

Micro-credit, Women's Groups, Control of Own Money: HIV-Related Negotiation Among Partnered Dominican Women

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Abstract A sample of 356 members of women's groups, aged 18–49, in the Dominican Republic were interviewed by trained female interviewers. Data among 273 partnered women were analyzed. The dependent variable, a measure of HIV-related negotiation, was examined for associations with control of own money, level of women's group participation, and ever having received a loan through a micro-credit program. Findings suggest control of own money to be significantly associated with HIV-related negotiation. Ever having received a loan and level of women's group participation, however, were not significantly associated with HIV-related negotiation. Empowerment measured as control of own money may influence HIV protective behavior among partnered women in this setting.

Keywords HIV prevention · Micro-credit · Group participation · Empowerment · Dominican Republic

Introduction

HIV prevention is a critical public health concern in the Caribbean. The Caribbean region has the second highest HIV infection rate in the world, following sub-Saharan Africa (UNAIDS 2006). More than half of adults living with HIV in the Caribbean are women; and, 75% of all people living with HIV in this region are concentrated in

the Dominican Republic and Haiti (UNAIDS 2006). In the Dominican Republic, HIV is primarily transmitted heterosexually (UNAIDS 2006). Having multiple sex partners is more common for men than women. Data from the most recent Demographic and Health survey show nearly 30% of sexually active men reported at least two sex partners in the previous year, versus only 3% of sexually active women (ENDESA 2002). In the absence of an HIV vaccine or cure, consistent condom use is the most effective means of HIV prevention. Condom use among marital or cohabitating partners, however, is low and has been reported as less than 2% in one nationally representative survey (CESDEM 1997). Changing HIV risk behavior among heterosexual couples in this context will likely require women to more proactively negotiate their partners risk behavior. The purpose of this paper is to examine the relationship between women's empowerment and negotiation of partner's behavior change to avoid HIV infection among partnered, sexually active women in rural Dominican Republic.

The unequal distribution of resources, legal protections, and economic opportunities creates power imbalances between groups, increasing HIV vulnerability for men and women (Turmen 2003; Rao Gupta 2002; Parker et al. 2000; Farmer et al. 1996). Gender roles within society reflect these larger power imbalances between groups and individuals, creating gender inequality and increased HIV risk. These inequalities are reflected in partner relationships and particularly where women are economically dependent on men, may inhibit HIV protective behaviors. Women who depend economically on their male partner may not negotiate risk reduction for fear of loss of economic and material support (Heise and Elias 1995). Women's ability to negotiate HIV risk reduction behavior with their partner has been associated with the concept of empowerment.

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Micro-credit loan programs are described in the literature as a mechanism for increasing women's empowerment through providing a source of income generation (Hashemi et al. 1996).

Women's empowerment is often promoted in the literature as a goal to reducing HIV risk behavior among heterosexual partners (Blanc 2001; Amaro and Raj 2000). Although empowerment is not well defined in the literature, empowerment is typically described as a process of moving from less empowered or disempowered to empowered, agency or taking action to access and control resources; and power, or internal motivation for change. Malhotra et al. (2002) identified six main domains, or areas, of empowerment in the literature: economic; socio-cultural; family/interpersonal; legal; political and psychological. Each of these domains has particular components, of which the economic domain often includes control over income, access to and control over household resources, and relative contribution to family support. Domains and components of empowerment explored in the health literature include physical mobility; decision-making regarding household purchases; political awareness and participation (Schuler and Hashemi 1994); decision-making regarding family size and working outside the home (Hindin 2000); negotiation and discussion of sex between partners (Blanc and Wolff 2001). For the purposes of this paper, the economic domain of empowerment is the domain of interest.

