



Published in final edited form as:

Asia Pac J Public Health. 2010 July ; 22(3 Suppl): 151S–158S. doi:10.1177/1010539510373018.

Educational and Structural Interventions and Their Impact on Condom Use and STI/HIV Prevention for Filipina Women and Male Customers

Donald E. Morisky, ScD, MSPH, ScM¹ and Teodora V. Tiglao, EdD, MPH²

¹ University of California, Los Angeles, CA, USA

² University of the Philippines, Manila, Philippines

Abstract

Nearly 30 million people have died of AIDS during the past 27 years. More than 90% of people with HIV live in the developing world. The virus does not discriminate by age, race, gender, ethnicity, sexual orientation, or socioeconomic status—anyone is susceptible. HIV/AIDS has been particularly devastating on women and girls who now comprise more than 50% of people aged 15 years and older living with HIV. Successful strategies with significant impact on new HIV infections include strong governmental support, voluntary counseling and treatment, harm-reduction, community outreach, and universal access to treatment. This study presents the results of educational and social structural/environmental behavioral interventions among young women and their male partners. A 10-year study among high-risk populations (female bar workers and their male customers) in the Philippines identifies major components of a model HIV prevention program.

Keywords

female bar workers; HIV/AIDS prevention; condom use; STI; structural interventions; evaluation

Introduction

Throughout the world, governments are striving to initiate programs and confront the threat of HIV/AIDS.¹ In India, perhaps somewhat belatedly, the government is now recognizing the importance of the sociocultural and behavioral context in promoting the use of condoms as an HIV/AIDS prevention strategy, even among heterosexual couples.² In China, efforts are underway to prevent and control the disease by focusing on high-risk populations such as hospitality girls working in licensed entertainment establishments throughout the nation and developing programs to encourage condom use.³ Many women from developing countries have sought to escape poverty by finding work as domestic helpers, entertainers, and sex workers. The low economic and social status of women in many societies increases women's vulnerability, thus placing them at risk for HIV and health disparities. Women in the developing Asia-Pacific region constitute more than 50% of new HIV cases.⁴

© 2010 APJPH

Corresponding Author: Donald E. Morisky, Department of Community Health Sciences, School of Public Health, University of California, Los Angeles, 650 Charles E. Young Drive South, Los Angeles, CA 90095-1772, USA, dmorisky@ucla.edu.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the authorship and/or publication of this article.

Community-Based Participatory Research

International HIV prevention and other health promotion projects have engaged communities during various research stages.⁵⁻⁷ Unlike the traditional approaches to research in which researchers generate the ideas for projects, define the methods, and interpret the outcomes, the approaches of participatory research empower community populations to shape the research agenda.⁸ Their participation often results in generating greater sociopolitical awareness and effecting systemic change in the community.

In the Philippines, where HIV/AIDS has not yet become a generalized epidemic, the government is moving aggressively to confront the problem. An action plan was instituted that includes an emphasis on local responsiveness by governmental agencies and nongovernmental organizations (NGOs), the incorporation of HIV/AIDS education into the school curriculum, and laws forbidding discrimination against persons with HIV/AIDS or those who belong to at-risk groups.⁹

Methods

Most of the research in developing countries has focused on the less visible establishment-based workers (in massage parlors, bars, beer gardens, karaoke centers) commonly referred to as female bar workers (FBWs).¹⁰ Gaining access to this high-risk population is a challenge and involves working closely with establishment owners and managers. The Philippines Department of Health requires that owners/managers of these establishments register their employees at the local Social Hygiene Clinic (SHC) and have them undergo weekly examinations for sexually transmitted infections (STIs). Therefore, working through the City Health Officer greatly facilitated the recruitment and enrollment of study participants. To access this population and implement a theory-based intervention research program, strong community participation was essential.

The community-based HIV prevention program in the southern Philippines involved training managers and peer educators from approximately 130 different establishments, and implementing a 3-year longitudinal quasi-experimental study in 4 regions. As described by Tiglao et al,¹¹ community involvement took place in 2 phases: preintervention phase (social preparation of the community and preparation of the survey) and implementation phase (establishment of an Advisory Committee, Owners/Managers Association, and FBWs—Peer Counselor Association).

