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Original article

The Effectiveness of HIV/AIDS awareness intervention in a rural area of Cambodia: illiteracy, mobility, sexual behavior, and HIV/AIDS

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Abstract:

Objective: To convey HIV/AIDS-related knowledge to people in rural Cambodia, we conducted an HIV/AIDS awareness intervention program and investigated its effectiveness, participants' sexual behavior, HIV-related knowledge, and their attitude to HIV/AIDS.

Methods: We conducted HIV/AIDS awareness intervention in a rural area of Cambodia from April to November 2007. We selected three villages (a total of 180 villagers) in Siem Reap Province. Our HIV/AIDS awareness intervention involved practical explanations by well-trained Cambodian staff using visual material and participatory activities in order to promote interest among illiterate participants. We implemented a cross-sectional study in each village after the HIV/AIDS awareness intervention using a questionnaire written in Khmer and assisted by a Cambodian NGO.

Results: Two-thirds of the participants had not finished primary school and had difficulties reading and writing. A total of 77.8% of the people had obtained HIV/AIDS-related information from NGOs.

Conclusion: The HIV/AIDS awareness intervention was welcomed by most of the villagers and positively influenced HIV/AIDS-related knowledge through the use of practical explanations. Rural areas are still more vulnerable to HIV/AIDS transmission, and at the same time more likely to be influenced by NGOs, than cities because of high rates of illiteracy and a lack of access to general HIV/AIDS-related information sources including television, books, newspapers, and the Internet. NGOs need to increase their efforts to educate the vulnerable populations in rural areas.

Key words: HIV, Cambodia, awareness intervention, rural area, rural medicine

INTRODUCTION

One of the Southeast Asian countries, Cambodia experienced the ruthless tyranny of the Khmer Rouge. From 1975 to 1979, an estimated 1.7 million Cambodians were killed under the Khmer Rouge regime, 21% of the total population [1]. This tragic past continues to traumatize Cambodians and hamper the country's infrastructure and social system, including education, legislation, economy, and the health system.

Rapid increases in HIV transmission have been reported in Cambodia since the first recorded case in 1991. By 2003, an estimated 170,000 adults were infected with HIV. The prevalence among those aged 15 to 49 years old is estimated to be 2.7% [2]. Available data show a downward trend in HIV prevalence among high-risk groups. An increase in condom use among commercial sex workers and their clients and a declining trend in sexually-transmitted diseases have been reported as a result of large-scale HIV/AIDS campaigns conducted by the Cambodian Ministry of Health, international organizations, and non-governmental organizations (NGOs). However, Cambodia still has one of the most serious HIV/AIDS problems among Southeast Asian countries. Cambodia needs to increase its efforts to reduce transmission among the vulnerable population. Until now, HIV/AIDS campaigns have focused on commercial

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sex workers in the cities and condom use. These have successfully led to a downward trend in HIV/AIDS prevalence.

On the other hand, the rural areas from which many migrants come are still vulnerable because of high rates of illiteracy and poor access to information. We conducted an HIV/AIDS awareness intervention program in rural villages of Siem Reap Province, Cambodia, in order to familiarize locals with basic knowledge on HIV/AIDS. In this paper, we report information related to HIV/AIDS and risk behavior in Cambodian people living in rural areas.

MATERIALS AND METHODS

1. Study area

We selected three populations in three villages: Prummakot Village, Khmar Sang Kream Village, and Kor Knick Village, located in rural areas of Siem Reap Province, Cambodia (Fig.1). These villages are located about 90 minutes by car from Siem Reap City, famous for Angkor Wat, the remains of an ancient city designated as a World Heritage Site. The villages were presumed to have insufficient knowledge related to HIV/AIDS because of the lack of access to HIV/AIDS-related information sources: television, the Internet, posters, and HIV seminars conducted by the government and NGOs.

Fig. 1 Map of Cambodia

2. Intervention

HIV/AIDS awareness intervention was conducted from April to November 2007. The participants were 180 villagers (about 60 participants in each village). HIV/AIDS awareness intervention covered basic knowledge on HIV/AIDS (sex without a condom, illicit drug use, blood transfusions, ways to prevent HIV, and HIV transmission linked to tourism). Many foreign tourists visit Siem Reap to see Angkor Wat, a factor related to the growing number of sexual abuse and child trafficking cases. Therefore, we included additional content regarding the rights of children and human trafficking linked to tourism. We also emphasized the problems of illicit drug use and blood transfusions, which are two of the main HIV-related risk factors in Cambodia.

