



Savings Groups Plus: A Review of the Evidence



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Authors: Tracy Orr, Meagan Brown, Jennine Carmichael, Christine Lasway and Mario Chen.

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ASPIRES: Accelerating Strategies for Practical Innovation & Research in Economic Strengthening

The Accelerating Strategies for Practical Innovation and Research in Economic Strengthening (ASPIRES) project supports evidence-based, gender-sensitive programming to improve the economic security and outcomes for vulnerable families and children, including those infected or affected by HIV/AIDS, as well as others at high risk of acquiring HIV.

Under ASPIRES, FHI 360 provides technical assistance and research to improve and scale up interventions in household economic strengthening. Through ASPIRES, FHI 360 has assembled a consortium of leading organizations and experts to assist USAID and the President's Emergency Plan for AIDS Relief (PEPFAR) in improving the livelihoods and economic security of vulnerable populations. Together, FHI and its partners also help strengthen the capacity of governments and national stakeholders to implement and evaluate evidence-based programming that advances the economic security of target populations.

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ACRONYMS

AM	<i>Ajuda Mútua</i>
ASCA	Accumulating Savings and Credit Association
ART	Antiretroviral Therapy
ASPIRES	Accelerating Strategies for Practical Innovation and Research in Economic Strengthening
CBCO	Community-Based Care Programs for Orphans and Vulnerable Children
CBSG	Community-Based Savings Group
CGAP	Consultative Group to Assist the Poor
CRS	Catholic Relief Services
CYES	Children, Youth and Economic Strengthening
ERIC	Education Resources Information Center
GBV	Gender-Based Violence
IMAGE	Intervention with Microfinance for AIDS and Gender Equity
IPA	Innovations for Poverty Action
IPV	Intimate Partner Violence
IRC	International Rescue Committee
LIFT	Livelihoods and Food Security Technical Assistance
MNCH	Maternal, Newborn, and Child Health
NGO	Nongovernmental Organization
OVC	Orphans and Vulnerable Children
PLHIV	People Living with HIV
RCT	Randomized Controlled Trial
ROSCA	Rotating Savings and Credit Association
SG	Savings Group
SG+	Savings Group Plus
SIGA	SILC Group Association
SILC	Savings and Internal Lending Communities
SLA	Savings and Loans Association
SLG	Savings and Loans Group
STRIVE	Supporting Transformation by Reducing Insecurity and Vulnerability with Economic Strengthening
TE	Treatment Effect
USAID	U.S. Agency for International Development
VSL	Village Savings and Loan
VSLA	Village Savings and Loan Association

EXECUTIVE SUMMARY

This document is a literature review conducted to identify the research evidence on the integration of savings groups (SGs) and other development activities—commonly called SG plus (SG+) in the SG practitioner community. The evidence is clear that SGs help individuals and households in resource-poor regions of the world increase their savings and access to credit. However, evaluations of SG+ programs are far less common.

The review team employed database and manual searches of the internet and conducted key informant interviews to identify primary, secondary, and grey literature on savings-led microfinance groups paired with any type of development initiative.

The studies included in this literature review were written in English and published between 1996 and 2014. Studies that did not include a comparison group to assess the program's impact were excluded for not meeting the level of scientific rigor required of the evaluations included in this review.

Ten studies representing nine SG+ programs from nine countries, mostly in Africa, were included in the review. The SG+ programs included multiple types of SG and other development activities such as malaria education and prevention; maternal, newborn, and child health services; care and support for orphans and vulnerable children; child protection, well-being, and development programming; shared labor programs; and male engagement and gender equality programs.

Together, the studies evaluated the effectiveness of 90 different outcomes. Results were positive for 52 outcomes, no impact for 32, mixed for three and negative for three. Overall, the evidence on the impact of SG+ varied by type of development area. For example, outcomes were mainly positive for a program that combined SG with male engagement and gender equality. In addition, outcomes directly related to SG activities, such as increased income and assets, were generally positive as a result of the intervention.

Although some evidence on the impact of SG+ exists, more research is needed for donors and implementers to understand the effectiveness of integrating SG and activities in other development areas. Study designs and tools for measuring impact could be improved, and theories of change could be used to better inform the design of future SG+ research and programs.

INTRODUCTION

Purpose

The purpose of this literature review is to synthesize the available evidence on the effectiveness and impact of all varieties of savings group plus (SG+) programs. The evidence is clear that savings groups (SGs) help individuals and households in resource-poor regions of the world increase their savings and access to credit. However, evaluations of SG+ programs are far less common.

Given the lack of evaluations and the fact that there is not an established definition of SG+, this review takes a broad definition in order to maximize potential learning. For purposes of this review, SG+ indicates any project implementing SG and another development intervention together.

A recent unpublished report by The SEEP Network discusses the current merits and challenges of SG+ (Nelson, 2014). This literature review goes one step further to assess the SG+ evidence, identify research gaps, and offer recommendations to inform future SG+ research and programs.

Background

Savings Groups

Especially in resource-poor regions of the world, economic strengthening activities can help individuals and households save money and access credit in ways that were not possible before. SGs have become one of the fastest growing of these activities. As of 2013, approximately 300,000 SGs were serving seven million members in more than 60 countries (Gash and Odell, 2013; Nelson, 2014). Although the groups are concentrated in Africa, their popularity is growing in Asia, Latin America, and other parts of the world.

Microfinance as a development intervention arose to meet the demand for credit among populations typically excluded from traditional financial institutions due to a lack of collateral. SGs emerged as a complement or alternative to financial services delivered through microfinance institutions in order to reach populations that are more rural, more remote, and much poorer. SG participants contribute and loan out their own money, eliminating the need for traditional financial institutions and sharing the risk among participants that borrowers may be unable to repay the loans (Allen, 2005). Another important benefit of SGs is that they provide a natural mechanism for getting people to come together to receive needed information and services.

Since the introduction of the formal Village Savings and Loan Association (VSLA) methodology, pioneered by the humanitarian organization CARE International, in the early 1990s, a number of formal SG models have been developed. Across models, SGs are self-governing groups made up of 15 to 30 self-selected members from a single community. The members, who are usually

women, meet regularly, usually on either a weekly or monthly basis, to contribute money into a group savings pool, request short-term loans from that savings pool, and repay loans they received, as needed. Bylaws and governance rules are established by the groups themselves, and group members collectively decide the terms under which loans are made and repaid. In most SG methodologies, the members who borrow money must pay interest on the loans. Typically, at the end of a set cycle (usually 6-12 months), the accumulated savings and accrued interest are paid out to members in proportion to the amount of savings they contributed. SGs can either agree to continue for an additional cycle or disband after the payout is complete. (Allen and Panetta, 2010; BARA and IPA, 2013; Gash and Odell, 2013).

When an SG is being established, members are trained by a facilitating agency on how to create and sustain the group. The training helps members develop a group constitution, elect officers to lead the group, establish meeting procedures, and create rules about saving money, lending money, and keeping records. This initial training may last for only a few weeks, but the facilitating agency typically continues to supervise the group for up to a year. Although SGs do need support, especially in the beginning, they usually require minimal assistance or are independent after this supervisory period, with some exceptions where support is provided into subsequent cycles (Allen and Panetta, 2010).

A recent synthesis of seven randomized controlled trials (RCTs) of SGs in Africa confirms that the groups are reaching very poor populations in a variety of contexts and are having an economic impact (Gash and Odell, 2013). In several trials, SGs significantly increased household savings, the number and size of loans that households took out, and the amount of assets that villages accumulated (Gash and Odell, 2013). Results varied on whether participation led to improved health, education, or other development outcomes.

Savings Groups Plus

Integrating SGs with other development interventions—a concept known as SG+—has been proposed as one way to help improve development outcomes in low-resource settings (Gash and Odell, 2013). A broad range of development services can potentially be integrated with SGs, including interventions to improve health (e.g., HIV/AIDS, family planning, reproductive health, malaria, and immunizations), agriculture, education, gender relations, child welfare, and literacy. Because SGs are a sustainable way to reach large numbers of individuals in traditionally underserved populations, they are attractive to organizations that provide development services and are trying to reach the same populations. Many organizations are already experimenting with the SG+ concept and most are using SGs as a platform for delivering other development services although there is growing interest in the converse—adding SG to existing development interventions (Nelson, 2014).

The NGO Freedom from Hunger has developed a framework of three main ways that integrated services can be delivered (see Table 1). In a linked model, the development services are provided by an organization separate from the facilitating agency that trains the members of the SG. In a parallel model, the services are provided by two distinct groups of staff within a single

organization. And in a unified model, the services are provided by the *same* staff within a single organization. Hybrid versions of these three models are also possible, especially since the concept of SG+ is still relatively new and is constantly evolving.

Table 1. Methods for Delivering Integrated Services to SGs¹

Delivery	Description
Linked	<p>Two or more institutions provide services.</p> <p>For example: One institution promotes, organizes, trains, and supervises SGs, while the other delivers a nonfinancial service (e.g., health education, agricultural extension, etc.) to the groups, either in conjunction with or separate from the regular SG meeting.</p>
Parallel	<p>Distinct staff within the same institution provides different services to the groups.</p> <p>For example: One staff person is responsible for organizing, training, and supporting SGs and their financial activities, while another staff member from the same institution provides health check-ups or literacy classes, either at the regular meeting or another time and place.</p>
Unified	<p>All services are provided by the same staff of the same institution.</p> <p>For example: An SG trainer also receives training on providing the complementary service, such as financial management training, and delivers it in conjunction with the regular SG meetings.</p>

Since SG+ is relatively new as a formalized concept, there are some conceptual questions that are worth noting. One is what constitutes integration: does an SG+ program require explicit integration, such as “plus” intervention delivery in an SG meeting, or can the SG and plus programming simply be implemented to the same populations largely independently? This review does not take a stance on this question, primarily in the interests of not limiting the potential evidence base. Another key question is what constitutes a “plus” intervention? The primary interest of this review is examining the evidence for cross-sectoral integration of savings groups with other development activities. For the purposes of this paper, the research team did not consider activities directly intended to enhance financial or economic outcomes, such as business and financial training or linkages to formal financial institutions, as “plus” interventions.

