

Assessing the incremental effects of combining economic and health interventions: Findings from the IMAGE Study in South Africa

Abstract

Objective: Globally, microfinance programs have expanded access to credit and savings services to the poor, and particularly to rural women. Growing evidence suggests that combining health and development interventions can create synergy and broaden impacts. This study set out to explore whether the addition of a Gender and HIV training programme can lead to health and social benefits beyond those achieved by microfinance services alone.

Methods: Cross-sectional data were derived from three randomly selected matched clusters in rural South Africa: 1) 4 villages with 2-year exposure to the IMAGE intervention (microfinance plus health training); 2) 4 villages with 2-year exposure to microfinance services alone; 3) and 4 Control villages which did not receive any intervention. Adjusted risk ratios (aRR) employing village level summaries compared associations between groups in relation to indicators of economic well-being, empowerment, intimate partner violence (IPV) and HIV risk behaviour. The magnitude and consistency of aRR allowed for an estimate of incremental effects.

Findings: 1409 participants were enrolled. All were female and the median age was 45 years. After 2 years, both the MF-alone group and the IMAGE group showed economic improvements relative to the Control group. However, only the IMAGE group demonstrated consistent associations across all domains relating to women's empowerment, intimate partner violence, and HIV risk.

Conclusion: The addition of a training component to group-based microfinance programmes may be critical for achieving broader health benefits. Donor agencies should encourage the kind of inter-sectoral partnerships that can foster synergy and broaden the health and social impacts of economic interventions such as microfinance.

INTRODUCTION

The United Nations Millennium Development Goals have articulated a global agenda that explicitly recognises the importance of addressing the intersections between poverty, gender inequalities, and health (1). Microfinance programs expand access to credit and savings services and globally reach over 100 million poor clients, most of whom are women (2). Alongside economic benefits, there has been some evidence to suggest that microfinance may be an effective vehicle for empowering women, and that newly acquired business skills have the potential to generate improvements in self-esteem and self-confidence, ability to resolve conflicts, household decision-making power, and expanded social networks (3-5). In addition, health gains in child mortality, nutrition, immunization coverage, and contraceptive use have been demonstrated (3, 6-8), sparking interest in the potential of microfinance to impact on other health issues, such as HIV/AIDS and gender-based violence (9-12).

Both HIV/AIDS and intimate-partner violence (IPV) are major public health challenges in sub-Saharan Africa. In South Africa alone, 29.1% of women visiting public antenatal clinics were HIV positive in 2006 (13), and national prevalence surveys suggest that women and girls make up 55% of all infections (14). In addition, one in four South African women report having experienced violence from an intimate partner (15), which has been identified as an independent risk factor for HIV infection (16). We recently conducted the Intervention with Microfinance for AIDS and Gender Equity (IMAGE) Study, a cluster-randomized trial evaluating the impact of a combined microfinance and training intervention on poverty, gender inequalities, intimate partner violence and HIV/AIDS. Based in rural South Africa, the intervention combined group-based microfinance with a 12-month gender and HIV training curriculum delivered to women at fortnightly loan repayment meetings. After 2 years, we observed improvements in economic well-being, and multiple dimensions of empowerment among programme participants (17). Furthermore, levels of physical and sexual IPV were 55% lower in IMAGE participants compared to controls (18), and young program participants reported higher levels of HIV-related communication, HIV testing, and greater condom use with non-spousal partners (19).

These findings highlighted the potential synergy that can be generated by deliberately integrating targeted public health interventions into development initiatives, such as microfinance. By addressing the immediate economic priorities of participants, the IMAGE intervention was able to gain access to a particularly vulnerable target group and to maintain sustained contact for over one year - a critical opportunity rarely afforded many stand-alone health interventions. Because the IMAGE study tested a *combined* microfinance-plus-training model, the findings have stimulated additional questions of policy and programmatic importance. How much of the observed impacts might be attributed to the microfinance component of the intervention, and how much to the training programme? In a donor climate where microfinance institutions are under growing pressure to recover their operational costs and achieve financial sustainability, what additional value does the health training contribute? Is it possible that the provision of microfinance services alone would produce a similar range of economic, social, and health benefits?

