Research to Prevention

Income Generation
Rigorous Evidence – Usable Results

Ninth in a series, this summary fact sheet presents existing evidence from rigorously evaluated interventions to prevent HIV transmission in developing countries. Results are presented here from the systematic review of income generation studies published in leading scientific journals. In contrast to the many anecdotal reports of best practices, this series provides readers with the strongest evidence available in a user-friendly format. The evidence provides program planners, policy makers, and other stakeholders with information about "what works."

Income Generation interventions attempt to address poverty, unemployment, and lack of economic opportunities to increase participants' ability to generate income and secure livelihoods. These interventions can take a wide variety of forms, including microcredit programs that provide small loans to individuals or groups who would not normally qualify for loans from conventional financial institutions. Microcredit is one form of microfinance, which involves the provision of a wider range of financial services, such as access to savings, credit, and insurance to poor people. In addition to microcredit, other income generation interventions focus on business and vocational skills training for participants, either for positions within existing industries or to develop small businesses of their own. Both microcredit and vocational skills training programs may include additional components not related to income generation, such as health education, women's empowerment, critical thinking, and communication skills. Many also have strong social support components.

Women preparing paints before making a batik decoration. The women are part of the Bonda Arts & Crafts Centre, a women's income generation collective in Bonda, Zimbabwe. Credit: © 2004 Jessica Enman, Courtesy of Photoshare.

Income generation interventions address poverty, which is considered a structural determinant of HIV risk.[1, 2] Structural determinants include aspects of the social, political, environmental, and economic context that play a role in shaping HIV-related risk. Interventions that address structural determinants have been increasingly viewed as a critical component of the global HIV response.[1, 3, 4] Two primary mechanisms have been proposed to explain how income generation programs might affect HIV-related outcomes. First, these programs are designed to provide economic empowerment to participants. By increasing the ability of participants to generate income, participants may be more able to negotiate safer sex or less likely to exchange sex for money or material goods.[2] Second, these programs are often conducted in groups that may build social capital. The formation of supportive groups may provide participants with increased access to material and emotional resources and increased knowledge and self-efficacy for HIV prevention–related behaviors. In addition, microfinance and vocational skills programs may simply provide a convenient platform for adding HIV education and skills training.[2]

Effectiveness of Income Generation Interventions

The Kennedy et al.[5] systematic review examined the state of evidence for the effect of income generation interventions, including microfinance and vocational skills training, on HIV prevention for participants in developing countries.

Microfinance Alone (2 studies)

- One group randomized trial among women in South Africa showed no significant difference in rates of condom use at last sex with all non-spousal partners and no significant difference in their household communication about sex and HIV among participants receiving microfinance alone.[6]

- One cross-sectional study among members of women's groups in the Dominican Republic showed that having received a microcredit loan was not significantly associated with HIV-related negotiation (defined as ever trying to convince current partner to change his behavior to avoid becoming infected with HIV).[7]

Microfinance with Health Education (5 studies)

- One group randomized trial among women in South Africa showed that participants were significantly more likely to have gone for voluntary HIV counseling and testing, less likely to report unprotected sex during last sex with a non-spousal partner,[8] and less likely to report intimate partner violence over 2 years.[9] No difference was found in the number of sexual partnerships reported by participants in the intervention and control groups.[8]

- Another group randomized trial providing health education and savings accounts to AIDS-orphaned adolescents in Uganda showed improved attitudes towards engaging in risk behaviors among boys, but not among girls.[10]

- Three before/after studies of microcredit among women in Guatemala, Malawi, and Thailand found that participants in all three countries showed moderate, significant improvements ranging from 8% to 29% in HIV and sexually transmitted infection (STI) knowledge, self-efficacy, and accessing primary care for child health one year after the intervention.[11]

Microfinance, Health Education, and Business Development/Vocational Training (3 studies)

- One before/after study of female sex workers in Kenya's urban slums showed that participants reported fewer sex partners overall and fewer regular sex partners, but no change in casual sex partners. Women also reported increased consistent condom use with regular partners, but there was no significant change for already high condom use rates with casual partners.[12]