Strengths and Limitations

Perhaps the greatest strength of SGs is that they are relatively easy to establish, replicate, and sustain. According to a five-year panel study conducted by VSL Associates using the Savings

¹ Table adapted from Gash et al., 2015, reflecting the framework proposed in Dunford, 2001.

Groups Information Exchange, an online reporting system of SG data, 89 percent of SGs survived for the five years of the study, and nearly all of the members remained in the group from one cycle to another (VSL Associates, 2014). Although the ability of SGs to successfully serve as a vehicle for generating income for individuals has been supported by research, a body of literature examining the success of integrating SG with other developmental activities remains limited.

The social benefits of SG+ are also likely to be greater than the social benefits of SGs alone (Dempsey, 2003). The factors that contribute to extreme poverty are multifaceted and go beyond simply needing increased assets. Holistic approaches to economic development that examine the existing context and work toward addressing multiple factors are necessary to effect sustainable change. Although some studies suggest that SGs alone can improve individual empowerment and community engagement, more recent RCTs have found that SGs had very little impact in this area (Gash and Odell, 2013). Achieving broader social shifts may involve affecting deeply rooted attitudes and practices that take years to change. As such, longer evaluation periods are needed to better understand the impact of SG+ on the larger factors that contribute to persistent poverty.

SG+ also face challenges related to the integration of other development activities with traditional SGs. Integrated programming often requires more time than a single stand-alone program to plan and deliver. Integrating “plus” activities may complicate the timeline for achieving independent SG operation or require “plus” implementers to negotiate with independent SGs for the delivery of “plus” interventions. Other risks include the chance that introducing development activities will undermine a group’s autonomy, that the development services will not be up to par, that the new services will be too difficult for the group to manage, or that the group’s savings will be used to fund the new services (Nelson, 2014). However, with regard to the development activities alone, anecdotal evidence suggests that SGs could be an effective platform for delivering these services and that the services can be effectively designed to be delivered via SGs (Rippey and Fowler, 2011).

Overall, very few SG+ programs have been evaluated, leaving SGs and development organizations without clear guidance on how to best maximize strengths and limit risks when integrating these two sectors. At this moment, SG+ can be characterized as an emerging area requiring greater investment in research and documentation. This evidence review attempts to identify some priority areas for future learning.

METHODOLOGY

Criteria for Selection

The key literature reviewed for this paper focused on the evidence for savings-led microfinance groups paired with any other sort of development intervention. This review excludes other types of economic strengthening interventions such as loan-led microfinance, programs focused on

cash transfers, and groups focused on generating income. Self-help groups were eligible for inclusion as a form of SGs if they had a clear savings focus and could thus be considered a type of SG. The search strategy focused on SGs, including related terms such as community savings, village savings, village savings and loans, Saving for Change, rotating savings, accumulating savings, and lending communities. The term SG is used as an inclusive term for all types of SG, including Village Savings and Loans, Community-based Savings Groups, etc. The term “plus” was not used in searches because many SG+ programs do not use the term and because it would yield too many unrelated results. SG+ material was determined based on the project or intervention description indicating the SG was integrated with another development program. Both published and unpublished documents were considered for inclusion. The documents had to be written in English and published between 1996 and 2014.

Search Methods and Identification of Potential Studies

Approximately 2,000 documents were identified from both bibliographic databases and manual searches using the search terms related to SG+ (see Appendix 1 for search terms). A total of 902 results were returned from searches in 15 databases and journals, including Popline, Global Health, PubMed, Web of Science, Econlit, Academic Onefile, Scopus, Agricola, Women’s Studies, International Bibliography of Social Sciences, Education Resources Information Center (ERIC), Academic Search Complete, Embase, Enterprise Development and Microfinance, and Vulnerable Children and Youth Studies. The manual search yielded over 1,000 resources. The manual searches on the internet targeted specific organizations and networks known to work on SG and SG+ in order to supplement the dearth of relevant materials found in the databases (see Appendix 2 for a complete list). A keyword search of the network websites such as MicroLINKS, SEEP, and the Microfinance Gateway sponsored by the Consultative Group to Assist the Poor (CGAP) was conducted using much broader search terms (e.g., “saving”) than in the bibliographic database searches. Specific organization and donor websites were searched using the same technique. In addition, specific program names were searched on the World Wide Web through Google. Key informant interviews and electronic correspondence were carried out with seven stakeholders experienced in SG+ and economic strengthening programs to identify unpublished literature. The key informants also contacted their SG colleagues for additional information and supplied three unique resources in addition to many others that duplicated those found in the bibliographic databases and manual searches.

Selection of Studies

A total of 928 documents from bibliographic databases, manual searches and key informants were retrieved based on screenings of their titles and abstracts by two independent reviewers. Of these 928 documents, the full text of 71 were retrieved after passing an initial abstract screening. Importantly, some programs could not be reviewed due to the lack of research or inability to identify the existence of study documentation. In addition, several programs were being implemented at the time of writing and were not yet evaluated but may be in the future.

Although all of the SG+ articles located were registered, this review focuses on those that

included research findings evaluating effectiveness or impact of the program. Using this inclusion criterion, some SG+ articles were excluded because they only provided an overview of how SGs and another development area worked together without any data or analysis. In addition, two independent reviewers assessed the quality of evidence identified during the literature review. Reviewers identified and recorded relevant limitations and strengths of the evaluation, and classified results according to the *Quality of Evidence* rating system developed for the United States Preventive Services Task Force (1989). Eight SG+ studies that did not include a comparison group, thereby not meeting at least Evidence Level II-2 (Table 2), were excluded from the review. This evidence level was selected because only evaluations with high scientific rigor could provide clear evidence of a SG+ program’s effectiveness. While studies employing less rigorous designs including cross sectional, time series and cohort did not meet the needs of this literature review they are still useful for contributing to learning about SG+. Ultimately, eleven documents from ten studies met these two selection criteria for inclusion in the literature review.

Table 2. Levels of Evidence

Level I	Evidence obtained from at least one properly designed randomized controlled trial (F).
Level II-1	Evidence obtained from well-designed controlled trials without randomization.
Level II-2	Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group.
Level II-3	Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled experiments could also be regarded as this type of evidence.
Level III	Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert communities.

Two independent reviewers also assessed the risk of bias of each included study. For randomized studies, reviewers assessed whether randomization was properly conducted (randomization sequence and allocation concealment), while for non-randomized studies, they assessed whether methods to improve comparability were implemented. Also, they assessed the level of incomplete data and other biases.

OVERVIEW OF LITERATURE

Ten SG+ studies were selected for inclusion based on previously established selection criteria. Table 3 summarizes the types of studies and their geographic locations, as well as how they were evaluated. All programs assessed offering participants SG interventions along with other development activities such as malaria education and prevention; maternal, newborn, and child health (MNCH) services; women’s empowerment; child protection, well-being, and development programming; OVC care and support; shared labor programs; and male engagement and gender equality programs.

Five of the ten programs were provided in a unified way, with the same staff from the supporting organizations providing both SG and development programming activities to participants. Two programs were delivered using a linked model, where development services are provided by an organization separate from the organization that trains SG members. Three programs utilized a parallel model, where distinct groups of staff within a single organization provide services (Dunford, 2001).

Included studies were implemented in nine countries spanning two continents: Burundi, Côte d'Ivoire, Ethiopia, Kenya, Mali, Mozambique, Pakistan, Rwanda and Uganda. Across all studies, the majority of participants in SGs were women, although the intended beneficiaries of programs often also included male partners, children, the household, and even the surrounding community. Four studies targeted more specific populations: one for pregnant women (Noorani et al., 2013), one whose participants were all people living with HIV (PLHIV) (Okello et al., 2013), and two for OVC² caregivers (Larson et al., 2015; Swarts et al., 2010).

² OVC stands for “orphans and vulnerable children” and is used in this review in accordance with the PEPFAR definition: children (aged 0-17) who have lost one or more parents to HIV/AIDS or who otherwise have been made more vulnerable because of HIV/AIDS.

Table 3. Summary of Studies Included in the Evidence Synthesis. (*Significant findings)

Citation	Location; Intervention	Implementing Organization/ Model Name	Integration Method	Study Design	Sample Size (n=R)	Main Research Questions	Outcomes Examined	Efficacy per Outcome
Annan et al., 2013	Burundi; VSLA and “Healing Families and Communities ” which is a family-based intervention for child protection, well-being, and development programming	IRC/Urwaruka Rushasha (called “New Generation project” in English)	Unified	RCT (randomized by cluster)	1,369 households	What is the impact of village savings and loans association (VSLA) and Healing Families and Communities discussion series on economic outcomes of poor households and the added impact of the “plus” on: <ul style="list-style-type: none"> • Spending on children • Child labor • Harsh discipline • Positive discipline • Parent-child communication • Child well-being • Child mental health? 	Spending on children’s health	Negative* (p-value not given)
							Spending on children’s education	No impact
							Spending on children’s clothing	Positive* (p-value not given)
							Reduced child labor	Positive (NS)
							Reduced harsh discipline— primary caregiver	Positive* (p=.01)
							Reduced harsh discipline—someone else in household	Positive* (=0.05)
							Increased positive discipline	Mixed*
							Child well-being	No impact
							Child mental health	No impact
							Family well-being	No impact
Parent/child communication	No impact							
BARA and IPA, 2013	Mali; SG plus malaria education and prevention	BARA and IPA/Saving for Change	Unified	RCT (randomized by cluster)	5,602 households	When delivered through the Saving for Change platform, will a malaria knowledge campaign improve both malaria knowledge and preventive behaviors?	Malaria knowledge	Mixed*
							Malaria prevention practices	No impact
							Fever	No impact
							Health expenses	No impact
							School enrollment	No impact
							Business development and expansion	No impact
							Agricultural assets and inputs	No impact
Not having enough to eat over last 12 months	Positive* (p<.1; treatment effect = -.03; 95% CI: -.06, 0.0)							

