

Trauma, Violence, & Abuse

Randomised controlled trials of interventions addressing intimate partner violence in sub-Saharan Africa: A systematic review.

Journal:	<i>Trauma, Violence, & Abuse</i>
Manuscript ID	TVA-17-125.R3
Manuscript Type:	Review Manuscripts
Keywords:	Domestic violence and cultural contexts < Domestic Violence, Intervention/treatment < Domestic Violence, Anything related to domestic violence < Domestic Violence, Anything related to domestic violence < Domestic Violence < Cultural Contexts

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Manuscripts

Review

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3 **Randomised controlled trials of interventions addressing intimate partner violence in**
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5 **sub-Saharan Africa: A systematic review.**
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7
8 **Abstract**
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10 Background: Intimate partner violence (IPV) perpetrated by males is the most prevalent form
11 of violence against women across the globe. A systematic review was carried out to identify
12 published randomised controlled trials of interventions aiming to prevent or reduce IPV in
13 sub-Saharan Africa. Details were sought on the interventions, outcomes, and risk of bias in
14 evaluations.
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22 Methods: Articles were identified by searching MEDLINE, Embase, Web of Science, and
23 PsychInfo. The search included terms pertaining to IPV, the research design and the target
24 geographical region. To be included, studies needed to have assessed the impact of an
25 intervention on reported incidence, prevalence of IPV, or measures of related attitudes and
26 behaviours. Fifteen papers were included in the final review. Risk of bias was evaluated using
27 the Cochrane Library 'Risk of Bias' tool.
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36 Results: Findings suggest that interventions have the potential to reduce IPV-related
37 behaviours and attitudes. Certain types of IPV were more amenable to change than others.
38 Higher levels of efficacy were identified in interventions that had longer follow-up, addressed
39 IPV as a main aim, and occurred at the community level or multiple levels of the social
40 ecology.
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47 Conclusions: Findings should be interpreted in light of varying risks of bias. Suggestions are
48 made for future research and practice.
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Randomised controlled trials of interventions addressing intimate partner violence in sub-Saharan Africa: A systematic review.

Introduction

Violence against women affects approximately one third of women in their lifetime (WHO, 2013). Intimate partner violence (IPV), defined as behaviour within an intimate relationship that causes physical, sexual or psychological harm, including acts of physical aggression, sexual coercion, psychological abuse, and controlling behaviours (WHO, 2010), is the biggest contributor to this high prevalence (WHO, 2013). Although IPV can be perpetrated by women, and violence can exist in same-sex relationships, the most common type of IPV is that inflicted by men against female partners (UN Women, 2013).

Women who have experienced IPV are significantly more likely to report poor physical health (Ellsberg et al., 2008), and it is associated with numerous negative reproductive health outcomes (Hindin et al., 2008), and alcohol abuse (WHO, 2013). Women who have experienced IPV are more likely to experience depression (WHO, 2013), and report more suicide attempts (Ellsberg et al., 2008). Additionally, as the positive association between IPV and HIV is strongest in regions with high prevalence rates of HIV, such as sub-Saharan Africa, women experiencing IPV in this region are particularly vulnerable to infection (Durevall et al., 2015; UNAIDS, 2014). These physical and mental health implications have led the WHO (2013) to identify IPV as a global public health problem of epidemic proportions.

Economically, IPV incurs both direct costs, such as the cost of treating physical injuries, and indirect costs, related to the detrimental impact it has on women taking advantage of economic opportunities (International Rescue Committee [IRC], 2012). Fearon and Hoeffler (2014) estimated the global costs of IPV to be 5.2% of global gross domestic

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3 product. These associations demonstrate that addressing IPV is essential in the pursuit of
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5 global health, economic and social development (García-Moreno et al., 2015).
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8 Understandings of violence against women have shifted from individual level
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10 explanations, to recognising the complex interplay of multiple factors (Michau et al., 2015)
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12 such as gender inequality and discrimination (UN Women, 2013). In this vein, the WHO
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14 (2010) described violence against women as a social problem rooted in unequal power and
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16 resource distributions between men and women and institutionalised through laws, policies,
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18 and norms that afford preferential rights to men. Jewkes (2002) concluded that two factors
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20 are necessary for IPV: the unequal position of women in a relationship and in society; and the
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22 normative use of violence, suggesting that the influence of a number of other factors is
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24 mediated through their effect on these two main factors. A different but related perspective
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26 on IPV is the integrated ecological model of violence (Heise, 1998; 2011). In this model,
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28 violence against women, including IPV, is seen as a result of the interaction of individual,
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30 relationship, community, and societal factors (which may include gender inequality), and is a
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32 widely accepted foundation for programming and research. Cools and Kotsadam (2015)
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34 propose a ‘contextual acceptance employment’ hypothesis according to which female
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36 employment leads to a higher risk of abuse in settings where social norms are such that
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38 acceptability of physical IPV is high. Based on these theoretical foundations, many
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40 interventions aim to tackle gender-power imbalances, economic empowerment, and social
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42 norms.
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47 While progress on IPV legislation has been made, the law alone cannot prevent
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49 violence (World Bank Group, 2014) and system-wide changes, such as community-
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51 interventions, are needed to improve enforcement (Morrison et al., 2007). Preventative
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53 approaches to IPV take one of two forms: primary prevention decreases the number of new
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55 cases of violence; while secondary prevention mitigates harm after violence has occurred
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(Arango et al., 2014). Promising preventative interventions may entail social/economic empowerment of women, promoting change in attitudes and behaviours through education of both men and women, or participatory community mobilisation (Garcia-Moreno et al., 2015). Rates of perpetration of IPV are strongly predicted by both men's and women's attitudes condoning such acts (Abramsky et al., 2011), highlighting the importance of addressing both men's and women's attitudes, however behaviour change must ultimately be the main objective of interventions. In high income countries (HIC) secondary prevention has received more attention while in low- and middle-income countries (LMIC) there is a greater focus on primary prevention. That said, however, the overall number of services and evaluations is lower in LMIC and what has been evaluated in HIC may not be relevant to LMIC (Arango et al., 2014). Therefore it is essential to synthesise information from other regions to assist with developing and implementing interventions. Despite the vast differences within the 46 countries in sub-Saharan Africa (Alesina et al., 2003) all countries share in common prevalence rates of IPV above the global average (WHO, 2013).

This systematic review aimed to synthesise findings from randomised controlled trials (RCTs) that have evaluated interventions aiming to prevent/reduce IPV perpetrated against adult females in sub-Saharan Africa. It sought to gather information on aspects of studies such as facilitator training, recruitment methods, and underlying theoretical models which will assist in the future planning of interventions. Potential sources of bias in each RCT were identified to improve future research.

Methods

The "Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) Statement" (Moher et al., 2009) and PRISMA-P guidelines (Shamseer et al., 2015) guided this review. The protocol was recorded on the PROSPERO database.

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3 Studies were included if they were: randomised controlled trials that collected
4 primary data evaluating pre- and post-intervention measures of the incidence/prevalence of
5 IPV or related attitudes/behaviours; published in English in peer-reviewed journals; and
6 conducted in a sub-Saharan African country with adults as the target population. Studies that
7 did not state that addressing IPV was an aim of the intervention, and/or studies evaluating
8 interventions addressing only the sequelae of IPV were not included. Web of Science,
9 PsychInfo, MEDLINE, and EMBASE were systematically searched for articles published up
10 to the 31st of March 2016. Appendix A provides the search strategy for one of these
11 databases. Search terms relating to designs other than RCTs were included to ensure that no
12 RCTs were inadvertently missed. Sub-Saharan African countries were those listed by the UN
13 Development Programme (UNDP, n.d.). Primary authors of included studies were contacted
14 for information on potentially eligible papers. Of 17 authors contacted, 9 replied suggesting a
15 number of resources. The reference lists of included papers were hand-searched for additional
16 studies. After duplicates were removed, two researchers (C.C. & P.N) independently scanned
17 the abstracts and titles of the papers for suitable papers. Full text articles were then examined
18 by both researchers for eligibility. In general the level of agreement was high and any
19 differences were resolved through discussion of the eligibility criteria and consensus
20 agreement. Relevant data was extracted and tabulated. Two researchers (C.C. & N.B)
21 independently assessed bias in the studies using the Cochrane Collaboration's 'Risk of Bias'
22 tool (Higgins et al., 2008).
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46 Results

