

A Microfinance Program Targeting People Living with HIV in Uganda: Client Characteristics and Program Impact

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Abstract

HIV has disproportionately affected economically vulnerable populations. HIV medical care, including antiretroviral therapy, successfully restores physical health but can be insufficient to achieve social and economic health. It may therefore be necessary to offer innovative economic support programs such as providing business training and microcredit tailored to people living with HIV/AIDS. However, microfinance institutions have shown reluctance to reach out to HIV-infected individuals, resulting in nongovernment and HIV care organizations providing these services. The authors investigate the baseline characteristics of a sample of medically stable clients in HIV care who are eligible for microcredit loans and evaluate their business and financial needs; the authors also analyze their repayment pattern and how their socioeconomic status changes after receipt of the program. The authors find that there is a significant unmet need for business capital for the sample under investigation, pointing toward the potentially beneficial role of providing microfinance and business training for clients in HIV care. HIV clients participating in the loans show high rates of repayment, and significant increases in (disposable) income, as well as profits and savings. The authors therefore encourage other HIV care providers to consider providing their clients with such loans.

Keywords

HIV/AIDS, microfinance, Uganda, socioeconomic outcomes

Introduction

One million Ugandans live with HIV, and roughly 100 000 die each year due to AIDS.¹ HIV prevalence in Uganda has declined from 18% in 1992 to a current rate of 7% among adults.¹ However, this rate has stagnated recently and Kampala has a rate of 12%.² With HIV greatly affecting young adults, the social and economic consequences are far-reaching as work and income generation is compromised, households are dismantled, orphan rates increase, education and health sectors deteriorate,³ and stigma increases. Among the most common economic effects of HIV on households are reduced income and productivity,^{4,5} reallocation and consumption of assets and savings,^{6,7} and diverting labor to caring for family members.^{8–15} To fully understand the economic impact, one must go beyond health expenditures and lost work days and examine whether households borrow, sell assets, and use savings and the implications for future income production, debt, and livelihood sustainability^{16,17}; yet few studies have examined these economic variables in the context of HIV. HIV-related social stigma and discrimination may also impact the ability to find work, to access a loan from a conventional banking institution, and to find people to buy one's product if selling.¹⁸

Microfinance (MF) has been propagated as a tool giving access to credit to marginalized populations excluded from the formal banking sector.¹⁹ Such programs may be particularly appropriate and effective for people living with HIV/AIDS (PLWHA) who are often impoverished and excluded from both formal banking access and informal sources of credit such as rotating saving schemes because of disease-related stigma and the perception that they may not be able to repay loans given to them. People living with HIV/AIDS have reported that they were excluded even from existing MF programs, necessitating programs tailored to their specific situation and needs.²⁰ In addition, the specific needs of PLWHA need to be incorporated into the design of MF programs to avoid that they have a negative impact on the health of PLWHA, such as when repayment is put before necessary health expenses.

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There are few microcredit services targeting PLWHA in sub-Saharan Africa and Uganda specifically.²⁰ Microfinance institutions (MFIs) have been reluctant to target PLWHA because of perceived high risk for loan defaults²¹; our field experience with HIV clients and clinic directors in Uganda reveals that MFIs are rarely viewed as viable options because of high interest rates and need for collateral, rendering these programs essentially inaccessible. Given the large numbers of PLWHA in sub-Saharan Africa that are living long and healthy lives because of the increasing availability of antiretroviral treatment (ART), this population segment is a potentially important MF market.

Economic losses due to HIV status (job loss, cost of medical care, transport costs to access care, etc) can prevent a PLWHA from achieving socioeconomic recovery, particularly in resource-limited settings where economic opportunities are often rare.²² Microfinance may represent a tool to reintegrate PLWHA into society and allow them to fulfill their economic potential for the sake of their own good and that of their families. In contrast to a large literature on the effectiveness of MF in general (for a review, see for example, Westover²³), there is only a small literature on MF interventions aimed at PLWHA (for a review, see Caldas et al²⁰). This limited literature found mixed but encouraging results that indicate the need to tailor MF interventions to the needs of PLWHA, and the potential benefit of linking MF support to HIV care in order to optimize program success.

