

# The effects of a training program for reducing nurses' discrimination towards PLWHAs

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## Abstract

Performing a training program for reducing nurses' discrimination towards AIDS clients, and then evaluating the effect of the training model and analyzing the influencing factors of the training effect to form a long-run training model. 150 clinical nurses were selected to attend the program to reduce nurses' discrimination towards AIDS clients. The program included 3 steps: knowledge education, psychological intervention, and behavior correcting. Before the program, we conducted pre-research to learn the current situation, including existing discrimination and training needs. Selected nurses were asked to complete questionnaires before and 6 months after training, and the trainees were from several hospitals in Haikou. The research period was from March to September 2020. The scores for AIDS-related knowledge, discrimination attitudes, and nursing standard behavior before training were (49.69 ± 3.80), (47.01 ± 3.70), and (35.98 ± 3.01), respectively, and the scores from 6 months after training were (59.01 ± 3.88), (52.19 ± 4.98), and (38.12 ± 2.98), respectively. Correlation analysis revealed that the scores for the nurses' AIDS-related knowledge and behavior were positively correlated ( $R = 0.31$ ,  $P < .05$ ); however, there was no correlation found between attitude and behavior ( $P > .05$ ); no significant differences were observed in the 3 scores among nurses in different departments and nurses with different working durations. There was a significant difference detected among nurses in their experience caring for AIDS clients ( $F = 3.80$ ,  $P < .05$ ). The nurses with higher education levels also showed a significant difference compared to those with low education levels on their knowledge and behavior scores ( $[F = 3.49$ ,  $P < .05]$  and  $[F = 4.68$ ,  $P < .05]$ , respectively). AIDS-related knowledge training and psychological intervention can effectively reduce the discriminatory attitudes of nurses towards AIDS clients.

**Abbreviations:** AIDS = acquired immune deficiency syndrome, HIV = human immunodeficiency virus, PLWHAs = people living with AIDS, TOT = training of trainers.

**Keywords:** acquired immune deficiency syndrome, AIDS, discrimination, influencing factors, nurses

## 1. Introduction

Acquired immune deficiency syndrome (AIDS) discrimination refers to people treating those living with AIDS, their families, or relatives unfairly.<sup>[1]</sup> AIDS groups are often inaccessible due to the existing AIDS stigma or discriminatory attitudes. Thus, AIDS prevention and control tasks are difficult to perform in a comprehensive way in China. The current epidemic saturation of AIDS in China has been transformed from a mere medical problem to a social problem that may affect the country's economic development, social progress, peace, and security; thus, the AIDS epidemic has become a serious national problem. However, in 2005, the World Health Organization pointed out that discrimination against AIDS was extremely serious among medical institutions; AIDS discrimination is the biggest obstacle to global AIDS prevention and control. Therefore, reducing medical staff discrimination against AIDS patients is critical. Our research team conducted a

project named "Reducing discrimination towards AIDS clients" using knowledge popularization, psychological intervention, and behavior correcting. The AIDS epidemic in China is currently growing, making prevention, and control work critical.<sup>[2]</sup> China's health administration departments help AIDS patients standardize treatment by setting quantitative targets and monitoring the implementation of the targets. However, public discrimination against AIDS is still widespread.<sup>[3]</sup> Medical staff play an essential role in AIDS prevention and control; however, the discrimination has become one of the main obstacles in fighting AIDS.<sup>[4]</sup> From 1993 to the present, scholars<sup>[5-7]</sup> have confirmed that discrimination against people living with AIDS (PLWHAs) is closely related to the lack of certain knowledge. They believed that popularizing relevant knowledge can improve people's understanding of PLWHAs and reduce discrimination towards them. Furthermore, medical staff can call on the public to participate in AIDS prevention and control.