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49 Figure 1. shows the results of the literature search. Briefly, 592 studies were initially
50 identified, 62 full-text articles screened, and 15 articles included.
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54 Study Characteristics

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3 Fifteen studies drawing on 11 unique datasets were included. Sample sizes were large ranging
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5 from 478 (Jones et al., 2013) to 11,448 (Wagman et al., 2015) unique participants enrolled at
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7 baseline (Median = 981, IQR = 1,199): 8,099 were male and 15,095 female. Four studies
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9 were carried out in Uganda (Abramsky et al., 2014; Green et al., 2015; Kyegombe et al.,
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11 2014; Wagman et al., 2015), three in Côte d'Ivoire (Falb et al., 2015; Gupta et al., 2013;
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13 Hossain et al., 2014), six in South Africa (Jewkes et al., 2008; Jones et al., 2013; Kim et al.,
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15 2009; Minnis et al., 2015; Pronyk et al., 2006; Wechsberg et al., 2013), and two in Kenya
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17 (L'Engle et al., 2014; Parcesepe et al., 2016). Twelve studies were cluster RCTs (Abramsky
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19 et al., 2014; Falb et al., 2015; Green et al., 2015; Gupta et al., 2014; Hossain et al., 2014;
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21 Jewkes et al., 2008; Jones et al., 2013; Kim et al., 2009; Kyegombe et al., 2014; Minnis et al.,
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23 2015; Pronyk et al., 2006; Wagman et al., 2015). The remaining three studies were
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25 randomised at the participant level. The interventions had varied and sometimes multiple
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27 underlying theoretical models. Some of these included: gender equality/issues and gender
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29 equitable relationships (Falb et al., 2015; Gupta et al., 2013; Jewkes et al., 2008; Kim et al.,
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31 2009; Minnis et al., 2015; Pronyk et al., 2006; Wechsberg et al., 2013); economic
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33 empowerment and poverty alleviation (Falb et al., 2015; Green et al., 2015; Gupta et al.,
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35 2013; Kim et al., 2009; Pronyk et al., 2006); cognitive behavioural skill training (Jones et al.,
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37 2013); ecological model of violence and power imbalances (Abramsky et al., 2014;
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39 Kyegombe et al., 2014); social norms theory (Hossain et al., 2014); and stages of change
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41 (L'Engle et al., 2014; Parcesepe et al., 2016; Wagman et al., 2015). All interventions were
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43 primary interventions, i.e. they aimed to decrease the number of new cases of violence. No
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45 interventions aimed to solely address IPV but addressed multiple psychosocial problems such
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47 as poverty alleviation (Green et al., 2015); HIV prevention (Abramsky et al., 2014; Kyegombe
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49 et al., 2014); and reducing alcohol use (L'Engle et al., 2014; Parcesepe et al., 2016). Three
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51 studies were of interventions whose aim was reducing IPV through the incremental effects of
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3 adding features to pre-existing programmes (Falb et al., 2015; Gupta et al., 2013; Hossain et
4 al., 2014). Two studies were of an intervention that was solely community based (Abramsky
5 et al., 2014; Kyegombe et al., 2014). Four studies described interventions that used a mix of
6 community-based interventions and interventions targeted at groups or individuals (Hossain
7 et al., 2014; Kim et al., 2009; Pronyk et al., 2006; Wagman et al., 2015). Nine described
8 targeted interventions aimed only at small groups or individuals (Falb et al., 2015; Green et
9 al., 2015; Gupta et al., 2013; Jewkes et al., 2008; Jones et al., 2013; L'Engle et al., 2014;
10 Minnis et al., 2015; Parcesepe et al., 2016; Wechsberg et al., 2013). Interventions were
11 facilitated by: previously untrained unpaid lay people supported by an existing organisation
12 (Abramsky et al., 2014; Kyegombe et al., 2014; Wechsberg et al., 2013); trained NGO field
13 staff (Falb et al., 2015; Green et al., 2015; Gupta et al., 2013; Jewkes et al., 2008; Kim et al.,
14 2009; Pronyk et al., 2006); trained professionals/paraprofessionals (Jones et al., 2013;
15 L'Engle et al., 2014; Minnis et al., 2015; Parcesepe et al., 2016); and both trained lay people
16 and trained professionals or paraprofessionals (Wagman et al., 2015). A description of the
17 interventions and underlying theoretical models can be found in Table 1. Further details on
18 the characteristics of the studies including recruitment strategies and facilitator training
19 details can be accessed by contacting the corresponding author.

40 Risk of Bias

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43 Figure 2 provides a summary of each study's classification on the various 'risks of bias'
44 indices (i.e. high/low/unclear). As a domain based evaluation, the tool for evaluation of risk
45 of bias is not intended to give an overall 'score' for each study but rather to allow a
46 judgement of whether outcome assessments may be affected by different types of bias. The
47 main bias related concerns for the studies as a whole were allocation concealment, blinding
48 of participants/outcomes, and incomplete outcome data. As is the case with many
49 psychosocial interventions, blinding of participants and personnel either did not take place, or
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3 was not addressed in any of these studies. In all trials except one, blinding of outcome
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5 assessment either did not occur or the reported information was not sufficient to make a
6
7 judgement. Blinding of outcome assessment was achieved in one trial of an individualised
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9 counselling intervention by masking treatment allocation to the study investigators until data
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11 handling was finalised (L'Engle et al, 2014; Parcesepe et al., 2016), decreasing the risk of
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13 detection bias in studies of this trial - it may be easier to maintain blinding in individualised
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15 interventions compared to community interventions. Regarding incomplete data outcomes,
16
17 one study analysed results on a per-protocol basis (Pronyk et al., 2006), while in two studies
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19 it was not clear whether analysis was per-protocol or intention to treat (ITT; Kim et al., 2009;
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21 Minnis et al., 2015). In one study it was not possible to judge the risk of attrition bias (Falb et
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23 al., 2015) while in another, a significantly greater number of participants in the control group
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25 were lost (Wagman et al., 2015), potentially affecting trial results.
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29 **Study Outcomes**

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32 Key results of each study are summarised in Table 2. Follow up times ranged from 6-8 weeks
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34 (Jones et al., 2013) to 4 years (Abramsky et al., 2014; Kyegombe et al., 2014) post-baseline
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36 (Median= 16 months, IQR= 12 months). The conceptualisation of most behaviours and how
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38 they were measured was not uniform across the studies. The conceptualisations of some
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40 abusive behaviours varied notably between studies: for example, emotional violence was
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42 measured according to different definitions between studies (Falb et al., 2015; Jones et al.,
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44 2013; Wagman et al., 2015); and the measures for 'marital control' or 'controlling behaviour'
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46 in some studies overlapped with those relating to economic abuse and emotional violence in
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48 others (e.g. Green et al., 2015; Kim et al., 2009; Pronyk et al., 2006).
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52 **Behavioural indicator outcomes: intervention groups vs. controls**

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3 Unless stated otherwise, the results reported here are based on comparisons between the
4 intervention and control groups. Physical IPV was lowered among women in the SASA!
5 intervention with a large effect size (Abramsky et al., 2014), but not significantly. Physical
6 IPV significantly decreased in the high adherent group of the VSLA and GDG intervention
7 (Gupta et al., 2013), but not in low adherent or ITT analyses. When this sample was stratified
8 by age of marriage, ITT analysis showed that physical IPV significantly decreased in non-
9 child brides, but not in child brides (Falb et al., 2015). Physical IPV was significantly lower
10 in the Safe Homes And Respect for Everyone (SHARE) intervention group at 35 months but
11 not 16 months, and the effect size was small (Wagman et al., 2015). Physical IPV
12 significantly decreased in the PartnerPlus intervention (Jones et al., 2013) with a large effect
13 size. Adding a Men's Discussion Group (MDG) to a community GBV prevention programme
14 yielded a reduction in women's self-reported experience of physical IPV compared to the
15 GBV programme alone, but not significantly (Hossain et al., 2014). Physical IPV was not
16 significantly reduced compared to controls in two studies (Parcesepe et al., 2016; Wechsberg
17 et al., 2013).