The main behavioral and health outcome objectives of the project were to (a) increase the proportion of consistent condom use among the FBWs and (b) decrease the incidence of STI. At the strong insistence of community participants at the conclusion of the successful interventions to FBWs, an expanded program for males in the community was recommended. This followed the FBWs study and incorporated a similar model of a community-based STI and HIV/AIDS prevention program directed toward community values and norms with diffusion to other parts of the community. This article describes the conceptualization, implementation, and evaluation of the overall program.

Enlisting Support

The university partners identified the collaborating Health Officers in the various study sites, as many of these were former master's in public health (MPH) students of the coinvestigator, Dr Tiglao. They also coordinated the translation of educational materials and questionnaires. Investigator's held meetings with city health officers, STI coordinators, nurses and midwives, sanitation inspectors, medical technologists, and recording clerks at the study sites. Unobtrusive observations were also conducted at the SHC to assess clinic

flow, amount of educational counseling provided by the nurse, opportunities for education during waiting periods, and observations at the various establishments where FBWs were employed.

NGOs participated in the project's training programs and continued to participate in booster sessions held in years 2 and 3 of the project. NGOs conducted training programs on HIV/AIDS prevention in conjunction with the City Health Department's goals and objectives. They also assisted in the training of the peer educators and managers. They were actively involved with the program throughout the implementation period and at the end of the program. They continued to collaborate closely with the City Health Office in conducting continuing education workshops for the establishment owners, only now the establishment owners were required to pay for the training workshops. This payment proved not to be problematic inasmuch as the owners learned that the workshops resulted in a reduction of the number of FBWs who were restricted from working because of having an STI.

Conceptual Framework

A series of prevention efforts were developed, using participatory methods with the community. Social cognitive theory¹² supports peer education as a way for FBWs to learn positive health behaviors from those who are similar to them and who demonstrate high self-efficacy. Diffusion of innovation theory¹³ and organizational behavior change policy¹⁴ best explain the potential spread of positive intervention effects throughout an organization and into the community.

Results

Women were recruited from entertainment-related establishments on 4 southern Philippine islands: southern Luzon, Cebu, Ilo-Ilo, and northern Mindanao. In all, 98% of the women agreed to participate in the study and provided informed consent after receiving culturally sensitive and appropriate human subjects protection information regarding the study and protocol (eg, objectives, potential risks and benefits) approved by University of California, Los Angeles and the University of the Philippines Institutional Review Boards. Of 1360 women interviewed, 76 were excluded from our analyses because they denied engaging in commercial penetrative vaginal, anal, or oral intercourse.

Table 1 presents the sociodemographic sample characteristics, which averaged 23.5 years (range 15–54 years), 8.96 years of schooling, and 12.47 months of employment with a mean weekly income of 1237.32 pesos (approximately US\$ 48.83/week). Overall, 8% of the FBWs were street workers, 67% bar workers, and 30% non-bar workers, and 70% reported they were unmarried or lived separately from their husbands. FBWs reported an average of engaging in vaginal intercourse approximately twice in the past week before the interview. From a medical record review, it was found that 35% were ever infected with an STI or had a re-infection during the 8-month investigation period.

Condom use was determined by a validated 6-item Likert-type scale, which had an α reliability of .86 and was negatively correlated with occurrence of an STI.¹⁵ Table 2 presents pre–postintervention results demonstrating modest improvements in the single intervention approaches but highly significant improvements in consistent condom use behavior among participants assigned to the combination of peer education and manager training. At establishments where a condom use policy existed, FBWs were 2.6 times more likely to use condoms consistently during sexual intercourse compared with establishments that did not have such a policy in place.^{16,17}

STIs recorded in the SHC, occurring during a 1-month period preintervention and postintervention are presented according to study status in Table 3. A decline in STIs is noted from preintervention to postintervention for all study groups. However, significant differentials were noted only in the group assigned to the manager training or the combination of the peer education and manager training.

All registered FBWs are required by law to undergo HIV testing every 6 months. Table 4 presents the results for workers registered in study sites from June 1995 to December 2001 (N = 24,302), which shows significantly higher numbers of HIV positive cases among the usual care group compared with other study groups (13 cases in the usual care group vs 5 cases in the intervention groups).