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Although there have been training programs that have tried to solve this problem, their long-term effect on reducing AIDS-related discrimination among medical fields is uncertain. Our research team completed a project in Kaifeng, Henan province, named “To reduce nurses discrimination against PLWHAs (persons living with AIDS)”, and according to the research results and the results of other authors’ opinions,<sup>[8]</sup> we determined that regulating professional behavior and overcoming wrong cognition is the key to consolidating the training effect. Furthermore, behavioral learning theory, also called ABC theory (Activating events: trigger event, Beliefs: faith, Consequences: emotional and behavioral reactions) holds that learning process intervention can correct medical behavior; A is the remote cause of C, and B is the immediate cause. Based on this idea, combined with our previous research results, we formed a training model that includes current status notification, knowledge education, normative nursing behavior, and psychological intervention.

Furthermore, we studied the long-run effect of this training method: 6 months after the training program, we also researched the program’s training effectiveness. The authors who joined this program as clinical volunteers found that different nurses got different scores before and after the training; thus, we analyzed the related influence factors to perform further studies. Therefore, this study was designed to evaluate the effect of the training model for reducing nurses’ discrimination towards AIDS clients and analyze the influencing factors.

## 2. Methods

### 2.1. Design and sample

This was a one-group pretest–posttest design. The target population was selected from the 6 departments of internal medicine, surgery, gynecology, pediatrics, intensive care unit, and outpatient department in grade A hospitals of Hainan Province. According to the number of nurses in each department, an odd number is selected as the target population. There were unqualified nurses who were unwilling to cooperate with the study, and the remaining staff was numbered again and then selected for the second time. 40, 40, 40, and 30 were selected from the 4 hospitals, a total of 150 people.

First, we performed pre-research to learn the current AIDS-related discrimination status, AIDS-related knowledge, and education requirements from the clinical medical staff.

We selected 150 clinical trainees and collected their following general information: name, age, working time, and experience and education background. Then, we investigated their pre-training scores (including 3 aspects: AIDS-related knowledge, discrimination attitude, and nursing standard behavior). The project team delivered the program, collected scores 6 months after training, and then compared these 2 data to confirm the effects of this training model.

### 2.2. Inclusion and exclusion criteria

Inclusion criteria: trainees should be registered nurses, working in a clinic, sane and willing, and able to join the program. Exclusion criteria: intern, aid nurse, and those who do not willing to join this program; do not get RN license; working time less than 2 years.

After collecting all the information, we performed a comprehensive analysis.

### 2.3. Education method

We performed 2 questionnaire studies. The questionnaire included 3 aspects: AIDS-related knowledge, discriminatory attitude, and nursing standard behavior. First step: conducting pre-training research. Second step: carrying out the training

program from March 2020 to September 2020 by using the training model (AIDS-related knowledge(March 2020 to May 2020) popularization, psychological intervention, and behavior correcting (June 2020–September 2020). There is a cross-over in time to train selected nurses. Third step: performed the questionnaire research again 6 months after training and then compared these 2 data to confirm the training model’s effectiveness. Experimental control: All project team members were trained through the Training of Trainers (TOT) program. We established standard training procedures and provided learning examples of a finished questionnaire, and the questionnaires were handed out and collected on the spot.

Specific: Through literature research, questionnaire adjustment and interview clarified the existing problems and mechanisms of medical staff in the response to infectious diseases. Based on this concept and the guidance of ABC theory (trigger events, Beliefs, Consequences emotion and behavior reaction), psychological intervention should be conducted to address the root causes of label effect, fear, and discrimination. Under the guidance of health belief model and knowledge-belief-action model, intervention in behavioral learning process can correct problematic behaviors.

TOT: Using TOT method to determine the scope and depth of knowledge sharing for trainers. The contents and methods of behavioral intervention; Psychological intervention methods and matters needing attention; Precautions and emergency handling. Unify the mode and guiding language of health education.

Intervention model: (COVID-19, tuberculosis, AIDS) epidemic status and outbreak trend sharing—related knowledge sharing and updating (infectivity, epidemic, reporting route, knowledge and skill demand preparation, health protection)—psychological intervention (psychological construction: It mainly deals with pressure, “fear” and “label effect”)—standardizing medical behavior (peer education aims at discrimination behavior)—promoting influence factors (consolidating learning effect and serving community residents)—contacting patients. (Case sharing and scenario simulation).