Micro-credit programs have been widely applied as a strategy for both poverty reduction and social change through providing financial services to low income men and women. The term 'micro-credit' is used generally to describe different kinds of financial programs; however, the focus of this paper is small loans, which are provided through a micro-credit program to low income rural women for the initiation or expansion of small income generating projects in the informal sector. Micro-credit programs have been evaluated both as interventions to alleviate poverty and as a mechanism for improving well-being (Sebstad and Cohen 2000) and ultimately in catalyzing change in gender relationships (Schuler, et al. 1997). More often, micro-credit programs are assessed for the economic benefits to recipients and the overall financial sustainability of the program rather than the social outcomes for the participants (Jain 1996; Murdoch 1999). Women's participation in micro-credit programs has been associated with increased contraceptive use (Schuler and Hashemi 1994; Steele et al. 2001; Gage 1995); improvement in children's nutritional status (Mkelly and Watetip 1993); and educational attainment (Sebstad and Chen 1996). However, few studies have aimed to evaluate micro-credit programs as an intervention for the prevention of HIV (RADAR 2002).

Two theoretical frameworks guide this research in exploring relationships between women's empowerment, gender inequality and health: Freire's work on class inequality (Freire 1970); and, Chen's model (1997) of the social impact of micro-credit program participation. Freire emphasized the importance of group discussion and sharing experiences as necessary steps in raising awareness of one's own social reality and therefore initiating action to resolve problems in the community. Collective action, therefore, requires individual self-reflection and motivation for change and group participation. Both are essential in the process of social change. In Chen's conceptual model, micro-credit is theorized to positively affect both social and health conditions of loan recipients by increasing control of household money, and enhancing decision-making regarding resources at the household level. As women are able to participate to a greater extent in decisions on how household income is used, family well-being improves, as does women's ability to negotiate relationships within the household. Women's access to economic opportunity is a critical in Chen's model for women's improved social condition and health.

In this study, quantitative survey data are used to examine the association between: micro-credit loan participation, level of participation in women's groups, control of own money, perception of partner's monogamy, and HIV-related negotiation behavior among partnered, sexually active women in rural areas of the Dominican Republic. The major aim of this paper is to identify socio-economic predictors of HIV-related negotiation, referred to here as "ever having tried to convince current partner to change behavior to avoid getting infected with HIV", among the sample. Whether control of own money or women's group participation plays a more significant role in women's negotiation of protective behaviors with their male partners is also explored.

Methods

Participants

A cross-sectional quantitative survey was implemented among women aged 18–49 years from May to July 2002 in two southwestern provinces of the Dominican Republic, Azua and Peravia. A total of 356 women met the recruitment criteria of being age 18–49 years, having a current sexual partner, and to be a member of the local community women's group receiving technical assistance through *Mujeres en Desarrollo Dominicana, Inc. (MUDE)*, a Dominican nongovernmental organization. The sample was drawn from only those communities where MUDE

offered both loan and health programs to ensure all study participants were exposed to the same program interventions. A total of eleven communities in Peravia and eight communities in Azua were included in the study sample. Membership rosters from each woman's group were used to locate eligible women. Where rosters were not accessible, a roster was developed with the aid of the group's president.

Four female interviewers were trained in quantitative data collection using the survey instrument. Preliminary visits to the women's groups meetings were planned to introduce the project and invite participation among women's group members. Interviewers typically returned for data collection at the same location, day of the week and time of the women's groups' regular meetings. Group members came to their normal meeting location and from there interviewers took participants to a more private area, gained oral consent and conducted the interview. Interviews lasted about an hour depending on the respondent's participation in the loan program and how many loans had been received. Incentives were not provided to study participants in accordance with recommendations and standard practices of MUDE staff. The response rate of women approached to be interviewed was 76%. Women were responsive to the study when approached for the interview however; locating all association members listed on the rosters was a challenge. If women were not available at the initial interview, return visits were made, but in some cases this was not possible due to logistics and time constraints.

Women excluded from these analyses were women who were not in a partnership ($N = 6$, 2%); not sexually active in the previous 12 months ($N = 40$, 11%); had received loans from either commercial banks or organizations other than MUDE ($N = 33$, 9%); and two missing cases (0.6%). Finally, one community was removed from these analyses because the women's group had dissolved a few weeks prior to data collection. Two women interviewed from this community were taken out of these analyses leaving a final sample of 273.

Measures

Among all women interviewed, their current steady partner was referred to as their husband and was the partner they lived with as a married couple. HIV-related negotiation with current, steady partner was assessed using the variable: ever try to convince current partner to change his behavior to avoid becoming infected with HIV.