In order to address these questions, we compared data from villages receiving the IMAGE intervention to matched villages receiving microfinance alone or acting as a control group. This analysis assessed how indicators of economic well-being, empowerment, intimate partner violence and HIV-risk behaviours were distributed between these three groups after similar duration of exposure.

METHODS

The study was based in rural Limpopo Province, an area where, in spite of South Africa's status as a middle-income country, poverty remains widespread and more than 60% of adults are unemployed (20, 21).

Study Design

Data on IMAGE participants and controls were derived from a cluster-randomized trial and are presented in detail elsewhere (18). Briefly, eight villages were pair-matched according to size and accessibility with one village from each pair randomly allocated to receive the intervention at the start of the study, or at the end of the observation period. Within both sets of villages, eligible intervention participants were recruited using participatory wealth ranking (PWR) criteria which identify women age 18 years and over from the poorest households in each village (22). Women from Control villages were matched by age and poverty status and were recruited contemporaneously. This study employs data collected from both groups in October 2004, two years following the introduction of the IMAGE intervention (18).

To identify a comparable group of villages receiving microfinance alone (MF-alone), a stratified random sample was generated from villages where microfinance was being implemented without the training component. As before, individual participants were recruited using PWR. Villages were eligible for inclusion in the sampling frame if they met three criteria: 1) no prior exposure to microfinance; 2) two-year exposure to MF-alone; 3) similar socioeconomic and cultural context as the IMAGE and Control villages. Eleven villages were identified which met these criteria, which were then also grouped according to size and accessibility. Villages were then randomly selected to generate 4 villages matching the characteristics of the IMAGE and Control groups.

A survey of MF-alone participants was undertaken in these villages in February 2006, two years following the introduction of the MF-alone intervention. A list of all women who had received a loan during the previous two years was generated. Data were collected from all individuals who had joined the programme, regardless of whether they were still participating two years later – thus collecting data both on current participants as well as drop-outs. Outcome data were collected in face-to-face interviews by an experienced female research team, using the same survey tools from the original trial. The team had received four-weeks of intensive training, including technical, ethical, and safety considerations in conducting research on HIV and IPV (23). The construction of outcome indicators has been described in detail elsewhere (17) (18). Briefly, indicators measuring economic well-being and empowerment were drawn from the development and microfinance literature, piloted and then adapted to the local South African context. Measures of IPV assessed participants' attitudes toward and experiences of physical and sexual violence by an intimate partner, and were drawn from the international World Health Organization violence against women study instrument (24). HIV indicators captured sexual behaviour as well as household communication and collective action around HIV.

Microfinance-Alone Intervention: The microfinance component was implemented by the Small Enterprise Foundation (SEF), a South African NGO with over 40 000 active clients established in 1992. Based on a Grameen Bank model (25), groups of five women served as guarantors for each other's loans, with all five having to repay before the group were eligible for more credit. Loans were used to support a range of small businesses (e.g. selling fruit and vegetables, or second-hand clothes) and loan centres of approximately 40 women met fortnightly to repay loans, apply for additional credit, and discuss business plans.

IMAGE Intervention: In addition to the microfinance component described above, the IMAGE intervention included a participatory learning programme called "Sisters-for-Life" (SFL) which was

integrated into routine loan centre meetings. SFL comprised two phases. Phase One consisted of ten one-hour training sessions, and covered topics including gender roles, cultural beliefs, relationships, communication, domestic violence, and HIV. Participatory methods aimed to increase confidence, communication skills and critical thinking. Phase Two encouraged wider community mobilization to engage both youth and men in the intervention villages. Women deemed “natural leaders” by their peers were elected by loan centres to undertake a further week of training, and subsequently worked with their centres to address priority issues including HIV and IPV. SFL was developed and piloted in conjunction with a South African domestic violence NGO, and was delivered alongside microfinance services by a separate team of trainers over a 12 month period. Further details about the intervention are published elsewhere (26).

