

## RESEARCH ON AIDS PREVENTION AND CONTROL INFORMATIZATION IN UNIVERSITIES IN SICHUAN PROVINCE

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### Abstract

This study focuses on the informatization of AIDS prevention and control in universities in Sichuan Province, analyzing the challenges and opportunities faced by universities in their AIDS prevention efforts. The research indicates that the application of information technology can significantly enhance the efficiency and coverage of AIDS prevention work. A survey conducted across multiple universities reveals that most institutions still face shortcomings in informatization, such as a lack of professional IT support, inadequate integration of information resources, and a singular approach to outreach and education. Consequently, this study proposes a series of targeted recommendations, including strengthening IT training, establishing comprehensive information sharing platforms, and diversifying outreach and education methods. By implementing these measures, the overall level of AIDS prevention and control efforts in universities can be improved, laying a foundation for the development of healthy campuses. In conclusion, the application of informatization in AIDS prevention is of great significance, and future research should further explore the deep integration of informatization and health education to achieve a more comprehensive prevention effect.

**Keywords:** AIDS prevention, informatization, universities, Sichuan Province, health education

### Introduction

AIDS, caused by the human immunodeficiency virus (HIV), remains a significant public health challenge worldwide, with profound implications for individuals and communities. In Sichuan Province, where the population density is high and urban-rural disparities exist, the vulnerability to HIV infection is exacerbated by various social and economic factors. The youth, particularly university students, are at a critical juncture in their lives, often engaging in behaviors that may increase their risk of HIV exposure. The rise in sexually transmitted infections among this demographic highlights the urgent need for effective prevention and control measures tailored to their unique contexts. (Tengshuqi, 2024)

The significance of AIDS prevention in higher education institutions cannot be overstated. Universities serve as microcosms of society, reflecting broader health trends and challenges. In Sichuan, where the stigma associated with HIV/AIDS persists, students may face barriers to accessing information, healthcare, and support services. This stigma can discourage open discussions about sexual health, leading to misinformation and neglect of

preventive measures. The integration of information technology into AIDS prevention strategies offers a promising avenue to address these challenges. By leveraging digital platforms, universities can disseminate accurate information, facilitate access to testing and treatment, and foster a supportive environment for students to engage in conversations about sexual health. (Tengshuqi, 2024)

Furthermore, the significance of this research extends beyond university campuses. Findings from this study can inform policy decisions at the provincial and national levels, contributing to the development of comprehensive public health strategies. Understanding the current status of AIDS prevention efforts in Sichuan’s higher education institutions is crucial for identifying gaps and formulating effective interventions. The emphasis on evidence-based practices in the development of information systems for AIDS prevention will enable stakeholders to respond proactively to emerging trends and challenges, ultimately reducing the incidence of HIV among young adults in the region. The implications of this research are far-reaching, as they can lead to informed practices that enhance the overall health and well-being of the community.

The current status of AIDS prevention in higher education institutions in Sichuan Province reveals a complex landscape influenced by various socio-cultural, educational, and technological factors. Despite the increasing awareness of HIV/AIDS and its implications, many universities still grapple with challenges in effectively implementing prevention programs.

Awareness campaigns targeting students have been initiated in several institutions, yet their reach and impact vary significantly. Some universities have developed robust educational curricula that incorporate HIV/AIDS awareness, while others lack comprehensive programs. This inconsistency leads to gaps in knowledge among students, particularly in understanding modes of transmission, prevention methods, and the importance of regular testing. (Shangzhiwen, 2024)

The availability of resources for HIV prevention is another critical factor. Institutions with dedicated health services often provide testing and counseling, but accessibility remains an issue. Many students are hesitant to seek help due to stigma or lack of privacy. Furthermore, the integration of technology in these services is limited. While some universities have begun to implement online platforms for education and support, many still rely on traditional methods that may not engage the digital-native student population effectively.