The perception of a partner's monogamy was measured as the perception that the current partner did not have extra-relational partners at the time of the interview. Among married and cohabitating women interviewed in the most recent Demographic and Health Survey (ENDESA 2002),

99% reported having only one sex partner in the previous 12 months, their marital or cohabitating partner. Women most likely underreport extra-relational partners, as it is socially not as acceptable among women as men (ENDESA 2002). The proportion of women who have sexual partners other than their marital or cohabitating partner is estimated to be less than 5% (ENDESA 2002). In contrast, among married or cohabitating men interviewed, a total of 20% claimed at least one or more partners other than their marital or cohabiting partner during the previous 12 months (ENDESA 2002).

The economic dimension of empowerment is the focus of this study. A single item was used to measure women's control over money. Women surveyed were asked, "Do you have your own money that only you decide how to use?" Responses were measured using dichotomous categories (0 = no and 1 = yes).

Group participation variables include the duration of membership in the women's group measured as categories of years (0 = 1 year or less; 1 = more than 1 year, but less than 5 years; 2 = 5–10 years; and, 3 = more than 10 years); frequency of meeting attendance (0 = group not meeting; 1 = every 2 weeks; and, weekly = 2); and, ever having held a leadership position in the women's association, such as president, treasurer or secretary (0 = no, 1 = yes). Receiving a loan through MUDE's micro-credit program was measured as ever receiving a loan. Income was measured by monthly reported cash income for the reported income generating activities of women (RD\$). Women were asked to list all of the ways in which they currently made money and how much they earned from these activities on a monthly basis. The source of income was determined to be formal sector if the income was a regular fixed salary of the same amount each month from an employer functioning under government regulations of tax and licensing. Examples of women included in this category are teachers, nurses, and military or police officers. Domestic housework was not included in formal sector employment as this work is in private homes outside of the formal system although women may be paid the same amount every month.

Demographic data including age, education, residence, religion, and number of children living at home were also assessed. The median number of years of education was used to dichotomize the education variable into primary and secondary levels.

Data Analyses

Bivariate tests of association using chi square for categorical variables and *t*-tests for continuous variables, were conducted to explore significant associations between negotiation of partner's behavior and credit and group

participation, empowerment and sociodemographic characteristics. A significance level of 0.05 was used to guide the development of a multivariate model. Key variables were kept in the multivariate model. HIV risk perception was explored as a moderator of group participation and credit participation in relation to negotiation of partner's behavior.

Results

Sociodemographic characteristics were compared between women included in these analyses and women excluded because they were not sexually active in the past 12 months, were single or have borrowed loans from institutions other than MUDE. Women included in these analyses were significantly younger (aged 36.49 versus 39.61), had more children (2.81 versus 2.29) and included more loan participants (0.66 versus 0.46) than women omitted from the analyses. Given the nature of the research questions, these results are generalizable to sexually active women who are members of women's groups supported by MUDE.

A majority of women reported having at least one child ($N = 254$, 94%), were Catholic ($N = 209$, 77%) and had some primary school education ($N = 189$, 69%). Weekly community group meeting attendance was reported by most women, 79%. A total of 40% had at some time held a leadership position in their women's group. Nearly half of the women interviewed had ever received a loan through MUDE's loan program ($N = 124$, 45%), half of whom had received more than one loan. A total of 47% of women in the study relied completely on their partner or other family or friends for financial support. Receiving money from family or friends living outside of the country is common in the Dominican Republic; however, in this sample only 22 (8%) women reported receiving money transfers from outside the country and only 17 (6%) women, from outside of the community. More than one third of women worked in the informal sector ($N = 124$, 46%), and a small percentage ($N = 30$, 11%), earned an income in the formal sector.

A total of 80% of women reported ever discussing HIV/AIDS with their current steady partner. Negotiation with their partner regarding his condom use with any partner was reported by 22% of women and 62% said they had negotiated with their partner to change his behavior to avoid HIV. HIV protective behaviors did not differ significantly across loan participants and non-participants. Condom use was measured as ever used a condom with current partner and a total of 15% of women interviewed reported ever using a condom with their partner. However, condom use at last sex was reported by 0.8% of partici-

pants. Given that women interviewed are married and of reproductive age, 18–49 years, condom use was not expected to be high. Among those women reporting ever using a condom, 71% reported using them primarily for family planning and 13% as protection against HIV or other sexually transmitted infections.