Uganda's microcredit sector has grown rapidly since 1990, with MFIs in 52 of 56 districts of Uganda, and more than 1000 active programs, many of which are managed by multipurpose non-government organizations (NGOs) and cooperatives.²⁴ The number of MFI clients increased from 50 000 in 1990 to about 930 000 in 2004. Most programs use the group-lending model, with the average loan being Ugandan Shilling (US\$) 108 750 (~US\$60). Most beneficiaries are not among the poorest as MFIs in Uganda typically require a regular cash flow and coguarantors. General MFIs in Uganda (eg, FINCA, MED-Net, BRAC Uganda, and PRIDE) do include some HIV-infected individuals among their clients, although typically unknowingly as they do not know their HIV status, and their services are not specifically designed for PLWHA. The lack of available MF programs addressing the specific needs of PLWHAs has led some NGOs and AIDS service organizations to start their own microcredit programs and to modify existing microcredit models in order to address the concerns of PLWHA, so that these services can reach this population.²¹ One such MF program is that offered by Uganda Cares, an HIV care provider in Uganda. Uganda Cares started the Social and Economic Empowerment Program (SEEP) to offer microcredit loans to their medically stable clients on antiretroviral therapy who have a small business and are willing to attend weekly meetings.

There has been substantial discussion on the role of MF in the lives of the (unbanked) poor, ranging from the vision of the Grameen Bank founder Muhammed Yunus of MF to unleash the productive potential of the poor to a broader but potentially more realistic view of MF as 1 tool used by households to smooth consumption, manage cash flows, and accumulate assets (see, for

example, the discussion in Karlan and Murdoch²⁵). Finding out the role that MF plays is particularly important for our sample of economically vulnerable HIV-positive clients who may take on MF for daily needs such as medical bills that could potentially result in loan recycling—the practice of taking out new loans to pay off old loans leading to a mounting debt burden.

In this paper, we investigate the question whether clients in HIV care perceive a need for MF loans and, when taking up such loans, whether they manage to repay them and are able to use them to improve their socioeconomic status. We therefore describe in a first step the characteristics of the study population of clients in HIV care who are eligible for SEEP including access to credit and the role microcredit plays for these households. These findings build the foundation for understanding the impact of SEEP for improving the economic situation of SEEP clients that is investigated in the second part of the paper. We hope that the findings in this paper provide much needed information for other HIV practitioners who consider providing socioeconomic support to their clients.

Methods

Study Design

The original design of the study was based on an encouragement design. Clients who were eligible for SEEP and who expressed interest in knowing more about the program after a brief 5-minute presentation about SEEP at the clinic, were approached to consider participating in the study and administered consent procedures. Clients who gave written informed consent and enrolled were then randomly assigned on a 1:1 ratio to either receive an additional “encouragement” information session on SEEP (which included more detail about the program and loan process as well as testimonies from SEEP clients), or a simple referral to speak to SEEP officials for additional information. The underlying hypothesis was that a larger fraction of respondents exposed to the seminar would apply for SEEP. However, very few of both the control and the encouragement group participants applied for the program, therefore we supplemented our sample with respondents who had already applied to SEEP. Similarly, in Soroti, all participants were recruited after already having applied for the loan and just prior to beginning the 8-week training. Our sample composition is therefore close to that of a typical SEEP cohort of clients about to receive training and subsequent loans. Clients who enrolled were administered a baseline interview, then completed SEEP training and 6-month loan cycle if applicable, followed by a follow-up interview 9 months after baseline.

Selection and Description of Participants

The study population consists of HIV-infected clients of Uganda Cares, an affiliate of the US-based AIDS Healthcare Foundation. Clients are eligible for SEEP loans if they are at least 18 years of age, on ART for at least 2 years, and currently earn some form of income. Uganda Cares is an NGO that

operates 13 HIV clinics across Uganda and provides HIV care to over 54 000 patients. We interviewed 192 individuals in 2 Uganda Cares clinics: 141 (73.44%) participants were selected at a market clinic in the capital Kampala that is visited mainly by market vendors. Of note, 51 (26.56%) participants were selected in Soroti, a rural site in Eastern Uganda, about 300 km from Kampala.

Description of SEEP

Clients are informed of the program during 4-week mobilization periods in which the program administrator attends the clinic each day and gives a 10-minute presentation about the program to all clients as a group before they start to see the clinicians. Clients who are interested in the program are then directed to attend an orientation meeting at the end of the 4-week mobilization. Clients can only enter the program during the mobilization periods, which take place twice a year.