Besides, considering the influence factors, such as the environment/family/friends/people around medical staff; they will also gain intervention on knowledge/attitude and other problems.

### 2.4. Procedure

The training module including knowledge – psychological – behavioral interventions – influence factors intervention.

1. Providing the state-of-the-art epidemic situations and consequences of AIDS; the latest vaccine development situation; comprehensive literacy (AIDS-related knowledge, ways of transmission, treatment progress, standard protective principle, etc.);

2. Training clinical nurses through the TOT program, including some nurses acting as volunteers to educate clinical colleagues, to correct 9 common AIDS discriminatory behaviors: Insulting behavior or remark/refuse to serve PLWHAs (they may 1 day become hospital clients); Delaying treatment or nursing action; Disclosing private information; Treating them differently from ordinary clients; Labelling AIDS items; Over protecting; Testing human immunodeficiency virus (HIV) without informing clients; Refusing to inform them of testing results; Isolate, restrain or detain AIDS clients without the clients’ agreement. Combining the use of standard protective principles to standardize nursing behavior; helping nurses overcome the fear caused by occupational exposure to AIDS;

3. Psychological intervention based on the ABC theory (Activating events, Beliefs, Consequences—emotional and behavioral reactions).

Based on the discrimination facts, medical staffs’ discriminatory emotional and behavioral reactions, the project team’s

psychologists used the ABC theory to perform a psychological intervention (after AIDS-related knowledge sharing and before reinforcing standard medical behavior) to change the medical staffs' beliefs to some extent, hoping to correct their emotional and behavioral reactions; the medical staffs can eventually establish the correct cognition and medical-related behaviors for themselves.

4. Strengthen nurses' coping skills, providing group-based psychological counseling (one time/15 days/last 3 months), and a psychological knowledge learning channel; providing coping skills (opening a hot line, joining WeChat group/one time per week for the last 3 months), assisting nurses in overcoming the cognition that AIDS equals sex and drug abuse;

5. Maintain visual contact between nurses and PLWHAs (once a week, 60 minutes per session). We invited PLWA volunteers or requested daily living videos (they provided as PowerPoints) from the clinical volunteers to help the medical workers understand their clients' daily lives, work, and leisure time to eliminate the fear of the unknown and cultivate compassion for them;

6. Nine common discrimination behaviors were corrected by the TOT volunteers. The psychological experts and volunteers performed a psychological intervention to enhance the nurses' coping skills, eliminate psychological barriers of discrimination, and overcome the wrong cognition. Group psychological intervention was arranged 8 weeks after the knowledge training, and the intervention was carried out 2 times a week for 4 weeks (groups were divided according to different departments, with each department serving as a group). Two or 3 psychological intervention hotlines were also opened, working 24 hours a day. Furthermore, the project team held group interventions once a week for 4 weeks. Six months after completing the training program, we surveyed the training results.

**2.5. Investigation tool**

The investigation tool used was a questionnaire. We performed a pre-experiment test with 30 medical students in the first and third weeks, and the results showed that the questionnaire's content had a validity of 0.83 and a Cronbach  $\alpha$  of 0.85. The questionnaire was divided into 4 parts: basic information, AIDS-related knowledge, attitude, and standard care behavior. Each part had certain questions, and each question was given a corresponding score. The scoring criteria was as follows: in AIDS-related knowledge, the correct answer earned 3 points, an unclear response received 2 points, and a wrong answer was awarded 1 point; in discrimination attitude, a nondiscriminatory manner received 3 points, an uncertain attitude received 2 points and a discriminatory attitude received 1 point; in standard care behavior, the standard nursing behavior received 3 points, unclear or uncertain answers received 2 points, and nonstandard nursing behavior received 1 point.

**2.6. Data analyses**

The Statistical Package for Social Sciences (SPSS) version 17.0 was used for analyzing the descriptive statistics. Methods: Descriptive analysis, Chi-square test, correlation analysis.  $P < 0.05$  was statistically significant.

**3. Results**

Participant information: The 150 clinical nurses were all women between 20 and 51 years old.