Women surveyed were asked if they thought their current partner has other sexual partners, and to assess condom use behavior of their current partner with other partners. Half ($N = 129$, 50%) said they thought their partner has other partners. Among these women, 95 (74%) thought their partner did have other partners but that he uses condoms with them, and 34 (26%) said their partner has other partners with whom he does not use condoms.

Results of logistic regression analysis of the bivariate relationships of HIV-related negotiation by ever receiving a loan through MUDE's micro-credit program, group participation, earning income, and control of own money are presented in Table 1. Among the key variables of interest credit program and level of group participation variables were not significantly associated with negotiation of partner's behavior change to avoid HIV infection. Control of own money, however, was significantly associated with negotiation of partner's behavior change (OR = 2.37, 95% CI 1.44–3.91). Participants who perceived their partner to have extra-relational partners (OR = 7.43, 95% CI 4.18–13.20) as compared to those who did not and women living in Peravia versus Azua (OR = 1.98, 95% CI 1.20–3.25) were more likely to have negotiated with their partner's behavior change.

Evangelical religious affiliation was significantly and negatively associated with negotiation of partner's behavior change (OR = 0.16, 95% CI 0.07–0.36).

Results of multivariate logistic regression are presented in Table 1. Characteristics of the level of women's group participation measured as duration of membership and ever holding a leadership position, and ever receiving a loan were not significantly associated with the HIV negotiation measure in the multivariate analysis. Control of own money was, however, significantly associated with negotiating partner's behavior change to avoid HIV (OR = 2.43, 95% CI 1.18–4.98). Women's perception of their partner's monogamy was significantly associated with negotiation of partner's behavior change in multivariate analyses (OR = 6.39, 95% CI 3.26–12.50). Other variables significantly associated with negotiating partner's behavior change included residence in Peravia (OR = 3.53, 95% CI 1.74–7.15), affiliation with Evangelical religion (OR = 0.12, 95% CI 0.04–0.36) and no religious affiliation (OR = 0.29, 95% CI 0.10–0.84).

Consideration was given not only to ever receiving a loan, but also, among borrowers only, whether or not the borrower remained in control of the loan and the number of

Table 1 Odds ratios (OR), adjusted odds ratios (AOR) and 95% confidence intervals (95% CI) of negotiation of partner's behavior change by credit program participation, group participation, empowerment and selected sociodemographic characteristics

Characteristic	Negotiation of partner's behavior change			
	OR	95% CI	AOR	95% CI
HIV risk perception				
Faithful partner (ref)				
Unfaithful partner	7.43***	4.18–13.20	6.39***	3.26–12.50
Ever received a loan	0.91	0.56–1.49	1.66	0.76–3.64
Earned income				
No earned income (ref)				
Earned income	0.84	0.51–1.38	0.63	0.30–1.33
Duration of group membership				
One year or less (ref)				
More than 1 year, less than 5 years	0.79	0.36–1.75	0.52	0.18–1.48
Five to 10 years	0.62	0.27–1.45	0.64	0.20–2.03
More than 10 years	0.91	0.42–1.95	0.65	0.21–2.04
Ever held leadership post	1.25	0.76–2.07	1.07	0.51–2.24
Frequency of meeting attendance				
Weekly (ref)				
Every 2 weeks	0.72	0.38–1.35	–	–
Group currently not meeting	2.06	0.41–10.17	–	–
Control own money	2.37***	1.44–3.91	2.43**	1.18–4.98
Age (years)	0.98	0.95–1.01	1.01	0.96–1.06
Education				
None to 8 years (ref)				
Nine or more years	0.95	0.56–1.61	–	–
Residence: Peravia	1.95**	1.19–3.20	3.53***	1.74–7.15
Marital status				
Cohabiting (ref)				
Married	0.52*	0.29–0.95	0.80	0.33–1.94
Religion				
Catholic (ref)				
Evangelical	0.16***	0.07–0.36	0.12***	0.04–0.36
No affiliation	0.58	0.25–1.31	0.29*	0.10–0.84
Number children at home	0.82*	0.69–0.96	0.89	0.72–1.11

* $P < 0.05$, ** $P < 0.01$, *** $P < 0.001$

loans they had received. Limitations in sample size of borrowers only, and therefore power to detect significant differences when considering only loan recipients, prevented further analysis.