The program starts with the orientation meetings followed by an 8-week preloan training period, during which clients meet weekly to learn about program policies and procedures and to receive training related to business management and skills building as well as instruction regarding their health, nutrition, hygiene, and importance of adherence to ART. Clients also form loan groups of 5 to 6 members during this period. At the end of the training period, loans are issued to individuals in the group based on the decision of the loan officer (initial loan amount ranges from US\$ 50 000 to 300 000). The group then continues to meet weekly to provide their payment to the group's designated treasurer who then gives it to the program administrator. Each loan has an interest rate of 3% per month and is for 6 months, after which the loan must be fully paid back. Clients who repay their loan on time can then apply for a new, larger loan.

Measures

The interviewer-administered survey included information on their demographics, wealth situation, employment and business activities, financial activities, as well as information on their physical and mental health, and food security, among other variables. Demographic information included age, gender, education status, and level of reading and writing comprehension of the respondent, as well as information on household characteristics including number of children of school age and how many of them are enrolled in school. Physical health was assessed with chart-abstracted CD4 count, and the physical health functioning subscale of the Medical Outcomes Study HIV Health Survey (MOS-HIV²⁶; scores are standardized on 0-100 scale, with 100 representing excellent functioning). The assessment of wealth-captured home ownership and condition of the home, availability of electricity in the house, as well as a range of assets (land, livestock, machinery, etc) currently owned or recently purchased or sold. The employment and business module consisted of information such as regular source of income, hours worked, and income and expenditures

in a typical week. It also included a question on the main problems experienced in running a business, as well as intentions of business activities in the next 6 months. The financial activities module covered source of borrowing and saving in the last 6 months as well as information on the amount and interest payments on any such lending, as well as perceived accessibility of each financing source and intention to borrow from it. In addition, we asked clients about what they would use funds from a (hypothetical) loan for (eg, business expenses, household food, children's school fees). The Social and Economic Empowerment Program loan variables used to calculate repayment rates and delays in repayment were abstracted from program data.

Statistics

Bivariate statistics (2-tailed *t* test, χ^2 test) were used to compare baseline characteristics among the different groups (location, gender, health status). We present summary statistics of interest for the whole sample as well as stratified by location as economic conditions, labor markets, and financial access may differ between urban Kampala and rural Soroti. This stratification therefore gives us insight into the needs of PLWHA willing to obtain MF in different conditions. We also stratify by gender to investigate whether females have different needs and baseline conditions from men as well as by the health status of the client.

In order to study the outcomes of interest (in particular, income and profit) over time, we compare the baseline values to those of the 9-month follow-up assessment; in addition, we give the same data points for the study participants who did not receive a loan, mainly because the loan officer decided to postpone the loan due to an unfinished or otherwise nonsatisfactory business plan that is a requirement for loan receipt, or because they decided not to apply for a loan after the training period. While the group of nonrecipients therefore potentially differs from that of loan recipients, it nevertheless provides us with a group allowing us to control for time trends that would have impacted both groups similarly, such as macroeconomic shocks.

Results

In Table 1, we present descriptive statistics to characterize the population along dimensions such as demographics, literacy, and socioeconomic status. The population is largely female (64%), and bad health status impedes physical functioning for a small fraction of the participants only (12%). More than half of the sample (51%) indicate they have difficulty reading a newspaper, and an even larger fraction (55%) indicate that they have difficulty writing a letter. The low rate of literacy reflects a relatively low educational status of the study sample, where only 58% of participants indicate having completed primary schooling.

Table 1. Summary Statistics.

	Total	Kampala	Soroti	Male	Female
Bad physical health functioning	11.98%	9.93%	17.65%	11.76%	12.10%
Age, years	39.44	39.12	40.31	42.22 ^a	37.97
Difficulty reading	51.00%	49.60%	54.90%	42.60% ^b	55.30%
Difficulty writing	55.20%	53.90%	58.80%	47.10%	59.30%
Completed primary schooling	57.80%	61.00%	49.00%	64.70%	54.50%
Married (including committed relationship)	51.56%	44.68% ^a	70.59%	75% ^a	38.21%
Disclosed to partner	83.05%	78.21% ^b	92.50%	92.73% ^a	74.19%
Household size	5.08	4.28 ^a	7.27	5.47	4.89
No. of children	0.17	3.95	4.76	5.53 ^a	3.42
CD4 count	488	446 ^a	597	452	508
Sample (n)	192	141	51	124	68

^a*p* < .01.^b*p* < .1.**Table 2.** Baseline Socioeconomic Status and Business Needs.

