

# Analysis on the Practice of Adolescent Anti-Drug Education Based on the Synergy of Multiple Subjects in Colleges

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**Abstract:** This survey aimed to investigate and analyze the level of understanding among Wanning City's adolescents regarding drug abuse, HIV, and oral health issues. Based on the analysis results, corresponding educational programs will be developed to disseminate relevant knowledge. Materials and Methods: Graduate students lead the undergraduate team conducted a questionnaire survey among local adolescents in Wanning City, the questionnaire includes Age; Gender; Educational Level; Ability to distinguish drugs correctly; Ability to distinguish drug-producing plants correctly; Ability to distinguish the transmission levels of HIV/AIDS; Current dental problems; Frequency of daily toothbrushing. Carry out on-site investigation in the form of questionnaire survey, and finally make statistics. Results: A total of 228 questionnaires were issued and 228 were recovered. The study included a total of 228 participants, with a majority being female (62%) and male (38%). The educational background of the participants was primarily at the middle school and high school levels (58%). A significant proportion of the participants were able to differentiate common drug-producing plants (84%) and levels of HIV transmission risk (68%). However, the majority of participants were unable to discern confusing drug names (62%). Despite the presence of varying degrees of oral health issues among the participants, such as toothache (81%), tooth discoloration (93%), and gum bleeding (68%). Almost all participants reported varying degrees of yellowing of their teeth. Nonetheless, there was still a certain level of awareness and behavior regarding oral health protection. Regarding toothbrushing frequency, almost all participants (92%) claimed to brush their teeth at least twice daily. Conclusion: Most adolescents have a good understanding of drugs and HIV/AIDS, but there are still some who do not know enough about them. In addition, a large number of adolescents have oral health risks.

**Keywords:** Drugs, Adolescents Education, Oral Health, HIV/AIDS

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## 1. Introduction

With the development of social economy and the popularization and promotion of the internet, people's channels for accessing information have been growing

exponentially in the past decade. Among the population composition in China, adolescents are in a critical period of physical and psychological development due to their unique

nature and status. They often find it difficult to promptly discern the unreliable information and resist temptations, resulting in their vulnerability in society. According to the differentiation theory of communication, the diversity of social environment and relationships that adolescents encounter will significantly influence their future behavioral choices. This suggests that adolescents are likely to be influenced by various social risk factors and may end up engaging in illegal activities in the future [1]. Various data indicate that Chinese adolescents face a range of psychological and social problems during their growth, such as academic stress during middle school, the desire for parental and teacher attention, and negative influences from society [2]. When their accumulated stress reaches a certain level and they lack proper guidance for venting their emotions, they often go astray. Thus, in order to achieve the healthy growth of adolescents, it is necessary to strengthen their health education, enhance their risk awareness, cultivate high-quality talents, stabilize their ideological and political positions, and foster new talents capable of coping with the unprecedented changes in China in a moderate, reasonable, and targeted manner within the appropriate age range. Drug abuse, as one of the most harmful substances in the world, not only imposes a huge economic burden but also threatens public health. Drug use lowers people's immunity and significantly increases the incidence of various diseases. From 1990 to 2012, the number of registered drug users in China increased nearly 30 times, from 7 to 20.98 million [3]. According to a systematic literature review and analysis of adolescent drug use from 1996 to 2020, it is evident that drug use in China is currently characterized by a significant trend towards younger ages, with adolescents accounting for more than half of drug users [4]. The age of first drug use is gradually decreasing, with most individuals starting their drug abuse under the influence of friends, and the severity of addiction is positively correlated with the frequency of drug use. Furthermore, a meta-analysis based on drug users and oral diseases shows that the overall probabilities of dental caries, periodontitis, and dental calculus in drug users are 79.1%, 67.7%, and 85.9% respectively [5]. This clearly indicates that drug abuse is highly likely to induce various oral diseases. It also points out that the majority of drug users lack oral health awareness, with about 40% of them rarely brushing their teeth. Another related investigation shows that the detection rate of oral mucosal diseases among drug users is 13.07% to 62.5% [6]. Among 178 drug users who underwent oral examination, the incidence rate of fibrotic changes in the oral mucosa was 37.08%, which is higher than the rate of 3.0% in the general population. The lack of oral health awareness is not only present in drug users but also prevalent among most adolescents. An analysis of oral health behaviors among students aged 12 to 15 in Hainan Province shows that only about 40% of students brush their teeth twice a day or more [7]. Most students have a weak sense of oral hygiene, lack related knowledge, and the rate of knowledge popularization is higher in urban areas than in rural areas. These data collectively indicate a significant overlap

between drug abuse and oral problems in Hainan Province, which require resolution. From the perspective of social stability and treatment costs, a large body of literature strongly supports the strategy of "prevention first" as the most effective approach to drug control [8]. With the conclusion of the second three-year anti-drug campaign in Hainan Province (2020-2022) and the implementation of various special activities to combat drugs and protect youth, a new wave of anti-drug efforts has emerged. Based on the guiding principle of "prevention first" in the anti-drug campaign, our team has conducted in-depth research, engaged with the society, and directly interacted with adolescents in Wanning City, Hainan Province, to collect and organize data on the cognitive level of youth regarding drugs, HIV/AIDS, and oral problems. This data and theoretical support will be used for future research conducted by other scholars targeting adolescents in Hainan Province. Additionally, preventative educational activities will be carried out to strengthen and consolidate the social achievements of the anti-drug campaign, solidify the awareness and ideology of drug and HIV/AIDS prevention, foster a healthy mindset, break through the limitations of the adolescent perspective, and enhance the overall quality of the youth population in Hainan Province.

