follow group membership, actions taken by members, and the development of leadership. And we will document community enquiries and referrals as a result of violence against women.

The third project is to understand the mechanisms through which program effects are achieved. Like many public health implementors, we have a strong interest in realist evaluation (Pawson & Tilley, 1997). Within an intervention with many moving parts, which activities work well, for whom, and in which contexts? Our aim is to generate candidate context-mechanism-outcome configurations that we can propose as hypotheses, and to test them. The context of program sites will be described after a combination of ethnographic work, participatory learning and action activities, and quantitative data collection on demography, sociocultural indices, and experience of and response to violence against women. We take a method-neutral approach, combining ethnographic interviews and observation, targeted qualitative interviews with staff, group members, and volunteers, and case studies of how the intervention unfolds in selected localities; these augmented with data from our intervention monitoring system that can be used to answer specific questions. Central issues for consideration include the contribution of secondary prevention to primary prevention, the role of collective action (Gram et al., 2019), the role of expanded reference groups in norm change, and the role of men in program effectiveness (Chakraborty et al., 2018).

An interesting challenge to the development and use of our theory of change has been understanding how to frame work that has traditionally taken a feminist social position within the developing public health paradigm for complex interventions. Sociologists have proposed that randomised controlled trials could be used hypothetico-deductively to test and refine theories of change for complex public health interventions (Bonell et al., 2018). Coryn and colleagues have proposed five principles for theory-driven evaluation. It should (1) formulate a plausible program theory, (2) formulate and prioritise evaluation questions around the theory, (3) be used to guide planning, design, and execution of the evaluation, (4) measure constructs postulated in the theory, and (5) identify breakdowns and side-effects, determine program effectiveness or efficacy, and explain cause and effect associations between theoretical constructs (Coryn et al., 2011). These principles sometimes fit awkwardly with feminist concerns with building an activist social movement rather than a managerial, professional organisation. We are trying to do both.

**Conclusion**

20 years ago, Weiss said that, “If theory is taken to mean a set of highly general, logically interrelated propositions that claim to explain the phenomena of interest, theory-based evaluation is presumptuous in its appropriation of the word. The theory involved is much less abstract and more specific, more selective, and directed at only that part of the causal chain of explanation that the program being evaluated is attempting to alter” (Weiss, 1997). This certainly applies to several existing theories for prevention of violence, which include macro concerns such as national development, sectoral issues, organisational aims, or program aims (James, 2011), and whose lack of specificity has made it hard to apply them to the current theory of change.

We are particularly struck by the rapidity with which draft theories are often developed. The field tends to quite quickly adopt new approaches and there is a danger that, if theory of change is seen as something that can be produced after two or three variably attended workshops (Gooding et al., 2018), its undoubted benefits will be seen as a fad. Again, the assumption is that theory will be revisited and amended (Mason & Barnes, 2007), but program realities—and perhaps a lack of time and space to interrogate assumptions (Archibald et al., 2016)—conspire to make this uncommon.

We hope that our theory of change is plausible, feasible, and testable (Kubitsch, 1997). In developing it, we had four advantages: sufficient time, 15 years of program activities to examine, evaluators as core team members, and stakeholder involvement (Auspos & Kubisch, 2004). This meant that we were able to ensure that the theory fitted the context and the opinions of diverse contributors (Moore & Evans, 2017). We hope that our theory will become a useful tool for researchers, practitioners and policy-makers working in similar contexts to think through the pathways through which they hope to achieve impact on violence against women.

**Data availability**

**Underlying data**

UK Data Service: Changing gender norms in the prevention of violence against women and girls in India. [https://doi.org/10.5255/UKDA-SN-852735](https://doi.org/10.5255/UKDA-SN-852735) (Osrin, 2017).

This project contains transcripts of focus group discussions and interviews, translated into English. The safeguarded data files are made available to users registered with the [UK Data Service under UK Data Archive End User Licence conditions](https://doi.org/10.17605/OSF.IO/47JM). The data files are not personal, but—given the subject matter of the interviews and focus groups—the data owner and research ethics committee consider there to be a limited residual risk of disclosure.

**Extended data**

Open Science Framework: A theory of change for community interventions to prevent domestic violence against women and girls in Mumbai, India. [https://doi.org/10.17605/OSF.IO/47JM](https://doi.org/10.17605/OSF.IO/47JM) (Osrin, 2019).

This project contains the following extended data:

- Action_documentation_archive.xlsx
- Consultant_report_2016.docx (initial consultancy report)
- Reference_list.docx (reference list for development of theory of change)
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Extended data are available under the terms of the Creative Commons Attribution 4.0 International license (CC-BY 4.0).
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Open Peer Review

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Version 2

Reviewer Report 30 August 2019

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Abigail M. Hatcher

1 Department of Medicine, University of California, San Francisco (UCSF), San Francisco, CA, USA
2 School of Public Health, University of the Witwatersrand, Johannesburg, South Africa

I have no additional comments and felt the authors responded fully to the first review.