Expansion to Male Worksite Community Project

The participatory success of these activities set the stage for methods used in the larger community study with the males and FBW customers. The methods used to work with the male population came from the managers of the establishments and was affirmed by the peer educators. The City Health Officer in each community had a very close relationship with CEO and owners of organizations, industries, military, police, firemen, factories, and transportation companies also assisted. The advocacy to expand to the community and work with the male population was based on the need to also establish norms in the community of “male clients” who are a high-risk population and also in need of educational interventions. Focus group discussions with the representatives of these different organizations highlighted the need to train a small group (about 10%) of males in these different organizations as “Peer Counselors” who would receive specialized training in HIV/AIDS prevention.

Organizational and peer interventions among the FBWs alone could not influence the condom use and sexual practices of the FBWs and their male partners. The male program was also based on a participatory research framework. The program established HIV/AIDS prevention efforts at the peer level, organizational level, and policy level. Peer educators were recruited and trained, education materials developed, and safer sex practices reinforced. A total of 18 organizations, including transportation (taxi cab and pedicab drivers), military, factory workers, and high-risk communities comprised the study groups.¹⁸

Intervention Implementation

The project conducted a 3-year, longitudinal, quasi-experimental study using participatory action research to determine the feasibility and efficacy of an expanded STI and HIV/AIDS prevention program among diverse high-risk male heterosexual populations in the southern Philippines.¹⁹ The research program used a “Train the Trainer” workshop approach on the social and behavioral aspects of STI and HIV/AIDS prevention in the community. The study identified and trained “gatekeepers” of STI and HIV/AIDS information. Peer educators conducted additional training programs for members of the association, including communication skills to key informants that could influence others and educate customers who frequent bar worker establishments.

Education materials *fotonovellas* or storyboards demonstrated STI and HIV/AIDS prevention through picture stories to help participants acquire more accurate knowledge.²⁰ At each site, 10% of participants were trained as seed educators (peer educators). The male peer counselors were all involved in the development and production of the *fotonovellas* and educational campaigns: from their involvement in assessing the results of questionnaire data from their individual organizations, to the identification of specific issues that needed to be addressed in the educational campaign, to the development of educational materials. Peer counselors worked on themes for the *fotonovella* by writing character sketches on a

storyboard, which eventually was expanded to a complete story. Pictures were taken of the peer counselor in the community depicting each scene on the storyboard and produced into a publishable *fotonovella*. This educational booklet raised the status and social power of the peer counselor, recognizing his participation in the program as well as his advanced knowledge regarding the subject matter.

Community-Based Research Outcomes

A total of 2436 men constituted the heterosexual male study sample. The peer-mediated intervention was effective in reducing risk among taxi and tricycle drivers in the Philippines. The results of the repeated measures analysis of variance indicated a significant change on knowledge about HIV/AIDS from baseline to posttest to follow-up ($F = 449.27$, $df = 2$, $P < .001$). There was also a significant change on attitudes about condom use from baseline to posttest and from posttest to follow-up ($F = 425.19$, $df = 2$, $P = .001$), and a significant effect on condom use behavior with commercial sex workers from baseline to posttest to follow-up ($F = 428.31$, $df = 2$, $P = .001$). Condom usage (36.1% to 38.7% to 46.3%), attitudes toward condoms (21.7% to 24.6% to 25.2%), and knowledge about HIV/STI transmission (41.9% to 42.2% to 33.3%) increased significantly from baseline to posttest and 6-month follow-up, respectively ($P < .01$). Furthermore, the reported STI incidence decreased significantly (7.4% to 4.6% to 2.4%). Changes differed significantly between the intervention and control group at posttest and follow-up ($P < .01$). These findings illustrate the appropriateness of using the participatory action research methodology in promoting and sustaining positive behavior change.