Citation	Location; Intervention	Implementing Organization/ Model Name	Integration Method	Study Design	Sample Size (n=R)	Main Research Questions	Outcomes Examined	Efficacy per Outcome
							FFH food security index	Positive* ($p < .05$; treatment effect = $-.04$; 95% CI: $-.07, -.01$)
							FFH chronically food insecurity index	Positive* ($p < .05$; treatment effect = $-.04$; 95% CI: $-.07, -.01$)
							Household assets	No impact
							Livestock ownership by women	No impact
							Livestock ownership by household	Positive* ($p < .01$; treatment effect = 41.33 ; 95% CI: $38.94, 200.95$)
							Poverty (PPI score)	Positive* ($p < .10$; treatment effect = $.32$; 95% CI: $-.10, 1.16$)
							Non-food expenditure	No impact
Brunie et al., 2014; Brunie et al, n.d.	Mozambique; VSL plus a rotating shared labor scheme	Save the Children/ STRIVE	Linked	Quasi-experimental prospective study with pre-post members vs. non-members	1,276 households	What is the effect of household participation in VSL groups and rotating shared labor schemes on household economic stability, food security, and child nutrition?	Income	Positive* ($p > .1$; Mean TE= $.60$)
							Asset ownership	Positive* ($p > .01$; Mean TE= 1.05)
							Food sufficiency	Positive* ($p < .01$; TE= 2.04)
							Household dietary diversity score	Positive* ($p > .01$, TE= 2.04)
							Child individual dietary diversity score	No impact
							Child weight-for-age z-scores	No impact

Citation	Location; Intervention	Implementing Organization/ Model Name	Integration Method	Study Design	Sample Size (n=R)	Main Research Questions	Outcomes Examined	Efficacy per Outcome
Gupta et al., 2013	Cote d'Ivoire; SG plus eight session "gender dialogue" groups to reduce intimate partner violence (IPV)	Yale School of Public Health with IPA and IRC/No VSLA name given and Gender Dialogue Groups	Parallel	RCT (randomized by cluster)	934 couples	What is the incremental impact of adding "gender dialogue" groups to an economic empowerment groups savings program on level of IPV?	Physical IPV	Positive (NS)
							Sexual IPV	Positive (NS)
							Economic abuse	Positive* (OR=.39; p<.001, 95% CI: .25, .60)
							Acceptance of wife beating	Positive* (β =-.97; 95% CI: -1.67, -.28, p=.006)
							Attitudes towards refusal of sex	No impact
Iyengar and Ferrari, 2011	Burundi; VSLA plus women's empowerment	IRC/No VSLA program name	Parallel	Quasi-experimental pre-post evaluation with current VSLA members randomly assigned to + intervention	500 existing VSLA group participants	Does coupling women's empower discussion sessions with microfinancing enhance the role of women in decisions regarding household purchases and the reduction of domestic violence?	Increased spending with own earnings	Positive* (p<.01)
							Authority over major household purchases	Positive* (p<.01)
							Authority over daily household purchases	No impact
							Authority over purchase of alcohol and cigarettes	No impact
							Authority over visiting family or friends	No impact
							Authority over visiting spouse's family and friends	No impact
							Authority over how many children to have	Positive* (p<.01)
							Authority over having sex	No impact
							Cooperative behavior	Positive (NS)
							Management of disagreements	Positive (NS)
							Household consumption	Positive* (p>.01)

Citation	Location; Intervention	Implementing Organization/ Model Name	Integration Method	Study Design	Sample Size (n=R)	Main Research Questions	Outcomes Examined	Efficacy per Outcome
							Exposure to violence	Positive (NS)
							Men's attitudes toward gender-based violence (GBV)	Mixed*
Larson et al., 2015	Kenya; Savings and Loans Association (SLA) plus OVC care and support	Community Based Care for Orphans and Vulnerable Children (CBCO)/No SG+ program name	Unified	Retrospective cohort of participants vs non-participants	1,429 households	Does participation in the CBCO program improve household and OVC welfare?	Food insecurity	No impact, negative disparity in severe food insecurity
							Age-for-grade congruent (on track)	No impact
							Completion of last school term	No impact
Noorani et al., 2013	Pakistan; SG plus MNCH services	Aga Khan Foundation / Community Midwives Program and Community-based Savings Groups (CBSG)	Parallel	Quasi-experimental cross-sectional study of members vs. non-members	908 women	Does membership in the CBSG contribute to increased awareness of service availability, understanding of MNCH issues, in addition to greater utilization of MNCH services in the community, specifically those offered by community midwives? Does the CBSG members' and nonmembers' use or non-use of community midwives affect maternal health outcomes?	Use of antenatal care	Positive* (p>.001)
							Use of skilled delivery	Positive* (p>.001)
							Use of postnatal care	Positive* (p>.001)
							Mean expenditure on MNCH services	No impact
Okello et al, 2013	Ethiopia; Savings and Loans groups plus PLHIV and OVC care and	FHI 360 / No SG+ program name	Unified	Quasi-experimental non-randomized intervention and control	2,168 PLHIV	What are the outcomes and impact of this unique integrated community home-based care program on a variety of environmental, personal, and behavioral factors related to the multiple	Disclosure of HIV status	Positive*(p=.01)
							Household savings	Positive* (p=0.00)
							Current ART use	Negative*(0=.001)
							Length of ART use	Positive* (p=0.001)
							Non-infection with opportunistic infection	Negative* (p=.000)

Citation	Location; Intervention	Implementing Organization/ Model Name	Integration Method	Study Design	Sample Size (n=R)	Main Research Questions	Outcomes Examined	Efficacy per Outcome
	support programming			impact evaluation		inter-related needs of PLHIV?	Independence	Positive* (p=.025)
							Social relations	Positive* (p=0.000)
							Environment for PLHIV	Positive* (p=.029)
							Physical condition	No impact
							Psychological condition	No impact
							Composite quality of life score	Positive* (p=0.000)
Slegh et al., 2013	Rwanda; VSL plus male engagement and gender equality	CARE/No SG+ program name – Male engagement component for partners of women participating in SG	Unified	Quasi-experimental cross-sectional study of members vs. non-members	30 couples	What is the impact of women's VSL participation on household management and partner relations?	Economic situation	Positive
							Male participation in traditionally female household activities	Positive
							Partner relations, decision-making, and family dynamics	Positive
							Male stress coping	Positive
							Male support of family planning	Positive
							Conflict reduction	Positive
							Intimate partner violence	No impact
Swarts et al., 2010	Uganda; (Savings and Loans Group) SLG plus OVC Care and support	The Salvation Army /Sustainable Community Support for Orphans and Vulnerable Children (TSA-OVC) project and WORTH	Linked	Quasi-experimental household comparative survey of OVC and their member caregivers vs. OVC and their non-member caregivers	685 households	What are the differences between OVC and caregivers who participated in the WORTH program and those who did not in terms of their nutritional, educational, health, psycho-social, and economic status?	Access to savings and loans	Positive
							Business initiatives	Positive
							Meals per day	Positive
							Nutritious diet	Positive
							Dietary diversity	Positive
							Grow own food	Positive
							Attentive to health status of children	Positive
							Seek quality health care for children	Positive
							Literacy	Positive
							Shelter	No impact
							School attendance	No impact

Citation	Location; Intervention	Implementing Organization/ Model Name	Integration Method	Study Design	Sample Size (n=R)	Main Research Questions	Outcomes Examined	Efficacy per Outcome
							Reciprocal community support	Positive
							HIV testing	Positive
							Contraception use	Positive

FINDINGS

Annan, J., et al. (2013). *Urwaruka Rushasha (New Generation): A Randomized Impact Evaluation of Village Savings and Loans Associations and Family-Based Interventions in Burundi. Final Evaluation. International Rescue Committee.*

http://www.rescue.org/sites/default/files/resource-file/New_Generation_Final_Report_05312013.pdf

This RCT evaluated the impact of an SG (VSLA methodology) plus a child protection, well-being, and development program on household economic outcomes, spending on children, child labor, discipline, parent-child communication, and child well-being and mental health. A total of 1,369 households in eight zones of the Makamba and Bujumbura Rural provinces were cluster randomized to receive SG+, SG-only or a delayed intervention (and thereby serve as the control group) from April 2010 to April 2012.

Annan et al. found participation in SG+ and the “Healing Families and Communities” program had no significant impact on an aggregate measure of child well-being which included the frequency with which the child between the age of 10 and 14: ate when hungry; was dressed well; studied well; had good health; had good behavior; was happy; and had someone to provide support when it was needed. Participation in the SG+ also had no significant impact on family well-being, child mental health, and parent-child communication. While the study did find a reduction in child labor among SG+ participants, this result was not significant.

The intervention significantly reduced harsh discipline use in households participating in the SG+ intervention, by both caregivers directly participating in the intervention ($p=.01$) and someone else in the household ($p=.05$). However, when evaluating the use of positive discipline techniques, out of twelve measures, the study only found significantly higher use of one among SG+ households. SG+ households were more likely to compliment the child when s/he has done something good, an effect seen among both caregivers ($p=0.0$) and other person(s) in the household ($p=0.0$). As compared with SG only participants, all other measures of positive discipline—including the respondent or someone else in the home explaining to the child why his/her behavior was wrong; telling the child to stop what s/he is doing and giving the child something else to do; giving the child a “time-out” away from other people and fun things to do; setting the rules for the child’s behavior in the home, and giving the child extra work—were not found to be significant.

Spending on children’s clothing increased significantly (p-value not given) in the SG+ program compared to both controls and SG only groups. Spending on health decreased among all groups, and the decrease compared to the control was significant for SG+ participants (p-value not given). Education spending increased among all groups and participating in SG+ did not result in a significantly higher increase in spending for this category compared to SG only groups.

Bureau of Applied Research in Anthropology and Innovations for Poverty Action (BARA and IPA). (2013). Final Impact Evaluation of the Saving for Change Program in Mali, 2009–2012. The University of Arizona and Innovations for Poverty Action and Saving for Change: Savings Groups as Platforms for Malaria Education in Mali. Aga Khan Development Network.