Competing Interests: No competing interests were disclosed.

Reviewer Expertise: Intimate partner violence, randomised control trials, process evaluations, theory of change, gender norms.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

Reviewer Report 29 August 2019

https://doi.org/10.21956/wellcomeopenres.16844.r36280

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Angela Taft

Judith Lumley Centre, La Trobe University, Bundoora, Australia

While I might quibble with the positioning of the description of range of general theories after the outline of the methods used in this theory development, I am comfortable that this paper deserves to be indexed and I look forward to reading the trial outcomes.

I think the argument about the need for evidence informing prevention theory on VAW that takes
into account the interdependence of actions at community level that are secondary responses but that may have preventive consequences or cause harm is valid and important. An important study in a small field in LMI countries.

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** I have conducted and published studies in intimate partner/family and gender-based violence for twenty years in both high and low income countries. These include epidemiological, Cochrane systematic reviews and pragmatic randomised controlled trials with process evaluations, co-designed interventions and qualitative exploratory studies. I am currently conducting a cluster randomised trial in primary care to enhance family doctors' care of diaspora women from South Asian countries experiencing family violence. We also work on health system responses to partner violence in Timor Leste.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard.

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**Version 1**

Reviewer Report 17 June 2019

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**Angela Taft**

Judith Lumley Centre, La Trobe University, Bundoora, Australia

This theory development and the impressive amount of empirical work preceding has the potential to make a substantial contribution to a very limited literature of prevention interventions, as it aims to develop and test a theoretical model of feedback between primary and secondary prevention in a low-income and patriarchal society. It is well written and structured. It is part of an ambitious and impressive set of studies over many years by the team at SNEHA.

I have articulated below where I think your outline could be clarified for improved understanding by readers. My comments echo those of Abigail Hatcher in suggesting that more clarity is needed about the mechanisms of action between all three phases of the model.

**Introduction**

Excellent and clear rationale for the study and the need for theory in a very challenging environment for an IPV prevention program.

1. I urge you to define how you understand primary and secondary prevention and apply it to your work, especially to clarify your intentions in the penultimate paragraph prior to the
Methods section. For example, you mention both in the second paragraph of page 3, but it is not clear to which category the activities you describe belongs.

Methods
You mostly clearly present the set of strategies used to develop your emerging theory of change.

1. p.4 - 21% of ever-married women have experienced IPV – ‘ever’ or in previous twelve months?

2. It would be helpful to describe what characterised the actions at each ecological level you describe, and I agree with the first reviewer about the need to understand how these were selected for Table 1.

3. In Table 1, why were your actions not included under these category levels which would have been more useful than below types of violence, given your decision to focus on domestic violence against women and girls? Why is non intimate partner violence and child abuse included in this table if it is part of your theory building exercise?

4. Ethical approval – can you please provide more information about Ethicos, given that searches for them do not reveal much about their scope and practice.

5. How was the literature review incorporated with your previous work and who had access to its findings. How did it contribute to your findings, given it was your last undertaking?

Results
1. Primary and secondary intervention are now defined for the first time. Again, if you have decided on domestic violence against women and girls only, why is non-partner sexual violence (very important but different) prevalence included in Figure 1 - Theory of change?

2. It is not clear to me how institutions such as the health care system are involved or mobilised, although their crisis responses are critical to the responses. How are they theorised into this model? It is only mentioned in passing on page 9 at the end of the paragraph on outcomes.

3. Please clarify what ‘institutional support’ means in the first paragraph on Page 9.

4. I also congratulate the investigators for their attention to ‘dark logic’ - potential adverse effects, but I would like more discussion about how they were predicted and managed, as there are considerable and real dangers to your workers illustrated in Table 1. You address a description of what you found or could anticipate in ‘Undesirable changes’ on page 9 – but you do not theorise how you might address it in your prevention theory.

Discussion
You argue that the theory has a strong empirical basis in their previous programs of work, is adapted to the South Asian (Indian) context rather than Africa and posits a feedback loop between secondary and primary prevention. This is admirable and indeed innovative and it will be interesting to read the outcomes of the randomised trial that is proposed to ‘measure and evaluate all aspects of our theory of change’.

However, you also argue that your current theory ‘lists pre-conditions that need to be fulfilled for each component to work’. Without comprehensive process evaluation for the interim stages between the resources – changes – outcomes sections of the theory (for example above of effective training programs or organisational links), the proposition that these demonstrate causal pathways appears very speculative.
Indeed your interim stages of training and building strong and essential individual, team and organisational capacity and these process outcomes or levels of quality are missing stages in the theory development and really need to be better addressed.

