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### Original article

# Effectiveness of a School-Based AIDS Education Program among Rural Students in HIV High Epidemic Area of China

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#### **Abstract**

**Purpose:** To evaluate the feasibility and effectiveness of a life-planning skills training program using participatory methods among rural senior high school students in Shangcai County, Henan Province, China.

**Methods:** The study was a quasi-experimental study conducted in three Shangcai County senior high schools with comparable socioculture–economic and demographic characteristics (two interventions and one control). The intervention, a life-planning skills program that uses participatory training methods, combining information education with effective skills building, was provided to all first-grade students (14–18 years old; 87% of them are between 15 and 17 years old) in the intervention group from October 2003 to December 2003. In total, 717 students from the intervention group, and 457 from the control enrolled at baseline, and over 91% of these were followed up at posttest.

Results: Group  $\times$  time interaction effects in ordinal logistic regression analysis were found on HIV/AIDS-related knowledge (p < .0001), attitudes toward daily contact with HIV-positive persons (p < .0001), and subjects' protection self-efficacy (p < .0001), suggesting the intervention increased subjects' knowledge significantly, changed their attitudes positively, and improved their protection self-efficacy. The intervention also significantly improved subjects' communication with teachers and peers on HIV/AIDS issues (p < .0001). However, no significant change was observed on respondents' attitudes toward premarital sex or their communication with parents between the two surveys (p > .05). Conclusions: Three months of short-term HIV/AIDS education through life-planning skills training was welcomed by students and positively influenced HIV/AIDS-related knowledge, attitudes, protection self-efficacy, and communication among senior high school students in a rural area with high HIV prevalence. © 2008 Society for Adolescent Medicine. All rights reserved.

Keywords:

Adolescents; HIV/AIDS education; Life-planning skills training; Participatory methods; China; HIV prevention; School-based programs

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In the mid-1990s, people living in Shangcai County, Henan Province, which is located in the middle of China, witnessed increases in HIV and AIDS. HIV was spread among poor farmers through unhygienic blood plasma collection, and later spread to families through sexual intercourse and transmission from mothers to babies. By 2002, over 10,000 of the county's population of 1,300,000 people

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had been diagnosed as HIV positive, making it known as an area of high HIV prevalence in China [1,2]. As the county began to see a large outbreak of HIV and AIDS cases, rumor and stigma became widespread, promoting fear, indifference, and an unstable social atmosphere. In addition, insufficient knowledge about HIV prevention also exposed local residents, especially vulnerable youth, to risk behaviors. The government recognized this situation and included HIV/AIDS propaganda and education, as well as reducing unsafe behavior among high-risk populations (sex workers and injecting drug users) as key components of its HIV/AIDS prevention strategy.

Teenagers are an important part of society, and they will be an important force against HIV transmission in the near future. In addition, their opinions, attitudes, and behaviors play a critical role in constructing a compassionate social environment free from discrimination for people living with HIV and AIDS [3]. Evaluations of school-based HIV prevention programs have shown them to be one of the most important sources of education interventions [4-7]. Thus, school-based education was considered an important effort for HIV/AIDS prevention activities. In Shangcai County, adolescents aged 10-24 constitute about one-fourth of the population. Because most of them join the workforce after graduating from senior high school, it is even more important for them to receive HIV prevention education while still in school. Before the program, a few school-based HIV prevention activities in China improved participants' AIDS knowledge and their attitudes toward HIV-infected persons; however, they were mostly conducted in traditional, passive methods (lecture and materials dissemination) that do not hold students' attention, and lacked skills development [8,9]. Emerging computer- and video-assisted education models are rare due to limited resources. Thus, the introduction of low-cost, practical, participatory methods for sexual reproductive health (SRH) education is vital, especially in China, where rural adolescents account for about two-thirds of the total population.

Participatory life-planning skills (LPS) training, informed by the classic cognitive/social learning theoretical framework, has been widely adopted and achieved success in the United States, Africa, England, and Australia on decreasing adolescents' risk-taking behaviors [10-14]. In this program, it was introduced in the field of sexual education through the curriculum "Path to Growth," developed by the China Family Planning Association and PATH. The training manual used materials from Life Planning Skills: A Curriculum for Young People, developed by PATH, adolescent training materials by the Hong Kong Family Planning Association, the Youth Peer Education Manual for HIV/AIDS Prevention, developed by the Yunnan/Australian Red Cross HIV/AIDS Care and Prevention Project, and the HIV/AIDS Prevention Education Teacher's Guide, developed by the United Nations Children's Fund. The curriculum combines sexual education with effective skills

building (communication, decision making, and self-protection) while preparing youth for the future. A variety of participatory methods are used to create an interactive atmosphere [15–17]. Similar curriculum also achieved success in some African countries [18].

In China, some pilot studies adopting LPS training programs to improve adolescents' reproductive health knowledge and attitudes have proved successful [5,17]. Based on previous research, the curriculum was further edited to meet the situation of China and was introduced in more sites including Shangcai County. This study looked at an LPS program in a rural area with a high rate of HIV prevalence and evaluated its effectiveness on students' HIV/AIDS knowledge, attitudes, protection self-efficacy, and communication behaviors, which is different from previous studies in two aspects. First, it is the first time to evaluate the impact of LPS training among students from an HIV high epidemic rural area. Second, the study examined the change of protection self-efficacy and communication behaviors, which was rarely studied in previous evaluations in China. In this paper we only consider the short-term impact of the 3-month intervention, that is, HIV-related knowledge and attitudes, because there was not enough time to observe behavior change.

#### Methods

Study design

It is a quasi-experimental study. Three senior high schools in Shangcai County, Henan Province, China, were selected as research sites, with two as the intervention group and one as the control. The selection criteria of the intervention schools included: low student drop-out rates and support from school authorities for the intervention program. Two out of 10 local senior high schools met these criteria, so both of them were included in the study as the intervention sites. The control school was chosen on the basis of its similarity to the intervention schools on the educational level, academic performance, and family background. Also, it was far enough to avoid cross-contamination. All the first-grade students (14-18 years old; 87% of them between 15 and 17 years old) in selected schools were recruited as study participants. Youth and their parents were informed of the study purpose before the study. Parental consent was directly sought in the parent-teacher meeting that was held before the baseline survey, and no parents disagreed. Youth consent was sought in written form in the classroom before the survey, and all of them agreed to participate. School supplies were given to those who completed the questionnaire in gratitude for their participation. PATH's human subject's protection committee approved the research protocol.

The baseline survey was conducted in September 2003 before the intervention began, and a similar survey was

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