DOI: 10.5281/zenodo.17233556
Vol. 3(3); 2025
Received 27 July 2025; Accepted 26 September 2025
Available online 30 September 2025, Copy right @2024

Journal of Interdisciplinary Insights
ISSN (Online) :2995-6587
Published by Global Insight Publishing Ltd, USA

A Study on the Main Modes and Effects of AIDS Health Education for Undergraduate Freshmen in the Zhanjiang Area

Junchu He[1,2*],Zhuofei Jiang[3], Yanyan Yang[1], Sisi Li[1] Daniel Wong Barrenechea[2]

Abstract: Objective This paper discusses the main modes and effects of AIDS health education for undergraduate freshmen in Zhanjiang area, so as to provide a scientific basis for colleges and universities to carry out AIDS health education.**Methods** A total of 700 freshmen enrolled in September 2023 from two universities in Zhanjiang area were randomly selected to carry out questionnaire survey on main modes of AIDS health education and AIDS awareness rate before and after education. A total of 1400 questionnaires were collected, 1400 valid questionnaires were collected, and statistical analysis was made. **Results** The study analyzed HIV awareness levels among participants by institutional affiliation and gender, with no statistically significant differences observed (P> 0.05). The WeChat Official Account push model was the most preferred method, chosen by 347 participants (49.58%), followed by street promotion booths (201 participants, 28.71%) and peer education (152 participants, 21.71%). No significant differences were found between the three educational approaches in terms of awareness rates (P> 0.05). However, pre-and post-intervention evaluations revealed statistically significant changes in self-awareness rates (P <0.05). Post-intervention awareness rates reached 335 participants (96.54%), 166 participants (82.59%), and 127 participants (83.55%), respectively. Statistical analysis demonstrated significant differences across groups (P <0.05), confirming the effectiveness of all models. Comparative analyses showed the WeChat push group outperformed both street promotion and peer education groups (χ^2 = 31.609, P = 0.000; χ^2 = 25.977, P = 0.000), while the street promotion group showed no significant difference (P = 0.811), indicating comparable educational outcomes between these groups.**Conclusion** The primary models for HIV/AIDS health education among undergraduate students in Zhanjiang region include WeChat public account promotions, on-site promotional booths, and peer education. These three approaches should be fully utilized to conduct HIV/AIDS health education for college students, with particular emphasis on the WeChat platform. By implementing efficient, precise, and sustained health education initiatives, we can effectively enhance students' awareness of HIV/AIDS and curb its spread within university communities.
Keywords: Zhanjiang Region; Undergraduate enrollees; AIDS; Health Education

1.Introduction:

AIDS, also known as acquired Immune Deficiency syndrome (AIDS), is a malignant infectious disease caused by human immunodeficiency virus (HIV) with a very high fatality rate [1]. It was discovered in 1981.HIV/AIDS has spread at an alarming rate globally. By the end of 2023, approximately 39.9 million people worldwide were living with HIV/AIDS, making it a major global public health issue [2].China has a vast population of undergraduate and college students. A majority of them are sexually active but lack sufficient awareness of self-protection, which confers a relatively high risk of HIV infection. Their physical and mental health status directly impacts family harmony and social stability [3].Therefore, the objective of university health education is to identify efficient health education models for the student population. This aims to deliver targeted and effective HIV prevention knowledge, enhance awareness, substantially improve knowledge levels, and ultimately strengthen the first line of health defense. This task represents one of the most urgent priorities in current health education efforts [4,5].This study investigated the primary models and effectiveness of AIDS health education among 700 randomly selected first-year non-medical students from two universities in Zhanjiang. Statistical analysis was performed, and the results are presented below.

2.Patients and Methods

2.1Study Population

[1] Guangdong Medical University,Zhanjiang City, Guangdong Province, China
[2*.] Center for International Education, Philippine Christian University, Manila, Metro Manila, Philippine
Corresponding email:junchuhe@gdmu.edu.cn
[3] Dongguan Maternal and Child Health Care Hospital ,Dongguan City, Guangdong Province, China

This study enrolled first-year non-medical undergraduate students who matriculated in September 2024 from two universities in the Zhanjiang region. A total of 700 participants were randomly selected using a cluster sampling method after obtaining their informed consent.Inclusion criteria were: willingness to participate in the questionnaire survey and ability to complete the questionnaire truthfully and seriously.Exclusion criteria were: a history of sexually transmitted infection (STI), prior participation in a similar survey, or refusal to participate.The cohort consisted of 350 students from each university, comprising 343 males and 357 females, with a mean age of 18 ± 0.6 years.