Experience nursing AIDS clients: 71 nurses had no nursing experience (47.33%), 52 had cared for 1 to 5 AIDS clients

(34.67%), 27 had cared for 6 or more AIDS clients (18.00%). Nurses' educational background: 22 nurses had graduated a technical secondary school (14.66%), 87 had an associate degree (58%) and 41 had a bachelor's degree or above (27.34%). Department: 46 nurses were from the internal medicine department (30.67%), 42 were from the surgical department (28.00%), 8 were from obstetrics and gynecology (5.33%), 4 were from the operating room (2.67%), 33 were from the emergency room 33 (22%), and 17 were from other departments (11.33%). Working experience: 60 nurses had worked for 2 years (40.00%), 34 had worked for 7 years (22.67%), 29 had worked for 13 years (19.33%) and 37 had worked 18 years or more (18.00%).

Scores (3 aspects: AIDS-related knowledge, attitudes, and behaviors) before and 6 months after training: The average scores before training were (49.69  $\pm$  3.80), (47.01  $\pm$  3.70), and (35.98  $\pm$  3.01), respectively, and the average scores 6 months after training were (59.01  $\pm$  3.88), (52.19  $\pm$  4.98), and (38.12  $\pm$  2.98), respectively; the differences were statistically significant ( $t = 17.01, 8.70, 16.96, P < .01$ ).

**3.1. Factors influencing nurses' discrimination towards AIDS patients**

The scores of nurses experienced in caring for AIDS patients: The differences in nursing behavior scores between nurses with no AIDS-caring experience were statistically significant when compared with those nurses who had AIDS-caring experience ( $P < .05$ ); the differences in knowledge and behavior scores between nurses with a bachelor's degree or above were statistically significant when compared to those with technical secondary school educations ( $P < .05$ ). Other backgrounds, such as different departments and nursing work experience, had no statistical significance ( $P > .05$ ), as shown in Table 1.

Researchers have shown that AIDS-related knowledge can affect medical staffs' attitudes and behaviors<sup>[5-7]</sup>; thus, we analyzed the relationship between AIDS knowledge and discriminatory attitude and nursing behavior scores. AIDS knowledge scores and discriminatory attitude and nursing behavior scores showed a strong correlation ( $R = 0.51, R = 0.30$ , respectively;  $P < .05$ ). Thus, the higher the nurse AIDS-related knowledge score, the higher the discriminatory attitude and nursing behavior scores, as shown in Table 2.

**4. Discussion**

The results of this study showed that nurses' scores for AIDS-related knowledge, discrimination attitudes, and nursing standard behavior are all improved through this model of training.

**Table 1**  
Score comparisons for nurses with different backgrounds.

Items	Three aspects	Fvalue	Pvalue
Experience in caring for AIDS patients	Knowledge	1.89	0.23
	Attitude	0.20	0.88
	Behavior	3.80*	0.01
Working age	Knowledge	1.41	0.21
	Attitude	0.61	0.59
	Behavior	1.31	0.28
Different department	Knowledge	0.31	0.95
	Attitude	0.32	0.89
	Behavior	0.24	0.95
Educational background	Knowledge	3.49*	0.03*
	Attitude	0.19	0.26
	Behavior	4.68*	0.02*

\*Significant differences in 3 indicator scores under different situations.

**Table 2**  
Correlation analysis.

Items	Statistical approach	AIDS-related knowledge	Nursing standard behavior	Discriminatory attitude
AIDS-related knowledge	<i>R</i> value	1.00	0.51*	0.30*
	<i>P</i> value		0.00	0.00
Nursing standard behavior	<i>R</i> value	0.30*	1.00	0.053
	<i>P</i> value	0.00		0.15
Discriminatory attitude	<i>R</i> value	0.51*	0.053	1.00
	<i>P</i> value	0.00	0.15	

\*Strong correlation.

The scores for the nurses' AIDS-related knowledge and behavior were positively correlated ( $R = 0.31$ ,  $P < .05$ ). There was a significant difference detected among nurses with different nursing experience and educational background.