Outcome Sustainability

The project measured outcome sustainability by examining the prevalence of STIs, knowledge, attitudes, beliefs, and practices, preintervention and postintervention in the FBWs. Outcome successes included strong linkages between FBW and local SHC, significant improvement of appointment keeping rates for FBWs, and significant reduction of STI in intervention versus control sites. Significant environment and organizational changes occurred as a result of this organization. Educational policies concerning safer sex practices and distribution of condoms came into effect as a result of initial efforts. The significant results of these initial efforts were disseminated to important sectors within the community through an expanded approach. AIDS-related policy guidelines were established in worksites and among driver association groups.²¹

Acknowledgments

Special thanks to UCLA doctoral students, Lianne Urada and Taigy Thomas, for their continued commitment to this project.

Funding

The authors disclosed receipt of the following financial support for the research and/or authorship of this article:

This research was supported by Grant RO1 A33845 by the National Institute of Allergy and Infectious Diseases and the University of California Pacific Rim Research Program.

References

1. UNICEF. Children and HIV and AIDS. New York, NY: UNICEF; 2008.
2. Bhattacharya G. Sociocultural and behavioural contexts of condom use in heterosexual married couples in India: challenges to the HIV prevention program. *Health Educ Behav.* 2004; 31:101–117. [PubMed: 14768661]

3. Wei S-B, Chen Z-D, Zhou W, et al. A study of commercial sex and HIV/STI-related risk factors among hospitality girls in entertainment establishments in Wuhan, China. *Sex Health*. 2004; 1:141–144. [PubMed: 16335301]
4. Chen KT, Chang HL, Chen CT, Chen YA. The changing face of the HIV epidemic in Taiwan: a new challenge for public health policy. *AIDS Patient Care STD*. 2009; 23:195–201.
5. Rhodes SD, Hergenrather KC, Duncan J, Ramsey B, Yee LJ, Wilkin AM. Using community-based participatory research to develop a chat room-based HIV prevention intervention for gay men. *Prog Community Health Partnersh Res Educ Action*. 2007; 1:175–184.
6. Family Health International, Community Involvement in International Research. Lessons Learned from the HIV Prevention Trials Network. 2006. p. 159 http://www.hptn.org/community_program/LessonsLearned.htm
7. Darrow WW, Montanca JE, Fernández PB, Zucker UF, Stephens DP, Gladwin H. Eliminating disparities in HIV disease: community mobilization to prevent HIV transmission among Black and Hispanic young adults in Broward County, Florida. *Ethn Dis*. 2004; 14(3 Suppl 1):S108–S116. [PubMed: 15682779]
8. Jason, LA.; Keys, CB.; Suarez-Balcazar, Y.; Taylor, RR.; Davis, MI., editors. *APA Decade of Behavior Volumes*. Washington, DC: American Psychological Association; 2004. Participatory Community Research: Theories and Methods in Action.
9. Mateo R, Sarol JN, Poblete R. HIV/AIDS in the Philippines. *AIDS Educ Prev*. 2004; 16(3 Suppl A): 43–52. [PubMed: 15262564]
10. Parker M. Ethnography/ethics. *Soc Sci Med*. 2007; 65:2248–2259. [PubMed: 17854966]
11. Tiglao TV, Morisky DE, Tempongko SB, Baltazar JC, Detels R. A community PAR approach to HIV/AIDS prevention among sex workers. *Promot Educ*. 1996; 3(4):25–28. [PubMed: 9081642]
12. Bandura, A. *Social Foundations of Thought and Action: A Social Cognitive Theory*. Englewood Cliffs, NJ: Prentice Hall; 1986.
13. Rogers, EM. *Diffusion of Innovations*. 5. New York, NY: Free Press; 2003.
14. McLeroy KR, Bibeau D, Steckler A, Glanz K. An ecological perspective on health promotion programs. *Health Educ Q*. 1988; 15:351–377. [PubMed: 3068205]
15. Morisky DE, Ang A, Sneed C. Validating the effects of social desirability on self-reported condom use. *AIDS Educ Prev*. 2002; 14:351–360. [PubMed: 12413181]
16. Morisky DE, Stein J, Chiao C, Ksobiech K, Malow R. Impact of a social influence intervention on condom use and sexually transmitted infections among establishment-based female sex workers in the Philippines: a multilevel analysis. *Health Psychol*. 2006; 25:595–603. [PubMed: 17014277]
17. Morisky DE, Pena M, Tiglao TV, Liu KY. The impact of the work environment on condom use among female bar workers in the Philippines. *Health Educ Behav*. 2002; 29:461–472. [PubMed: 12137239]
18. Morisky DE, Nguyen C, Ang A, Tiglao TV. HIV/AIDS prevention among the male population: results of a peer-education program for taxicab and tricycle drivers in the Philippines. *Health Educ Behav*. 2005; 32:43–57.
19. Morisky DE, Ang A, Coly A, Tiglao TV. A model HIV/AIDS/AIDS risk reduction program in the Philippines: a comprehensive community-based approach through participatory action research. *Health Promot Int*. 2003; 19:69–76. [PubMed: 14976174]
20. Fotonovella. <http://dmorisky.bol.ucla.edu/files/old/index.html>
21. Thomas, T.; Urada, L.; Morisky, D.; Malow, R. Best practice example: a low-level prevalence country and the male population. In: Pope, C.; White, R.; Malow, R., editors. *Globalization of HIV/AIDS: An Interdisciplinary Reader*. New York, NY: Taylor & Francis; 2008.