2.2 Methods

A standardized questionnaire and a unified procedure were established. The questionnaires were distributed, completed, and collected on-site. Research staff conducted immediate reviews and quality control checks. Participants were encouraged to consult the staff for any clarification to ensure the quality of the responses.The survey utilized the "Public AIDS Core Knowledge Questionnaire," administered anonymously. The questionnaire collected information on the participant's university name, gender, age, and academic year. Knowledge was assessed using a section of 8 questions. A participant was deemed to have adequate knowledge if they answered at least 6 questions correctly.Needs for health education were evaluated through a single-choice question with 3 options.

2.3 Outcome Measures

The primary outcome measures included: (1) the number of participants who voluntarily chose each of the three AIDS health education models; (2) the AIDS-related knowledge score, assessed before and after the health education intervention among subjects in each model group.

2.4 Statistical Analysis

Data analysis was performed with SPSS 22.0. Continuous variables are presented as mean ± SD and were compared by the t-test. Categorical variables are expressed as numbers (percentages) and were analyzed using the chi-square test. A P-value < 0.05 was defined as statistically significant.

3.Results

3.1 Analysis of AIDS Prevention Knowledge Awareness by Institution and Gender.

The awareness rates of AIDS-related knowledge among respondents from the two institutions were 67.43% (236/350) and 65.71% (230/350), respectively. No statistically significant difference was observed between the two institutions (P>0.05), indicating that the institutional factor did not influence the level of knowledge among the subjects. Similarly, the awareness rates were 68.33% (233/341) for males and 65.18% (234/359) forfemales. This difference was also not statistically significant (P>0.05), suggesting that gender was not a influencing factor prior to the health education intervention. Details are presented in Table 1.

Table 1. Awareness of AIDS Prevention Knowledge Among Study Participants by Institution and Gender [n (%)]

Demographic Characteristics		Total n (%)	Awareness, n (%)	χ^2	P
Institution	University A	350（50）	236（67.43）	0.231	0.631
	University B	350（50）	230（65.71）		
Sex	Male	341（48.71）	233（68.33）	0.780	0.337
	Female	359（51.29）	234（65.18）		

3.2 Number of Participants Opting for the Three Models and Their Baseline Knowledge Levels.

Based on the characteristics of the three health education models, participants voluntarily selected the one they were most interested in. The "WeChat Official Account push" was the most preferred model, chosen by 347 individuals (49.58%), among whom 230 were knowledgeable about AIDS, yielding an awareness rate of 66.28%. This was followed by the "information booth campaign," which interested 201 participants, with 130 (64.68%) demonstrating awareness. Only 152 participants favored "peer education," and 101 of them (66.45%) were knowledgeable. Comparison of the baseline awareness rates among the groups opting for the three different models showed no statistically significant difference (P > 0.05), preliminarily indicating equivalent levels of AIDS knowledge among participants prior to the health education intervention. Details are presented in Table 2.

Table 2. Number of Participants and Awareness Rates for the Three AIDS Health Education Models [n (%)]

Health Education Model	n	%	Awareness, n (%)	χ^2	P
WeChat Official Account Push Notifications	347	49.58	230（66.28）		
Information Booth Campaign	201	28.71	130（64.68）	0.176	0.916
Peer Education	152	21.71	101（66.45）		

3.3 Changes in Knowledge Levels Before and After the Three Health Education Interventions

A standardized questionnaire on AIDS prevention knowledge was administered uniformly to all participants upon completion of the study period, following the delivery of the respective health education model they had chosen. In the WeChat Official Account Push Notifications group, the number of knowledgeable participants increased from 230 at baseline to 335 after the intervention, resulting in an awareness rate of 96.54%. The Information Booth Campaign group saw an increase of 36 knowledgeable participants, achieving a post-intervention awareness rate of 82.59%. In the Peer Education group, 127 participants were knowledgeable, corresponding to an awareness rate of 83.55%. Intragroup comparisons (within each model) revealed a statistically significant improvement in awareness rates after the intervention compared to baseline ($P < 0.05$), indicating that all three health education models were effective. Detailed data are presented in Table 3.