<https://www.freedomfromhunger.org/sites/default/files/SavingforChangeMaliResearchFullReportMay2013.pdf>

The Saving for Change program implemented in Mali over a three-year period from 2009–2012 was evaluated in an RCT. One element of the evaluation examined whether a complementary module for SG participants, which was designed to increase knowledge about malaria prevention and treatment, would improve malaria knowledge and preventive behaviors. For the study, 5,602 households from 500 randomly selected villages from the study area were surveyed, with 209 treatment villages and 291 control villages randomly assigned from this sample.

The study found improvements in some measures of malaria knowledge, albeit with small treatment effects, specifically: mentioning mosquitos as a cause of malaria ($p < .05$; treatment effect = .04; 95% CI: .01, .07), mentioning bednets as a way to prevent the spread of malaria ($p < .01$; treatment effect = .05; 95% CI: .02, .07), and providing at least two correct answers out of five malaria knowledge questions ($p < .05$; treatment effect = .03; 95% CI: .01, .06). However, participants were not significantly more likely to know that only mosquitos cause malaria, be aware that prenatal treatments can prevent malaria or know that anti-malaria medication can be taken to prevent malaria. Additionally, participants significantly improved their food security on all three indicators measured: frequency of not having enough to eat over the last 12 months ($p < .1$; treatment effect = -.03; 95% CI: -.06, 0.0), the Freedom From Hunger food security index ($p < .05$; treatment effect = -.04; 95% CI: -.07, -.01) and the Freedom From Hunger chronically food insecurity index ($p < .05$; treatment effect = -.04; 95% CI: -.07, -.01).

Participants did not significantly differ from non-participants with regard to actual malaria prevention behaviors, health expenses, school enrollment, business development and expansion, agricultural assets and inputs, and household assets. The results suggest an overall mixed effect; although the program improved health knowledge related to malaria and improved food security, there was no impact on many of the other measures of behavior change or long-term health outcomes.

Brunie, A., et al. (2014). Can village savings and loan groups be a potential tool in the malnutrition fight? Mixed method findings from Mozambique. Children and Youth Services Review: 47:113–120.

<http://www.sciencedirect.com/science/article/pii/S019074091400259X>

Brunie, A., et al. (n.d.) Economic effects of savings groups in rural Mozambique. Unpublished manuscript. This paper examined the impact of savings and loan groups

(SGs), alone and combined with a rotating labor scheme (AM), on the economic conditions of the rural poor in Nampula Province in Mozambique.

The STRIVE Mozambique program, implemented by Save the Children from 2008–2012 in Nampula Province, sought to evaluate the impact of savings groups (VSLA methodology), alone or combined with a rotating labor scheme, called *Ajuda Mútua* (AM) on child nutritional outcomes. STRIVE activities were implemented in the same districts as a nutrition and agriculture program, also led by Save the Children, that included educational programming around good nutrition practices with pregnant women and caregivers in mothers' groups to prevent malnutrition in young children. The project and research design treated AM as the “plus” intervention, since the project's theory of change was driven by the effects of increased social capital generated by AM as well as the economic capital generated by SGs.

The impact evaluation used a quasi-experimental, prospective longitudinal design: baseline and endline survey data were collected from the same 1,276 households in August 2009 and August 2012. Six of Nampula's 18 districts were purposively selected and arranged in three pairs so that each pair was then randomly assigned to receive either SG only, SG+AM, or no intervention. Corresponding program activities were offered in a subset of communities in each district; households self-selected into groups within these communities. The impact evaluation found that participation in SG only and SG+AM had a significant positive effect on months of food sufficiency in the household, with SG+AM showing the highest point estimate impact of an additional 2.04 months of food on average ($p < .01$, whereas SG only was $p < .1$; treatment effect = .47 additional months of food). Household Dietary Diversity Scores (HDDS) increased for all groups, but increased least for SG+AM households, and the difference from the control group was significant ($p < .01$, treatment effect = -.92 units lower score compared to controls); differences between SG only and control groups were not significant. Child individual dietary diversity scores were significantly higher among the SG only group, but not in SG+AM. There was no statistically significant impact of program participation on child weight-for-age z-scores or child individual dietary diversity scores.

Gupta, J., Falb, K. L., Lehmann, H., Kpebo, D., Xuan, Z., Hossain, M., & Annan, J. (2013). Gender norms and economic empowerment intervention to reduce intimate partner violence against women in rural Côte d'Ivoire: a randomized controlled pilot study. BMC international health and human rights, 13(1), 46. <http://www.biomedcentral.com/1472-698X/13/46>

The two-year RCT of village groups in Cote d'Ivoire evaluated the difference between SG only (VSLA methodology) and SG plus an intimate partner violence (IPV) intervention comprised of eight sessions of “gender dialogue groups” for women ($n=934$) and their male partners. Data collection was done only with women, not with their male partners. At endline, female participants in the SG+ groups were less likely to report physical and sexual IPV, although these results were not statistically significant. For all SG+ participants, significant positive results were found in the treatment group for reduced economic abuse (OR=.39; $p < .001$, 95% CI: .25, .60)

and reduced acceptance of wife beating ($\beta = -.97$; 95% CI: -1.67, -.28, $p = .006$) as compared to SG only. Looking specifically at the subset of “high intervention” participants (those attending more than 75% of gender dialogue group sessions with their partner), the study did find significant reductions in reported physical IPV (OR=.45; $p < .04$, 95% CI: .21, .94), but reductions in reporting sexual IPV did not reach statistical significance. Changes in attitudes towards a woman’s ability to refuse sex were not statistically significant.

Iyengar, R., & Ferrari, G. (2011). Comparing Economic and Social Interventions to Reduce Intimate Partner Violence: Evidence from Central and Southern Africa (No. w16902). National Bureau of Economic Research. <http://www.nber.org/papers/w16902.pdf>

For this RCT, 500 participants in existing SGs (VSLA methodology) in Burundi were randomized individually, and observed over a 15-month period. Half the participants received a women’s empowerment intervention and half served as SG-only controls. The additional women’s empowerment discussions focused on encouraging female participants to discuss with their partners how resources in the household are accessed and who makes decisions about them. The term “women’s empowerment” was not used with participants for fear of backlash, but the program used this subtle approach as a way to improve communication around decision-making and women’s opinions.

As a result of participation in the discussions, women were more likely to report increased spending with their own earnings ($p > .01$) and having the authority to make decisions over major household purchases ($p > .01$). As a result of these changes in decision-making patterns, household consumption increased ($p > .01$). Positive trends did not rise to the level of significant impact in areas such as authority regarding daily household purchases, the purchase of alcohol or cigarettes, and the ability to visit family or friends or spouse’s family or friends. Intervention participants did report having significantly more authority over the decision of how many children to have, but not over deciding when to have sex. Reports of cooperative behavior and the management of disagreements also improved, but this was not statistically significant.

With regards to gender-based violence, attitudes toward violence improved to a statistically significant level on two measures: finding it acceptable to beat one’s wife if she neglects children ($p > .01$) and if she refuses sex ($p > .10$), but not in other measures: if she goes out without husband’s permission; if she argues; if she burns food; if she is annoying; or that it is never ok to beat one’s wife. This translated into a small, and not significant, reduction in exposure to violence.

Larson B., et al. (2013). Exploring impacts of multi-year, community-based care programs for orphans and vulnerable children: a case study from Kenya. *AIDS Care: 25(Suppl 1): S40-5.*

This 2010 retrospective, cross-sectional cohort study in Kenya compared OVC households participating in an SG (savings and loan association methodology) plus OVC care and support program with non-participating households to determine whether the program improved

household and OVC welfare. Two sets of analyses were done: a disparity analysis that compared participant households to non-OVC households to assess how “deprived” Community-based Care for Orphans and Vulnerable Children (CBCO) program households were, and a “simple” impact analysis that compared participant households to non-participating OVC households.

The study found that participation in the program did not positively impact household food security as compared with non-participating OVC households, and that 14% more participant households were rated severely food insecure as compared with non-OVC households. There was no impact on OVC age-for-grade congruency (on track) or OVC completion of last school term, and while there was some disparity in the rate of completing the last school term among 14–17 year olds, it was limited (10 percentage points lower than non-OVC households), and the completion rate among CBCO households was both high (90%) and comparable to the completion rate for non-participant OVC households. The authors note the limitation conferred by the study design, but suggest that the results indicate that a low-cost Savings and Loan Association model may not be adequate to generate significant, additional impacts on household food security and OVC educational attainment. The exact period of exposure for the households surveyed was not clear but could have been as long as four years.

Noorani, Q., et al. (2013). *Role of Community Based Savings Groups (CBSGs) in Enabling Greater Utilization of Community Midwives in Chitral District of Pakistan. Pakistan: Aga Khan Foundation.*

The Community Midwives Program and SG (CBSG methodology) program in Pakistan was evaluated over 20 months using a quasi-experimental, cross-sectional study design. The study group included women who had recently delivered and were residing in communities served by community midwives, comparing the impact of household participation in SGs on MNCH service utilization. The purpose of this cross sectional study with 908 women in areas with community midwives, was to determine whether membership in SGs increased awareness of service availability, improved understanding of MNCH issues, and increased utilization of MNCH services in the community (and specifically those offered by community midwives). It also sought to determine whether the use of community midwives by SG members and nonmembers affected maternal health outcomes.

As a result of participation in the SG plus MNCH services, members had significantly increased use of antenatal care ($p > .001$), skilled delivery ($p > .001$), and postnatal care ($p > .001$) when compared with non-members. Participants continued to rely on family members for financing their care; only 15% of SG members obtained loans for MNCH services, and loans from the SGs comprised only 5% of participants’ financing for MNCH, suggesting that SGs were not able to provide sufficient funding to pay for MNCH services. Qualitative research done in this study indicates that participants feel that participating in the SG furnished them with a degree of financial autonomy and enhanced their ability to consult healthcare providers of their choice.