	Total	Kampala	Soroti	Male	Female
Provides most or all household income	75.00%	78.70% ^a	64.70%	88.20% ^b	67.50%
Child lives elsewhere	28.30%	33.80% ^b	12.50%	36.40% ^c	23.10%
Has electricity	46.90%	59.60% ^b	11.80%	44.10%	48.90%
Owens a business	77.10%	73.00% ^a	88.20%	57.40% ^b	87.80%
Business is profitable	65.30%	76.7% ^b	38.60%	69.20%	63.50%
Has TV set	37.60%	47.10% ^b	10.20%	36.40%	38.50%
Owens cell phone	87.00%	97.10% ^b	58.80%	91.20%	84.60%
Capital availability is a problem	69.70%	58.3% ^b	97.60%	65.80%	70.80%
Lack of accounting skills a problem	60.50%	43.7% ^b	100%	51.30%	63.60%
Loan purpose: inventory	72.90%	71.60%	76.50%	64.7% ^a	78.00%
Loan purpose: capital	27.60%	36.6% ^b	3.90%	28.80%	27.10%
Loan purpose: emergency needs	26.60%	19.5% ^b	43%	23.70%	28.40%
Sample (n)	192	141	51	124	68

^a*p* < .05.^b*p* < .01.^c*p* < .1.

Baseline Wealth Status, Business Activities, and Credit Need

Despite the study population's low literacy and education levels, 75% of respondents indicate that they provided "most" or "all" of total income of the household that averages 5 members (including the participant) as can be seen in Table 2. An indicator of the precariousness of the participants' household situation is that 28% of respondents with children report having 1 or more children living with someone else because they have difficulty taking care of them. About 38% of respondents own a TV set, and not surprisingly given that few respondents in the rural Soroti have electricity, ownership is much higher in Kampala (47%) than in Soroti (10%). Most of the sample own a cell phone (87%), with almost universal cell phone ownership in Kampala (97%) relative to Soroti (59%).

Most (77%) respondents reported operating a business at the time of the survey. Of those with a business, about two-thirds (65%) report that their business is profitable. When asked about the major barriers to running the business, capital availability

was the problem most frequently cited (70%). Not surprisingly, access to credit and savings opportunities were also frequently cited, with 55% of respondents citing savings opportunities as a major business barrier. Technical skills were another category of problems frequently cited. For example, 60% of the sample responded that a lack of accounting skills represented a "small" or "significant" problem in running their business (note 1).

We asked the respondents what they would use the loan income for. The 3 most cited answers were stock and inventory (73%); capital investment such as tools, equipment, and machines (28%); and emergency needs (27%). These answers reflect the business orientation of the study population that required having (or recently having had) a business to qualify for the program

Impact of SEEP Loan on Socioeconomic Outcomes

As a direct indicator of the ease (or difficulty) with which SEEP members repay their loans, we look at repayment data

Table 3. Impact of Loan Receipt on Weekly Income and Total Savings.^a

Weekly Income	Received Loan			Total Savings	Received Loan		
	Yes	No	Difference		Yes	No	Difference
Baseline	42 080	81 822	-39 742	Baseline	371 479	457 641	-86 162
Month 9	108 302	105 219	3084	Month 9	564 121	484 104	80 017
Change	66 222	23 397	42 826 ^b	Change	192 643	26 463	166 179 ^b
Sample (n)	72	96			70	94	

^a Results reported are in Ugandan Shilling (USh); at the time the data for this study were collected US\$1 was worth about 2500 USH.

^b*p* < .05.

and investigate what fraction of loan recipients repaid their loan when it was due, how many had one or more missed payments, and what fraction repaid it before the due date. Although all clients paid their loan back by the loan end date, almost all clients had missed payments: only 2 of the 86 loan recipients never missed a payment, and over half of the sample missed 8 payments or more. The loan duration ranges from 27 to 33 weeks, so missing 8 payments or more translates into missing at least 25% to 30% of scheduled weekly payments.

