

ORIGINAL ARTICLE

Evaluation of a peer education programme for female sex workers in Bali, Indonesia

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Summary: The objective of this paper is to evaluate a peer education programme for female sex workers in Bali, Indonesia. Sex workers participated in face-to-face interviews and STD exams in August–September 1998. In October 1998 one woman from each of 30 clusters was selected to be a peer educator and received a 2-day training on AIDS, STDs, condom use, and condom negotiation. After training, the peer educators were visited twice a week by field workers to answer questions and offer support. All sex workers received group education every 2 months. In January–February 1999, the sex workers again participated in face-to-face interviews and examinations. One month after peer education training, only 50% of the peer educators were still working in the clusters where they were trained. To evaluate the impact of the peer educators, sex workers in clusters where a peer educator continued to work were compared with sex workers in clusters where women did not continue to work ($n=189$). In clusters where women continued to work, there were higher levels of AIDS knowledge ($P<0.05$), STD knowledge ($P<0.05$) and condom use (82 vs 73%, $P=0.15$). The prevalence of *Neisseria gonorrhoeae* infection was also lower in clusters with a peer educator (39% vs 55%, $P=0.05$) than in clusters without a peer educator.

Keywords: Gonorrhoea, STD, prostitutes, Indonesia, peer education

INTRODUCTION

Commercial sex has been an important factor in the spread of HIV/AIDS in Asia. A number of programmes have been developed to reduce the level of infection among sex workers and clients including peer education, group education, counselling, condom distribution, and STD treatment¹⁻⁵. Peer education has often been employed as an HIV/STD prevention model for sex workers. However, despite its frequent use, few evaluations are available of its efficacy in reducing levels of HIV/STD infection. The objective of this paper is to evaluate the effectiveness of a peer education programme for female sex workers in Bali, Indonesia.

The Bali STD/AIDS study was conducted in several low-price brothel areas near Denpasar, Bali. Within these complexes, women work in groups or clusters of 6–12 women who are supervised by a pimp. Women serve an average of 3.8 clients per

day. Most of the women are from East Java and they will typically work in Bali for a period of time and then return to Java. The majority (75%) are divorced or separated. Most (80%) have one or more living children. The children remain in Java with family members. The women range in age from 15–42 years, mean 27.6. The mean number of years of schooling was 4.5. Clients of these women are almost exclusively Indonesian, including both residents and visitors to Bali.

METHODS

Sex workers participated in STD examinations and face-to-face interviews in August–September 1998. In October 1998 one woman from each of 30 clusters of a brothel complex received a 2-day training on AIDS, STDs, condom use and condom negotiation. Following the Health Belief Model⁶ and social cognitive theory⁷, the education programme stresses the importance of promoting positive beliefs about disease prevention and condom use as well as developing self efficacy for condom use and condom negotiation. The programme also included detailed information about AIDS as well as other STDs. The importance of recognizing and treating

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sexually transmitted infections was emphasized. The peer educators did not present formal educational programmes to the women in their cluster, but were present as a resource to them. Women in all the clusters received group education on the same topics every 2 months. In January–February 1999 the sex workers again participated in interviews and STD exams.

One month after the peer education training, only 50% of the peer educators were still working in the clusters where they were trained. To assess the impact of the peer educators, clusters where peer educators continued to work for at least one month were compared with clusters where the peer educators worked for one month or less. Women who were trained as peer educators were removed from the data set for the evaluation.

Four measures derived from the interviews and examinations were used in this evaluation.

- (1) *AIDS knowledge.* AIDS knowledge was measured as the sum of correct answers to 23 questions. A list of these questions is shown in Appendix 1.
- (2) *STD knowledge.* STD knowledge was measured as the sum of correct answers to 12 questions on STD transmission, symptoms, and treatment. A list of these questions is shown in Appendix 1.
- (3) *Condom use.* Condom use was measured by the percentage of each woman's clients who used a condom in the last day.
- (4) *Neisseria gonorrhoeae infection.* Cervical mucous from vaginal exams was tested for the presence of *N. gonorrhoeae* (LCx, Abbott Laboratories, Abbott Park, Illinois, USA). Specimens were shipped from Bali, Indonesia to the Clinical Microbiology Laboratories of the University of Michigan for processing.

Analysis of variance was used to test differences between groups.

This project was approved by the University of Michigan Health Sciences IRB and the Kerti Praja IRB.

RESULTS

Table 1 shows the level of AIDS knowledge, STD knowledge, condom use, and gonorrhoea infection among sex workers before and after the peer training. At baseline, the levels of knowledge, condom use and gonorrhoea infection did not differ significantly for women who were in clusters where the peer did continue working from women who were in clusters where the peer did not continue working. There was a small difference in AIDS knowledge, that reached significance at the 0.09 level.