Control Group: Control villages received the IMAGE intervention at the end of the follow-up period.

Data analysis

Our analysis first assessed comparability between the three study groups, by comparing their baseline socio-demographic profile from the 2001 South African Census (27) - prior to any intervention in these villages.

Analysis of outcome data involved three two-way comparisons: MF-alone vs Control; IMAGE vs Control; IMAGE vs MF-alone. Since the interventions were administered at the village-level, all analyses were performed at the cluster-level. For each comparison, crude measures of effect with 95% confidence intervals (CIs) (prevalence or risk ratios, identified as RR) were calculated by entering the log of village-level summaries, weighted by village denominator, into an analysis of variance model including terms for intervention and village triplet. In order to control for possible baseline imbalances between intervention and control women, adjusted measures of effect (aRR) were also calculated using a two stage process. First, using a logistic regression model fitted to individual-level data from control villages, expected outcomes were derived for each village based on the age, marital status, education, parity and gender of the household head for each respondent. Standardised village level summaries of the ratio of observed to expected outcomes were then entered into an analysis of variance model as described above. All statistical analyses were performed using Stata version 9.0 (Statacorp, Texas, USA). In addition to noting results for individual indicators, we also sought to assess the consistency of patterns (direction and magnitude of effect) for all indicators within each of the 4 outcome domains: economic well-being, empowerment, IPV, and HIV risk behaviour.

Informed consent was obtained from all participants. The study approved by institutional review boards at the University of the Witwatersrand (South Africa) and the London School of Hygiene and Tropical Medicine (UK).

RESULTS

Study enrolment and baseline characteristics

A total of 1409 participants were enrolled into the interventions or recruited as controls. Of these, 363/430 (84%) in the control group, 481/549 (88%) in the MF-alone group, and 387/430 (90%) in the IMAGE group were successfully interviewed two years post-intervention. The median age was similar between groups (43-49 years) and married women predominated above those who were single, or those who were divorced, separated or widowed (Table 1). At the village level, the three groups were broadly similar in

terms of pre-intervention socio-demographic characteristics, including household size, age, sex, income, employment, and education.

Comparative analysis

Table 2 shows the results of the analysis comparing intervention effects between the three study arms. These results are summarized graphically in Figure 1.

Microfinance-alone vs Control

Evaluating the impacts of the MF-alone intervention against the Control group (column A), there was a clear pattern of improvement across all 9 indicators of economic well-being, including household asset value, ability to pay back debts, and ability to meet basic household needs. For all economic variables, intervention effects were in the same direction with aRRs ranging from 1.22 to 3.38 and confidence intervals excluding 1 for most indicators. However, this same degree of consistency was not observed across the empowerment, IPV, or HIV variables, where the direction of intervention effects varied among indicators within each domain.

IMAGE Intervention vs Control

Comparing the effects of the IMAGE intervention against the Control group (column B), there was a clear and consistent pattern of improvement in all 24 indicators across all domains. These included all indicators of economic well-being, empowerment (e.g. greater self confidence, autonomy in decision making, and larger social networks), and intimate partner violence (including reduction in past year experience of physical or sexual IPV), as well as all HIV risk indicators (including increased condom use at last sex with a non-spousal partner). For all these variables, aRRs were in the direction of positive intervention effect, with many attaining statistical significance.

Microfinance-alone vs IMAGE Intervention

Comparing the MF-alone intervention against the IMAGE intervention (column C), there was no clear pattern to suggest that either intervention had produced greater improvements in economic well-being. However, in relation to every other domain, the IMAGE intervention consistently demonstrated greater impact on all variables relating to empowerment, IPV and HIV, with many differences attaining statistical significance.