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36 Sexual IPV was reduced only in 'non-child brides' participants in the VSLA and
37 GDG intervention compared to VSLA alone with a large effect size and trending towards
38 significance (Falb et al., 2015). It was also significantly reduced in the SHARE intervention
39 at the second follow-up but the effect size was small (Wagman et al., 2015). The additional
40 MDG showed large but non-significant effect sizes for a decrease in women's reported sexual
41 IPV in all dose levels compared to the GBV programme alone (Hossain et al., 2014).
42 Women's experience of forced sex from a partner was significantly lower in SHARE
43 intervention groups at 35 months but the effect size was small (Wagman et al., 2015). There
44 was no statistically significant reduction in sexual IPV in SASA! (Abramsky et al., 2014;
45 Kyegombe et al., 2014) or a Brief Alcohol Intervention (L'Engle et al., 2014).
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3 An aggregate measure of physical and/or sexual IPV was reduced in non-child brides
4 in the VSLA and GDG intervention, with a large effect size and trending towards
5 significance but with wide confidence intervals (Falb et al., 2015). Rates of a similar measure
6 were significantly reduced in IMAGE with large effect sizes (Kim et al., 2009; Pronyk et al.,
7 2006). The effect of IMAGE on this measure when compared to microfinance was less
8 reliable (Kim et al., 2009). Physical and/or sexual IPV was reduced in the MDG intervention
9 relative to a community GBV prevention programme alone (Hossain et al., 2014) but not
10 significantly. There were no significant effects for physical or sexual IPV with the Stepping
11 Stones intervention (Jewkes et al., 2008). There was no notable change on
12 ‘physical/emotional violence’ in the WINGS or Women Plus interventions (Green et al.,
13 2015). ‘Victimization’ was reduced by a gender-separate health coop (MHC/WHC) six
14 months post intervention, compared to both the Women’s only Health Coop (WHC) control
15 and a Couples Coop intervention (CHC). This reached statistical significance and was
16 associated with a large effect size (Minnis et al., 2015).
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34 Economic abuse was statistically significantly reduced in all populations and levels of
35 adherence to the VSLA and GDG intervention, with large effect sizes (Falb et al., 2015;
36 Gupta et al., 2013). Emotional abuse significantly decreased in non-child brides in the VSLA
37 and GDG intervention compared to VSLA, with a large effect size but increased in child-
38 brides albeit with a small effect size and not statistically significantly (Falb et al., 2015).
39 Emotional violence was not reduced in PartnerPlus or SHARE (Jones et al., 2013; Wagman
40 et al., 2015). Marital control significantly increased in Women’s Income Generating Support
41 (WINGS) compared to a waitlist control, but decreased in Women Plus compared to WINGS,
42 though not significantly (Green et al., 2015). IMAGE had a small but non-significant
43 decreasing effect on experience of controlling behaviour, compared to a microfinance control
44 (Kim et al., 2009). On the other hand, microfinance alone slightly increased marital control
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3 relative to controls (Kim et al., 2009) suggesting that this difference in effect is due to a
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5 decrease in controlling behaviour in the IMAGE group and a corresponding increase in the
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7 microfinance group.
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10 Women in CHC reported significantly greater increases in relationship control
11 compared to WHC with a large effect size, but wide confidence interval. However, women in
12 the CHC condition reported less shared decision making in relationships, significantly so
13 compared to MHC/WHC which promoted shared decision making (Minnis et al., 2015).
14 Hossain and colleagues' (2014) measure of men's hostility and conflict management
15 alongside no reports of threatening behaviour significantly increased in the intervention
16 group with large effect sizes and moderate confidence intervals for all conditions. Men's
17 reported perpetration of physical/sexual IPV was significantly lower in Stepping Stones at
18 two year follow-up with a moderate effect size and confidence interval range (Jewkes et al.,
19 2008). In SHARE, men's reported emotional and physical abuse seemed to decrease at 16
20 months but not at 35 months (Wagman et al., 2015).
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34 **Outcomes of attitudinal measures in intervention groups compared to controls**

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37 Women's social acceptance of physical IPV towards females was significantly lower in the
38 SASA! intervention with a large effect size (Abramsky et al., 2014). It was also significantly
39 lower in ITT and high adherence participants of the VSLA and GDG intervention (Gupta et
40 al. 2013). Acceptance that a woman can refuse to have sex was significantly lower in women
41 in SASA!, with moderate effect sizes (Abramsky et al., 2014) but did not change in any
42 analysis of the VSLA and GDG intervention (Gupta et al., 2013). IMAGE produced a
43 moderate effect estimate for an increase in 'progressive attitudes towards IPV', significantly
44 so compared to microfinance (Kim et al., 2009), and non-significantly compared to no-
45 treatment (Kim et al., 2009; Pronyk et al., 2006). Women in the SASA! intervention were
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3 significantly more likely to report feeling able to refuse sex from their husbands, but the
4 effect size was small (Kyegombe et al., 2014). Women's subscription to statements
5 supportive of female autonomy/empowerment significantly increased in CHC compared to
6 the standard WHC group but the confidence interval was wide (Minnis et al., 2015). This
7 measure did not increase in the gender separate intervention (Minnis et al., 2015). A similar
8 measure was not affected by WINGS or Women Plus (Green et al., 2015). Women in the
9 IMAGE intervention were more likely to challenge statements supportive of women's
10 subservience with a large effect size but wide confidence interval (Pronyk et al., 2006).
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21 In the SASA! intervention, men's reported acceptance of physical IPV was not
22 significantly reduced, while men's reported acceptability that a woman can refuse to have sex
23 with her husband significantly increased with a moderate effect size but a wide confidence
24 interval (Abramsky et al., 2014). This also increased in the MDG intervention but not
25 significantly in any analysis (Hossain et al., 2014). Reported intention to perpetrate physical
26 IPV was non-significant in all analyses in the intervention group however the effect size was
27 moderate in the high-dose analysis compared to controls (Hossain et al., 2014). Perceptions
28 of women's autonomy and rights did not improve in the WINGS programme compared to
29 control (Green et al., 2015).
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41 Discussion

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44 IPV is a significant global problem requiring the development of adequate interventions. The
45 results of the current review suggest that there is potential for interventions to change
46 behaviours and attitudes related to IPV in sub-Saharan Africa. Studies that measured both
47 sexual and physical IPV outcomes for the same intervention suggest that sexual IPV
48 outcomes are more difficult to change (Abramsky et al., 2014; Falb et al., 2015; Gupta et al.,
49 2013; Kyegombe et al., 2014; L'Engle et al., 2014; Parcesepe et al., 2016). On the other hand,
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3 less physically controlling behaviours and economic abuse may be more amenable to change
4 (Falb et al., 2015; Green et al., 2015; Gupta et al., 2013; Hossain et al., 2014). While
5 behavioural outcomes were measured in all studies, measures of attitudinal outcomes were
6 less commonly utilised (included in 8 evaluations). The studies with the most successful
7 changes in attitudinal outcomes (Abramsky et al., 2014; Gupta et al., 2013; Kyegombe et al.,
8 2014; Minnis et al. 2015[CHC only]) appeared to approach imbalances in power between
9 men and women as an integrated community activity, or with couples working together to
10 address them, and in the cases of interventions involving microfinance these activities had to
11 specifically address finance (as opposed to gender roles more broadly). However while
12 addressing attitudes may be important for reducing IPV, behaviour change must be the key
13 objective of interventions and attitudinal change in the absence of behaviour change will not
14 suffice.