We held the HIV/AIDS awareness intervention program in a community assembly hall with the cooperation of a Cambodian local non-governmental organization, Cambodian Poor Children Support Organization (CPCSO). We devised practical explanations using visual materials and participatory activities in order to promote interest among illiterate participants. We prepared colorful large posters depicting high-risk behaviors of HIV transmission in lectures, such as casual sex, breast feeding, illicit drug use, and blood transfusions, to make our lectures more easily and visually understandable even for illiterate people. We also provided a practical demonstration of how to use condom including participants' exercise, educational video of sexual abuse, and human trafficking-themed short play performed by child drama group. All participants were involved in discussion and group workshop in the end of the HIV/AIDS awareness program to wrap up what they had learned. These attempts facilitated learning through active participation rather than passive listening. The HIV/AIDS awareness intervention program was conducted by four well-trained CPCSO staff who had attended several seminars on HIV/AIDS and who had a related educational background. Hundreds of Cambodian, presumably reached to thousands of people, has more or less some experiences of working for international NGOs and some of them have taken training courses for HIV/AIDS preventive campaign provided by international NGOs. All of our stuff also had worked at other international NGOs involved in HIV/AIDS-prevention activities. We placed special emphasis on young people by asking village leaders to assemble more youths than elder people in advance. This demographic plays an important role in HIV/AIDS prevalence because casual sex is more likely among young, unmarried men [3].

3. Survey

We conducted a cross-sectional study from April to November 2007. We handed out a questionnaire to all participants after HIV/AIDS awareness intervention with the assistance of CPCSO staff in order to determine their basic background, attitude to sex, and their level of HIV-related knowledge. The questionnaire was translated from English to Khmer, the local language. Our questionnaire covered the following sections:

A) Participants' reaction to intervention
B) Basic information
C) Sexual behavior
D) Fundamental knowledge of HIV/AIDS
E) Attitude toward HIV/AIDS
F) Primary health care status
G) Others

RESULTS

The questionnaires were collected after HIV/AIDS awareness intervention (n=180; collection rate: 100%). The male: female ratio was 56 : 114 (gender was unknown in 10) (Fig. 2). These disproportion in sex and age caused from the fact that most men were working outside their villages in daytime and we had requested the chiefs of villages in advance to assemble students and persons in key positions such as policemen and school teachers in order to familiarize HIV/AIDS-related knowledge to more vulnerable young people effectively (In Cambodia, students are defined as those who go to any school; not only public school but also language and vocational school.). The participants' reaction to understanding, impression, and perceived usefulness of HIV/AIDS awareness intervention was favorable (Fig. 3).

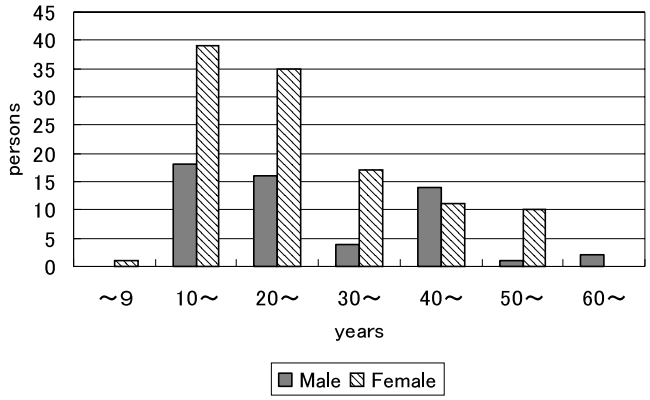

Fig. 2. Participant distribution

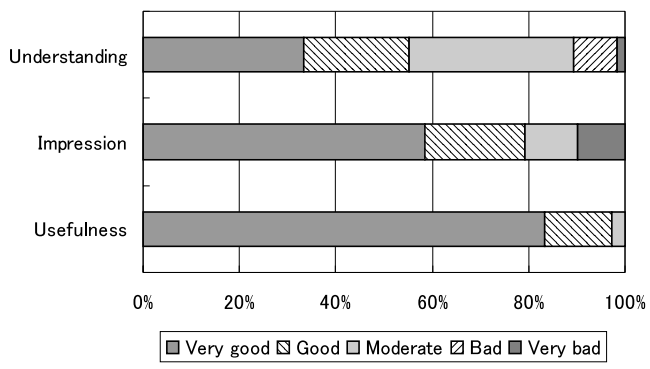

Fig. 3. The reaction of participants

Two-thirds of the people had not finished elementary school (61.7 %). A Total of 54.5% people declared literate, however, observationally literate rate was far more lower than our results by finding almost all participants had difficulty in answering our questionnaire (Table 1). Most people (82.5%) lived on less than 60 US dollars a month, and half of them were farmers or fishermen (Table 1).