DISCUSSION

This study set out to explore whether the addition of a Gender and HIV training programme can lead to health and social benefits beyond those achieved through the delivery of microfinance services alone. After 2 years, both the microfinance-alone intervention and the combined microfinance-plus-training intervention (IMAGE) were associated with higher levels of economic well-being when compared to a control group. However, only the combined intervention was associated with a wider range of effects encompassing women's empowerment, reduced risk of intimate partner violence, and protective HIV-related behaviour. These findings lend support to the hypothesis that adding a health component to conventional group-based microfinance can foster synergy and may be critical for achieving broader health and social benefits.

This study had a number of strengths, including efforts to ensure comparability between villages within the 3 study arms, age- and poverty-matching among participants, and cluster-level analysis of outcomes. Outcome indicators were defined prior to analysis, and the analysis controlled for potential confounding factors. Despite the small number of villages and limited study power to detect cluster-level differences, statistically significant associations were evident for many indicators. What was however more striking

was the consistent pattern of associations that emerged across all pre-defined health and social domains when examining the incremental effects of the combined IMAGE intervention vs microfinance alone.

The study also had several limitations. The data employed in this analysis were essentially cross-sectional collected two years after of exposure to the interventions, thus definitive statements about causality are difficult to make. However, villages were randomly selected after careful matching, and national census data suggest similar baseline characteristics between the different study arms. As participants self-select to join the MF-alone or IMAGE interventions, there may be unmeasured differences between these groups and the Control arm. However, this selection bias would unlikely influence comparisons between the IMAGE and MF-alone since both interventions required a similar level of time commitment – minimizing an important form of bias common in assessing the effect of microfinance programs (28). Finally, self-reported outcomes may be subject to bias, although the direction of such bias is difficult to predict. It has been noted that heightened sensitisation to issues around gender violence can lead to increased reporting of IPV(23), a bias that would tend to underestimate the added value of IMAGE over the MF-alone intervention.

Why might additional inputs, such as the IMAGE training programme, be important for achieving wider health and social impacts? Critics of microfinance have long questioned whether, in the absence of efforts to address broader gender inequalities, simply providing financial services to women can be truly empowering. They note that offering credit to women does not necessarily guarantee their control over its use, and that the pressure to pay back loans can add to the already heavy burden of responsibilities borne by poor women (29-31). Moreover, while some studies have suggested that participation in microfinance can reduce the risk of IPV (31-33), others have noted that attempting to empower women might potentially exacerbate this risk by challenging established gender norms, and provoking conflict within the household (4, 34-36). In our study, provision of the microfinance-alone intervention did *not* exacerbate the risk of past year IPV, compared to a matched control group. However, neither did it reduce this risk – an association that was observed only in the IMAGE intervention group.

A number of factors have been identified from this study and elsewhere around strategies to maximize the health and social benefits of development programmes such as microfinance. Many authors have suggested that training *content* is critical in catalyzing health gains, noting that it should include an explicit gender focus, raise awareness about gender roles and cultural beliefs as well as creating a safe space for women to discuss often stigmatized subjects such as sexuality, HIV/AIDS, and gender-based violence (5, 37-39). Others have stressed the importance of *process*, and in particular, the value of participatory, group-based learning. In relation to HIV/AIDS education, group-based interventions have been found to foster critical analysis, collaborative learning, communication skills, problem-solving and peer support. These, in turn, have been regarded as critical steps in changing social norms and increasing knowledge, skills, and solidarity among women – all considered important aspects of empowerment (38-42). Finally, recognising the broader social and political context in which women's lives are situated, many have raised the importance of *engaging the broader community* through mobilizing others, including men and boys (5, 37, 41-44). Following the IMAGE intervention, participants were able to communicate more openly with partners and family members about sexuality, HIV and domestic violence, and to share this knowledge with others in their communities (45, 46). Many entered traditionally male-dominated domains, engaging with traditional leaders, police stations, schools, and soccer clubs, as well as organizing numerous village meetings and marches (17, 47). Similarly, in some programmes in India, microfinance has formed the basis for organising around issues such as dowry, domestic violence, and alcohol abuse, and in Bangladesh, programmes have mobilised members to vote for the first time in elections. In general, however, there has been little attempt to link microfinance to wider social and political activity (37, 48).