Discussion

These data demonstrate a significant, positive relationship between women's control of own money and negotiating partner's change in behavior to avoid HIV infection. Loan program and level of group participation were not predictors of HIV-related negotiation. The reasons for the lack of an effect of this micro-credit program on HIV risk reduc-

tion are likely complex. For example, negotiation of partner's behavior change to avoid HIV infection was significantly associated with the perception that a partner had extra-relational partners and women's control of own money. Women may feel they have more leverage in negotiating with their partner when they have more economic independence from their partner. It is interesting that these effects are independent of participation in women's groups and receiving loans, implying that economic empowerment matters with regard to HIV risk reduction, but that the intervention did not affect these proximal determinants of HIV risk. Our findings contribute to the literature in understanding links between economic and social change and women's HIV vulnerability.

It would be premature to conclude that these findings support or refute Freire or Chen's conceptualizations of empowerment through group participation and access to income. Chen's conceptual model hypothesizes that receiving a loan through micro-credit will increase women's income contribution to the household, expanding their participation in household decisions and better positioning women to negotiate gender relationships with their partner. While micro-credit programs may enhance economic opportunities for women, they were not shown here to contribute to women's empowerment with their sexual partners with regard to HIV risk reduction. This may be because of how women were able to utilize the loan funds they received through the micro-credit program. Women who used their loan from the micro-credit program for income generation activities typically engaged in work they could do from home, such as preparing and selling food. These activities generate minimal profit and do not challenge the role of women in the labor market, an observation that has been noted in the literature (Mayoux 2000). Many women also did not use their loan to establish or enhance income generation activities, but applied them to more immediate needs such as paying a debt or for home improvement projects. As others have observed, even though women may be able to retain some control over aspects of the loan, this does not necessarily enable them to negotiate relationships within the household (Fernando 1997). These findings contribute to the literature challenging assumptions that micro-credit programs automatically lead to empowerment for women.

Freire's theory of consciousness raising through group forums as a means to bring about empowerment is also not substantiated or unsubstantiated here, at least in regard to empowerment related to HIV risk reduction. These findings differ from what other research has shown in terms of HIV risk reduction and group participation among adolescent girls (Gregson et al. 2004). Statistically significant associations were not observed between group participation and HIV negotiation, perhaps because MUDE does not provide a formal, structured HIV prevention education program in the women's groups, and members are only exposed to HIV prevention messages through talks and printed materials from MUDE facilitators approximately once a year. It might be that a more focused intervention program dealing with HIV prevention specifically would support Freire's supposition that the very nature of group participation will lead to empowerment and therefore better quality of life. Results from a recent study in South Africa show a positive relationship between an integrated package of HIV training and micro-credit and HIV risk reduction (Pronyk, et al. 2006). It may be overly simplistic to assume that mere participation in a community women's group or receiving a loan through a micro-credit program will automatically

lead to reduction in HIV risk. It is more likely that to affect empowerment specific to HIV-related behavior, and therefore risk reduction, micro-credit programs would have to emphasize HIV-related relationship issues more directly and provide more support to ensure greater gender equality in the households of women who receive them.

Slightly more than half of the women in the sample were in control of their own money (58.6%), indicating an already higher level of economic empowerment among the women surveyed. This elevated level of economic empowerment may leave little room to measure significant relationships between loan or group participation and HIV-related negotiation. This may also mean that women who have already achieved a certain level of economic empowerment may be more in a position to take advantage of opportunities that arise, such as joining the women's group or participating in the micro-credit program, than women who are less empowered.