Studies have shown that AIDS-related knowledge is the key to reducing nurses' AIDS discrimination,<sup>[8,9]</sup> and the training results show that the AIDS-related knowledge score has a strong correlation with the AIDS discriminatory attitude score and care behavior score ( $R = 0.51$  for knowledge and attitude,  $R = 0.30$  for knowledge and behavior). This is similar to the findings of a study that deficiencies in AIDS knowledge about HIV transmission and prevention are associated with more negative attitudes towards patient stigmatization.<sup>[10]</sup> The higher the AIDS-related knowledge score, the higher the discrimination and standardized nursing behavior scores, which shows that clinical nurses' AIDS knowledge score influences their AIDS discrimination and standardization of nursing behavior; the correlation between nursing behavior and attitude score is not significant. Thus, to reduce nurses' discrimination towards AIDS patients, we must strengthen the spread of AIDS-related knowledge, such as basic knowledge, vaccines, medication treatments, ways of transmission, and prognosis. Properly informing people about AIDS will help them accept and understand PLWHAs and support AIDS prevention and control.

Therefore, education should cater to the actual clinical demands, paying attention to the system of knowledge propaganda. In addition, according to the results, the nurses' different departments, ages, and experiences show no obvious difference regarding knowledge scores, suggesting that all clinical medical staff require training. However, the differences in the knowledge scores and behavioral scores of nurses with bachelor's degrees and those with technical secondary school degrees were statistically significant ( $P < .05$ ); thus, it is recommended that the training be hierarchical. Knowledge training should be diversified and suitable for different education levels to improve nurses' overall AIDS-related knowledge and standardization of nursing behavior.

The nurses' different experience levels in caring for AIDS clients, attitudes, and knowledge scores were not statistically different; however, the nursing behavior score was high ( $F = 3.80$ ), suggesting a high degree of nursing behavior standardization and explaining why nurses feared being infected when caring for with AIDS clients. Nurses who have experience in caring for AIDS patients have better understanding of diseases and patients suffering, they can perform standard nursing action. And they have less fear of contagious diseases. Thus, they get higher score in behavior. Yet without knowledge and psychological intervention, they have no significant change in Knowledge and Attitude score. Thus, we must encourage nurses and AIDS clients to maintain normal contacting and to participate in AIDS prevention and control work.

In addition, the nurses' 3 indicator scores were statistically significant before and after training, indicating that we should carry out similar training in a wider range of nurses. Different nursing backgrounds had no statistical differences in discriminatory attitude, indicating factors such as education, departments,

and working time have no strong influence in AIDS discrimination. We should pay attention to knowledge, intervention, and cognition, and it is recommended that such training should be aimed at "tag" effects, correcting wrong cognitions, such as AIDS equals sexual abuse or drug abuse, and helping clinical nurses to develop coping skills when face to face with AIDS patients. Study<sup>[11]</sup> has shown that nurses' attitude towards AIDS stigmatization is related to high-risk behaviors such as illegal drug users. Through training and psychological intervention, nurses can recognize that fear is rooted in the lack of relevant knowledge and the AIDS stigma, and nurses can overcome this barrier through self-reflection, positive coping, and relieving mental stress. Obvious effects have been achieved, and nurses' attitudes towards PLWHAs have improved significantly.

It is possible to update existing HIV/AIDS knowledge among medical staff so they can perform primary prevention work effectively. Establishing intervention modes and clarifying the long-term effects can bring medical staff "authority effect" into full play in the fight against AIDS and make the most of educational resources to serve AIDS prevention and control work, also providing information for chronic and infectious disease management. Through all these methods, the training program may improve the living standards for PLWHAs and reduce hospitalization costs. Moreover, based on our previous study the attitude of medical staff attitude towards people living with AIDS may seemingly better due to policy implications such as "four frees and one care" policy in China, which suggests that government should advocate more of caring for those groups.<sup>[12]</sup>

There are several limitations in this study as it is designed as a cross-sectional study with small sample size in stratified analysis. Second, this study confined in Hainan province.

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## Author contributions

T.W. contributed to the project consultation, the design and review; X.-m. J.U. contributed to the data analysis and manuscript preparation. S.T. contributed to the implementation and data collection. All authors have read and agreed to the published version of the manuscript.

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