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30 No interventions solely targeted IPV; therefore it cannot be deduced whether such
31 interventions produce more reliable effects than those targeting multiple problems. It was
32 suggested in one study that the synergistic nature of interventions with multiple aims might
33 lead to broader beneficial effects (Kim et al., 2009). Indeed, interventions yielding more
34 significant and large effects tended to work at the community level or at multiple levels of the
35 social ecology (Abramsky et al. 2014; Hossain et al., 2014; Kyegombe et al., 2014; Minnis et
36 al., 2015; Wagman et al., 2015). This is consistent with theories posited by the integrated
37 ecological model of violence (Heise, 2011), which suggests that factors operating at multiple
38 levels from the micro- to the macro-level contribute to IPV. Evaluations of
39 microfinance/economic empowerment alone indicate that they do not suffice to decrease
40 IPV-related measures and may increase controlling behaviours (Green et al., 2015; Gupta et
41 al., 2013; Kim et al., 2009) and suggest that microfinance programmes should be
42 accompanied by comprehensive couples training (Gupta et al., 2013).

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3 Interventions in which IPV was not a primary aim, but rather a secondary aim, were
4 not generally successful in changing outcomes relating to IPV, for example the brief alcohol
5 intervention (L'Engle et al., 2014; Parcesepe et al., 2016), and microfinance alone (Green et
6 al., 2015 [WINGS]; Kim et al., 2009 [microfinance only condition]). The exception to this
7 was a short intervention with a short follow-up time of which a main aim was not IPV, but
8 which had a significant impact on physical violence (Jones et al., 2013). This could be due to
9 the fact that it engaged a high risk group of women along with their partner, with a joint aim
10 of preventing transmission of HIV to their child. The underlying theoretical models that the
11 interventions were based on convey current prevailing theories of IPV such as gender
12 inequality and related power imbalances, economic empowerment, social norms, and less
13 frequently, individual behaviour change. However there did not appear to be an observably
14 more beneficial effect associated with any one of these theoretical bases. It could tentatively
15 be said that studies with longer follow-up times yielded more significant positive changes.
16 This may be due to a beneficial effect from interventions of a longer duration or due to a
17 latency period being required for change to occur.

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36 Considering that the VSLA+GDG intervention measured the incremental effects of a
37 relatively short programme, GDG, the decreases in women's reported IPV are noteworthy
38 (Falb et al., 2015; Gupta et al., 2013). Utilising a different format, SASA! was notably
39 effective for attitudinal outcomes. Due to the nature of this project, it is difficult to specify
40 what the active ingredients were, but building an intervention from the bottom up may ensure
41 its relevance and acceptability (Chowdhary et al., 2013). Another extensive community
42 programme yielded similarly successful results on behavioural outcomes (Wagman et al.,
43 2015).

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54 These findings, however, should be interpreted in light of varying risks of bias. While
55 almost all studies did not succeed in blinding participants/personnel or outcome assessment,
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3 in some studies there were also additional risks of bias such as that resulting from inadequate
4 allocation concealment, and incomplete outcome data. Inadequate or unclear reporting of,
5 allocation concealment, lack of blinding in randomized trials, and per-protocol compared to
6 ITT analysis, are all associated with more exaggerated estimated intervention effects (Pildal
7 et al., 2007; Portal, Bonet, & Cobo, 2007). This exaggeration appears to occur more in trials
8 with more subjective outcomes (Wood et al., 2008). While in the current review, per protocol
9 and ITT analyses were not notably different in the studies that reported both, some studies
10 reported only per-protocol analysis, or were not clear on how analysis was conducted. Thus,
11 the effect sizes of outcomes in studies with risks of bias in multiple domains should be treated
12 with caution, particularly those reporting more subjective outcomes such as attitude change.
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25 Female reports of IPV are considered to be more reliable than males' (Wagman et al.,
26 2015), however studies could gain valuable insight from including male reports, which were
27 recorded less frequently in the included studies. Wagman and colleagues (2015) found
28 significant reductions in women's experiences of IPV but not in men's reported perpetration,
29 whilst in Jewkes and colleagues' (2008) study the reverse was found. Hossain and colleagues
30 (2014) found that adding a targeted men's intervention to a community GBV intervention
31 increased men's use of conflict management tactics, but wasn't successful in significantly
32 changing IPV or IPV-related attitudes. Similar to Hossain et al. (2014), Green and colleagues
33 (2015) found that increasing male partners' engagement did not significantly improve IPV
34 outcomes however in both studies the results were in the hypothesised direction. Minnis and
35 colleagues (2015) found varying beneficial effects of a couples' intervention and a gender-
36 separate intervention on different outcomes. These findings suggest a need for a closer
37 examination of mechanisms driving these differential effects in order to develop the most
38 beneficial interventions, particularly in the area of male engagement.
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Differential outcomes associated with specific groups such as child brides (Falb et al., 2015), and female sex workers (L'Engle et al., 2014; Parcesepe et al., 2016) emphasise the need for future interventions to be tailored to such populations, accounting for any sub-groups whose social circumstances and relationships may be particularly resistant to change. A number of studies used innovative recruitment methods attempting to purposefully access vulnerable populations instead of relying upon, for example, voluntary participation.

While some effect sizes were notably large, less than a third of measured outcomes yielded statistically significant results (34 statistically significant outcomes out of 118 IPV related outcomes measured across all included studies). However some studies, particularly those analysing by cluster-level ITT, may not have been sufficiently powered to detect significant results, as there were examples of large effect sizes without corresponding statistical significance in such studies (e.g. Abramsky et al., 2014; Hossain et al., 2014). Per-protocol analyses showed that some interventions might hold more promise if they become more acceptable and well-attended in communities (Gupta et al., 2013). However four per-protocol or dose-effect analyses showed no results that were tangibly different to ITT (Green et al., 2015; Hossain et al., 2014; Jewkes et al., 2008; Kyegombe et al., 2014). This may be due to systematic differences in the characteristics of participants who attend more intervention sessions than those who attend less.

This review provides an opportunity to reflect on the importance of having adequately trained individuals delivering interventions, which has been highlighted as a key issue in low-resource settings (Kakuma et al., 2011). A number of studies, some with successful IPV-related outcomes, used previously untrained lay persons to deliver interventions (Abramsky et al., 2014; Kyegombe et al., 2014; Wagman et al., 2015; Wechsberg et al., 2013). These examples show that previously untrained lay persons can be successfully utilised to deliver

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3 interventions in a cost-effective way. This has previously been highlighted as an effective
4 way of implementing interventions (van Ginneken et al., 2013).
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8 There were limitations associated with the included studies: firstly, most neglected
9 measures assessing emotional and/or psychological IPV which could be partly due to
10 ambiguity regarding the definition of these terms; secondly, there were overlap and gaps
11 between measures of emotional IPV, economic abuse, and controlling behaviour; finally, the
12 studies originated from only four geographically distant countries. Therefore the results
13 cannot be translated into generalisations of what types of interventions are effective across
14 the Sub-Saharan Region. With regards to the current review, only studies published in peer-
15 reviewed journals were included meaning this review may be susceptible to publication bias.
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26 **Conclusions**