To date, the success of the microfinance sector has been impressive. Across a wide range of models, reported loan repayment rates, even among the poorest clients, often exceed 95% (28, 49). Global experience has demonstrated that microfinance institutions (MFIs) can recover all or most of their administrative costs through interest rates and user fees - thus, rapid growth and wide scale are possible, even when donor funds are limited (49). Opportunities are now emerging for MFIs to broaden their scope and benefits by more directly addressing health-related concerns including reproductive health, HIV/AIDS and gender-based violence (9, 11, 12). Doing so will not make sense for every programme and population, and microfinance leaders have been justifiably wary of weighing down institutions with added responsibilities. But evidence is mounting to suggest that combining economic and health interventions can create powerful synergies, and broaden impacts in measurable ways. In Africa, Asia, and Latin America, a growing number of programmes have successfully integrated health education, without compromising core financial services or sustainability (10, 12, 50). The time may be right for donor agencies to move beyond primarily financial sustainability targets to encourage the kind of inter-sectoral partnerships that can broaden the health and social impacts of microfinance. Innovative and sustainable partnership models are already evolving, and further evaluation and scale-up of such initiatives will be vital.

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Table 1: Village and individual characteristics of study population

Study Population		Control	MF alone	IMAGE
Villages*				
Number enrolled		4	4	4
Number of households (number, range)		1647 (817 – 3334)	1489 (212 – 3099)	1129 (225 – 1918)
Average household size (mean, range)		4.9 (4.5 – 5.0)	4.5 (4.3 – 4.9)	5.1 (5.0 – 5.1)
Female (% , range)		55% (54 – 56)	56% (55 – 60)	55% (54 – 57)
Age under 15 years (% , range)		42% (40 – 44)	43% (40 – 44)	40% (39 – 44)
No income (% households)		48% (36 – 56)	34% (25 – 47)	45% (42 – 48)
Unemployed (% among those of working age, range)		65% (60 – 79)	60% (52 – 80)	70% (68 – 73)
Completed primary education or higher (% of those of school age, range)		45% (40 – 55)	48% (41 – 52)	49% (39 – 52)
Individuals				
Number surveyed 2 years post-intervention		363	480	386
Age (median, IQR)		44 (35–52)	49 (40-59)	43 (36–51)
Female-headed household		232 (55%)	225 (47%)	206 (50%)
Marital status	Never married	99 (27%)	84 (18%)	74 (19%)
	Currently married	146 (40%)	221 (46%)	172 (45%)
	Divorced, separated, or widowed	118 (33%)	175 (36%)	140 (36%)
Microfinance indicators	Number of loans taken (Median, IQR)	-	3 (2-4)	4 (3-4)
	Largest loan in ZAR (Median, IQR)	-	1300 (1000 – 1600)	1000 (600 – 1500)

* Data source: Statistics South Africa, Population Census (2001) (27)

Table 2: Comparison of effects on economic well-being, empowerment, intimate partner violence, and HIV risk behaviour