At baseline, respondents reported making a weekly profit of about US\$ 60 000 (about US\$24) which they use for rent, school fees, or other purposes. Profit is a meaningful variable as it results from the weekly income (which we would expect to go up as a result of the loan receipt) but already deducts business expenses such as repayment of the MF loan. When looking at the change in this measure over time in Table 3, we find that loan recipients more than doubled their weekly profit between baseline and month 9 surveys, whereas for nonrecipients this increase was much less pronounced. When using median instead of the restricted mean analysis to account for the possibility that outliers drive the mean changes, we find similar results (not reported for space reasons). We also investigate the total savings reported by the participants as they give an indication of whether his or her more long-term financial situation improves. For SEEP recipients, total savings increase by about 50% but remain almost constant for the nonrecipients. Again, this finding is confirmed by the median analysis where we find a pronounced increase for the loan recipients only (not reported due to space constraints).

Further evidence regarding the positive impact of receiving a loan is found in questions directed only at loan recipients: over 80% indicate that they were able to increase the size of their business since baseline, and 26% of loan recipients added new products or services to an existing business. When we asked clients about what purpose they used the loan for, 79% indicated using it to buy stock inventory and other working capital, 36% indicated using it to pay school fees as well as food and other daily needs (28%) and emergency needs (22%). Health costs were mentioned by 19% of loan recipients. Overall, it seems that most clients used the loan for the purpose stated at baseline above, that is, that the clients use the loan as an injection into their business.

We then look into the potential downsides of getting a loan. The first variable we analyze is whether the respondent had trouble repaying the loan: we find that 21% of loan recipients indicate that they had had trouble repaying the loan, and 13% indicate that they received pressure from other group members to repay the loan when they were late with their payments. A further indication that loan repayment may pose problems for some of the group members is evidence when looking at whether the respondent sold any assets in the last 6 months: while the fraction of respondents not receiving a loan reporting this event is 25% at baseline and goes down to 18% at follow-up, loan recipients are more likely to report this event at follow-up (25%) than at baseline (12.5%).

Discussion

In this article, we investigate the characteristics and financial needs of HIV-positive clients eligible for an MF program at 2 HIV clinics run by Uganda Cares and investigate the impact of the loans received on their socioeconomic status. The Social and Economic Empowerment Program, the program under consideration, is one of only a handful of MF programs specifically targeted to PLWHA and offered by an HIV care provider. As Uganda Cares is one of the largest providers of HIV care in Uganda, the results found here are likely to hold insights for (the design of) other such programs in Uganda and the region. They should therefore be of interest to other HIV care providers considering providing socioeconomic support to their clients.

The baseline characteristics indicate that the study sample has significant difficulty in providing for basic needs of the household, yet the majority of respondents provide a large part of the household income, which puts the economic capacity of this sample of HIV clients in the foreground as they have to provide not only for themselves but also for their families. Of the 134 respondents with a primary school-age child (5-13 years), 15% do not send 1 or more of their child or children of this age to school despite schooling being free in Uganda, and this was more pronounced for men than women. Asset ownership and school attendance of children indicate a precarious economic condition of SEEP participants that is confirmed by poor housing conditions such as an almost complete lack of electricity in Soroti. In general, asset ownership is not very high and much lower in rural Soroti than that in the capital Kampala.

People with better health status generally have more assets and seem to be better off economically.

We find that there is a significant need for credit as well as business training such as improving accounting skills. A large fraction of the sample feels excluded from the formal banking sector: in the case of credit, clients feel they are not able to obtain it, whereas for savings, many people feel they would be able to use this form of saving but likely feel that it is not beneficial for them to do so. We find significant differences in the income patterns and business needs between the urban and rural site, which highlights the need to provide appropriate MF services to rural populations and, in particular, to farmers. Twice the fraction of respondents report a profitable business in Kampala than in Soroti. Perception of a lack of savings opportunities was also much higher in Soroti (93%) than in Kampala (39%). Similar numbers are reported for access to credit, with an average of 60% perceiving this as a business problem (93% in Soroti and 46% in Kampala).

Health does not seem to be a major barrier to conducting business in our sample of medically stable HIV clients, which indicates that the sample under consideration may be relatively similar to other economically disadvantaged populations that are healthy. Microfinance for HIV-positive clients may therefore both remedy a market failure caused by a lack of credit to HIV-positive people due to HIV-related stigma and at the same time be an effective economic support for this sample who have a need for credit and plan to use it for business development rather than personal consumption, avoiding a vicious cycle of loan recycling that led some to caution against giving microcredit to vulnerable, HIV-positive clients. Lack of access to capital as well as business training to making their businesses more successful are frequently cited such obstacles. In our sample there is therefore a clear need for an MF program such as SEEP that provides participants with much needed capital and business training.