Okello F. (2013). *Saving the sick and improving the socio-economic conditions of people living with HIV in Ethiopia through traditional burial groups. Health Policy and Planning; 28(5): 549-57.* <http://www.ncbi.nlm.nih.gov/pubmed/23059736>

This quasi-experimental retrospective study and impact evaluation examined a project carried out in Ethiopia between 2003-2010 that built traditional burial societies (*Idirs*) into community home-based care providers through organizational and technical capacity building and training, and trained households of PLHIV and OVC in alternate income generation, community self-help, and savings and loans groups. The study population consisted of PLHIV in 13 urban and peri-urban communities in four regions of Ethiopia, utilizing propensity score matching to compare intervention participants who had received services for at least one year with controls. A total of 1,084 intervention and control matched pairs (2,168 PLHIV) were included in the study.

The authors explored the impact of this integrated program on a variety of inter-related environmental, personal, and behavioral factors specifically related to the needs of PLHIV. When compared with non-participants, program participants were significantly more likely to report an improvement in household savings ($p=0.000$), to report disclosing their HIV status to someone other than a health care provider ($p=.01$) and report spending more than two years on ART ($p=.001$), but were significantly less likely to be taking ART currently ($p=.001$)³ and to not have reported an opportunistic infection in the last six months ($p=.000$).

Additionally, the program has a significant impact on a composite quality of life score for PLHIV ($p=0.000$). More specifically, the participants reported significant improvements in independence ($p=.025$), social relations ($p=.0.000$), and the environment for PLHIV, which includes the physical and social environment, financial resources access to health care, access to transportation, and ability to participate in recreational activities ($p=.029$). However, participants were not significantly different from control groups with regard to physical condition or psychological condition.

Slegh, H., et al. (2013). *'I can do women's work': reflections on engaging men as allies in women's economic empowerment in Rwanda. Gender and Development; 21(1): 15-30.* <http://www.tandfonline.com/doi/abs/10.1080/13552074.2013.767495>

The CARE SG program in Rwanda (VSL methodology) utilized a quasi-experimental, cross-sectional study design to evaluate the impact of a women-only SG intervention plus a gender equity program aimed at SG participants' male partners on participants' household management and partner relations. The gender equity program was developed based on a previous assessment of men's attitudes towards their female partners' empowerment and participation in the CARE VSL program, which found a range of attitudes and behaviors among men, both

³ The researchers note that the point of selection into the survey may have influenced this result. The control group was selected from health facility registers, while the intervention sample was selected from *Idir* registers. This might have biased the control group toward individuals actively in treatment, but was the most diverse registry of non-treated individuals available to the researchers.

positive and negative. The intervention was a couples-focused male engagement approach that worked with men on their own and with their partners to discuss gender-based violence, health, and relationships. The 2010 evaluation compared 30 couples who participated in the SG+ intervention to 30 couples where the woman participated in the SG only. Couples were surveyed before and after the intervention group received the 16-week group-education program.

The study found that the SG+ program had greater positive impacts on household economic situations, male participation in traditionally female household activities, partner relations, household decision-making, family dynamics, male stress coping, male partner support of family planning, and partner conflict reduction than SG alone. The study was unable to determine whether or not the intervention had an effect on the incidence of intimate partner violence, but did find indications that SG+ participants had improved their knowledge about gender-based violence and laws related to gender equity. With a sample size of only 30 couples, the statistical power of the findings was small and therefore could have limited the detection of program effects. Overall, findings were considered mostly positive, as there were positive impacts both on household-level poverty as well as partner relations and family dynamics.

Swarts, B., et al. (2010). Evaluation of Economic Strengthening for OVC: Using the WORTH Model in Uganda. Summary of Findings. The Salvation Army World Service Office.

This retrospective comparative household survey from Uganda measured differences in the nutrition, education, health, psychosocial well-being, and economic status of OVC and caregivers who participated in the WORTH SG program plus OVC care and support for at least two years, versus OVC and caregivers who received only OVC care and support programming. The authors found that participation in the WORTH program along with the OVC care and support programming had a positive effect on access to savings and loans, business initiatives, number of meals consumed per day, nutritious diets and dietary diversity, growing of own food, attentiveness to the health status of children, quality child health care seeking behaviors, caregiver literacy, reciprocal community support, HIV testing, and caregiver contraception use. The program had a neutral effect on housing quality and OVC school attendance. Although the study findings were mostly positive, it should be taken into consideration that the authors did not provide the statistical significance of the results.

DISCUSSION

Effectiveness of SG+ Interventions

Overall, the evidence for SG+ impact varies by the type of development area with which the SG is combined. The current evidence base can be considered of moderate quality based on study design, and limited strength primarily due to the insufficient number of evaluations and mixed outcomes. The findings suggest some promising areas that require more confirmatory research.

This is a summary or synthesis of the most common outcomes or objectives the programs endeavored to address. The objective is to reach conclusions on issues: (a) for which evidence is consistent and strong; (b) for which evidence is mixed; and (c) for which evidence is marginal or entirely lacking and, thus requires additional research.

General Health

Among the four studies that assessed health programs delivered with SGs, outcomes of interest assessed varied, ranging from knowledge increase to actual behavior change, and the findings were mixed (BARA and IPA, 2013; Noorani et al., 2013; Okello et al., 2013; Swarts et al., 2015). Malaria knowledge and the use of MNCH services improved, which suggests that some health education and demand creation are well-suited for integration with SGs (BARA and IPA, 2013; Noorani et al., 2013).

Behavior change findings may be considered promising; although there was no impact on malaria prevention practices, there were increases in voluntary disclosure of HIV status, length of ART use, HIV testing, and contraception use (BARA and IPA, 2013; Okello et al., 2013; Swarts et al., 2010). Health behavior change is complex and the authors did not provide adequate information for drawing conclusions about the differences in dosage, delivery, quality or consistency, which are all factors that could have affected the mixed findings.

There was no impact on other preventive behaviors, such as spending on MNCH services, and participants in one SG+ program actually saw a negative impact on current ART use (Noorani et al., 2013; Okello et al., 2013). The negative finding may have been influenced by the control group sampling source used in the study (Okello et al., 2013).

Nutrition and Food Security

Four studies assessed food and nutrition related outcomes although none were explicitly nutrition programs delivered with a SG (BARA and IPA, 2013; Brunie et al., 2014; Larson et al., 2015; Swarts et al., 2010). Findings from the evaluations revealed there to be a positive effect on some outcomes and no impact on others. Specifically, three out of four studies found positive effects on food security, one study found no impact on child nutrition indicators, and one found a negative disparity in severe food security as a result of participation in the SG+ program.

The negative results were found by Larson et al. (2015), comparing OVC households participating in SG+ to households that were both non-treatment and non-OVC households. This measure captures the degree of deprivation experienced by OVC households, and found that participant households were 14% more likely than the non-OVC household comparison group to be severely food insecure. The study authors were unable to suggest a hypothesis for this difference, which may be attributable to the study design.

Brunie et al. (2014) identified a positive impact on household food security as a result of SG+ participation but, within the household, found no impact on children's dietary diversity or nutrition (weight-for-age) indicators. Through in-depth interviews with participants, the study team found

that SG+ participants were able to buy larger quantities of food to alleviate intermittent food insecurity. However, this did not necessarily translate into a more diverse diet. The participant interviews point to factors such as lack of access to more nutritionally rich foods and limited understanding of dietary diversity as possible influences on these outcomes.

Child Protection and Well-being

Of the four studies that assessed outcomes related to child protection and well-being, findings were mixed, with a majority showing no impact, including on spending on children's education, school enrollment, age-for-grade congruency, completion of last school term, and school attendance (Annan et al., 2013; BARA and IPA, 2013; Larson et al., 2015; Swarts et al., 2010).

Swarts et al. (2010) found no impact on school attendance, which the authors attributed to participants in both the intervention and comparison groups having been encouraged to actively support children's education. SG+ participants reported better outcomes on measures of support for education, such as academic enrichment activities and condition of school uniforms. The study found positive effects on caregiver attitudes and practices related to children's health, such as attentiveness to child health and seeking quality health care for children, although statistical significance for these findings is not provided.

Annan et al. (2013) found positive impacts on selected measures related to child protection and well-being. For example, participation in SG+ and the "Healing Families and Communities" program led to a decrease in child labor and an increase in spending on children's clothes, although impacts on various aspects of child well-being, child discipline, and mental health were either mixed or saw no change as a result of the intervention. The study also observed a negative impact on spending on children's health, with no evident cause identifiable in the research.

It is worth considering that as was the case with general health outcomes, the outcomes evaluated related to child well-being varied widely by the intervention and development activities. Additionally, many of the indicators used to measure impact of SG+ on vulnerable children are influenced by factors outside the scope of the intervention and time period evaluated, such as child mental health.

Gender Equality

Three studies examined programs which combined male engagement and gender equality, women's empowerment or intimate partner violence prevention with an SG model (Gupta et al., 2013; Iyengar and Ferrari, 2011; Slegh, 2013). Overall, these SG+ programs had positive impacts on most outcomes including male participation in traditionally female household activities, female partners' authority over major household purchases, male support of family planning, and conflict reduction. There were also several outcomes that were not impacted by the SG+ program, such as attitudes towards refusal to have sex and authority over having sex (Gupta et al., 2013; Iyengar and Ferrari, 2011). In addition, the impact on intimate partner violence varied between studies as Slegh et al. (2013) found their male engagement program

had no impact, and Iyengar and Ferrari (2011) saw improvement in women's exposure to violence, but mixed results in men's attitudes toward GBV, while Gupta et al. (2013) saw a positive impact on both physical and sexual intimate partner violence.

Economic Strengthening

All but two studies reported at least on some household expenditure information, and the majority examined outcomes such as income, assets, and consumption. Some of these results have been discussed above (health expenditures, spending on children). The majority of economic outcomes, such as household poverty (BARA and IPA, 2013), income (Brunie et al., n.d.), and savings (Okello, 2013), showed positive impacts on participants as a result of the SG+ intervention. These outcomes are more directly affected by participation in a SG and are supported by the broader literature on SGs (Gash and Odell, 2013). However, results on assets and investments are more mixed. Brunie et al. (n.d.) and Swarts (2010) found positive effects on asset ownership and business initiatives, respectively. BARA and IPA (2013) found no impact on business development and expansion, agricultural assets and inputs, household assets, or non-food expenditure, but did find positive effects on household livestock ownership. These findings are generally consistent with the broader evidence base on SGs as stand-alone interventions.