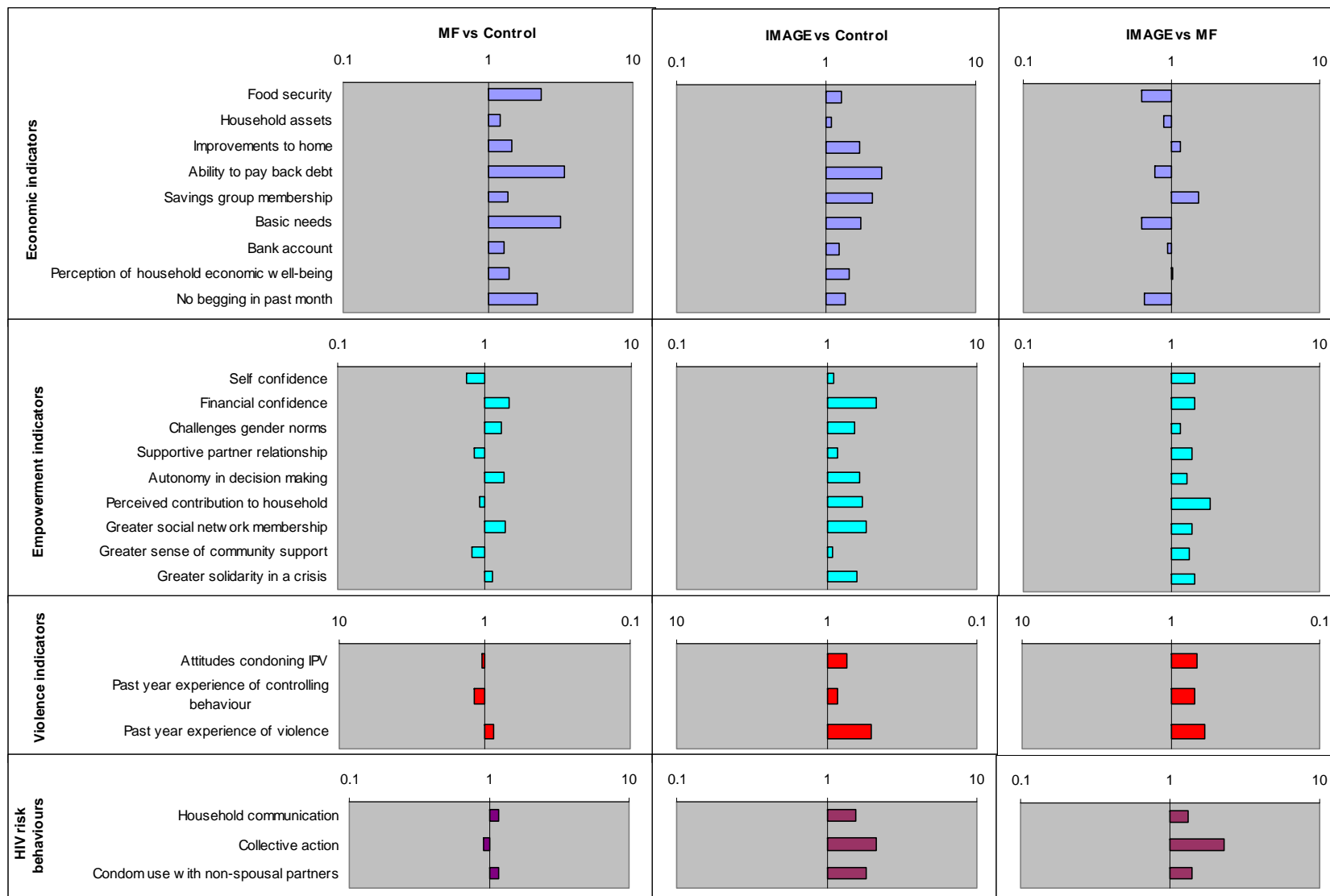
Outcome	Control	MF	IMAGE	(A) MF vs Control		(B) IMAGE vs Control		(C) IMAGE vs MF		
	n/N (%)	n/N (%)	n/N (%)	RR	aRR*	RR	aRR*	RR	aRR*	
Economic well-being										
Greater food security	129/361 (36%)	350/480 (73%)	177/371 (48%)	2.58 (0.83 – 8.01)	2.33 (0.73 – 7.42)	1.34 (0.22 – 8.21)	1.28 (0.20 – 8.31)	0.59 (0.19 – 1.85)	0.63 (0.22 – 1.85)	
Estimated household asset value > 2000 Rand	182/361 (50%)	313/480 (65%)	207/370 (56%)	1.29 (1.20 – 1.38)	1.22 (1.15 – 1.30)	1.10 (0.79- 1.54)	1.08 (0.81 – 1.45)	0.84 (0.57 – 1.25)	0.88 (0.64 – 1.20)	
Greater expenditure on home improvements	70/361 (19%)	147/474 (31%)	129/370 (35%)	1.57 (0.78 – 3.17)	1.46 (0.71 – 2.97)	1.82 (1.25 – 2.64)	1.68 (1.22 – 2.32)	1.14 (0.64 – 2.03)	1.14 (0.62 – 2.08)	
Better able to pay back debt	86/360 (24%)	340/480 (71%)	194/371 (52%)	3.71 (1.16–11.80)	3.38 (1.09 – 10.50)	2.41 (0.55 – 10.56)	2.34 (0.50 – 11.01)	0.72 (0.37 – 1.40)	0.77 (0.38 – 1.56)	
Membership in stokvel (savings group)	55/363 (15%)	98/480 (20%)	140/387 (36%)	1.32 (1.22 – 1.43)	1.38 (1.03 – 1.85)	2.13 (0.92 – 4.94)	2.06 (0.84 – 5.08)	1.64 (0.74 – 3.66)	1.53 (0.64 – 3.64)	
Able to meet basic needs in past year	39/316 (12%)	167/434 (38%)	94/350 (27%)	3.65 (1.77 – 7.49)	3.17 (1.69 – 5.94)	1.86 (0.26 – 13.10)	1.71 (0.21 – 14.25)	0.58 (0.11 – 3.10)	0.63 (0.12 – 3.40)	
Possesses bank account	111/360 (31%)	210/474 (44%)	147/371 (40%)	1.42 (1.02 – 1.98)	1.29 (0.99 – 1.68)	1.25 (0.91 – 1.71)	1.21 (0.87 – 1.66)	0.87 (0.56 – 1.36)	0.94 (0.72 – 1.24)	
Better perception of HH economic well-being	186/361 (52%)	347/474 (73%)	277/371 (75%)	1.43 (0.87 – 2.42)	1.40 (0.86 – 2.28)	1.48 (0.80 – 2.75)	1.43 (0.75 – 2.71)	1.03 (0.78 – 1.36)	1.03 (0.75 – 1.42)	