**Is the work clearly and accurately presented and does it cite the current literature?**
Partly

**Is the study design appropriate and is the work technically sound?**
Yes

**Are sufficient details of methods and analysis provided to allow replication by others?**
Partly

**If applicable, is the statistical analysis and its interpretation appropriate?**
Not applicable

**Are all the source data underlying the results available to ensure full reproducibility?**
Yes

**Are the conclusions drawn adequately supported by the results?**
Partly

**Competing Interests:** No competing interests were disclosed.

**Reviewer Expertise:** I have conducted and published studies in intimate partner/family and gender-based violence for twenty years in both high and low income countries. These include epidemiological, Cochrane systematic reviews and pragmatic randomised controlled trials with process evaluations, co-designed interventions and qualitative exploratory studies.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 11 Aug 2019

**David Osrin,** University College London, London, UK

Thanks to both reviewers for their enthusiasm for the paper and very helpful suggestions.

**Comment 1**
My comments echo those of Abigail Hatcher in suggesting that more clarity is needed about the mechanisms of action between all three phases of the model.

**Response**
We hope that the additions presented in response to Abigail Hatcher go some way toward clarity.

**Comment 2**
I urge you to define how you understand primary and secondary prevention and apply it to your work, especially to clarify your intentions in the penultimate paragraph prior to the Methods section. For example, you mention both in the second paragraph of page 3, but it is not clear to which category the activities you describe belong.

Response

We have added to the text in the Results.

“In this formulation, community mobilisation has two general aims: primary prevention through development of awareness of the importance and iniquity of violence against women, accompanied by knowledge of rights and law, and secondary prevention through increased identification of survivors and individual and collective action to support them. Prevention encompasses a range of interventions aiming to reduce risks or threats to health and wellbeing, grouped into three categories: primary, secondary, and tertiary. We believe that all three – particularly primary and secondary prevention - lead to reduction of violence at individual, relationship, and community levels. Primary prevention is exemplified by previous trials in which interventions have focused on increasing community awareness of violence against women, inequitable gender norms, and women's rights. Primary prevention not only targets specific causes and risk factors for violence against women and girls, but also aims to promote healthy behaviours, increase knowledge of rights and entitlements, and improve women's capacity to resist violence.“

“Secondary prevention usually describes interventions to support women survivors of violence in order to prevent it continuing or mitigate it. We see the enactment of these interventions as a means of both highlighting violence in the community and showing that redress and resolution are possible. In this sense, it speaks to the modelling function within the COM-B framework (a product of education, persuasion and coercion). Visible intervention to support survivors makes people aware of the problem and potential solutions. This helps to foster safe environments that reduce the risk of violence; for instance, through creating networks that offer support to women. Intervening in emergencies and demonstrating action builds trust and confidence, increases awareness and knowledge in communities, and reduces community members' tolerance of violence. Tertiary intervention describes interventions to support women in dealing with the consequences of violence, particularly effects on their mental health. Again, the pathway of support, from community activist to counsellor to psychologist and psychiatrist, sends a message to other women in difficult circumstances.”

Comment 3

P.3 Second column, second paragraph. You talk about your cadre of volunteers who take on special responsibilities. I suggest you name them as 'sanginis', as I remained puzzled as to what their responsibilities and roles were until you defined them only in the top paragraph on page 9, which is too late.

Response

Thanks. We've done this.

Comment 4

Methods. You mostly clearly present the set of strategies used to develop your emerging theory of change. p.4 - 21% of ever-married women have experienced IPV – ‘ever’ or in
previous twelve months?

**Response**
It is ‘ever’ and we have clarified this in the text.

**Comment 5**
It would be helpful to describe what characterised the actions at each ecological level you describe, and I agree with the first reviewer about the need to understand how these were selected for Table 1. In Table 1, why were your actions not included under these category levels which would have been more useful than below types of violence, given your decision to focus on domestic violence against women and girls? Why is non intimate partner violence and child abuse included in this table if it is part of your theory building exercise?

**Response**
We have redrafted Table 1, added columns, and added text to the Methods. Please see our response to Abigail Hatcher, and we have added the following to the Methods:

“Although our commitment is to preventing domestic violence, both individual and collective actions often responded to incidents in the neighbourhood. Different kinds of violence – and particularly sexual violence in public spaces – coexist and response to each is both a source of confidence and a step toward a belief in collective efficacy. Likewise, groups often undertook collective action to improve their environment and we see this as contributing to a sense of collective efficacy and community building.”

**Comment 6**
Ethical approval – can you please provide more information about Ethicos, given that searches for them do not reveal much about their scope and practice.

**Response**
The Ethicos Independent Ethics Committee is registered with the Central Drugs Standard Control Organization, Directorate General of Health Services, Ministry of Health & Family Welfare, Government of India. It includes physicians, psychologists, and other healthcare professionals. The ethics committee is organised and operates according to the requirements of the Indian Council of Medical Research, Good Clinical Practice, local law, and regulatory requirements.

**Comment 7**
How was the literature review incorporated with your previous work and who had access to its findings. How did it contribute to your findings, given it was your last undertaking?

**Response**
Apologies for the lack of clarity. We were reviewing literature throughout the theory building process but did not conduct a formal systematic review until the end. The purpose of the review was in part to uncover theoretical gaps we had not considered in our framework, but we did not find any major gaps.