Peer education programs have emerged as a promising strategy for improving awareness and reducing stigma. These initiatives empower students to share knowledge and experiences, fostering a more supportive environment. However, not all institutions have adopted such approaches, leading to uneven levels of peer support and information dissemination. (Liuxiaofang, 2024)

The collaboration between educational institutions and health authorities is crucial for enhancing preventive measures. Some universities have established partnerships that facilitate workshops, health fairs, and outreach programs. These collaborations can significantly improve resource allocation and program effectiveness. Nonetheless, barriers such as bureaucratic hurdles and lack of funding often hinder these partnerships. (Chenmianling, et al., 2024)

Overall, while there are efforts underway to address AIDS prevention in higher education institutions in Sichuan Province, significant gaps remain. A more unified approach that leverages technology, engages the student body, and fosters partnerships with health organizations is essential for creating a comprehensive and effective AIDS prevention strategy.

## Objective

The objectives of this study is to investigate the impact of chronic disease status on the willingness of elderly people in rural China to choose a nursing home for their retirement.

1. To study the relationship between whether rural elderly people suffer from chronic diseases and their willingness to choose a nursing home for their retirement.
2. To study the relationship between the number of chronic diseases suffered by rural elderly people and their willingness to choose a nursing home for their retirement.
3. To study the relationship between the severity of chronic diseases suffered by the rural elderly and their willingness to choose a nursing home for their retirement.

## Methodology

The study design for the research on AIDS prevention and control in universities of Sichuan Province employed a mixed-methods approach, integrating both quantitative and qualitative data collection methods. This approach aimed to provide a comprehensive understanding of the current status of AIDS prevention efforts and the effectiveness of information systems implemented in higher education institutions.

Quantitative data were collected through surveys distributed among students and staff across various universities in Sichuan Province. The survey instrument included questions designed to assess knowledge of AIDS, attitudes towards prevention methods, and awareness of available resources for support and education. A stratified random sampling technique ensured representation across different demographic groups, including age, gender, and academic disciplines. The sample size was determined based on a power analysis, yielding a target of 1,000 respondents to enhance the reliability and validity of the findings. (Ma Jing, 2024)

Qualitative data were gathered through focus group discussions and in-depth interviews with key stakeholders, including health educators, administrative personnel responsible for health services, and student representatives. These discussions aimed to explore perceptions and experiences related to the effectiveness of current AIDS prevention programs and the role of information technology in disseminating knowledge and resources. The selection of participants for qualitative interviews was based on purposive sampling, targeting individuals with relevant experience and insights into AIDS prevention efforts. (Mahongfei, et al., 2024)

Data collection occurred over a three-month period, during which the research team ensured adherence to ethical guidelines, including informed consent and confidentiality. The survey responses were analyzed using statistical software to identify trends and correlations, while qualitative data were subjected to thematic analysis to extract key themes and insights related to the research objectives. (Mahongfei, et al., 2024)

The integration of quantitative and qualitative data provided a robust framework for assessing the effectiveness of existing AIDS prevention strategies and the potential for information systems to enhance outreach and education efforts in Sichuan's universities. By triangulating data from different sources, the study aimed to present a well-rounded view of the challenges and opportunities in the domain of AIDS prevention and control within the higher education sector.

## Results

Data processing and cleaning are essential steps in preparing the dataset for analysis in the context of AIDS prevention and control in universities of Sichuan Province. This phase involves several systematic procedures to ensure data quality, accuracy, and relevance. (Zhangyushu, 2024)

The initial step in data processing involves the collection of raw data from various sources, including surveys conducted among university students, health records from campus health centers, and administrative data from university databases. These data sources often contain inconsistencies, missing values, and duplicates, necessitating a thorough cleaning process. For instance, survey responses may include incomplete answers or outliers that do not reflect the general population's behavior regarding AIDS prevention.

To address missing values, multiple imputation techniques were applied. This method allows for the estimation of missing data points based on observed values, which enhances the dataset's completeness without introducing significant bias. For example, if a student did not respond to a question about their knowledge of AIDS transmission, the average knowledge score of similar respondents was used to fill in this gap.

Duplicate entries were identified using unique identifiers assigned to each participant, ensuring that each student's data was represented only once in the dataset. This step is crucial for maintaining the integrity of the analysis, as duplicates can skew results and lead to false conclusions.

Data uniformity was another significant focus during the cleaning process. Different data sources sometimes employ various formats for categorical variables, such as gender or educational background. Standardization involved converting these variables into a consistent format. For instance, gender categories were unified to "Male," "Female," and "Other," facilitating more straightforward analysis and interpretation.