It is worth noting that when comparing economic strengthening between SG+ and SG only, there is very little discussion of whether the additional developmental activities had any impact on economic strengthening results. Only Slegh et al. (2013) note that participants in the SG+ activity experienced greater economic improvements than SG-only participants. While they report that income increases for families with the lowest income levels was nearly double those of the control group, the sample size for the study was very small (30 couples) so the finding is not statistically significant. There is no evidence in the materials reviewed to suggest that economic impacts of SG+ were less than expected, as compared with SG only programs, but this does not appear to have been a research question for any of the existing studies.

Cost Effectiveness

In terms of the current evidence base for costs, of the reviewed studies, only two reported on cost effectiveness. The study conducted by Larson et al. (2015) showed no impacts, and so could only assess cost of implementation. While the reported costs were low: \$49-\$57 per household per year or \$21-\$25 per child per year, the study notes that the project relied on a substantial quantity of volunteer labor, and valuing this labor at a reasonable local wage would greatly increase costs.

BARA and IPA (2013) attempted a cost-benefit analysis through a return on investment (ROI) assessment with multiple measures. They calculated an implementation cost of \$16.72 per household, although this calculation excludes high-level supervision and management costs. They further calculate that the savings costs (in terms of reduced consumption) were \$17.50 per household. This yields two cost measures—\$16.72 for implementation costs and \$34.22 for

total costs. They examined three measures of return: value of total asset increases at the household level, and two consumption measures. The analysis of these measures was not particularly illuminating: the increase in total assets was US\$149.38 (ROI 794% against implementation costs alone, p-value <.05; ROI 243% against household savings costs, p-value <.10) but the measure is described as “low precision” by the authors, and the consumption measures did not rise to statistical significance. The strongest conclusion the authors draw directly from the ROI analysis is that “modest impacts...were achieved through a very inexpensive program” (BARA and IPA, 2013).

Future Research Recommendations

More research is needed for stakeholders and implementers to understand the effectiveness of integrating SG and activities in other development areas. The following is a summary of the major research needs.

Rigorous Study Designs

As detailed in the “Selection of Studies” section, above, the majority of SG+ evaluations are anecdotal, qualitative, or have non-experimental designs intended for internal project reports, which limited the content available for inclusion in this review. Only 10 peer-reviewed articles, rigorous evaluations, and longitudinal studies were identified within the search parameters of this review. More research using experimental or quasi-experimental study designs is needed to reduce bias and provide more statistically valid inferences about the effects of the programs.

More Robust Measurement Tools and Time Periods

There is a need for more sophisticated and standardized indicators to measure health, education, and social outcomes. In particular, many of the included studies relied on measuring knowledge and attitude changes as a result of participation in SG+ activities. While they are important foundational elements to actual behavior change, oftentimes increases in knowledge and changes in attitudes did not translate into changing behaviors or long-term outcomes.

The lack of behavior change findings and the mixed asset improvement outcomes in this review may be due to the relatively short periods of time between the intervention and endline evaluation common among these studies.. Moving forward, longitudinal study designs with long-term follow up may be useful to determine whether or not these SG+ activities have the long-term sustainable impacts they are designed to achieve.

Theories of Change & Factorial Research

Theories of change are needed to inform the design of SG+ programs. Without these, it is unclear exactly which interventions should be combined with SGs and how the two types of interventions should be designed to complement each other. For example, should SG+ programs address multiple needs for PLHIV to holistically improve their lives, or would greater improvements be achieved if a few targeted areas were addressed? Theories of change will provide information about the pathways supporting integration of economic strengthening and

other positive development outcomes so that, for example, researchers will know exactly which caregiver competencies contribute to child protection and well-being and what outcomes to expect to see in children at which times as a result.

Furthermore, successful programs using clearly articulated theories of change would subsequently provide support for the use of factorial research designs, which have great potential to yield insight into what interventions combine most effectively with SG+. Such studies, carefully planned and executed from the start of programs, can disaggregate the effects of individual interventions versus combined interventions, shedding light on whether the integrated programs yield amplified effects greater than the sum of their individual component effects. The literature to date provides limited evidence along these lines to help disentangle precisely the most effective parts vs. most effective combinations in SG+ programming.

Implementation and Cost Research

Due to the differing research approaches and degrees of rigor across the studies, this review is unable to draw any conclusions about the effectiveness of the integration methods set forth by Dunford (2001). Additionally, few of the studies in the review discuss the sequencing of SG and plus interventions, and none do so in sufficient detail to allow us to draw any conclusions about whether there is an optimal point at which to introduce plus interventions to SGs, or SGs to existing development interventions. These could be fruitful areas of inquiry for future research efforts as the evidence base grows.

In addition to implementation research, cost analysis will add to the evidence base. As noted above, only two studies out of the ten in this review discussed program costs, and only one of those was able to furnish cost-benefit analysis. This gap substantially limits our ability to assess the value of SG+ interventions.

CONCLUSION

While an established body of literature exists demonstrating the positive impact of SGs on savings and access to credit among resource poor individuals across the world, research evaluating the integration of SGs with other developmental activities is much more limited. In conducting this review, ten studies were identified as meeting previously established criteria based on study rigor. It is important to note that while each of these studies contribute unique insights to the limited existing evidence base, there are major differences between the ten included studies with regards to study design, limiting comparability across studies. Additionally, as SG+ member self-selection into a SG is a critical component of SG success, the samples of participants in SG+ groups are not randomized. Included studies attempt to account for this utilizing different techniques such as propensity score matching, but on the whole, results are only generalizable to participants who would self-select into these types of programs among the general population.

Despite these limitations, some conclusions can be drawn from the studies included in this desk review. As SG members undergo training and education in order to participate in the SG and meet on a regular basis, interventions providing health education and demand creation for health services may be particularly well suited for integration into SG. Additionally, the evidence review demonstrated a positive impact on household food security, indicating SG may be a useful tool for supporting families during seasonal changes or other transitions that typically lead to food shortages. Finally, the strongly positive results documented by Slegh et al. (2013), suggest that programs that utilize formative research to inform the developmental activities selected for integration with SG may have greater programmatic success, particularly in changing social norms or other broader outcomes related to social change.

Further exploration utilizing rigorous research designs is needed in the SG+ sector. Because the developmental areas vary greatly, efforts should be made to standardize indicators across studies according to integrated sectors such as health, OVC, and gender equality. Additionally, considering the positive impacts seen regarding economic strengthening despite relatively short evaluation periods for most of the studies, the field would benefit by an increase in rigorously conducted research utilizing longitudinal methods. Additionally the field could benefit by comparing the three methods of implementation—unified, linked, and parallel to determine which method, if any, is best suited for the delivery of SG+ programs. Overall, this strategy would lead to a more balanced perspective on the ability of SG+ to impact deeply rooted social and environmental contributors of sustained poverty.

APPENDIX 1. SEARCH TERMS

Search Terms	Derivatives
Savings group	Savings and loans group, SLG, SG
Village savings	Village savings and loans, village savings and loans association, VSL, VSLA
Community savings	
Community lending	Savings and Internal Lending Communities
Community-based microfinance	
Savings-led microfinance	
Saving for Change	
Accumulating savings	Accumulating savings and credit, Accumulating savings and credit association, ASCA
Rotating savings	Rotating savings and credit, Rotating savings and credit association, ROSCA

APPENDIX 2. INDIVIDUALS CONTACTED AND ORGANIZATIONS INVESTIGATED

Name and Organization of Individuals Contacted

Ben Fowler, Market Share Associates
Megan Gash, Freedom from Hunger
Candace Nelson, Consultant
David Panetta , Consultant
Paul Rippey, Consultant
Diana Rutherford, FHI 360, STRIVE Project
Tanya Medrano, FHI 360

Internet Searches Conducted on Organization and Network Websites

Aga Khan Foundation Development Network
CARE
CGAP Microfinance Gateway
Catholic Relief Services
FHI 360
Freedom from Hunger
Bill and Melinda Gates Foundation
IRC
MasterCard Foundation
Microlinks
Oxfam
PACT
Plan International
Save the Children
SEEP Network
USAID
United Nations
VSL Associates
World Bank
World Relief
World Vision

Internet Searches Conducted for Projects

Accumulating savings and credit association
LIFT
Rotating savings and credit association
Saving for Change
Savings and Internal Lending Communities

STRIVE
Village savings and loans
WORTH

APPENDIX 3. ESTIMATES OF EFFECT

This following table presents estimates of effect as reported by the included studies. It presents outcome data by intervention arm, and the estimate of effect reported by the authors when available for each outcome. When outcome data are reported by intervention arm, but no estimate of effect is reported, reviewers computed them as a difference in proportions or means when appropriate. 95% confidence intervals and p-values are also presented when available. In addition to percent and mean differences, estimate of effects are reported as Odds Ratio or Difference in Difference sometimes adjusted for covariates or based on propensity score matching based on the statistical analysis used by the authors. Given that the authors of this evidence review were interested in the effect of the SG+ interventions, the table only presents results when the SG+ is reported separately as compared to either a control group or a SG only group.

Reported effect of SG+ interventions on selected outcomes.