**Comment 8**
Results. Primary and secondary intervention are now defined for the first time. Again, if you
have decided on domestic violence against women and girls only, why is non-partner sexual violence (very important but different) prevalence included in Figure 1 - Theory of change?

Response
We have added information about our inclusion of non-domestic violence to the Methods (response to Comment 5). Managing community expectations is critical for programs to prevent violence against women. One of the principles of community organisation and mobilisation is to work on issues that community members prioritise. Consciousness raising is an important strategy in our prevention work. Violence against women and girls is pervasive, ubiquitous, and multiform and our program seeks to build a holistic understanding. Although domestic and intimate partner violence are the commonest reasons for consultation at our counselling centres (and are our priority), women face other forms of violence in their communities. For example, during the microplanning process, women consistently report non-partner sexual violence in their families and outside their homes. It is difficult to segregate interventions on different forms of violence when we expect communities to take over and build strategies to prevent it. Moreover, community members are more interested in intervening in non-partner sexual violence as this is not considered to be a private matter and everyone has a stake in it.

Comment 9
It is not clear to me how institutions such as the health care system are involved or mobilised, although their crisis responses are critical to the responses. How are they theorised into this model? It is only mentioned in passing on page 9 at the end of the paragraph on outcomes.

Response
We hope that the revised version makes this clear. Health system responsiveness can be seen on a continuum of prevention and response in in addressing violence, including recognition and voicing of the issue, identification of vulnerabilities, facilitating referrals and institutional linkages, and creating an enabling environment. The tertiary initiatives entail counselling and legal service, advocacy for burn survivors and sensitization of staff, referrals, counselling and legal services, and ensuring deputation for training and provision of space. Tertiary prevention can be enhanced if linkages are built between the health care system and community members to monitor cases of violence, ensure long-term medical treatment in cases of mental ill health and extend support by the community as and when required.

Comment 10
I also congratulate the investigators for their attention to ‘dark logic’ - potential adverse effects, but I would like more discussion about how they were predicted and managed, as there are considerable and real dangers to your workers illustrated in Table 1. You address a description of what you found or could anticipate in ‘Undesirable changes’ on page 9 – but you do not theorise how you might address it in your prevention theory.

Response
In restructuring Table 1, we have removed the information on adverse events and placed it in the Results under undesirable changes. These were based largely on experience over the
years. Although response to each eventuality will differ and it may, as the examples included in the section now show, have an unpredicted positive outcome, it is always based on three principles: the safety of both survivors of violence and team members, organisational support, and adherence to protocols. A range of protocols are in place for response to threat and crisis, and field team members are mandated to call for support from experienced managers in any eventuality. A recent example is an incident in which local individual men became aware that women were discussing violence with our team and immediately called for suspension of activities. Senior managers met with the individuals involved, local women, and the sitting political representative - with support from the police - and the situation was clarified and resolved to the satisfaction of all parties. A second example from some years ago involved our activities being opposed by local community members after assistance for a survivor of child sexual abuse. This was resolved after community discussions with senior managers and program activities have continued in the area to date.

Comment 11
Discussion. You argue that the theory has a strong empirical basis in their previous programs of work, is adapted to the South Asian (Indian) context rather than Africa and posits a feedback loop between secondary and primary prevention. This is admirable and indeed innovative and it will be interesting to read the outcomes of the randomised trial that is proposed to ‘measure and evaluate all aspects of our theory of change’. However, you also argue that your current theory ‘lists pre-conditions that need to be fulfilled for each component to work’. Without comprehensive process evaluation for the interim stages between the resources – changes – outcomes sections of the theory (for example above of effective training programs or organisational links), the proposition that these demonstrate causal pathways appears very speculative. Indeed your interim stages of training and building strong and essential individual, team and organisational capacity and these process outcomes or levels of quality are missing stages in the theory development and really need to be better addressed.

Response: These comments are well taken and we have added material to Results and Discussion sections. Please see our response to Abigail Hatcher.

Competing Interests: The authors have no competing interests

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Abigail M. Hatcher

1 Department of Medicine, University of California, San Francisco (UCSF), San Francisco, CA, USA
This manuscript was a joy to read and addresses an issue sorely under-explored in the violence prevention literature: how to design programs so that the underlying theory is testable. To be fair, the prevention of intimate partner violence is also lacking efficacious interventions (with or without theoretical underpinnings). Yet, if new projects can be developed with strong theories of change articulated alongside them, it is feasible for outcomes to be achieved alongside a consistent advance of the theory. This is laudable and I am grateful for the hard work the authors have led towards this goal.

I have a few comments that may inform future efforts for this team and for others aiming to prevent intimate partner violence.

1. How were the actions detailed in Table 1 chosen from among the 76 total actions documented by the community mobilization team? Were these coded thematically, and was that coding undertaken by a single researcher or multiple team members? How was consensus reached and discrepancies resolved? The “Action type” and “Intervention function” are interesting but these do not map onto the theory of change, as far as I can tell. A better description of these categories and what they mean would be valuable.