Has not had to beg in past month	120/362 (33%)	346/480 (72%)	201/387 (52%)	2.31 (1.29 – 4.14)	2.22 (1.32 – 3.73)	1.45 (0.56 – 3.73)	1.36 (0.47 – 3.94)	0.67 (0.25 – 1.80)	0.66 (0.24 – 1.81)	
Empowerment										
Individual Level	Greater self confidence	227/358 (63%)	235/480 (49%)	278/383 (73%)	0.76 (0.71 – 0.82)	0.76 (0.71 – 0.82)	1.16 (0.83 - 1.61)	1.12 (0.82 – 1.53)	1.49 (1.05 – 2.13)	1.44 (1.00 – 2.06)
	Greater financial confidence	140/360 (39%)	219/480 (46%)	278/386 (72%)	1.50 (0.32 – 7.07)	1.48 (0.33 – 6.55)	2.26 (0.43 – 11.91)	2.13 (0.42 – 10.82)	1.51 (0.84 – 2.68)	1.44 (0.77 – 2.69)
	Challenges gender norms	154/361 (43%)	248/478 (52%)	233/381 (61%)	1.26 (0.62 – 2.58)	1.30 (0.68 – 2.50)	1.54 (0.84 – 2.79)	1.53 (0.86 – 2.71)	1.19 (0.99 – 1.43)	1.16 (0.97 – 1.38)
Household Level	Supportive partner relationship**	151/248 (61%)	189/338 (56%)	212/290 (73%)	0.93 (0.65 – 1.31)	0.85 (0.61 – 1.19)	1.21 (0.81 – 1.80)	1.18 (0.84 – 1.67)	1.28 (1.02 – 1.62)	1.37 (1.09 – 1.72)
	Autonomy in decision making**	55/149 (37%)	84/220 (38%)	105/184 (57%)	1.21 (0.39 – 3.75)	1.35 (0.42 – 4.30)	1.70 (0.72 – 4.01)	1.67 (0.92 – 3.03)	1.41 (0.66 – 3.02)	1.27 (0.62 – 2.59)
	Perceived contribution to household**	56/146 (38%)	148/206 (72%)	121/185 (65%)	1.89 (1.36 – 2.63)	0.92 (0.84 – 1.02)	1.70 (1.12 – 2.58)	1.73 (1.19 – 2.53)	0.88 (0.59 – 1.30)	1.84 (1.35 – 2.51)
Community Level	Larger social network	134/363 (37%)	267/480 (56%)	275/386 (71%)	1.57 (0.74 – 3.32)	1.37 (0.67 – 2.77)	1.95 (1.00 – 3.80)	1.81 (0.92 – 3.56)	1.29 (0.85 – 1.96)	1.38 (0.94 – 2.01)
	Greater sense of community support	184/362 (51%)	204/480 (43%)	232/387 (60%)	0.86 (0.54 – 1.33)	0.82 (0.50 – 1.33)	1.14 (0.39 – 3.36)	1.10 (0.38 – 3.17)	1.33 (0.57 – 3.13)	1.33 (0.59 – 3.01)
	Greater solidarity in a crisis	179/363 (49%)	253/479 (53%)	306/387 (79%)	1.12 (0.56 – 2.23)	1.12 (0.59 – 2.12)	1.68 (0.83 – 3.39)	1.60 (0.81 – 3.13)	1.49 (1.20 – 1.85)	1.43 (1.11 – 1.83)