A total of 89.4% of the participants had experienced their first sexual encounters after marriage, showing a background of conservativeness. On the other hand, 77.4% of people had never used a condom (Table 2).

The level of HIV-related knowledge was relatively high. A total of 79.1% of people understood that HIV drugs did not cure HIV/AIDS but simply delayed symptoms. However, only 45.5% of participants got all answers correct regarding the routes of HIV infection (Table 3).

Table 1. Basic information on education, literacy, occupation, and monthly income

Characteristics	
Education (n=128)	
No/not finish school	79 (61.7%)
Elementary school	31 (24.2%)
Junior high school	14 (10.9%)
Senior high school	3 (2.3%)
Academy	1 (0.7%)
Literacy* (n=156)	
Literate	85 (54.5%)
Poor literate	15 (9.6%)
Illiterate	56 (35.9%)
Occupation (n=158)	
Farmer/Fisherman	87 (55.1%)
No job/student	44 (27.8%)
Self-employed	15 (9.5%)
Government worker	10 (6.3%)
Blue-collar worker	2 (1.3%)
Monthly income (n=120)	
<$60	99 (82.5%)
>$60	21 (17.5%)

* Whether literacy or illiteracy was based on participants' self-declaration.

Table 2. Attitude toward sexual behavior

Characteristics	
When was first sexual encounter? (n=77)	
Before marriage	4 (5.2%)
After marriage	73 (94.8%)
Who was first sexual partner? (n=95)	
Husband/wife	84 (88.4%)
Sex worker	6 (6.3%)
Boy/girlfriend	3 (3.2%)
Friend	1 (1.1%)
Others	1 (1.1%)
Do you use condom? (n=115)	
Never	89 (77.4%)
Sometimes	17 (14.8%)
Always	9 (7.8%)

Table 3. HIV-related knowledge

Characteristics	
How HIV drugs effect on HIV infection? (n=148)	
Cure completely	14 (9.5%)
Delay sickness	117 (79.1%)
Ineffective	13 (8.8%)
Don't know	4 (2.7%)
Which behavior can transmit HIV? (n=156**)	
Sex without condom	121 (77.6%)
Sex with condom	11 (7.1%)
Kiss	1 (0.6%)
Eat together	6 (3.8%)
Live together	7 (4.5%)
Blood transfusion	87 (55.8%)
Illicit drug use	127 (81.4%)
All correct	71 (45.5%)

**Participants could choose more than two items.

Table 4. HIV behavior

Characteristics	
Have you ever taken HIV test? (n=122)	
Have been tested	50 (41.0%)
Never tested	72 (59.0%)
Do you know where to take HIV test? (n=142)	
Know	110 (77.5%)
Don't know	32 (22.5%)
From where did you get HIV information? (n=144**)	
NGOs	112 (77.8)
Mass media	30 (20.8%)
Friend	18 (12.5%)
If your friend is infected with HIV, how would you behave to your friend? (n=147)	
No change	140 (95.2%)
Meet less than before	4 (2.7%)
Never meet	2 (1.4%)
Other	1 (0.7%)
If infected with HIV, will you tell to your partner? (n=140)	
Yes	121 (86.4%)
No	19 (13.6%)

**Participants could choose more than two items.

The HIV testing rate was relatively high (41.0%), especially among men. Also, 77.5% of people knew where to receive a test. HIV-related information sources were mainly NGOs (77.8%) (Table 4).

People had a tolerant attitude toward HIV/AIDS, with 95.2% answering that they would maintain relations with HIV-positive friends as before and 86.4% saying they would tell their partners if they were HIV-positive.

A total of 39.3% of the people had experienced domestic violence. Most recognized that breast feeding was important (97.2%). Primary health-related facts were relatively widely known (Table 5). Most women delivered babies at home or in their villages, assisted by their family and midwives (66.2%). Therefore, relatively few people went to hospital (33.8%) (Table 5).

Table 5. Issues related to primary health care

Characteristics	
Have you ever experienced domestic violence? (n=135)	
Often	4 (3.0%)
Sometimes	27 (20%)
Rarely	22 (16.3%)
Never	82 (60.7%)
What do you think about child education? (n= 125**)	
Important	94 (75.2%)
More important for boys	25 (20%)
Housework is more important	9 (7.2%)
Expensive	3 (2.4%)
Who helped delivery? (n=136**)	
Obstetrician	46 (33.8%)
Midwife	77 (56.6%)
General practitioner	0 (0%)
Traditional attendant	17 (12.5%)
Health worker	16 (11.8%)
Family	0 (0%)
What do you think about breast feeding? (n=143)	
Important	139 (97.2%)
Not important	2 (1.4%)
Don't know	2 (1.4%)

**Participants could choose more than two items.

DISCUSSION

We focused on rural areas neglected by the previous HIV/AIDS campaigns that concentrated on commercial sex in cities, even though 85% of Cambodians live in rural areas and these people are still vulnerable to HIV transmission [3,4,5]. Our study revealed different situations related to HIV/AIDS in rural areas compared to cities and underlined the necessity for increased efforts by NGOs in rural areas. Regrettably, we could not compare the results from our target group with the one from control group because of our tight schedule and financial limitation.