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28 The implications of this review for future research and practice are summarised in Table 3.
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30 This review included only the most rigorously tested interventions and used a standard tool
31 for assessing risk of bias. While there were inconsistencies in the measures employed and the
32 interventions being evaluated, a number of studies showed promising results for efforts aimed
33 at addressing IPV-related indices. These studies tended to have longer-term follow up,
34 addressed IPV as a primary aim, and acted at the level of the community or on multiple
35 ecological levels. Interventions were more successful in changing sexual IPV compared to
36 physical IPV, and in changing controlling behaviours/economic abuse. Microfinance
37 interventions should be accompanied by comprehensive couples training and differential
38 effects on more vulnerable subgroups should be considered. The development of the skills of
39 existing human resources such as non-specialists and lay-people for intervention facilitation
40 should be encouraged. Future research should explore in what circumstances groups should
41 be single-sex or mixed, the differential effects of interventions by gender, and how to
42 effectively engage men. Future trials should use standardised conceptualisation and
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3 measurement of IPV, and rigorously test interventions with sufficiently powered samples so
4 that policy makers and NGOs can invest in those that are most effective. The proliferation of
5 new studies in recent years illustrates the momentum gathering in this field. It is hoped that
6 the findings in the current review can provide useful guidance for future endeavours.
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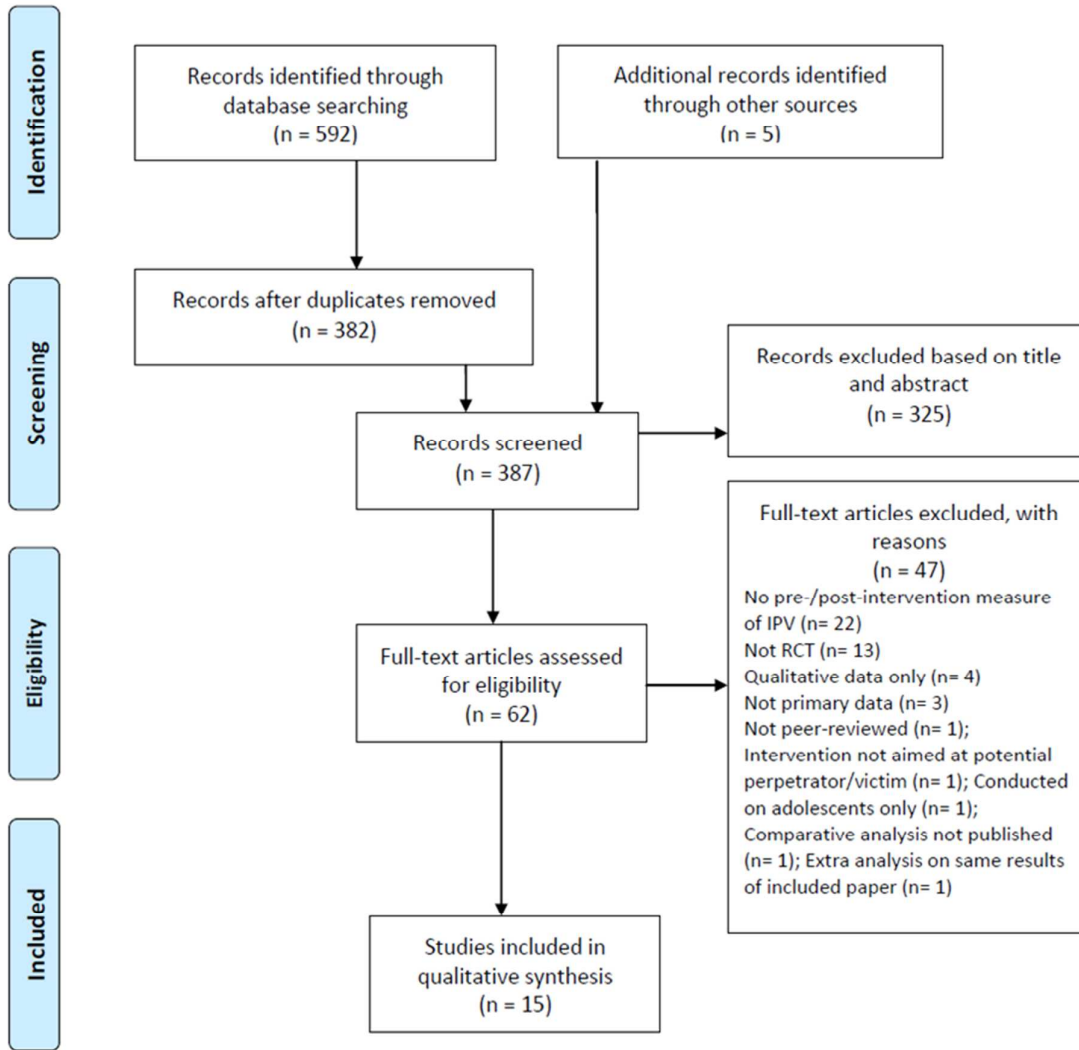


Figure 1. Flow chart of study selection

Author (Publication year)	Random sequence generation (selection bias)	Allocation concealment (selection bias)	Blinding of participants and personnel (performance bias)	Blinding of outcome assessment (detection bias)	Incomplete outcome data (attrition bias)	Selective reporting (reporting bias)
Abramsky et al., (2014)	●	●	●	●	●	●
Falb et al., (2015)	●	●	●	●	●	●
Green et al., (2015)	●	●	●	●	●	●
Gupta et al., (2013)	●	●	●	●	●	●
Hossain et al., (2014)	●	●	●	●	●	●
Jewkes et al., (2008)	●	●	●	●	●	●
Jones et al., (2013)	●	●	●	●	●	●
Kim et al. (2009)	●	●	●	●	●	●
Kyegombe et al. (2014)	●	●	●	●	●	●
L'Engle et al. (2014)	●	●	●	●	●	●
Minnis et al. (2015)	●	●	●	●	●	●
Parcesepe et al. (2016)	●	●	●	●	●	●
Pronyk et al. (2006)	●	●	●	●	●	●
Wagman et al. (2015)	●	●	●	●	●	●
Wechsberg et al. (2013)	●	●	●	●	●	●

Key: Red= High risk; Green= Low risk; Amber= Unclear risk

Figure 2. Risk of bias summary

Table 1 Theoretical models and interventions

Author (Publication Year)	Theoretical model & Intervention
SASA!	
Abramsky et al. (2014)	Theory: Designed around the ecological model of violence. Intervention: Promoting critical analysis and discussion of power and power inequities (particularly between men and women) through social diffusion and community mobilisation. People interested in issues of power, violence, and rights selected as community activists and underwent training. Analysis of imbalances in power encouraged through informal activities and fostering involvement and activism. The specifics of intervention activities were not stringently prescribed but developed in response to the community. Due to interruptions, participants had experienced 2.8 years of intervention at 4 year follow-up.
Kyegombe et al. (2014)	
VSLA + GDG	
Gupta et al. (2013)	Theory: Gender equality (GDG) & economic empowerment (VSLA). GDG based on Stages of Change constructs of the Transtheoretical Model.
Falb et al. (2015)	Intervention: VSLA - groups of 15-30 women contribute to a fund. Members borrow from it and pay back at a small interest rate. On a pay-out date each member receives their savings plus return. GDG - loan participants and male partners reflect on financial decisions and goals, the value of women, respect and communication between men and women, and alternatives to violence. Eight group sessions of 1.5-2.5 hours over 16 weeks separate to the weekly VSLA sessions.
WINGS;W+	
Green et al. (2015)	Theory: Poverty alleviation (WINGS) and engagement with male partners (W+). Intervention: Poverty alleviation (WINGS): offering cash to women and encouraging nonfarm businesses. Clients participate in training, formation of self-help groups, and supervision. Four days of training. AVSI staff visited every 6 weeks for 6 months. Partner engagement version (W+): program clients were encouraged to attend training with someone from their household (usually a male partner). One extra day of training involving material on culture, gender, communication, and joint-problem solving.
MDG + GBV Programming	
Hossain et al. (2014)	Theory: Engaging with male partners. Based on social norm theory. Intervention: Influencing inequitable gendered attitudes, behaviours, and expectations among men. MDG: based on Men & Women in Partnership Initiative. 16 week IPV prevention intervention for men. Material on: GBV towards women, men, and children; gender equitable beliefs; violence; household roles; and hostility and conflict management. Separate but complementary to a community-based GBV prevention programme occurring in both control and intervention arms. One session of 3 hours per week (from: IRC, 2010)
Stepping Stones	
Jewkes et al. (2008)	Theory: Gender equitable relationships. Intervention: 50 hour HIV prevention programme for men and women, using participatory learning to build knowledge, risk awareness, communication skills, and encourage critical reflection. Delivered to single-sex groups. Thirteen 3 hour sessions with 3 meetings with male and female peer groups and a final community meeting over 6-8 weeks. Material on sexual education, GBV, sexually transmitted diseases and HIV, communication skills.
PartnerPlus	
Jones et al. (2013)	Theory: Cognitive behavioural skill building Intervention: 4 week programme of 90-120 min sessions incorporating a prevention of mother-to-child (HIV) transmission intervention, plus skill building to improve communication, sexual negotiation, conflict resolution, STI/HIV prevention, use of condoms, and gender-relevant issues. Single-sex group sessions of max. 10 participants per group.
IMAGE	
Pronyk et al. (2006)	Theory: Poverty focused microfinance initiative with gender and HIV education. Participatory learning and action principles. Intervention: IMAGE made up of microfinance and 'Sisters-for-life': Microfinance - groups of 5 women serve as guarantors for each other's loans and must pay them back before applying for more credit. Groups of approximately 40 meet fortnightly; Sisters-for-life program - 2 phases delivered over 12-15 months: ten 1 hour training sessions during loan meetings, including sessions on gender roles, domestic violence, HIV, and culture. Phase 2 encouraged wider community mobilisation to engage young people and men in participatory learning. Selected women undertake further training and work to address priority issues.
Kim et al. (2009)	
Brief Alcohol Intervention	
L'Engle et al. (2014)	Theory: Stages of change and social cognitive health behaviour change theories. Intervention: 6 monthly counselling sessions, based on WHO Brief Intervention for Alcohol Use (Babor & Higgins-Biddle, 2001). One-on-one sessions of 20 mins. Motivational interviewing techniques, goal-setting, increasing self-efficacy, positive feedback and encouragement.
(Parcesepe et al., 2016)	
WHC; CHC; WHC/MHC	