Table 3. Awareness of AIDS Prevention Knowledge Before and After the Three Health Education Interventions [n (%)]

Health Education Model	n	Pre-intervention,n (%)	Post-intervention,n (%)	χ^2	P
WeChat Official Account Push Notifications	347	230（66.28）	335（96.54）	104.978	0.000
Information Booth Campaign	201	130（64.68）	166（82.59）	16,065	0.000
Peer Education	152	101（66.45）	127（83.55）	11.860	0.001

3.4 Comparison of Intervention Effects Among the Three Health Education Models

Following the implementation of the three AIDS health education models, post-intervention knowledge data were collected via questionnaire from all three groups. A chi-square (χ^2) test comparing the three groups revealed a statistically significant overall difference ($P < 0.05$). Post-hoc pairwise comparisons demonstrated that the WeChat Official Account Push Notifications group was statistically superior to both the Information Booth Campaign group ($\chi^2 = 31.609$, $P < 0.001$) and the Peer Education group ($\chi^2 = 25.977$, $P < 0.001$), indicating a stronger educational effect of the WeChat-based intervention. In contrast, no statistically significant difference was observed between the Information Booth Campaign group and the Peer Education group ($P = 0.811$), suggesting comparable effectiveness between these two models. Detailed results are presented in Table 4.

Table 4. Awareness Rates Following the Three Health Education Interventions [n (%)]

Health Education Model	n	Post-intervention,n (%)	χ^2	P
WeChat Official Account Push Notifications	347	335（96.54）		
Information Booth Campaign	201	166（82.59）	34.847	0.000
Peer Education	152	127（83.55）		

4. Discussion

AIDS has become a public health problem which seriously affects human health and global social and economic development due to its strong infectivity and high harm [6]. posing a serious threat to human life safety and physical and mental well-being. The population of university students in China is substantial and falls within a sexually active age group. However, their knowledge regarding AIDS is often inadequate, rendering them relati -vely vulnerable to exposure risks. Consequently, effectively enhancing the AIDS knowledge level among univer -sity students has become a critical challenge urgently needing resolution by health educators in higher institution s during the current phase. This study revealed that the awareness rate of core AIDS knowledge among the partici -pants was only 66.57%, which falls considerably short of the target outlined in the *"13th Five-Year Action Plan for Containing and Preventing AIDS in China"* [7, 8]. Although healthcare institutions at all levels, disease prev -ention and control centers, and educational organizations in China have conducted AIDS prevention education o

ver the past three decades, leading to some improvement in university students' prevention awareness [9], the kno -wledge awareness rate remains suboptimal. Therefore, exploring efficient and targeted health education models for AIDS prevention is particularly crucial [10].

Findings from this study indicate that the AIDS knowledge rate among the surveyed 700 students was approximately 66%, which is consistent with reports from other domestic scholars [11]. No statistically significant difference in knowledge levels was observed between students from the two universities or between male and female students. Potential explanations include that participants might not have had sufficient opportunity to systematically acquire AIDS prevention knowledge during their high school education, leading to an overall low level of awareness irrespective of their institution or gender. These results highlight the necessity of placing greater emphasis on first-year undergraduate students, urging the early and prompt development of health education initiatives and the implementation of specialized AIDS training programs [12].

The study revealed that "push notifications via WeChat public accounts" were the most favored method among students, with nearly 50% of the participants selecting this model, a finding consistent with the results reported by Chen Liying et al. [13, 14]. This preference can likely be attributed to several factors: firstly, society is currently in an era of highly developed internet networks, where most new information and trends are primarily disseminated online. Secondly, it is closely related to the widespread adoption of smartphones, which has further accelerated the engagement of young students with the internet. Thirdly, WeChat public accounts possess distinct advantages and have gained general acceptance, as they allow students to access relevant information instantly and conveniently, enabling self-directed health education anytime and anywhere.Furthermore, establishing booths in high-traffic areas on campus to distribute health education materials and conduct interactive activities also serves as a significant health education model. This approach effectively creates a strong atmosphere for awareness campaigns and attracts a greater number of students to participate.In contrast, peer education was selected by the fewest participants, accounting for only 21.71%, which aligns with findings from other domestic scholars [12]. A potential reason may be that freshman undergraduates feel embarrassed or hesitant about the sensitive topics often addressed in peer education, making immediate acceptance difficult. This finding underscores the importance of providing clear explanations and context when implementing AIDS peer education programs [15].

The study found that comparisons of the AIDS knowledge awareness rates before and after the implementation of all three health education models showed statistically significant differences, indicating that each model was effective. Consequently, all three can be considered and applied in practical work when formulating AIDS health education plans [16].However, statistical analysis of the post-intervention awareness rates revealed that the "WeChat Public Account push" model yielded superior results compared to the other two models. This underscores the importance of focusing on key effective modalities in health education initiatives. It is crucial to strategically integrate health education resources, foster inter-departmental coordination and communication, and continuously refine and enrich the content of health education WeChat public accounts. The content should be visually engaging, incorporating both images and text, to present AIDS prevention knowledge in an easily understandable and memorable format.It is noteworthy that this study did not incorporate an artificial intelligence-based health education model [17], nor did it explore combinations of the three models. Subsequent research will further investigate pairwise combinations of these models to analyze whether they serve as complementary enhancements to each other and to explore potential synergistic effects where the combined educational outcome exceeds the sum of its individual parts (a 1+1>2 effect).