2. The theory of change itself in Figure 1 adds considerably to the literature. I am particularly impressed by the assumptions that are articulated. However, I'm concerned that the arrows leading from “Resources” to “Changes” seem to be, in and of themselves, something of a black box. I would like to know (and the IPV field is search for answers to the question of) how community volunteers and groups of women and men work together to change participants? Indeed, how do these volunteers and community members take up their work in such a way that communities change overall? Is it through solidarity and group mutual support? Or is it through personal change that leads to an overall community-level benefit (i.e. the whole is greater than the sum of its parts)? The mechanism of action is not identified, which makes it very challenging to test the underlying assumptions of the theory. One suggestion would be to highlight important Theory (as in, sociological or behavioral theory) either within the figure or the accompanying text.

3. The notion of a “ceiling of accountability” is interesting, and I wonder if the authors can discuss how many IPV prevention programs position themselves along these lines. While many programs cite their stated aim is to reduce domestic violence, few projects globally have ever proven that they are able to do this.

4. It would be nice to hear a bit more about how sanginis “emerge” (or are chosen by the program to take up this role).

5. The section on “Undesirable changes” is excellent and crucial for the field, though this is the first time I have seen these concerns articulated so thoughtfully.

6. As above, the discussion statement around “makes explicit specific testable causal pathways to impact“ is not entirely right, since the pathways themselves are poorly fleshed out. While the ‘context’ and ‘outcome’ configurations are indeed mapped out, I believe the ‘mechanism’ linking the two requires additional thinking.

7. I agree with the authors position that this is among the first projects to meaningfully combine primary and secondary prevention, and this is also crucial for the field.

8. The protocol by Christofides et al (2016) would be important to include in the discussion, given its emphasis on a theory of change for primary prevention of IPV in a similar peri-urban setting. This would be particularly valuable in the sections on the three types of theory and the section about how policy change is incorporated into a theory of change and
the concomitant impact evaluation.
9. What methods beyond running a trial are the authors engaged with presently? For example, will they harness path analysis to unpack the mechanisms underlying intervention success? Will they conduct a qualitative process evaluation alongside the trial?
10. While the contradictions between feminist framing and the needs of trials/projects to be managerial in nature is important, I wonder if it could use additional thinking. In particular, this is an area where Theory (capital T) could be brought forward more intentionally, since the authors are clearly drawing from multiple approaches and epistemologies.

References
1. Christofides N, Hatcher A, Pino A, Reombo D, et al.: A cluster randomised controlled trial to determine the effect of community mobilisation and advocacy on men’s use of violence in periurban South Africa: study protocol. BMJ Open. 2018; 8 (3). Publisher Full Text

Is the work clearly and accurately presented and does it cite the current literature? Partly
Is the study design appropriate and is the work technically sound? Yes
Are sufficient details of methods and analysis provided to allow replication by others? No
If applicable, is the statistical analysis and its interpretation appropriate? Not applicable
Are all the source data underlying the results available to ensure full reproducibility? Yes
Are the conclusions drawn adequately supported by the results? Yes

Competing Interests: No competing interests were disclosed.
Reviewer Expertise: Intimate partner violence, randomised control trials, process evaluations, theory of change, gender norms.

I confirm that I have read this submission and believe that I have an appropriate level of expertise to confirm that it is of an acceptable scientific standard, however I have significant reservations, as outlined above.

Author Response 11 Aug 2019
David Osrin, University College London, London, UK
Thanks to both reviewers for their enthusiasm for the paper and very helpful suggestions.
Comment 1
How were the actions detailed in Table 1 chosen from among the 76 total actions documented by the community mobilization team? Were these coded thematically, and was that coding undertaken by a single researcher or multiple team members? How was consensus reached and discrepancies resolved?
The “Action type” and “Intervention function” are interesting but these do not map onto the theory of change, as far as I can tell. A better description of these categories and what they mean would be valuable.

Response
Both reviewers commented on Table 1, which means that it was not clear enough. In order to understand what kinds of individual and collective action people might take, and therefore to align our expectations in the theory of change with potential reality, we documented previous actions. Table 1 was included simply to give some illustrations through which readers could imagine the situation. We have redrafted it substantially, including columns categorising actions as individual, collective, or individual followed by collective, whether an action was in the home or the neighbourhood, and the type of violence to which it was a response. The core team have selected stories purposively to illustrate combinations of these categories: again, to give readers a flavour of the kinds of things that were done. We have retained the column categorising intervention functions in the COM-B model because we think it is educative. We have included more background on all of this in the Methods:

“In order to understand what kinds of individual and collective action people might take, and therefore to align our expectations in the theory of change with potential reality, the action documentation exercise recorded community mobilisation team members’ experiences of the kinds of action that community members had undertaken in the past. It yielded 76 actions, documented as extended data (Osrin, 2019). Adverse effects were also documented (although flare-ups in communities might actually suggest that the program was having an effect).”