- Another before/after study of adolescent female orphans in Zimbabwe showed no change in the percent of participants who were sexually active, or in the use of condoms with primary partners; however, only a small number of adolescents were sexually active, thus the study likely did not have the statistical power to detect significant differences in these outcomes.[13]

- A cross-sectional study in Haiti compared women with less than and more than 12 months of experience in the microcredit program. It found no significant differences in number of lifetime sexual partners, condom use in the past year, or condom use among women who reported having an unfaithful partner. However, women in the program for more than 12 months were less likely to report having an unfaithful partner.[14]

Vocational Training with Health Education (3 studies)

- One individual randomized-controlled trial of tailoring skills and health education for street-based sex workers in India showed that participants reported significantly fewer sex partners and sex exchange partners (i.e., clients of sex workers). However, there was no significant difference in reported condom use at last sexual exchange or in "always" use of condoms with clients.[15]

- Another individual, randomized-control study of small enterprise skills training for Ugandan youth showed significant decreases in the number of sexual partners and increases in abstinence and condom use, but no change in whether they were sexually active, for both the intervention and the comparison group.[16]

- A time-series study training female bar workers in Cambodia for hotel jobs met few of the systematic review's quality criteria and had a small sample size that rendered changes in many outcomes undetectable. Nonetheless, no significant difference in condom use at last sex or in the percent of women suggesting condom use at last sex was reported. Counter to the intervention goals, women who stayed in the program had lower rates of condom use at last sex than those who dropped out.[17]

How Is the Effectiveness of an Income Generation Intervention Determined?

The findings presented in this fact sheet come from a recent systematic review of twelve studies.[5] Although income generation is a broad topic, for the purposes of the analysis, the researchers defined income generation interventions as "interventions which impart vocational skills or provide capital or commodities that enhance the capacity of individuals or groups to generate income." The study looked at a range of behavioral, psychological, social, and biological outcomes. Of the twelve studies, six were conducted in sub-Saharan Africa, three in East and Southeast Asia, and three in Latin America and the Caribbean.

Selection Criteria and Rigor Criteria of Studies Included in the Kennedy et al.[5] Systematic Review

A study had to meet the following criteria to be included in the review:

1. Published in a peer-reviewed journal between January 1990 and August 15, 2012.
2. Evaluated an income generation intervention as defined above.
3. Used a pre-/post- or multi-arm design comparing individuals who received income generation to those who did not to assess post-intervention outcomes of interest.
4. Measured a behavioral, psychological, social, care or biological outcome related to HIV prevention.
5. Conducted in a low, lower-middle, or upper-middle income country.

Studies that did not meet these criteria were excluded, as were studies that examined conditional or unconditional cash transfer interventions where there was no expectation of repayment of distributed funds.

What Do the Data Tell Us about Implementing Income Generation as Part of a Prevention Program?

The studies included in the Kennedy et al.[5] review encompassed several intervention models with different combinations of microfinance, vocational training, and health education components, and were diverse in terms of locations, interventions, target populations, study designs, and rigor. Both studies examining microfinance alone did not find a significant intervention effect. Microfinance combined with health education, with or without additional vocational training, appeared more promising, although health outcomes were mixed compared to either microfinance alone or control groups. Vocational training in the absence of microfinance appeared moderately efficacious for female sex workers in one rigorous study, as it led to fewer reported sexual partners, but no change in condom use. Overall, there is inconclusive evidence that microcredit and vocational skills interventions are effective at changing sexual behaviors that place individuals at risk for HIV.

What More Do We Need to Know about the Effectiveness of Income Generation for HIV Prevention?

The small number of studies prevents drawing strong conclusions about how income generation interventions should be designed to best achieve HIV prevention goals. It is difficult to know whether differences in efficacy were due to differences in the intervention components, the populations, or other factors. All studies except two targeted women and girls, so the effect of income generation programs on HIV prevention among men and boys is largely unknown.