In conclusion, the awareness rate of AIDS prevention knowledge among first-year non-medical undergraduates in the Zhanjiang region is relatively low. To effectively enhance the AIDS knowledge level among the university student population, it is essential to fully leverage the primary health education models, namely WeChat public account pushes, booth setups, and peer education. Particular emphasis should be placed on promoting the WeChat public account push model. By implementing efficient and targeted health education interventions through this channel, we can significantly improve AIDS awareness among university students. This approach aligns with the principle of prioritizing prevention and aims to comprehensively curb the spread of AIDS within the student population.

Acknowledgement : **Education Fund project:** 2019 Zhanjiang City non-subsidized scientific and technological breakthrough project (project number 2019B01165)

References

[1]. Wu MY, Zhang T. A review of research status on HIV/AIDS knowledge, attitude, practice and health education among Chinese university students. Journal of Preventive Medicine Information. 2019;35(12):1341-1346.
[2].Ma YH. Challenges and countermeasures of AIDS prevention education in universities. Health Medicine Research and Practice. 2015;12(2):5-10.
[3].Yang M, Yang S, Cao CY, et al. Current situation and thoughts on AIDS health education among college students. China Higher Medical Education. 2020;(8):20-21.
[4].Sun JP, Tang XL, Cao NX. Investigation on the status of STD and AIDS health education among university students in four universities in Nanjing. Chinese Journal of Human Sexuality. 2019;28(3):146-148.
[5].Lin JJ, Ma R, Bu DD, et al. Exploration of innovative models for AIDS health education in Chinese universities under the new situation. Chinese Journal of School Doctor. 2019;33(5):382-384,400.
[6].Shi M, Li Z, Jia JX, et al. Exploration of AIDS prevention approaches in universities from the perspective of peer education. Chinese Medical Ethics. 2017;30(2):252-255.
[7]. General Office of the State Council of the People's Republic of China. Notice of the General Office of the State Council on Issuing the "13th Five-Year Action Plan for Containing and Preventing AIDS in China" [Z]. 2017.
[8].Shen HC, Li RL, Zhao PZ, et al. Investigation on the awareness rate of syphilis prevention knowledge among different populations in a comprehensive syphilis prevention and control demonstration area in Guangdong Province. Chinese Journal of AIDS & STD. 2016;3(5):386-387.
[9]. Wang SF, Shi JQ, Li JN, et al. Investigation on AIDS prevention knowledge among medical students in a higher vocational college in Yuncheng. Journal of Medical Pest Control. 2021;37(4):402-404.
[10]. Dai Z, He QY, Fan SF, et al. Investigation on needs and influencing factors of AIDS health education among college students in Chengdu in 2017. Journal of Preventive Medicine Information. 2019;35(2):114-120.
[11].Tang C, Luo XM, Li X, et al. Analysis of AIDS knowledge awareness and influencing factors among college students in Western Hunan. Chinese Journal of School Doctor. 2021;35(5):328-330.
[12]. He JC, Jiang ZF, Fu JF, et al. A study on the awareness rate of AIDS and syphilis prevention knowledge and health education needs among non-medical undergraduate students. International Medicine and Health Guidance News. 2021;27(16):2473-2476.
[13].Chen LY, Wang ZB, Zhang X, et al. Investigation on the needs for school-based AIDS health education among students in a medical university. Chinese Journal of Health Education. 2017;33(3):247-250.
[14].LI Xin-xin;KANG Dian-min.Effect evaluation of providing HIV/AIDS health education by using WeChat official account[J].Preventive Medicine Tribune.2024,(11)856-859
[15].zhu Min;Yang Feng;Yang Jing.Research on the Path of Peer Education to Adolescent AIDS Health Education[J].Health Education and Health Promotion. 2024, (05):500-503
[16]. Hu Y, Fan JX. Development and issues of HIV/AIDS health education models for university students. *Chinese Journal of Public Health Engineering*. 2024;(03):430-432.
[17].WANG Na,ZHANG Lei.Research on the model of college students′ AIDS health education under the perspe ctive of artificial intelligence[J].Acta Medicinae Sinica. 2025, (02) :186-191