“Table 1 provides examples of actions, categorising them as individual, collective, or individual followed by collective, whether an action was in the home or the neighbourhood, and the type of violence to which it was a response. The core team selected stories purposively to illustrate combinations of these categories. Individual action was often backed by the notional and practical security of being a member of a community group and having connections with a supportive organisation, using these connections as action escalated. Apart from help from our own organisation, and from periodic referral for skilled legal help and services for alcohol and drug dependency, the police force was a prominent institutional link. Although our commitment is to preventing domestic violence, both individual and collective actions often responded to incidents in the neighbourhood. Different kinds of violence – and particularly sexual violence in public spaces – coexist and response to each is both a source of confidence and a step toward a belief in collective efficacy. Likewise, groups often undertook collective action to improve their environment and we see this as contributing to a sense of collective efficacy and community building.”

“We also tried to classify behaviour change according to the Capability, Opportunity, and Motivation model (COM-B), a theoretical approach that we will use in subsequent process evaluation. Developed to inform public health programming, the COM-B model specifies
nine functions by which an intervention might stimulate change: education, persuasion, incentivisation, coercion, training, restriction, environmental restructuring, modelling, and enablement. The examples in Table 1 point to education (awareness of the problem of violence and potential approaches to addressing it), persuasion (of either perpetrators or community bodies), coercion (primarily of perpetrators, and often through linkages with the police), and modelling (of exemplary successful actions by individuals and groups) as prominent functions."

Comment 2
The theory of change itself in Figure 1 adds considerably to the literature. I am particularly impressed by the assumptions that are articulated. However, I’m concerned that the arrows leading from “Resources” to “Changes” seem to be, in and of themselves, something of a black box. I would like to know (and the IPV field is search for answers to the question of) how community volunteers and groups of women and men work together to change participants? Indeed, how do these volunteers and community members take up their work in such a way that communities change overall? Is it through solidarity and group mutual support? Or is it through personal change that leads to an overall community-level benefit (i.e. the whole is greater than the sum of its parts)? The mechanism of action is not identified, which makes it very challenging to test the underlying assumptions of the theory. One suggestion would be to highlight important Theory (as in, sociological or behavioral theory) either within the figure or the accompanying text.

Response
These comments are well taken and we have added material to the Results and Discussion sections. We think that the reviewer’s suggestions are both correct: the intervention develops solidarity and group support, along with collective efficacy and action, and also personal change in terms of capability, opportunity, and motivation to take action. In Results: “The theory of change narrative is that people involved in our intervention take action to help survivors of violence make informed choices, and to increase community awareness of violence against women and girls and the possibility of change. As a result of these activities, survivors and potential perpetrators understand the nature of violence. Survivors make decisions, potential perpetrators think again, and other people understand both the nature of violence and that action is possible. People stand up against violence against women and girls, individually and collectively, and community members think and act to help survivors. Families and communities stop accepting violence and strengthen community structures that support a conviction that it is intolerable. Institutional support from non-government organisations, the police, medical practitioners, and lawyers is accessible and functional and families and communities free themselves of violence against women and girls.”

In Discussion: “A potential criticism of a theory of change is that the connections between specific activities and outcomes are often insufficiently understood, a challenge that we call the block and arrow problem. Given our theory’s provisional nature, we hope to open up the blocks to understand the ways in which their components ‘work’. This is clearly difficult in a complex system with multiple inputs and emergent phenomena, but can be divided into three projects. The first project involves the stuff of process evaluation: to understand what was delivered, how well, what was received, and by whom. An evaluation framework is in place to address these questions both qualitatively and quantitatively in terms of reach,
efficacy, adoption, implementation, and maintenance (the RE-AIM framework (Glasgow, Vogt, & Boles, 1999), which we have used before (Shah More et al., 2013)). The second project is to understand whether each of the components of the three boxes describing change happens. We hope to evaluate this quantitatively through an electronic intervention monitoring system and simultaneous qualitative observation and interview: each of the changes listed in the boxes has been taken as an indicator. For example, we will track bystander intervention quantitatively and through case studies. We will enumerate identification of survivors and their subsequent communication with medical, police, and legal services. We will conduct qualitative and quantitative assessments of people's understanding of violence and the degree to which it ceases to be thought of as a private family matter. We will follow group membership, actions taken by members, and the development of leadership. And we will document community enquiries and referrals as a result of violence against women.”

“The third project is to understand the mechanisms through which program effects are achieved. Like many public health implementors, we have a strong interest in realist evaluation (Pawson & Tilley, 1997). Within an intervention with many moving parts, which activities work well, for whom, and in which contexts? Our aim is to generate candidate context-mechanism-outcome configurations that we can propose as hypotheses, and to test them. The context of program sites will be described after a combination of ethnographic work, participatory learning and action activities, and quantitative data collection on demography, sociocultural indices, and experience of and response to violence against women. We take a method-neutral approach, combining ethnographic interviews and observation, targeted qualitative interviews with staff, group members, and volunteers, and case studies of how the intervention unfolds in selected localities; these augmented with data from our intervention monitoring system that can be used to answer specific questions. Central issues for consideration include the contribution of secondary prevention to primary prevention, the role of collective action (Gram, Daruwalla, & Osirin, 2019), the role of expanded reference groups in norm change, and the role of men in program effectiveness (Chakraborty, Osirin, & Daruwalla, 2018).”