We find that loan recipients are able to significantly improve their weekly income and also find an increase in savings. On average, loan recipients are able to more than double their weekly profit between the baseline and the 9-month follow-up interview. Taken together, we have strong evidence that the loan recipients are able to improve their earnings capacity significantly more than the nonrecipients and that therefore HIV-positive clients can successfully participate in MF activities, contrary to the common current practice of lenders to exclude members who are (suspected to be) HIV positive.

A further positive finding is that all loan recipients are able to repay their loan at the end of the repayment period, which points to the likely conclusion that the loans are “affordable” to the clients given in the sense that they are not so large that they would default on them. It also underscores the care with which the clients were enrolled, trained in running a business and asked to draw up a business plan as a condition for receiving a loan, and finally selected to receive a loan. Again, this complete repayment rate underscores the point made above that HIV-positive persons can successfully participate in MF

schemes and that based on our findings there is no reason for lenders to exclude them.

However, tardy repayments were the norm, as most clients defaulted on at least one of their payments. Although all clients eventually catch up with these missed payments before the loan is due, the observation raises the question as to why the clients do not make these payments: is it because they are not able to satisfy these loan payments or are they unwilling to repay regularly and prefer to pay in fewer installments? Qualitative evidence points toward the importance of the latter explanation. In weekly focus groups clients complained about the high frequency of the group meetings.²⁷ For this reason, clients may have felt an incentive to skip some of these weekly group meetings and pay higher installments following missed meetings. However, in particular for people living with HIV, these weekly meetings may provide an important social support function, with potential beneficial spillovers to HIV care and ultimately health, apart from the traditional role of social capital in MF groups.

In this paper, we present evidence that among a sample of medically stable, relatively poor clients in HIV care, there is a clear need for MF loans and business training. We then showed that among SEEP participants the loan led to large increases in reported weekly income and profits, which we take as clear evidence of the usefulness of such programs to clients who are typically excluded from the traditional MF programs. Although all loan recipients repaid their loan, they do so at their own rate, as a large fraction of participants made one or several payments late, which may be related to the program’s time- and resource-intensive requirements of weekly group meetings. In summary, our findings present evidence that HIV-positive clients can significantly benefit from the provision of microcredit loans, but it is likely that program changes may further improve the perceived value of such programs to ensure that more HIV-positive clients take up such programs, whether they be offered by HIV care organizations or traditional MF lenders.

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Note

- Note that for the questions related to business obstacles perceived almost the full sample in Soroti reports them as a serious problem, which may reflect true perception of the sample's perceptions or potentially a problem with explaining or recording the questions correctly in Soroti.