Future studies can focus on how these interventions may have important effects on various outcomes beyond HIV prevention, including poverty and gender inequality. In some cases, the nature of income generation interventions may unintentionally place participants in situations that lead to greater risk of HIV, gender-based violence or other harms by exposing them to physical threats, sexual abuse, and coercion. In one study included in the review, adolescent girls reported threats to their personal safety while transporting goods to market, including harassment by men and police.[13] Future evaluations should rigorously monitor and attend to potential harms and ways in which participation in such interventions might make individuals more vulnerable to a variety of risks. They should also examine the role of income generation on shifting gender norms and attitudes.

While this review focused on the impact of income generation interventions on HIV prevention, other studies have also examined the impact of these interventions on health and quality of life for people living with HIV,[18, 19] and they could provide program information to help HIV-affected households.[20] Such programs may not only improve economic self-sufficiency for people living with HIV, but they may also act as psychosocial support groups to reduce stigmatization and increase members' sense of dignity and self-worth. Though this review excluded studies of cash transfer programs where repayment was not expected, recent studies have suggested they may hold promise for HIV prevention-related outcomes.[21-23] Finally, income generation interventions may lead to changes beyond the individual level. If implemented at sufficiently large scale, they could influence structural issues of poverty and income inequality at a societal level.

The findings of this review must be seen in light of several limitations. First, all studies relied on self-report of sexual risk behaviors, which may be subject to social desirability bias, particularly for intervention participants. Second, no studies measured biological markers of HIV risk, such as STIs, and none measured HIV incidence or prevalence directly among intervention participants, although one study did measure HIV incidence at the community-level and found no evidence of effect.[9] Third, there were some weaknesses in the rigor of the included studies. Non-randomized studies likely suffered from significant selection bias, as individuals participating in income generation programs are probably different in substantive ways from those who choose not to participate or drop out of these programs. Although there were four randomized trials, follow-up time periods may have been too short to measure the effect of a structural intervention on more distal health outcomes.

Results may be subject to publication bias, where studies showing positive results are more likely to be published

than studies showing negative results. In addition, there is the possibility that some articles that should have been included in the review were not identified by the search methods used.

Terminology and Acronyms

Income generation intervention
An intervention which imparts vocational skills or provides capital or commodities that enhance the capacity of individuals or groups to generate income.

Microcredit
The lending of small amounts of money to individuals or groups who would not normally qualify for loans from conventional financial institutions.

Microfinance
A term encompassing the provision of a broad range of financial services, including microcredit loans as well as savings, insurance, and fund transfers, to those who traditionally lack access to banking and related services.

Vocational skills training
Training or education to prepare for jobs or microenterprise based on manual or practical activities.