The evaluation survey showed differences between women who were in clusters that included a peer and women in other clusters. Differences between AIDS and STD knowledge in the 2 groups

Table 1. AIDS knowledge, STD knowledge, condom use, and prevalence of *Neisseria gonorrhoeae* infection among sex workers at baseline and evaluation

	Peer	No peer	Total	P value*
<i>Baseline</i>				
AIDS knowledge	14.5	12.8	13.4	0.09
STD knowledge	7.1	6.9	7.0	0.61
Condom use	74.4	74.2	74.3	0.97
<i>N. gonorrhoeae</i>	0.53	0.53	0.53	1.00
N	62	127	189	
<i>Evaluation</i>				
AIDS knowledge	15.1	13.4	13.9	0.05
STD knowledge	7.4	6.5	6.7	0.05
Condom use	82.0	73.0	75.7	0.15
<i>N. gonorrhoeae</i>	0.39	0.55	0.50	0.05
N	58	129	187	

*P value for analysis of variance for differences between peer and no peer groups

were significant at the 0.05 level. The difference in condom use between the 2 groups had increased from 0.2 percentage points to 9 percentage points ($P=0.15$). Finally, gonorrhoea infection had decreased significantly among women working in clusters with a peer educator ($P=0.05$). The prevalence of *N. gonorrhoeae* was 39% among women with a peer in the cluster, compared with 55% among women without a peer in the cluster ($P=0.05$).

The significance of differences between rounds was also tested for subgroups of women in clusters with a peer educator and for women in clusters without a peer educator. Although there are trends in these data for women in clusters with a peer educator, none of the tests on the sub-samples reached significance at the 0.05 level. The small sample size of the group with a peer educator may make it difficult to find significant differences.

DISCUSSION

In this mobile group of sex workers, peer educators were hard to retain. About half were gone within a month. However, where the women did continue to work in a cluster, there were benefits in terms of an increase in AIDS and STD knowledge as well as a reduction in *N. gonorrhoeae* infection.

There are 3 limitations to the study. First, the peer educators were not randomly assigned to clusters. However, the clusters where the women kept working did not differ significantly on AIDS/STD knowledge, condom use, and gonorrhoea infection from clusters where women did not keep working at baseline. Second, measures of condom use were based on self report and sex workers who are involved in intervention studies may tend to over-report use. Third, the small sample size of the study made it difficult to examine subgroup trends.

In summary, in areas where sex workers are very mobile, it may be hard to retain peer educators.

However, where they are retained, they may be helpful in increasing AIDS and STD knowledge and promoting preventive behaviours amongst sex workers.

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APPENDIX 1: KNOWLEDGE AND SELF-EFFICACY SCALE CONTENT

AIDS knowledge

- (1) Can a person who is already infected with the AIDS virus appear to be healthy?
- (2) Can a person who is already infected with the AIDS virus but still appears healthy spread the disease to other people?
- (3) Can people catch AIDS by exchanging clothes, eating from the same dish, or shaking hands with the person who is already infected with the virus?
- (4) Can an infected woman who is pregnant spread the AIDS virus to her unborn baby?
- (5) Can a person catch AIDS by urinating in the same place as a person infected with AIDS?
- (6) Do some Indonesians already have AIDS?
- (7) Can women who work like you become infected with AIDS?
- (8) Can AIDS be prevented by taking medicine/getting injections regularly?
- (9) If a condom is used during sex, can it be used to prevent AIDS, as long as it does not break?
- (10) Can a person who gets AIDS be cured?
- (11) Is AIDS spread through:
 - (a) body sweat
 - (b) body contact
 - (c) kissing on the mouth
 - (d) intercourse without using a condom
 - (e) injection drug use
 - (f) having abortions (equipment)
 - (g) blood transfusion
 - (h) injection using used needles
 - (i) eating contaminated food
 - (j) mosquito bites
- (12) Is AIDS always a fatal disease?
- (13) Is there any medication that can prolong the life of someone with AIDS?

STD knowledge

- (1) Can a person who is infected with a sexually transmitted disease look healthy (without symptoms)?

- (2) If all of your clients wear condoms, can you be protected against catching these diseases?
- (3) Can these diseases be prevented by taking antibiotics, such as tetracycline, before or after having sex?
- (4) Can sexually transmitted diseases be prevented or treated by drinking jamu (traditional medicine)?
- (5) Can these diseases be prevented by cleaning the genitals after sex?
- (6) Can these diseases be prevented by eating a lot of vegetables?
- (7) Can these diseases be prevented by using a net when sleeping?
- (8) Can these diseases be prevented by not drinking from the same glass as someone who has an STD?
- (9) Can these diseases be prevented by not changing sexual partners?
- (10) Can these diseases cause sterility/inability to get pregnant/have children?
- (11) If a doctor gives medicine for a sexually transmitted disease, do you have to continue the medicine until it is finished, even if symptoms are gone beforehand?
- (12) Can some of these diseases lead to death?

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