References

- UNAIDS. *Towards Universal Access: Scaling Up Priority HIV/AIDS Interventions in the Health Sector*. Progress Report 2008. Geneva, Switzerland: Joint United Nations Programme on HIV/AIDS; 2008.
- Sengendo J, Sekatawa E. *A Cultural Approach to HIV/AIDS Prevention and Care: Uganda's Experience*. Kampala, Uganda: UNESCO; 1999.
- Food and Agriculture Organization of the United Nations. HIV/AIDS and the food crisis in sub-Saharan Africa. Paper presented at: 23rd Regional Conference for Africa; March 1-5, 2004; Johannesburg, South Africa.
- Rugalema G. It is not only the loss of labor: HIV/AIDS, loss of household assets and household livelihoods in Bukoba District, Tanzania. In: Mutangadura G, Jackson H, Mukurazita D, eds. *AIDS and African Smallholder Agriculture*. Harare, ZI: SFAIDS; 1999.
- Yamano T, Jayne TS. Measuring the impact of working-age adult mortality on a small-scale farm households in Kenya. *World Dev*. 2004;32(1):91-119.
- Oni A, Obi CL, Okorie A, Thabede D, Jordan A. The economic impact of HIV/AIDS on rural households in Limpopo Province. *S Afr J Econ*. 2002;70(7):1173-1192.
- Linnemayr S. Consumption smoothing and HIV/AIDS: the case of two communities in South Africa. *Econ Dev Cult Change*. 2010;58(3):475-507.
- Barnett TA, Whiteside A, Desmond C. The social and economic impact of HIV/AIDS in poor countries: a review of studies and lessons. *Prog Dev Studies*. 2001;1(2):151-170.
- World Bank. *Confronting AIDS: Public Priorities in a Global Epidemic*. Washington, DC: World Bank; 1997.
- Ngalula J, Urassa M, Mwaluko G, Isingo R, Ties Boerma J. Health service use and household expenditure during terminal illness due to AIDS in rural Tanzania. *Trop Med Int Health*. 2002;7(10):873-877.
- Bechu N. *The Impact of AIDS on the Economy of Families in Cote d'Ivoire: Changes in Compromise among AIDS-affected Households*. Washington, DC: World Bank. *Confronting AIDS: Public Priorities in a Global Epidemic*; 1997.
- Pitayanon S, Kongsin S, Janjaroen W. The economic impact of HIV/AIDS mortality on households in Thailand. In: Bloom D, Godwin P, eds. *The Economics of HIV and AIDS: The Case of South and South East Asia*. Delhi: Oxford University Press; 1997.
- Johnson S, Schierhout G, Steinberg M, Russell B, Hall K, Morgan J. *AIDS in the household*. South African Health Review. Cape Town, South Africa: The Health Systems Trust; 2002.
- Bachmann M, Booyesen F. Health and economic impact of HIV/AIDS on South African households: a cohort study. *BMC Public Health*. 2003;3:14.
- Knodel J, VanLandingham M, Saengtinchai C, Im-em W. Older people and AIDS: quantitative evidence of the impact in Thailand. *Soc Sci Med*. 2001;52(9):1313-1327.
- Fox M, Rosen S, MacLeod WS, et al. The impact of HIV/AIDS on labour productivity in Kenya. *Trop Med Int Health*. 2004;9(3):315-317.
- McIntyre D, Thiede M. *A Review of Studies Dealing with Economic and Social Consequences of High Medical Expenditures with a Special Focus on the Medical Poverty Trap*. Cape Town, South Africa: Health Economics Unit, University of Cape Town; 2003.
- Ministry of Health (MOH) [Uganda] and ORC Macro. *Uganda HIV/AIDS Sero-Behavioral Survey 2004-2005*. Calverton, Maryland, USA: Ministry of Health and ORC Macro; 2006.
- Okojie C, Monye-Emina A, Eghafona K, et al. Institutional environment and access to microfinance by self-employed women in the rural areas of Edo State, Nigeria. Background Paper No.003; Nigeria Strategy Support Program (NSSP), International Food Research Policy Institute (IFPRI), Washington DC, September, 2009.
- Caldas A, Arteaga F, Munoz M, et al. Microfinance: a general overview and implications for impoverished individuals living with HIV/AIDS. *J Health Care Poor Underserved*. 2010;21:986-1005.
- Datta D, Njuguna J. Microcredit for people affected by HIV and AIDS: insights from Kenya. *J Soc Asp HIV/AIDS*. 2008;5(2):94-102.
- Sabin L, Desilva M, Hamer D, et al. Barriers to adherence to anti-retroviral medications among patients living with HIV in Southern China: a qualitative study. *AIDS Care*. 2008;20(10):1242-1250.
- Westover J. The record of microfinance: the effectiveness/ineffectiveness of microfinance programs as a means of alleviating poverty. *Electron J Sociol*. 2008;12(1):1-8.
- Tanburn J, Kamuhanda R. Making service markets work for the poor: the experience of Uganda. Uganda, Kampala: Department for International Development (DFID) / ILO supported consultancy Report for Business Services, Market Development Project; 2005.
- Karlan D, Morduch J. Chapter 71 - Access to Finance. In: Rodrik D, Rosenzweig M, eds. *Handbook of Development Economics*. Amsterdam, The Netherlands: Elsevier. Vol. 5, 4703-4784.
- Wu A, Revicki D, Jacobson D, Malitz F. Evidence for reliability, validity and usefulness of the Medical Outcomes Study HIV Health Survey (MOS-HIV). *Qual Life Res*. 1997;6(6):481-493.
- Wager G, Rana Y, Linnemayr S, Balya J, Buzaalirwa L. A qualitative exploration of the economic and social effects of microcredit among people living with HIV/AIDS in Uganda. *AIDS Res Treat*. 2012;2012:318957. doi:10.1155/2012/318957.