Author (Publication Year)	Theoretical model & Intervention
Minnis et al. (2015)	Theory: Equitable gender based power in relationships. Core elements based in feminist and empowerment theories. Intervention: Two 3 hour group sessions delivered one week apart. WHC - Information on sexual behaviours, HIV, relationship power, negotiation, violence and violence strategies. MHC - Similar to WHC, including elements from the Men as Partners program designed to engage men in reducing GBV. CHC - Extends WHC by integrating components from a couples based HIV intervention. Focused on communication, negotiation, gender roles and conflict. Couples practiced exercises in dyads as well as the larger intervention group.
SHARE	
Wagman et al. (2015)	Theory: Ecological framework. Based on stages of change theory. Intervention: 4 years 7 months. Community programme aspect involved HIV services, material on IPV's negative consequences, changing IPV attitudes & behaviours, advocacy, capacity building, community activism, learning materials disseminated, events and campaigns. Brief (5-10 mins) violence prevention intervention offered to all abused and/or HIV infected females. Men and boys program involved group and one-on-one discussions of concepts of masculinity and its impact on HIV and IPV, alcohol, and conflict resolution (retrieved from Appendix 1 online, Wagman et al., 2015)
WHC	
Wechsberg et al. (2013)	Theory: Grounded in an empowerment framework and feminist theory. Intervention: Four module intervention over 2 sessions with each module lasting approx. 1hour. Included information on drug use, sexual behaviours, HIV risk, relationship power, communication, negotiation, violence against women. Delivered to groups of 4-6 women.
Key: CHC= Couples Health CoOp; GBV= Gender Based Violence; GDG= Gender Discussion Groups; IMAGE= Intervention with Microfinance for AIDS and Gender Equity; MDG= Men's Discussion Groups; MHC= Men's Health CoOP; OR= Odds Ratio; SHARE= Safe Homes and Respect for Everyone; VSLA= Village Savings and Loans Association; WHC= Women's Health CoOp; WINGS= Women's Income Generating Support; W+= Women Plus; y/o= years old	

Table 2 Outcomes from the intervention groups compared to controls

Author (Publication Year)	Characteristics of sample & location	Analysis	Comparison Group	Behaviours	Attitudes
SASA!					
Abramsky et al. (2014)	4 pair matched clusters. Surveys: 1,583 at baseline. 18-49 y/o, male & females, community members. Mean age: 27.8 y/o. Kampala, Uganda.	Cluster level ITT 4 years post-baseline Adj RR / 95% CI	Active waitlist control	<u>Women's past year :</u> (-)Physical IPV: (0.4 / 0.16-1.39) (-)Sexual IPV: (0.76 / 0.33-1.72)	<u>Acceptability of physical violence by a man against partner:</u> (-) Male attitudes= (0.13 / 0.01-1.15) (-) Female attitudes= (0.54 / 0.38-0.79) <u>Acceptability that a woman can refuse to have sex (with husband):</u> (+) Male attitudes= (1.31 / 1.00-1.70) (+) Female attitudes= (1.28 / 1.07-1.52)
Kyegombe et al. (2014)				(-) Past year experience of sexual IPV: (0.81 / 0.31-2.10)	(+) Feels able to refuse sex with partner: (1.16 / 1.00-1.35)
VSLA + GDG					
Gupta et al. (2013)	981 eligible (partnered) women (24 villages) enrolled at baseline. >18 y/o. Mean age 37.7 y/o. North and north-western Côte d'Ivoire.	ITT ≈22 months post-baseline	Group Savings only (VSLA)	<u>Past year Adj OR / 95% CI</u> <ul style="list-style-type: none"> (-) Physical and/or sexual IPV: (0.92 / 0.58-1.47) p=0.72 (-) Physical IPV: (0.69 / 0.3-1.21) p=0.19 (-) Sexual IPV: (0.71 / 0.40-1.25) p=0.24 (-) Economic abuse: (0.39 / 0.25-0.60) p<0.0001 	<u>β / 95% CI</u> (-) Justification for wife beating: (-0.97 / -1.66-[-0.28]) p=0.006 (+) Attitudes towards woman's ability to refuse sex (from husband): (0.10 / -0.19-0.39) p=0.49
		High adherent (>75% sessions) vs. VSLA ≈22 months post-baseline		<ul style="list-style-type: none"> (-) Physical and/or sexual IPV: (0.64 / 0.35-1.16) p=0.14 (-) Physical IPV: (0.45 / 0.21-0.94) p=0.04 (-) Sexual IPV: (0.54 / 0.27-1.10) p=0.11 (-) Economic abuse: (0.47 / 0.27-0.81) p=0.01 	(-) Justification for wife beating: (-1.14 / -2.01- [-0.28]) p=0.01 (+) Woman's ability to refuse sex: (0.12 / -0.24-0.48) p=0.50
		Low adherent (<75% sessions) vs. VSLA ≈22 months post-baseline		<ul style="list-style-type: none"> (+) Physical and/or sexual IPV: (1.19, 95% CI, 0.69-2.05) p=0.64 (-) Physical IPV: (0.93 / 0.49-1.77) p=0.82 (-) Sexual IPV: (0.85 / 0.44-1.64) p=0.63 (-) Economic abuse: (0.31 / 0.18-0.52) p<0.0001 	(-) Justification for wife beating: (-0.19 / -1.13-0.74) p=0.69 (+) Woman's ability to refuse sex: (0.07 / -0.32-0.46) p=0.72
Falb et al. (2015)	692 included at baseline (those with data on age of marriage). >18 y/o	ITT ≈22 months post-baseline		<u>Child brides (past year)</u> <ul style="list-style-type: none"> (+) Physical and/or sexual IPV: (1.51 / 0.54-4.20) p=0.42 (-) Physical IPV: (0.56 / 0.15-2.00) p=0.37 (+) Sexual IPV: (1.05 / 0.32-3.43) p=0.92 (+) Emotional IPV: (1.20 / 0.51-2.85) p=0.66 	