The significance of residence was an interesting finding and perhaps best explained by proximity to larger cities. Peravia is geographically closer to the capital city, Santo Domingo, than Azua, approximately an hour by car, and some of the larger communities are more urbanized. Study participants from these larger communities of Peravia have more access to a greater diversity of job opportunities and education than participants in Azua. Azua is located 2 h from the capital, is historically an agricultural area and has statistically significantly more loan recipients. Women in the sample also differ in terms of religion with twice as many Evangelicals living in Peravia than in Azua, 24 versus 12. In qualitative interviews women who identified as Evangelical also claimed that their church emphasized communication in the marital relationship and one church sponsored family outings and events to encourage husbands and wives to spend more time together. The level of negotiation reported by women in Peravia may be a reflection of these messages.

Limitations to this study include control of self-selection bias, a challenge associated with research on micro-credit program participation (Pitt, et al. 1999; Nanda 1999) and sample size. Whether women who participate in groups are more likely to practice HIV protective behaviors because of some inherent characteristics of the group, or as a factor of the nature of the loan programs, cannot be determined in this study as we did not assess detailed characteristics of different groups nor loan programs. Women surveyed may have self-selected into the credit program due to economic need. Detection of significant associations between HIV negotiation, level of group participation, ever receiving a loan, and control of own money may also have been limited by the sample size. It is important to note that these results are generalizable only to partnered women participating in women's groups within this or similar settings.

The lack of an association between women's group participation or receiving a loan with enhanced HIV negotiation for HIV risk reduction with sexual partners indicates that micro-credit programs for women, as they are currently implemented in the program we studied in the Dominican Republic, may not make sufficient changes in women's lives to overcome strong social norms related to sexual behaviors within intimate relationships. Micro-credit programs may be limiting the potential for social impact by emphasizing aspects of program sustainability such as recruitment of clients or loan repayment rates, over enhancing women's entrepreneurial skills or increasing gender equality. Micro-credit programs that target low income women could emphasize women's skills development and loan management in all aspects of the loan including financial management and accounting, not only aspects of production. Prospective studies making comparisons over time of various loan disbursement plans and HIV-related training, such as life skills training, or services could be designed among current micro-credit programs to determine optimal methods to encourage HIV risk reduction.

Ultimately, control of own money was found to be important in affecting proximate determinants of HIV risk for women. The micro-credit program examined in this study may provide economic opportunities for women, but may also have limitations to the extent to which they affect important social norms within sexual partner relationships that could reduce women's HIV risk. A sense of economic control is one piece of the complete picture of women's empowerment in confronting HIV risk with intimate partners. Understanding how best to provide economic opportunities for women to enable HIV risk reduction should continue to be an important area of HIV prevention research.