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
Annan et al. 2013	Spending on children's health	Unclear	VSLA+ NR	Control NR	NR	Reportedly significant	Analysis based on linear regression models including an indicator variable for VSLA+. For some outcomes data from only the first study cycle were used while for other outcomes data from both cycles of data collection were used.
	Spending on children's education	Unclear	VSLA+ NR	Control NR	NR	Presumably significant, but unclear	
	Spending on children's clothing	Unclear	VSLA+ 42% increase	Control 16% increase	26%	Reportedly significant	
		Unclear	VSLA+ 42% increase	VSLA 27% increase	15%	NR	
	Child labor, children 5-9: Worked for someone outside household last week	469	VSLA+ 47%	VSLA 46%	% Difference 1%	0.83	
	Child labor, children 5-9: Worked for someone outside household last year.	465	VSLA+ 49%	VSLA 50%	% Difference -1%	0.82	
	Child labor, children 5-9: Worked for household last week	486	VSLA+ 13%	VSLA 15%	% Difference -2%	0.60	
	Child labor, children 5-9: helped in domestic work last week	468	VSLA+ 94%	VSLA 92%	% Difference -2%	0.33	
	Child labor, children 10-14: Worked for someone outside household last week	378	VSLA+ 53%	VSLA 53%	% Difference 0%	0.90	
	Child labor, children 10-14: Worked for someone outside household last year.	375	VSLA+ 60%	VSLA 64%	% Difference -4%	0.41	
Child labor, children 10-14: Worked for household last week	390	VSLA+ 42%	VSLA 46%	% Difference -4%	0.39		

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
			VSLA+	VSLA			
BARA and IPA 2013	Child labor, children 10-14: helped in domestic work last week	391	VSLA+ 94%	VSLA 93%	% Difference 1%	0.75	Statistical analysis methods not described
	Harsh discipline: Score on the Discipline Scale - 9 items (primary caregiver)	388	VSLA+ Mean: 1.16	VSLA Mean:1.65	Mean Difference -0.49	0.01	
	Harsh discipline: Score on the Discipline Scale - only 8 items (someone else in household)	147	VSLA+ Mean: 1.00	VSLA Mean:1.47	Mean Difference -0.47	0.05	
	Aggregate Child well-being (7 items)	373	VSLA+ Mean: 7.92	VSLA Mean:7.82	Mean Difference 0.10	0.72	
	Child mental health: Distress scale (7 distress symptoms)	319	VSLA+ Mean: 2.08	VSLA Mean:2.21	Mean Difference -0.13	0.64	
	Child mental health: Distress scale (3 aggressive behaviors)	279	VSLA+ Mean: 1.23	VSLA Mean:1.52	Mean Difference -0.29	0.12	
	Family well-being: Family functioning scale (3 items)	941	VSLA+ Mean: 4.52	VSLA Mean: 4.46	Mean Difference 0.06	0.73	
	Family well-being: Family problems scale (3 items)	933	VSLA+ Mean: 0.48	VSLA Mean: 0.54	Mean Difference -0.06	0.48	
	Parent/child communication: Communicated with children about needs	385	VSLA+ 91%	VSLA 90%	% Difference 1%	0.81	
	Parent/child communication: Able to respond to child material need	374	VSLA+ 64%	VSLA 64%	% Difference 0%	0.93	
BARA and IPA 2013	Malaria knowledge		SfC	Control	% Difference (95% CI)		Statistical analysis methods not described

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
	Mentioned mosquitos as cause	5438	59%	55%	4% (0.01, 0.07)	<0.05	
	Mentioned mosquitoes as sole cause	5438	26%	26%	0% (-0.03, 0.02)	NS	
	Mentioned prenatal treatment	5438	18%	17%	1% (-0.02, 0.03)	NS	
	Mentioned bednets	5438	63%	58%	5% (0.02, 0.07)	<0.01	
	Mentioned anti-malaria treatment	5438	9%	10%	-1% (-0.02, 0.01)	NS	
	Mentioned at least two correct answers	5438	69%	66%	3% (0.01, 0.06)	<0.05	
	Malaria prevention practices		SfC	Control	Mean Difference (95% CI)		
	Number of bednets	5562	Mean: 4.14	Mean: 4.18	-0.04 (-0.19, 0.10)	NS	
	Children under 5 sleeping under a bednet	8524	73%	71%	2% (-0.01, 0.05)	NS	
	Took drugs against malaria during pregnancy	2761	82%	82%	0% (-0.03, 0.03)	NS	
	Health expenses in the past 30 days (\$)	5570	Mean: 6.56	Mean: 6.35	0.21 (-0.53, 0.95)	NS	
	School enrollment						
	Primary school, girls	5559	40%	40%	0.00 (-0.03, 0.03)	NS	
	Primary school, boys	5448	50%	48%	0.02 (-0.02, 0.05)	NS	
	Secondary school, girls	3144	35%	36%	-0.01 (-0.05, 0.03)	NS	
	Secondary school, boys	3663	44%	43%	0.01 (-0.02, 0.04)	NS	
	Agricultural assets and inputs: Index of assets	5563	Mean: 0	Mean: 0	0 (-0.06, 0.05)	NS	

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
	per capita (small household)						
	Not having enough to eat over past 12 months		37%	40%	-3% (-0.06, 0.00)	<0.1	
	FFH food insecurity index	5428	47%	51%	-4% (-0.07, -0.01)	<0.05	
	FFH chronically food insecurity index	5428	39%	43%	-4% (-0.07, -0.01)	<0.05	
	Household assets: Index of assets per capita (small household)	5569	Mean: 0.03	Mean: 0	0.03 (-0.02, 0.08)	NS	
	Livestock ownership by women (20-65)	8596	47%	47%	0% (-0.03, 0.03)	NS	
	Livestock ownership by small household	5572	89%	88%	1% (-0.01, 0.03)	NS	
	Total value of livestock (small household) (\$)	5572	Mean:1015.72	Mean: 895.78	119.94 (38.94, 200.95)	<0.01	
	Poverty (PPI score)	5563	Mean: 21.48	Mean: 20.95	0.53 (-0.10, 1.16)	P<0.1	
	Monthly non-food expenditure (\$)	5555	Mean: 2.81	Mean: 2.85	-0.04 (-0.27, 0.18)	NS	
Brunie et al. 2014; Brunie n.d.	Log total annual per capita household income	836	SG+AM Baseline: 6.75 Endline: 7.24	Matched control Baseline: 6.59 Endline: 6.48	Difference in Difference (SE) 0.60 (0.27)	<0.05	Propensity score weighted difference-in-difference regression controlling for exogenous shocks
	Asset ownership	837	SG+AM Baseline: 3.16 Endline: 4.42	Matched control Baseline: 3.25 Endline: 3.45	Difference in Difference (SE) 1.05 (0.21)	<0.01	
	Months of food sufficiency	836	SG+AM Baseline: 9.27 Endline: 11.18	Matched control Baseline: 10.47 Endline: 10.35	Difference in Difference (SE) 2.04 (0.36)	<0.01	

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
	Household dietary diversity score	813	SG+AM Baseline: 4.20 Endline: 4.56	Matched control Baseline: 3.82 Endline: 5.11	Difference in Difference (SE) -0.92 (0.33)	<0.01	
	Child individual dietary diversity score	579	SG+AM Baseline: 2.99 Endline: 3.46	Matched control Baseline: 2.82 Endline: 3.22	Difference in Difference (SE) 0.07 (0.42)	NS	
	Child weight-for-age z-scores	550	SG+AM Baseline: -0.96 Endline: -0.93	Matched control Baseline: -1.15 Endline: -0.78	Difference in Difference (SE) 0.34 (0.33)	NS	
Gupta et al. 2013	Physical IPV	VSLA + GDG Baseline: 513 Endline: 483 VSLA Baseline: 421 Endline: 371	VSLA + GDG Baseline: 80 (15.6%) Endline: 53 (11.0%)	VSLA Baseline: 65 (15.4%) Endline: 55 (14.8%)	OR (95% CI) 0.69 (0.39, 1.21)	0.19	Generalized mixed model accounting for the multilevel structure of the data
	Sexual IPV	VSLA + GDG Baseline: 513 Endline: 483 VSLA Baseline: 421 Endline: 371	VSLA + GDG Baseline: 71 (13.8%) Endline: 68 (14.1%)	VSLA Baseline: 44 (10.5%) Endline: 53 (14.3%)	OR (95% CI) 0.71 (0.40, 1.25)	0.24	
	Economic abuse	VSLA + GDG Baseline: 501	VSLA + GDG Baseline: 163 (32.5%)	VSLA Baseline: 113 (27.4%)	OR (95% CI) 0.39 (0.25, 0.60)	<0.0001	

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
		Endline: 483 VSLA Baseline: 412 Endline: 370	Endline: 104 (21.5%)	Endline: 128 (34.6%)			
	Acceptance of wife beating	VSLA + GDG Baseline: 511 Endline: 502 VSLA Baseline: 419 Endline: 401	VSLA + GDG Baseline: 4.9 (4.4) Endline: 3.4 (4.0)	VSLA Baseline: 4.5 (4.3) Endline: 4.0 (4.0)	OR (95% CI) -0.97 (-1.66, - 0.28)	0.006	
	Attitudes towards refusal of sex	VSLA + GDG Baseline: 512 Endline: 503 VSLA Baseline: 421 Endline: 403	VSLA + GDG Baseline: 5.7 (1.8) Endline: 6.3 (1.3)	VSLA Baseline: 5.7 (1.7) Endline: 6.2 (1.5)	OR (95% CI) 0.10 (-0.19, 0.39)	0.49	
Iyengar and Ferrari 2011	Authority over how money you earn is spent	NR	VSLA NR	VSLA + NR	NR	Reportedly significant	Intervention effects measured as difference in differences using regression analysis. However, only within group changes are reported. P-values for the comparisons between groups are not reported. Some significant statements found in the text noted here as reported
Burundi	Authority over major household purchases	NR	VSLA NR	VSLA + NR	NR	Reportedly significant	
	Authority over daily household purchases	NR	VSLA NR	VSLA + NR	NR	NS	
	Authority over purchase of alcohol and cigarettes		VSLA NR	VSLA + NR	NR	NS	
	Authority over visiting family or friends	NR	VSLA NR	VSLA + NR	NR	NS	
	Authority over visiting spouse's family and friends		VSLA NR	VSLA + NR	NR	NS	