Most of the participants had difficulty in reading and writing, and few completed all the questions, even though Cambodian CPCSO staff assisted them and most participants regarded themselves as being literate. Therefore, it took considerable effort to collect reliable data from them. This shows that a different approach to the HIV/AIDS campaign is needed in rural areas in order to promote the participation of illiterate people. In this regard, our HIV/AIDS awareness intervention program was successful in including illiterate participants, using practical explanations and visual materials. In our study, the illiterate group was less likely to acquire HIV-related knowledge than the literate group (education beyond primary school), showing that the high rate of illiteracy clearly hindered the dissemination of

HIV/AIDS-related knowledge. HIV/AIDS awareness intervention using more practical and comprehensible explanations and employing visual material and participatory activities is clearly more effective in including illiterate participants.

There has been a marked decline in HIV prevalence in Cambodia because of continual intervention efforts by the government and NGOs over the past few decades [3]. The success of these efforts to reduce transmission related to commercial sex is shown by the marked increase in condom use and reduced numbers of men buying sex. On the other hand, Douthwowaite and Saroun [6] suggest that other paths of HIV transmission, namely between men and their wives or regular partners, are more likely to occur. Our study also showed that most of the participants had their first sexual encounter after marriage, revealing the background of conservativeness.

Many men in rural areas migrate to cities for lucrative jobs and so are more exposed to commercial sex. A mobile life was found to be a strong risk factor of casual sex. Especially, travel away from home >1 month in the past year was found to be a strong, independent HIV-related risk factor for both casual sex and sex with female sex workers (FSWs) [3]. Sok [7] reported that 26% of men infected with HIV were soldiers and 27% were farmers or laborers, and that 87% of the infected men had visited sex workers. Sopheab *et al.* [8] reported an HIV prevalence of 16% and high-risk behavior among fishermen because they spent more time away from their villages. In our study, 55.1% of the participants were farmers or fishermen. Considering the highly mobile lives of farmers and fishermen from rural areas, it is necessary to increase HIV/AIDS campaigns targeting young people in rural areas. Moreover, rural FSWs are twice as likely to be HIV positive and are older than urban FSWs, because rural FSWs tend to return to rural life after working in urban areas [8]. In addition, our study suggested the necessity to teach condom use, because 77.4% of the participants had never used one. Rural areas should be regarded as important targets of HIV/AIDS campaigns because of their highly mobile populations and different situations from cities.

Cai *et al.* [9] reported that Chinese migrant laborers in Nairobi, Kenya were at risk of HIV infection because they did not have any access to HIV/AIDS-related resources, such as television, books, and newspapers. Thus, low-level access to HIV/AIDS information is an important risk factor. Though most people (77.8%) obtained HIV-related information from NGOs, our study indicated that people had relatively good HIV-related knowledge but that only 45.5% of them could answer all HIV-related questions. NGOs play an important role in HIV/AIDS campaigns in rural areas but need to put increased efforts into disseminating HIV /AIDS-related knowledge in such areas.

It is known that one of the main HIV/AIDS transmission routes is illicit drug use involving needles. Devaney *et al.* [10] reported that the number of people using illicit drugs in Asia has increased over the past few decades. In Cambodia, the estimated prevalence of illicit drug use was reportedly higher than 2%. Our present intervention revealed that 81.4% of participants understood that HIV could be transmitted by the injection of illicit drugs. This is relatively high compared to other Asian countries. As a result of the hard-hitting campaigns regarding the dangers of illicit drug use, people had accumulated a considerable amount of information on the subject.

CONCLUSION

Our HIV/AIDS awareness intervention program was welcomed by most people and proved suitable for illiterate participants because of our use of visual materials, demonstrations, and the workshop style. Rural areas are still vulnerable to HIV/AIDS and more likely to be influenced by NGOs than cities because of the high rates of illiteracy and poor access to general HIV/AIDS-related information sources including television, books, newspapers, and the Internet. Therefore, NGOs need to increase their efforts to effectively educate and empower vulnerable populations in rural areas.

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