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Author (Publication Year)	Characteristics of sample & location	Analysis	Comparison Group	Behaviours	Attitudes
	females. Sub-analysis stratified by those married as child brides. North and north-western Côte d'Ivoire.			<ul style="list-style-type: none"> (-) Economic abuse: (0.33 / 0.13-0.85) p=0.02 <p><u>Non-child brides (past year)</u></p> <ul style="list-style-type: none"> (-) Physical and/or sexual IPV: (0.54 / 0.28-1.04) p=0.06 (-) Physical IPV: (0.45 / 0.20-1.01) p=0.05 (-) Sexual IPV: (0.46 / 0.20-1.05) p=0.06 (-) Emotional IPV: (0.44 / 0.25-0.77) p=0.004 (-) Economic abuse: (0.36 / 0.20-0.66) p=0.001 	
WINGS; W+					
Green et al., (2015)	<p>Phase 1: 120 clusters (villages) 1,800 participants Male & female. Average age 27.3. >85% female.</p> <p>Phase 2: 60 clusters (waitlist control from phase 1), 904 participants, male & female. Gulu and Kitgum districts, Uganda.</p>	ITT ≈20 months post-baseline β / 95% CI	<p>Waitlist control</p> <hr/> <p>Standard programme (WINGS)</p>	<p><u>Phase 1: WINGS Women</u></p> <p>(+) Physical/emotional abuse in past 8 months (including a measure of whether women refused sex): (0.02 / -0.1-0.14)</p> <p>(+) Marital control in past 8 months: (0.14 / 0.01-0.27)</p> <hr/> <p><u>Phase 2: W+ Women who had intimate partners</u></p> <p>(-) Physical/emotional abuse in past 8 months(including a measure of whether women refused sex): (0.08 / -0.2-0.04)</p> <p>(-) Marital control in past 8 months: (-0.07 / -0.26-0.12)</p>	<p><u>Phase 1: WINGS</u></p> <p>Perceptions of women's autonomy/rights</p> <p>(+) <i>Men & women:</i> (0.07 / -0.04-0.18)</p> <p>(+) <i>Women only:</i> (0.05 / -0.07-0.17)</p> <hr/> <p><u>Phase 2: W+</u></p> <p><i>Women who had intimate partners</i></p> <p>(-) Perceptions of women's autonomy/rights: (-0.01 / -0.22-0.2)</p>
MDG + GBV programming					
Hossain et al. (2014)	12 communities. 346 males >15 y/o males and current partners (255) interviewed at baseline. Mean age 36.5 y/o. Various rural sites, Côte d'Ivoire.	ITT vs. control ≈ 18 months post-baseline Adj RR / 95% CI	Community-based prevention programme	<p><u>Women (last 12 months) experience of:</u></p> <p>(-) Physical and/or sexual IPV: (0.52 / 0.18-1.51)</p> <p>(-) Physical IPV: (0.64 / 0.24-1.73)</p> <p>(-) Sexual IPV: (0.50 / 0.14-1.80)</p> <p>(+) Man uses at least 1 hostility/conflict mgmt. technique and no female partners report him threatening during arguments: (1.30 / 1.06-1.58)</p> <hr/> <p><u>Women (last 12 months) experience of:</u></p> <p>(-) Physical and/or sexual IPV: (0.59 / 0.18-1.90)</p> <p>(-) Physical IPV: (0.60 / 0.39-0.94)</p> <p>(-) Sexual IPV: (0.70 / 0.18-2.76)</p> <p>(+) Man uses at least 1 hostility/conflict mgmt. technique and no female partners report him threatening during arguments: (1.27 / 1.00-1.60)</p>	<p><u>Men:</u></p> <p>(-) Intention to use physical IPV: (0.83 / 0.66-1.06)</p> <p>(+) Belief a women can refuse sex in all circumstances (from husband): (1.21 / 0.77-1.91)</p> <hr/> <p><u>Men:</u></p> <p>(-) Intention to use physical IPV: (0.95 / 0.71-1.27)</p> <p>(+) Belief a women can refuse sex in all circumstances (from husband): (1.33 / 0.86-2.07)</p>

Author (Publication Year)	Characteristics of sample & location	Analysis	Comparison Group	Behaviours	Attitudes
		baseline Adj RR / 95% CI			
		High dose (>13 sessions) vs. control Adj RR / 95% CI ≈ 18 months post- baseline		<i>Women (last 12 months)</i> (-) Experience of physical and/or sexual IPV: (0.68 / 0.31-1.49) (-) Experience of physical IPV: (0.90 / 0.31-2.66) (-) Experience of sexual IPV: (0.61 / 0.22-1.68) (+) Man uses at least 1 hostility/conflict mgmt. technique and no female partners report him threatening during arguments: (1.31 / 1.04-1.64)	<i>Men:</i> (-) Intention to use physical IPV: (0.60 / 0.33-1.06) (+) Belief a women can refuse sex in all circumstances (from husband): (1.03 / 0.62-1.71)
Stepping Stones					
Jewkes et al. (2008)	70 clusters (villages). 2776 participants (1360 male and 1416 female), 15-26 y/o, mostly attending schools. Eastern Cape, South Africa.	ITT 12 months/24 months post baseline Adj RR / 95% CI	One three hour session on HIV, safer sex, and condoms.	>1 incident of physical or sexual IPV in the last 12 months/24 months: (-) <i>Women</i> (receipt): (0.97 / 0.64-1.18, p=0.36)/(1.14 / 0.77-1.68, p=0.51) (-) <i>Men</i> (perpetration): (0.73 / 0.50-1.06, p=0.099)/(0.62 / 0.38-1.01, p=0.054)	
PartnerPlus					
Jones et al. (2013)	478 individuals (239 couples) Pregnant women, 18+ y/o, and male partner. Mean age 28.2. Mpumalanga, South Africa.	6-8 weeks post- baseline Mean (SD)/N% n=478 (nominal data) in the past month	PMTCT in time-matched sessions	<u>Past month verbal aggression:</u> Baseline experimental: 94(79%) Post-intervention experimental: 76(64%) (McNemar's test, p=0.01) Baseline control: 89(74%) Post-intervention control: 84(70%) (McNemar's test, p=0.49) (-) Calculated: RR= 0.91, 95% CI, 0.8- 1.04, p=0.16	<u>Past month physical violence:</u> Baseline experimental: 51(43%) Post-intervention experimental: 21(18%) (McNemar's test, p<0.001) Baseline control: 57(48%) Post-intervention control: 46(38%) (McNemar's test, p=0.1) (-) Calculated: RR= 0.48, 95% CI, 0.35- 0.65, p<.0001
IMAGE					
Pronyk et al. (2006)	8 clusters (villages). 843 women (or matched control)	Per- protocol analysis ≈24 months after	None	(-) Past year experience of controlling behaviour by intimate partner:0.80 (0.35-1.83) (-) Past year experience of physical and/or sexual IPV: 0.45 (0.23-0.91)	(+) Greater challenge of established gender roles (challenging statements supportive of female subsistence):1.57 (0.87-2.81) (+) More progressive attitudes to IPV (acceptability of physical and sexual IPV):1.49 (0.86-2.60)

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Author (Publication Year)	Characteristics of sample & location	Analysis	Comparison Group	Behaviours	Attitudes	
	interviewed at baseline. Mean age: 41.5 (range 33-49). Limpopo, South Africa.	baseline Adj RR (95% CI)				
Kim et al. (2009)	12 clusters (villages). 1409, >18 y/o females. Median age: 45. Limpopo, South Africa.		1. Micro-finance alone 2. None	Past year experience of controlling behaviour by intimate partner: (+) MF vs control: (1.18, 0.77-1.80) (-) IMAGE vs control: (0.84, 0.38-1.87) (-) IMAGE vs MF: (0.69, 0.35-1.36)	Past year experience of physical and/or sexual IPV: (-) MF vs control: (0.86, 0.22-3.36) (-) IMAGE vs control: (0.51, 0.28-0.93) (-) IMAGE vs MF: (0.59, 0.09-3.66)	Attitudes condoning IPV (acceptability of physical and sexual IPV) (+) MF vs control: (1.05, 0.81-1.36) (-) IMAGE vs control: (0.73, 0.42-1.27) (-) IMAGE vs MF: (0.67, 0.50-0.90)
Brief Alcohol Intervention						
L'Engle et al. (2014)	818 FSW, >18 residents of Mombasa, moderate risk drinkers. Mean age 27.5 y/o. Mombasa, Kenya.	ITT Adj RR, 95% CI	Time matched non-alcohol related nutrition intervention	<u>Sexual violence from non-paying partners</u> (-) 6 months post-baseline: (0.92 / 0.66-1.29, p=0.69) (-) 12 months post-baseline: (0.76 / 0.53-1.08, p=0.19)		
Parcesepe et al. (2016)		ITT OR, 95% CI		<u>Physical violence by non-paying partner past 30 days</u> (-) Immediately post-intervention: (0.64 / 0.38-1.08, p=0.09) (-) 6 months post-intervention: (0.57 / 0.30-1.06, p=0.08)		
WHC; CHC; WHC/MHC						
Minnis et al. (2015)	3 clusters (neighbourhoods). Female partners of 18-35 y/o male, Black Africans, reporting drinking alcohol, frequenting shebeens and having unprotected sex. 290 women enrolled. Mean age of 24.2 years (range 18-39 years). Khayelitsha, South Africa.	6 months post-enrolment	WHC/ CHC	<u>Woman's influence/control in relationship [Effect estimate (β) (95% CI)]</u> (+) CHC vs WHC(standard): 0.92 (0.02-1.83) p=0.045 (increased for CHC) (+) MHC/WHC vs WHC(standard): 0.53 (-0.40-1.46) p=0.263 (+) CHC vs MHC/WHC: 0.39 (-0.48-1.27) p=0.379 <u>Shared decision making [Effect estimate (β) (95% CI)]</u> (-) CHC vs WHC(standard): -0.77 (-1.76-0.21) p=0.124 (+) MHC/WHC vs WHC(standard): 0.69 (-0.32-1.71) p=0.181 (-) CHC vs MHC/WHC: -1.46 (-2.42-[-0.50]) p=0.003 (decreased for CHC) <u>No victimization (verbal/emotional and physical violence and intimidation) experienced in previous 3 months [OR, (95% CI)]</u> (+) CHC vs WHC(standard): 1.17 (0.64-2.12) p=0.614 (+) MHC/WHC vs WHC(standard): 3.05 (1.55-6.00) p=0.001 (greater increase for MHC/WHC) (+) CHC vs MHC/WHC: 0.38 (0.20-0.74) p=0.004 (greater increase for MHC/WHC)	<u>Less traditional gender roles and female autonomy [Effect estimate (β) (95% CI)]</u> (+) CHC vs WHC(standard): 0.99 (0.07-1.91) p=0.035 (greater increase for for CHC) (+) MHC/WHC vs WHC(standard): 0.77 (-0.18-1.71) p=0.111 (+) CHC vs MHC/WHC: 0.22 (-0.67-1.11) p=0.626	