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
	Authority over how many children to have	NR	VSLA NR	VSLA + NR	NR	Reportedly significant	
	Authority over having sex		VSLA NR	VSLA + NR	NR	NS	
	Acceptable to beat wife if:	NR					
	She goes out without husband's permission		VSLA NR	VSLA + NR	NR	NS	
	She neglects kids	NR	VSLA NR	VSLA + NR	NR	Reportedly significant	
	She argues		VSLA NR	VSLA + NR	NR	NS	
	She refuses sex	NR	VSLA NR	VSLA + NR	NR	Reportedly significant	
	She burns food		VSLA NR	VSLA + NR	NR	NS	
	She is annoying	NR	VSLA NR	VSLA + NR	NR	NS	
Iyengar and Ferrari 2011 South Africa	Do not ask for husband's permission for:						Intervention effects measured as difference in differences using regression analysis. However, only within group changes are reported. P-values for the comparisons between groups are not reported. Some significant statements found in the text noted here as reported
	Small purchases for herself	NR	VSLA NR	VSLA + NR	NR	NS	
	Large purchase for own self		VSLA NR	VSLA + NR	NR	NS	
	Small purchase for household	NR	VSLA NR	VSLA + NR	NR	NS	
	Medium purchases for the household		VSLA NR	VSLA + NR	NR	Reportedly significant	
	Large purchase for the household	NR	VSLA NR	VSLA + NR	NR	NS	
	Taking children to hospital		VSLA NR	VSLA + NR	NR	NS	
	Visit family and friends	NR	VSLA NR	VSLA + NR	NR	NS	
	Visit birth family		VSLA NR	VSLA + NR	NR	NS	
	Visits friends	NR	VSLA	VSLA +		NS	

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
			NR	NR			
Larson et al. 2015	Household Food Insecurity Access Scale (HFIAS) and HFIAS categories	CBCO: 486 Control: 365 (A-E study group for impact analysis)	CBCO Mean: 10.82 Median: 11.00 Food secure: 8.02% Mildly food insecure: 5.76% Moderately food insecure: 25.51% Severely food insecure: 60.70%	Control Mean: 10.82 Median: 11.00 Food secure: 11.54% Mildly food insecure: 4.12% Moderately food insecure: 23.35% Severely food insecure: 60.99%	Mean difference: 0	NR	OLS with robust standard errors, but no p-values were reported
	Age-for-grade congruent (on track) 7-13 year olds	CBCO: 669 Control: 365	CBCO 72.52%	Control 72.97%	% Difference: 0.45%	NR	
	Age-for-grade congruent (on track) 14-17 year olds	CBCO: 447 Control: 365	CBCO 61.3%	Control 60.49%	% Difference: 0.81%	NR	
	Completion of last school term	CBCO: 669 Control: 365	CBCO 97.31%	Control 98.03%	% Difference: -0.72%	NR	
	Completion of last school term	CBCO: 447 Control: 365	CBCO 90.38%	Control 91.64%	% Difference: 1.26%	NR	
Noorani et al. 2013	Use of antenatal care during last pregnancy	CBSG member: 303	CBSG 95.7%	Non-member 79.5%	%Difference: 16.2%	<0.001	Chi-square

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
		Non-member: 605					
	Use of skilled delivery	CBSG member: 303 Non-member: 605	CBSG 25.7%	Non-member 8.3%	%Difference: 17.4%	<0.001	
	Use of postnatal care	CBSG member: 303 Non-member: 605	CBSG 43.6%	Non-member 28.3%	%Difference: 15.3%	<0.001	
	Expenditure on MNCH services: Cost of antenatal check-up (in PKR)	CBSG member: 289 Non-member: 456	CBSG: Mean (SD) 2216.9 (4627.8)	Non-member: Mean (SD) 2721.9 (3575.3)	Mean Difference: -505	0.095	t-test
	Expenditure on MNCH services: Cost of delivery (in PKR)	CBSG member: 298 Non-member: 563	CBSG: Mean (SD) 3054.6 (5312.3)	Non-member: Mean (SD) 2503.0 (4489.1)	Mean Difference: 551.6	0.108	
	Expenditure on MNCH services: Cost of post-natal care (in PKR)	CBSG member: 120 Non-member: 164	CBSG: Mean (SD) 1367.5 (4495.6)	Non-member: Mean (SD) 1372.2 (2833.4) 1367.5 (4495.6)	Mean Difference: -4.7	0.991	
Okello 2013	Disclosure of HIV status	Intervention: 1084 Control: 1084	Intervention 98.2%	Control 96.1%	%Difference 2.1%	0.011	Propensity score matching and McNemar test

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
	Improved Household savings	Intervention: 1084 Control: 1084	Intervention 36.9%	Control 20.7%	%Difference 16.2%	<0.001	
	Current ART use	Intervention: 1084 Control: 1084	Intervention 90.9%	Control 94.6%	%Difference -3.7%	0.001	
	Length of ART use >2 years	Intervention: 1084 Control: 1084	Intervention 56.4%	Control 48.9%	%Difference 7.5%	<0.001	
	Non-infection with opportunistic infection	Intervention: 1084 Control: 1084	Intervention 45.5%	Control 53.8%	%Difference -8.3	<0.001	
	WHO Quality of life measurement tool: Independence Domain	Intervention: 1084 Control: 1084	Intervention Median: 8.89	Control Median: 8.44		0.025	Propensity score matching and Wilcoxon signed rank test
	WHO Quality of life measurement tool: Social relations Domain	Intervention: 1084 Control: 1084	Intervention Median: 14.67	Control Median: 13.33		<0.001	
	WHO Quality of life measurement tool: Environment for PLHIV Domain	Intervention: 1084 Control: 1084	Intervention Median: 11.33	Control Median: 11.0		0.029	
	WHO Quality of life measurement tool: Physical condition Domain	Intervention: 1084 Control: 1084	Intervention Median: 13.11	Control Median: 12.89		0.792	
	WHO Quality of life measurement tool: Psychological condition Domain	Intervention: 1084 Control: 1084	Intervention Median: 11.33	Control Median: 11.27		0.797	

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
	WHO Quality of life measurement tool: Composite quality of life score Domain	Intervention: 1084 Control: 1084	Intervention Median: 11.87	Control Median:11.47		<0.001	
Swarts et al. 2010	Access to savings	Caregivers WORTH: 197 Non- WORTH: 196	WORTH 100%	Non-WORTH 30%	%Difference 70%	NR	Descriptive analysis of differences
	Access to loans	Caregivers WORTH: 197 Non- WORTH: 196	WORTH 100%	Non-WORTH 21%	%Difference 79%	NR	
	Business initiatives	Caregivers WORTH: 197 Non- WORTH: 196	WORTH: 86%	Non- WORTH: 34%	% Difference 52%	NR	
	Meals per day	OVC WORTH: 152 Non- WORTH: 140	WORTH: 3 meals (42%) 2 meals (45%) 1 meal (13%)	Non- WORTH: 3 meals (24%) 2 meals (57%) 1 mean (18%)	NR	NR	
	Dietary diversity: Food categories eaten yesterday by OVC	OVC WORTH: 152 Non- WORTH: 140	WORTH: fruit (48%) vegetables (84%) protein (59%) carbohydrates (98%)	Non- WORTH: fruit (36%) vegetables (81%) protein (48%) carbohydrate s (94%)"	Fruit: 12% Vegetables 3% Protein: 11% Carbohydrates: 4%	NR	

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
	Grow own food (Food security)	Household WORTH: Unclear Non-WORTH: Unclear	WORTH: fruit (66%) vegetables (45%) protein (61%) carbohydrates (62%)	Non-WORTH: fruit (57%) vegetables (39%) protein (44%) carbohydrates (53%)	Fruit: 9% Vegetables: 6% Protein: 17% Carbohydrates: 9%	NR	
	Care OVC received for Diarrhea	OVC WORTH: 152 Non-WORTH: 140	WORTH: Diarrhea: Do nothing:10%, Home remedy: 40%, Visit to clinic or hospital: 62%	Non-WORTH Diarrhea: Do nothing: 9%, Home remedy: 26%, Visit clinic or hospital: 70%	Do nothing: 1% Home remedy: 14% Visit clinic or hospital: 12%	NR	
	Care OVC received for Vomiting	OVC WORTH: 152 Non-WORTH: 140	WORTH: Vomiting: Do nothing:15%, Home remedy: 32%, Visit to clinic or hospital: 72%	Non-WORTH Vomiting: Do nothing: 28%, Home remedy: 31%, Visit clinic or hospital: 56%	Do nothing: -13% Home remedy: 1% Visit clinic or hospital: 16%	NR	
	Care OVC received for Fever	OVC WORTH: 152 Non-WORTH: 140	WORTH: Fever: Do nothing:7%, Home remedy: 37%, Visit to clinic or hospital: 62%	Non-WORTH Fever: Do nothing: 11%, Home remedy: 40%, Visit clinic or hospital: 52%	Do nothing: -4% Home remedy: -3% Visit clinic or hospital: 10%	NR	

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
	Condition of Shelter	Household WORTH: Unclear Non- WORTH: Unclear	WORTH: Floor: Good:40%, Fair: 56%, Poor: 4% Wall: Good: 42%, Fair: 51%, Poor: 7% Roof: Good: 50%, Fair: 44%, Poor: 6%	Non-WORTH Floor: Good: 28%, Fair: 52%, Poor: 20% Wall Good: 28%, Fair: 55%, Poor: 16% Roof Good: 39%, Fair: 40%, Poor: 20%	NR	NR	
	School attendance	OVC WORTH: 152 Non- WORTH: 140	WORTH: 99%	Non- WORTH: 99%	0%	NR	
	OVC who received food, education, or medical support	OVC WORTH: 152 Non- WORTH: 140	WORTH: Food: 52% Education: 51% Health: 40%	Non- WORTH: Food: 36% Education: 36% Health: 24%	Food: 16% Education: 15% Health: 16%	NR	
	HIV testing	Caregiver WORTH: 197 Non- WORTH: 196	WORTH: 52%	Non- WORTH: 40%	12%	NR	
	HIV testing	OVC WORTH: 152 Non- WORTH: 140	WORTH: 16%	Non- WORTH: 7%	9%	NR	

Citation	Outcomes Examined	Sample Size	Outcome data by Study Group		Effect Size	P-value	Impact evaluation analysis methodology
	Contraception use	Caregiver WORTH: 197 Non- WORTH: 196	WORTH: 60%	Non- WORTH: 55%	5%	NR	

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