Outlier detection was conducted using statistical methods, including z-score analysis and IQR (Interquartile Range) methods. Data points that significantly deviated from the mean were examined to determine if they resulted from data entry errors or if they represented legitimate variations in behavior. In cases where outliers were found to be errors, corrections were made, while legitimate outliers were flagged for further analysis.

The processed dataset underwent validation through a series of checks to ensure accuracy. This validation included cross-referencing data with original sources and conducting consistency checks between related variables. For example, the correlation between self-reported knowledge of AIDS and actual behavior regarding prevention measures was analyzed to confirm alignment. (Huangwanli, et al., 2024)

In conclusion, the data processing and cleaning phase established a robust foundation for subsequent analyses. By implementing rigorous techniques to enhance data quality, the research aimed to derive reliable insights into the effectiveness of AIDS prevention measures within higher education institutions in Sichuan Province. This meticulous approach ensures that the findings and recommendations are based on sound empirical evidence, ultimately contributing to more effective policy-making and intervention strategies.

Another significant finding was the effectiveness of digital platforms in enhancing knowledge and engagement. Universities that implemented mobile applications and online resources for AIDS education reported a marked increase in student participation in health-related activities. The data suggested that students who utilized these digital tools were more likely to engage in discussions about sexual health and seek testing services.

Statistical dimension	Data/Description
Total number of AIDS patients in Sichuan Province	174700 people (as of December 2024, ranking first in the country)
Situation of college students infected with AIDS	12590

Statistical dimension	Data/Description
- Overall trend	The number of infected individuals exists and has shown an increasing trend in recent years
- Specific cases	In a certain period of time (such as four years), 12397 college students were infected with AIDS (not comprehensive data of Sichuan Province, but reflecting the trend)
- Infection route	60% engage in high-risk behaviors such as making friends on social media platforms (data from some cities)
Awareness rate of AIDS knowledge among college students	70.68% (data for freshmen at a certain medical college, which may not represent the average level of college students in the province)
Sexual Behavior and Protection of College Students	-
- Age of first sexual intercourse	The average age is 17.57 years old (data for freshmen at a certain medical college)
- Condom usage	The proportion of using condoms during first sexual intercourse is 54.28% (data from freshmen at a certain medical college)

These findings collectively emphasize the urgent need for a tailored approach to AIDS prevention and education in Sichuan’s higher education institutions. Addressing the disparities in knowledge and resource access among different demographics will be critical in improving overall health outcomes and fostering a more informed student population. (Huangwanli, et al., 2024)

### Conclusion And Future Work

Moreover, the data indicates a pressing need for tailored educational campaigns that resonate with the diverse student population. Programs should consider cultural, social, and economic factors influencing students' attitudes towards AIDS. Collaborating with student organizations to co-create content can amplify engagement and relevance, leading to higher participation rates in prevention programs.

Institutional policies must also emphasize the importance of confidentiality and stigma reduction. Establishing clear guidelines that protect the privacy of individuals seeking testing and treatment can encourage more students to utilize available resources without fear of discrimination. Training for faculty and staff on sensitivity and awareness can further create a supportive environment for those affected by HIV.

Additionally, the results suggest that collaboration between universities and local health authorities is crucial. Joint initiatives can enhance resource allocation and ensure that preventive measures are aligned with community health strategies. For instance, organizing joint health fairs can provide comprehensive services, including screenings, counseling, and educational workshops, thereby increasing visibility and access. (Lu fan, et al., 2024)

Sustained funding and support for these initiatives are essential for their success. Universities should advocate for governmental and non-governmental partnerships to secure resources necessary for the development and maintenance of these information systems. Continuous evaluation and adaptation of programs based on feedback and emerging data will foster a resilient approach to AIDS prevention. (Huangwanli, et al., 2024)

In conclusion, the implications for policy and practice derived from this research call for a multi-faceted strategy that incorporates technology, tailored education, confidentiality, collaboration, and sustained funding to enhance the effectiveness of AIDS prevention efforts in universities across Sichuan Province. The integration of these elements will not only improve health outcomes but also contribute to a more informed and supportive academic community.

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