References

1. Parker R, Easton D, Klein C. Structural barriers and facilitators in HIV prevention: a review of international research. AIDS 2000;14:S22.
2. Dworkin SL, Blankenship K. Microfinance and HIV/AIDS prevention: assessing its promise and limitations. AIDS and Behavior 2009;13:462-469.
3. Fenton L. Preventing HIV/AIDS through poverty reduction: the only sustainable solution. Lancet 2004;364:1186-1187.
4. Sumartojo E, Doll L, Holtgrave D, Gayle HD, Merson MH. Enriching the mix: incorporating structural factors into HIV prevention. AIDS 2000;14(Suppl. 1):s1-2.
5. Kennedy C, Fonner V, O'Reilly K, Sweat M. A systematic review of income generation interventions, including microcredit and vocational skills training, for HIV prevention. In progress.
6. Kim J, Ferrari G, Abramsky T, et al. Assessing the incremental effects of combining economic and health interventions: the IMAGE study in South Africa. Bulletin of the World Health Organization 2009;87(11):824-832.
7. Ashburn K, Kerrigan D, Sweat M. Micro-credit, women's groups, control of own money: HIV-related negotiation among partnered Dominican women. AIDS Behav 2008;12(3):396-403.
8. Pronyk PM, Kim JC, Abramsky T, et al. A combined microfinance and training intervention can reduce HIV risk behaviour in young female participants. AIDS 2008;22(13):1659-1665.
9. Pronyk PM, Hargreaves JR, Kim JC, et al. Effect of a structural intervention for the prevention of intimate-partner violence and HIV in rural South Africa: a cluster randomised trial. Lancet 2006;368(9551):1973-1983.
10. Ssewamala FM, Ismayilova L, McKay M, Sperber E, Bannon W, Jr., Alicea S. Gender and the effects of an economic empowerment program on attitudes toward sexual risk-taking among AIDS-orphaned adolescent youth in Uganda. Journal of Adolescent Health 2010;46(4):372-378.
11. Sherer RD, Jr., Bronson JD, Teter CJ, Wykoff RF. Microeconomic loans and health education to families in impoverished communities: implications for the HIV pandemic. JIAPAC: Journal of the International Association of Physicians in AIDS Care 2004;3(4):110-114.
12. Odek WO, Busza J, Morris CN, Cleland J, Ngugi EN, Ferguson AG. Effects of micro-enterprise services on HIV risk behaivour among female sex workers in Kenya's urban slums. AIDS and Behavior 2009;13:449-461.
13. Dunbar MS, Maternowska MC, Kang MJ, Laver SM, Mudekunye-Mahaka I, Padian NS. Findings from SHAZ!: a feasibility study of a microcredit and life-skills HIV prevention intervention to reduce risk among adolescent female orphans in Zimbabwe. Journal of Prevention & Intervention in the Community 2010;38(2):147-161.
14. Rosenberg MS, Seavey BK, Jules R, Kershaw TS. The role of a microfinance program on HIV risk behavior among Haitian women. AIDS and Behavior 2010.
15. Sherman SG, Srikrishnan AK, Rivett KA, Liu S, Solomon S, Celentano DD. Acceptability of a microenterprise intervention among female sex workers in Chennai, India. AIDS & Behavior 2010;14(3):649-657.
16. Rotheram-Borus MJ, Lightfoot M, Kasirye R, Desmond K. Vocational training with HIV prevention for Ugandan youth. AIDS Behav 2012;16(5):1133-7.
17. Lee H, Pollock G, Lubek I, et al. Creating new career pathways to reduce poverty, illiteracy and health risks, while transforming and empowering Cambodian women's lives. J Health Psychol 2010;15:982.
18. 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(3):986-1005.
19. Pandit JA, Sirotin N, Tittle R, Onjolo E, Bukusi EA, Cohen CR. Shamba Maisha: a pilot study assessing impacts of a micro-irrigation intervention on the health and economic wellbeing of HIV patients. BMC Public Health 2010;10:245.
20. Mutenje MJ, Nyakudya IW, Katsinde C, Chikuvire TJ. Sustainable income-generating projects for HIV-affected households in Zimbabwe: evidence from two high-density suburbs. African Journal of AIDS Research 2007;6(1):9-15.
21. Baird SJ, Garfein RS, McIntosh CT, Ozler B. Effect of a cash transfer programme for schooling on prevalence of HIV and herpes simplex type 2 in Malawi: a cluster randomised trial. Lancet 2012;379(9823):1320-9.
22. de Walque D, Dow WH, Nathan R, et al. Incentivising safe sex: a randomised trial of conditional cash transfers for HIV and sexually transmitted infection prevention in rural Tanzania. BMJ Open 2012;2:e000747.
23. Pettifour A, Macphail C, Nguyen N, Rosenberg M. Can money prevent the spread of HIV? A review of cash payments for HIV prevention. AIDS and Behavior 2012.

Additional Websites and Resources:

http://www.aidstarone.com/focus_areas/gender/resources/technical_briefs/microfinance_hiv_and_womens_empowerment.

http://www.seepnetwork.org/seep-network-guidelines-for-microenterprise-development-in-hiv-and-aids-impacted-communities--supporting-economic-security-and-health---book-2-resources-834.php

Funding Source: The development of this summary was supported by USAID | Project SEARCH, Task Order No.2, which is funded by the U.S. Agency for International Development under Contract No. GHH-I-00-07-00032-00, beginning September 30, 2008, and supported by the President's Emergency Plan for AIDS Relief. The National Institute of Mental Health, grant number R01 MH071204, the World Health Organization, Department of HIV/AIDS, and the Horizons Program provided support for the synthesis and meta-analysis. The Horizons Program is funded by the US Agency for International Development under the terms of HRN-A-00-97-00012-00.