Intimate partner violence										
Attitudes condoning IPV	233/361 (65%)	326/472 (69%)	182/382 (48%)	1.07 (0.84 – 1.37)	1.05 (0.81 – 1.36)	0.73 (0.44 – 0.23)	0.73 (0.42 – 1.27)	0.66 (0.48 – 0.90)	0.67 (0.50 – 0.90)	
Past year experience of controlling behaviour**	101/242 (42%)	158/337 (47%)	95/282 (34%)	1.12 (0.74 – 1.70)	1.18 (0.77 – 1.80)	0.78 (0.34 – 1.82)	0.84 (0.38 – 1.87)	0.68 (0.35 – 1.33)	0.69 (0.35 – 1.36)	
Past year experience of physical and/or sexual IPV**	30/248 (12%)	39/337 (12%)	17/290 (6%)	0.79 (0.22 – 2.93)	0.86 (0.22 – 3.36)	0.50 (0.28 – 0.89)	0.51 (0.28 – 0.93)	0.63 (0.11 – 3.61)	0.59 (0.09 – 3.66)	
HIV risk behaviour										
Household communication about sex and HIV	197/361 (55%)	308/480 (64%)	331/383 (86%)	1.15 (0.76 – 1.72)	1.17 (0.76 – 1.80)	1.60 (1.25 – 2.05)	1.57 (1.20 – 2.05)	1.37 (0.98 – 1.93)	1.32 (0.90 – 1.93)	
Participation in HIV march or rally	124/361 (34%)	151/480 (31%)	290/383 (76%)	0.92 (0.57 – 1.49)	0.91 (0.58 – 1.41)	2.21 (1.03 – 4.76)	2.14 (1.00 – 4.54)	2.37 (1.32 – 4.25)	2.32 (1.33 – 4.03)	
Condom use at last sex with all non-spousal partners ***	10/45 (22%)	17/52 (33%)	23/51 (45%)	1.74 (0.37 – 8.21)	1.17 (0.32 – 4.29)	2.41 (0.77 – 7.54)	1.83 (0.94 – 3.57)	1.41 (0.97 – 2.04)	1.41 (0.97 – 2.04)	

*aRRs adjusted for village triplet, age-group, marital status, education, parity and gender of household head.

** Among currently partnered women (therefore, aRRs do not control for marital status)

***Among those age < 35 years old reporting at least one non-spousal partner

Figure 1: Bar Graph Comparing Consistency of Intervention Effects Among the 3 Study Arms*



* All aRR for indicators represented as bar graphs on a logarithmic scale

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