Author (Publication Year)	Characteristics of sample & location	Analysis	Comparison Group	Behaviours	Attitudes
SHARE					
Wagman et al. (2015)	11,448 male & female participants enrolled aged 15-49 y/o. Rakai, Uganda.	ITT aPRR (95% CI) 16 months post- baseline/35 months post- baseline	Standard care HIV services	<u>Women's experience of past-year</u> (+) Emotional (verbal) abuse:1.02 (0.92- 1.14)/0.91 (0.79-1.04) (-) Physical IPV:0.97 (0.85-1.11)/ 0.79 (0.67-0.92) (+) Sexual IPV:1.12 (0.96-1.31)/ 0.80 (0.67-0.97) (+) Forced sex:1.12 (0.95-1.32)/ 0.79 (0.65-0.96)	<u>Men's perpetration of past-year</u> (-) Emotional (verbal) abuse:0.88 (0.78- 0.98)/0.99 (0.85-1.16) (-) Physical IPV:0.80 (0.64-1.00)/1.00 (0.77-1.30) (-) Sexual IPV:0.90 (0.63-1.28)/0.81 (0.52- 1.26) (-/+) Forced sex:1.00 (0.65-1.55)/0.85 (0.50-1.42)
WHC					
Wechsberg et al. (2013)	720 drug using females, 18-33 y/o. Cape Town, South Africa.	ITT Adj OR (95% CI) 6 months and 12 months post- baseline	HIV counselling & testing	<u>No Physical IPV in past 6 months:</u> <u>Month 6</u> (+) Control/Nutrition: 1.1 (0.8-1.4) p=0.465 (+) Control/WHC:1.1 (0.8-1.6) p=0.657 (-) Nutrition/WHC: 0.9 (0.7-1.4) p=0.688 <u>Month 12</u> (+) Control/Nutrition: 1.02 (0.8-1.4) p=0.536 (+) Control/WHC: 1.1 (0.8-1.6) p=0.632 (-) Nutrition/WHC: 0.9 (0.7-1.7) p=0.788	

Key: Adj= Adjusted; aPRR= Adjusted Prevalence Risk Ratios; CHC= Couples Health CoOp; CI= Confidence Interval; GBV= Gender Based Violence; GDG= Gender Discussion Groups; IMAGE= Intervention with Microfinance for AIDS and Gender Equity; ITT= Intention to treat; MDG= Men's Discussion Groups; MF= Microfinance; MHC= Men's Health CoOp; OR= Odds Ratio; PMTCT= Prevention of Mother to Child Transmission; RR= Relative Risk; SHARE= Safe Homes and Respect for Everyone; VSLA= Village Savings and Loans Association; WHC= Women's Health CoOp; WINGS= Women's Income Generating Support; W+= Women Plus; y/o= years old; β= regression coefficient; (-/+)= indicates an increase or decrease in the variable in the intervention group compared to controls; ≈ = Approximately. Outcomes in bold indicate significant results.

Table 3 Implications of review for research and practice

Implications for research and practice	
Research	Varying outcomes according to participants' gender suggest that the mechanisms driving these results need to be more closely examined in order for future interventions to engage men and women in the most beneficial way to reduce IPV. The results from these studies suggested that engaging men did not necessarily lead to more beneficial outcomes.
	Innovative research should investigate ways of effectively addressing sexual IPV through preventative interventions in these contexts.
	Efforts should be made to use standardised conceptualisations and measurements of IPV in future research.
Practice	The study outcomes suggest that there are differences in how amenable certain types of IPV are to change. Sexual IPV appears to be more difficult to change compared to physical IPV, while less physically controlling behaviours, and economic abuse may be more amenable to change.
	Interventions yielding more significant and large effects tended to work at the community level or at multiple levels of the social ecology, consistent with the ecological model of violence. They also tended to have longer follow-up times, and their primary aim was IPV reduction. Microfinance programmes alone do not suffice to address IPV, and may increase controlling behaviours.
	While fewer studies included measures of attitude change, those that had successful changes in attitudes used an integrated approach involving the whole community, or involved couples working together. In cases where the intervention involved a microfinance aspect, work with couples had to specifically address finance issues.
	Some studies with successful IPV-related outcomes used previously untrained lay persons to deliver interventions. These examples show that previously untrained lay persons can be successfully utilised to deliver interventions in a cost-effective way which is an important factor in low resource settings.

Appendix A Search terms used for ‘Web of Science’ database

#5	#4 AND #3 AND #2 AND #1 <i>DocType=All document types; Language=All languages;</i>
#4	TOPIC: ((randomi?ed-controlled-trial*) OR (RCT) OR (controlled NEAR/2 (trial OR study)) OR (non-controlled NEAR/2 (trial OR study)) OR (uncontrolled trial) OR Evaluation OR (outcome assessment) OR ((treatment OR intervention) NEAR/2 (efficacy OR effectiveness)) OR (clinical NEAR/2 (trial OR study)) OR (quasi-experimental) OR (randomly-selected)) <i>DocType=All document types; Language=All languages;</i>
#3	TOPIC: (((abus* OR violen*) NEAR/3 (partner OR spous* OR husband OR wife OR marital OR couple OR domestic)) OR (battered wom?n)) <i>DocType=All document types; Language=All languages;</i>
#2	TOPIC: ("sub-Saharan Africa" OR Angola OR Gabon OR Nigeria OR Benin OR Gambia OR Rwanda OR Botswana OR Ghana OR "Sao Tome and Principe" OR "Burkina Faso" OR Guinea OR Senegal OR Burundi OR Guinea-Bissau OR Seychelles OR Cameroon OR Kenya OR Sierra Leone OR Cape Verde OR Lesotho OR South Africa OR Central African Republic OR Liberia OR South Sudan OR Chad OR Madagascar OR Swaziland OR Comoros OR Malawi OR Tanzania OR Democratic Republic Congo OR Mali OR Togo OR Congo OR Mauritania OR Uganda OR Cote d'Ivoire OR Mauritius OR Zambia OR Equatorial Guinea OR Mozambique OR Zimbabwe OR Eritrea OR Namibia OR Ethiopia OR Niger) <i>DocType=All document types; Language=All languages;</i>
#1	TOPIC: (interven*) OR TOPIC: (prevent*) OR TOPIC: (program*) <i>DocType=All document types; Language=All languages;</i>