Comment 3
The notion of a “ceiling of accountability” is interesting, and I wonder if the authors can discuss how many IPV prevention programs position themselves along these lines. While many programs cite their stated aim is to reduce domestic violence, few projects globally have ever proven that they are able to do this.

Response
A ceiling of accountability is recommended by experts in theory of change. We are not aware of other theories from violence prevention programs having used it. It is particularly relevant because of the need to be realistic about what a program could achieve. We do aim to reduce domestic violence, but wider effects are unlikely in the short term.

Comment 4
It would be nice to hear a bit more about how sanginis “emerge” (or are chosen by the program to take up this role).

Response
We have added to the Results section:
“Group sessions aim to build a political agenda for change that privileges women's interests and looks to transform gender and social power relations. Our group-work module follows a sequence over three years. The first year emphasises awareness of violence, gender norms, women's rights and entitlements, and the importance and strength of women's collectives in addressing violence against women and girls. The second year emphasises action, be it individual or collective. The third year emphasises leadership and group members are encouraged to take on prominent roles in the community. Generally, women who are proactive, articulate, have a social network in their neighbourhoods, and are willing to devote time to the issue are recommended as volunteer activists by groups and invited to become *sanginis*.”

Comment 5
As above, the discussion statement around “makes explicit specific testable causal pathways to impact” is not entirely right, since the pathways themselves are poorly fleshed out. While the ‘context' and 'outcome' configurations are indeed mapped out, I believe the ‘mechanism' linking the two requires additional thinking.

Response
This challenge has been articulated by both reviewers. We have added information about our evaluative plans to the Discussion section.
“A potential criticism of a theory of change is that the connections between specific activities and outcomes are often insufficiently understood, a challenge that we call the *block and arrow* problem. Given our theory's provisional nature, we hope to open up the blocks to understand the ways in which their components 'work'. This is clearly difficult in a complex system with multiple inputs and emergent phenomena, but can be divided into three projects. The first project involves the stuff of process evaluation: to understand what was delivered, how well, what was received, and by whom. An evaluation framework is in place to address these questions both qualitatively and quantitatively in terms of reach, efficacy, adoption, implementation, and maintenance (the RE-AIM framework (Glasgow et al., 1999), which we have used before The second project is to understand whether each of the components of the three boxes describing change happens. We hope to evaluate this quantitatively through an electronic intervention monitoring system and simultaneous qualitative observation and interview: each of the changes listed in the boxes has been taken as an indicator. For example, we will track bystander intervention quantitatively and through case studies. We will enumerate identification of survivors and their subsequent communication with medical, police, and legal services. We will conduct qualitative and quantitative assessments of people's understanding of violence and the degree to which it ceases to be thought of as a private family matter. We will follow group membership, actions taken by members, and the development of leadership. And we will document community enquiries and referrals as a result of violence against women.”
“The third project is to understand the mechanisms through which program effects are achieved. Like many public health implementors, we have a strong interest in realist evaluation (Pawson & Tilley, 1997). Within an intervention with many moving parts, which activities work well, for whom, and in which contexts? Our aim is to generate candidate context-mechanism-outcome configurations that we can propose as hypotheses, and to test them. The context of program sites will be described after a combination of ethnographic
work, participatory learning and action activities, and quantitative data collection on
demography, sociocultural indices, and experience of and response to violence against
women. We take a method-neutral approach, combining ethnographic interviews and
observation, targeted qualitative interviews with staff, group members, and volunteers, and
case studies of how the intervention unfolds in selected localities; these augmented with
data from our intervention monitoring system that can be used to answer specific
questions. Central issues for consideration include the contribution of secondary prevention
to primary prevention, the role of collective efficacy (Gram et al., 2019), the role of expanded
reference groups in norm change, and the role of men in program effectiveness
(Chakraborty et al., 2018)."

Comment 6
The protocol by Christofides et al (2016) would be important to include in the discussion,
given its emphasis on a theory of change for primary prevention of IPV in a similar peri-
urban setting. This would be particularly valuable in the sections on the three types of
theory and the section about how policy change is incorporated into a theory of change and
the concomitant impact evaluation.

Response
We actually discussed this protocol in a recent team seminar, but had not included
protocols in our paper. We have added text in the relevant section.

A similar approach has been taken in the development of Sonke CHANGE, a cluster
randomised controlled trial in periurban Johannesburg, South Africa. The Sonke Gender
Justice intervention involves workshops and community action teams working
predominantly with men with an emphasis on changing harmful gender norms and
prevailing hegemonic masculinity. The program theory of change proposes that community
action and advocacy to promote equitable gender norms and non-violent masculine
attitudes and practices will lead to enhanced critical consciousness, collective efficacy and
action, and better social cohesion and trust. These will lead in turn to self-efficacy to take
action, reduced influence of harmful gender norms, and an enabling environment for policy
implementation (Christofides et al., 2018)."