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References

- Amaro, H., & Raj, A. (2000). On the margin: Power and women's HIV risk reduction strategies. *Sex Roles, 42*(7/8), 723–749.
- Blanc, A. K. (2001). The effect of power in sexual relationships on sexual and reproductive health: An examination of the evidence. *Studies in Family Planning, 32*(3), 189–213.
- Blanc, A. K., & Wolff, B. (2001). Gender and decision-making over condom use in two districts in Uganda. *African Journal of Reproductive Health, 5*(3), 15–28.
- CESDEM. (1997). *PROFAMILIA, ONUPLAN and Macro International, Inc Republica Dominicana: Encuesta Demografica y Salud*. Calverton: Macro International, Inc. DHS Program.
- Chen, M. A. (1997). *A guide for assessing the impact of micro-enterprise services at the individual level*. Washington, DC: Management Systems International.
- ENDESA (2002). *Encuesta Nacional Demografica y de Salud. Demographic and Health Surveys*. Santo Domingo, Republica Dominicana: Centro de Estudios Sociales y Demograficas.
- Farmer, P., Connors, M., & Simmons, J. (1996). *Women, poverty and AIDS: Sex drugs and structural violence*. Maine: Common Courage.
- Fernando, J. (1997). Nongovernmental organizations, micro-credit, and empowerment of women. *Annals of the American Academy of Political and Social Science, 554*, 150–177.
- Freire, P. (1970). *Pedagogy of the oppressed*. New York: Seabury Press.
- Gage, A. (1995). Women's socioeconomic position and contraceptive behavior in Togo. *Studies in Family Planning, 26*(5), 264–277.
- Gregson, S., Terceira, N., Mushati, P., Nyamukapa, C., & Campbell, C. (2004). Community group participation: Can it help young women to avoid HIV? An exploratory study of social capital and school education in rural Zimbabwe. *Social Science and Medicine, 58*, 2119–2132.
- Hashemi, S. M., Schuler, S. R., & Riley, A. P. (1996). Rural credit programs and women's empowerment in Bangladesh. *World Development, 24*(4), 635–653.
- Heise, L. L., & Elias, C. (1995). Transforming AIDS prevention to meet women's needs: A focus on developing countries. *Social Science and Medicine, 40*(7), 931–943.
- Hindin, M. J. (2000). Women's power and anthropometric status in Zimbabwe. *Social Science and Medicine, 51*, 1517–1528.
- Jain, P. J. (1996). Managing credit for the rural poor: Lessons from the Grameen Bank. *World Development, 24*(1), 79–89.
- Malhotra, A., Schuler, R. S., & Boender, C. (2002). *Measuring women's empowerment as a variable in international development*. Washington, DC: World Bank.
- Mayoux, L. (2000). *Micro-finance and empowerment of women: Review of the key issues*. (Social Finance Unit Working Paper No. 23). Geneva: International Labor Organization.
- Mkelly, B., & Watetip, C. (1993). *Impact evaluation of freedom from hunger's credit with education program in Thailand*. Davis: Freedom from Hunger Foundation.
- Murdoch, J. (1999). The microfinance promise. *Journal of Economic Literature, 37*, 1569–1614.
- Nanda, P. (1999). Women's participation in rural credit programmes in Bangladesh and their demand for formal health care: Is there a positive impact? *Health Economics, 8*, 415–428.
- Parker, R., Easton, E., & Klein, C. H. (2000). Structural barriers and facilitators in HIV prevention: A review of international research. *AIDS, 14*(Suppl 1), S22–S32.
- Pitt, M. M., Khandker, S., Mckernan, S., & Latif, M. S. (1999). Credit programs for the poor and reproductive behavior in low-income countries: Are the reported casual relationships the result of heterogeneity bias? *Demography, 36*(1), 1–21.
- Pronyk, P., Hargreaves, J. R., Kim, J. C., Morison, L. A., Phetla, G., Watts, C., et al. (2006). Effect of a structural intervention for the prevention of intimate partner violence and HIV in rural South Africa: Results of a cluster randomized trial. *Lancet, 368*, 1973–1983.
- Rao Gupta, G. (2002). How men's power over women fuels the HIV epidemic. *British Medical Journal, 324*, 183–184.
- Rural AIDS Development Action Research Program (RADAR). (2002). *Social interventions for HIV/AIDS: Intervention with microfinance for AIDS and gender equity* (IMAGE Study Evaluation Monograph No. 1). Capetown: Rural AIDS and Development Action Research Program, School of Public Health, University of the Witwatersrand.
- Schuler, S. R., & Hashemi, S. M. (1994). Credit programs, women's empowerment, and contraceptive use in rural Bangladesh. *Studies in Family Planning, 25*(2), 65–76.

- Schuler, S. R., Hashemi, S. M., & Riley, A. P. (1997). The influence of women's changing roles and status in Bangladesh's fertility transition: Evidence from a study of credit programs and contraceptive use. *World Development*, 25(4), 563–575.
- Sebstad, J., & Chen, G. (1996). *Overview of studies on the impact of micro-enterprise credit*. Washington, DC: Management Systems International.
- Sebstad, J., & Cohen, M. (2000). *Micro-finance, risk management, and poverty*. Washington, DC: Management Systems International.
- Steele, F., Amin, S., & Naved, R. T. (2001). Savings/credit group formation and change in contraception. *Demography*, 38(2), 267–282.
- Turmen, T. (2003). Gender and HIV/AIDS. *International Journal of Gynaecology and Obstetrics*, 82(3), 411–418.
- UNAIDS. (2006). Report on the global AIDS epidemic. Geneva: UNAIDS.