Table 1

Selected Characteristics of Female Bar Worker Study Group (n = 1284)

	Mean	SD	Range
Age (years)	23.49	5.18	15–54
Education (years)	8.96	2.17	0–14
Weekly wage (pesos)	1237.32	1158.47	50–9000
Length of work (months)	12.47	20.30	0–240
Frequency of sexual activity during past week	1.99	3.36	0–40
n (%) ^a			
Marital status			
Single	571 (52)		
Single but living with a boy friend	215 (19)		
Separated	198 (18)		
Married	125 (11)		
Workplace			
Street worker	82 (8)		
Bar-based worker	744 (67)		
Non-bar-based worker	288 (26)		
Township			
Legaspi	231 (21)		
Cagayan	378 (34)		
Cebu	299 (27)		
Ilo-Ilo	206 (18)		
STI prevalence in 8 months			
No infection	535 (48)		
Infection/re-infection	390 (35)		
Unknown	189 (17)		

NOTES: SD = standard deviation; STI = sexually transmitted infection.

^aPercentage may not add up to 100 because of rounding off.

Table 2

Self-Reported Condom Use at Last Sex With a Customer Before and After Intervention Among Female Bar Workers in 4 Study Sites of the Philippines

	Legaspi: n = 231; Peer Education (%)	Cagayan de Oro: n = 378; Manager Training (%)	Cebu: n = 299; Combined (%)	Ilo-Ilo: n = 206; Control (%)
Preintervention ^a	14.4	17.1	35.2	45.6
Postintervention ^b	15.9	34.1	50.8	20.1

^a $\chi^2(3) = 47.4; P \leq .001.$

^b $\chi^2(3) = 97.6; P \leq .001.$

Table 3

Sexually Transmitted Infections Before and After Intervention Among Female Bar Workers in 4 Study Sites of the Philippines

	Legaspi: n = 231; Peer Education	Cagayan de Oro: n = 378; Manager Training	Cebu: n = 299; Combined	Ilo-Ilo: n = 206; Control
Preintervention	49.3	38.6	41.2	43.4
Postintervention	41.9	29.2	16.3	38.7
Difference	-7.4	-9.4 ^a	-24.9 ^b	-5.7

^a $P \leq .05$

^b $P \leq .001$.

Table 4

Seroprevalence of HIV Among Registered Female Bar Workers by Study Group

Date	Study Group			
	Peer Education (n = 5237)	Manager Training (n = 5672)	Combined Interventions (n = 7235)	Usual Care (n = 6157)
June 1995	0	0	0	0
December 1995	0	0	0	1
June 1996	0	0	0	2
December 1996	0	0	0	2
June 1997	0	0	1	1
December 1997	0	0	0	0
June 1998	0	1	0	0
December 1998	0	0	0	2
June 1999	0	0	0	1
December 1999	0	1	1	1
June 2000	1	0	0	1
December 2000	0	0	0	0
June 2001	0	0	0	1
December 2001	0	0	0	1
Total	1	2	2	13 ^a

^a*P* ≤ .001.