Comment 7
What methods beyond running a trial are the authors engaged with presently? For example,
will they harness path analysis to unpack the mechanisms underlying intervention success?
Will they conduct a qualitative process evaluation alongside the trial?

Response
Unfortunately, we are still waiting for the trial protocol to be published. It contains a fairly
comprehensive discussion of what we intend to do. We are doing a qualitative and
quantitative process evaluation as part of the trial, along with the development and testing
of context-mechanism-outcome configurations. We have added information on to the
Discussion section and it is included in the response to Comment 5.

Comment 8
While the contradictions between feminist framing and the needs of trials/projects to be
managerial in nature is important, I wonder if it could use additional thinking. In particular,
this is an area where Theory (capital T) could be brought forward more intentionally, since the authors are clearly drawing from multiple approaches and epistemologies.

Response
In light of this and other comments, we have added a discussion of theory to the Results. “Three areas of disciplinary theory meet in the ideas that underlie our program theory: social norms theory (already prominent in prevention of violence against women), network theory (prominent in political science, economics, and latterly in public health), and behaviour change theory (prominent in behavioural psychology and public health).” “Our ideas about norms are informed by feminist theory (Heise, 1998), which also underlies our organizational approach to working with survivors of violence. Beyond the need to work with families, we aim to ensure that no further harm is done to women, who remain the focus and whose views and making of meaning are prioritized. We believe that violence against women deserves attention as a gendered phenomenon beyond family violence (Lawson, 2012), and that gender needs to be in the foreground (Dobash & Dobash, 1979; Gelles, 1985). Our attempts to achieve gender transformative change are particularly indebted to theory around asymmetric distribution of power between genders (Rodrígues-Mené & Safranoff, 2012), and hegemonic patriarchy (R. Connell, 1987; R. W. Connell, 1995).” “Our thinking on potential mechanisms has been influenced by social norms theory, and particularly by discussions of the need to transform gender norms as a route to addressing violence against women (Alexander-Scott, Bell, & Holden, 2016). This is particularly relevant because we are concerned about the forms of violence that constitute gender-based household maltreatment: emotional and economic violence, control and neglect. Our previous work suggested that we might focus on three ideas about norm change (Daruwalla et al., 2017). The first is to make use of the mismatch between descriptive and injunctive norms. A descriptive norm describes beliefs about what other people do (Bicchieri, 2006; Cialdini, Kaligren, & Reno, 1991; Muldoon, Lisciandra, Bicchieri, Hartmann, & Sprenger, 2014), while an injunctive norm describes beliefs about what other people think one ought to do (Bicchieri, 2006; Cialdini et al., 1991). Descriptive norms intolerant of violence are likely to be magnets for behaviour and if we are able to show examples of non-violent interaction we might be able to influence people’s perception of what is actually prevalent in the community. This is helped by our second idea, which is that injunctive norms disapprove (at least in principle) of violence. How to spread awareness of this turns on the reference group - the people surrounding an individual from whom she takes her cue (Levy Paluck, Ball, Poynton, & Sieloff, 2010) - and our third idea is to expand the currently limited reference groups around individuals so that they can process a larger pool of opinion on norms intolerant of violence.” “When we ‘expand a reference group’, we are basically saying that individuals meet and engage with more people, and this evokes ideas from network or social capital theory (Putnam, 1995). Another way of seeing the new connections between people that develop in community groups is as weak ties or bridging social capital, in contradistinction to the (hierarchical) strong ties or bonding social capital that the family circle typifies (Granovetter, 2005; Patulny & Svendsen, 2007). Added to this is the idea of linking social capital between, for example, community members and institutions that might help them to address violence against women (Szreter & Woolcock, 2004), a process explicit in our theory of change. So, although community mobilisation is a way to address violence against women, it can be seen equally as a community building or social capital endeavour (see (Szreter &
Woolcock, 2004) for an anatomisation of the debates around social capital and public health.”

“We use the Capability, Opportunity, and Motivation model (COM-B) to think about individual behaviour change, particularly in terms of the functions of interventions that it summarises (Michie, van Stralen, & West, 2011). The program aims to increase the capability of participants to understand violence against women, identify survivors, and take supportive action, with knowledge of law and rights, decision-making and negotiation skills, self-efficacy, and collective efficacy. This it does predominantly through education, training, enablement, and modelling (first by program staff and then by community members). It presents opportunities to engage with others, learn, develop confidence and leadership, and connect with supportive non-government and government organisations; again predominantly through education, training, enablement, and modelling. Motivation comes from the development of belief in preventing violence against women and children, increased by education, persuasion, enablement, training, and modelling. From the point of view of potential perpetrators of violence, the primary functions are persuasion, coercion, and education, accompanied (we hope) by awareness and change in attitude brought about by education and modelling and reduced opportunity for violent behaviour.”

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**Competing Interests:** The authors have no competing interests