## 2. Questionnaire Design

### 2.1. Questionnaire Content

In this study, our team conducted an in-depth investigation on the prevention of oral health problems among adolescents in Hainan province through the distribution of questionnaires. The questionnaire was formulated based on the "Fourth National Oral Health Epidemiological Survey Program" and was developed after considering various literature and expert opinions. The questionnaire content includes general demographic characteristics (age, gender, education level, etc.), knowledge about drugs, basic information about oral health conditions, and behavioral information related to oral health.

### 2.2. Survey Participants

1. According to the "Medium- and Long-Term Youth Development Plan (2016-2025)" issued by the Communist Party of China and the State Council, young people are defined as individuals aged between 14 and 35. In this study, individuals aged between 14 and 20 were included as the survey sample.
2. Residing or living in Wanning city, Hainan province.
3. Having no history of drug abuse or HIV/AIDS.

### 2.3. Data Analysis

The EPIData 3.1 software was used to establish the database, with double data entry and verification for accuracy. Statistical analysis of the results was conducted using SPSS 22.0 software, including chi-square tests (Table 1).

**Table 1.** Results of questionnaire survey.

	Number of people	Percentum (%)
Age		
14-16	86	37%
16-18	63	28%
18-20	79	35%
Gender		
Male	87	38%
Female	141	62%
Educational Level:		
Junior high school or below	73	32%
High school	59	26%
College (associate's degree)	70	31%
College (Bachelor's degree)	26	11%
Ability to distinguish drugs correctly		
Yes	87	38%
No	141	62%
Ability to distinguish drug-producing plants correctly		
Yes	192	84%
No	36	14%
Ability to distinguish the transmission levels of HIV/AIDS		
Yes	153	68%
No	75	32%
Current dental problems		
No problems	93	41%
Tooth loss	7	3%
Tooth mobility	46	20%
Bleeding gums	156	68%
Toothache	184	81%
Tooth injury	6	3%
Yellowing teeth	211	93%
Crooked teeth	134	59%
Frequency of daily toothbrushing		
Once	18	8%
Twice	148	65%
Three times or more	62	27%
Total	228	

### 3. Results Analysis

A total of 228 individuals participated in the survey, with 141 females and 87 males. The majority of participants were in the age group of 14-16 years old, totaling 86 individuals. Besides age, the educational level of the participants was mostly concentrated in vocational college (31%). Most of the participants had difficulty in correctly distinguishing chemical drugs that can be misleading, but they had a higher ability to recognize common drug plants that they may encounter in daily life. When it came to basic questions related to HIV/AIDS, over half of the participants were able to provide correct answers. Regarding the oral health issues of the participants, nearly all of them (92%) reported brushing their teeth twice or more a day. However, the data showed that they still faced oral health-related problems. The top three oral health issues reported were yellowing of teeth (93%), toothache (81%), and gum bleeding (68%). These results are consistent with a study conducted by Wang Yuan and

colleagues on oral health knowledge among children aged 12-15 in Hainan province. It reflects the improving level of oral health awareness and behaviors among adolescents in Wanning city, Hainan province. There is increased social and family attention to adolescent oral health issues, and people are becoming more conscious and proactive in taking care of their oral health. At the same time, it also indicates that the government of Hainan province has achieved certain successes in drug prevention and education, improving the local residents' awareness of drugs and HIV/AIDS. The idea of prevention first has been successfully implemented among the population.

### 4. Discussion

Currently, there are still many challenges in addressing the oral health problems caused by drug abuse among young people. Despite multiple prevention and education activities targeting young people, the desired effects have not been achieved. Many young people neglect oral health and have limited knowledge about drugs. Special attention should be paid to different regions by using tailored propaganda methods, and by conducting persistent and comprehensive educational campaigns. Some areas, such as rural areas, ethnic minority areas, and grassroots areas, have lower levels of knowledge dissemination and require increased attention to improve coverage. Communities and schools should cooperate with each other to actively address and prevent drug abuse among young people, reduce the spread of HIV/AIDS caused by drug abuse, and advocate for drug-free campuses. Starting at the grassroots level will help reduce the harm of drugs among young people and prevent the spread of HIV/AIDS.

The economic level of drug users, their knowledge about HIV/AIDS, and their attitude towards the disease are closely associated factors. Drug users are more likely to suffer from oral diseases, and the severity of dental caries increases with the use of methadone, a drug commonly used in drug addiction treatment [9-10]. In clinical practice, drug users exhibit a higher prevalence of periodontitis, oral ulcers, gingival bleeding, and dental calculus. The drugs themselves have a relatively low impact on oral health, but the unhealthy lifestyle of drug users and their lack of concern for oral hygiene significantly increase the bacterial load in the mouth, leading to changes in the oral microflora and the proliferation of harmful bacteria, resulting in various dental diseases. Long-term heroin use can cause extensive damage to the periodontium, leading to blackened teeth, gingival bleeding, and dental caries. It can also cause oral mucosal diseases such as white swelling of the cheeks, candidiasis, leukoplakia, hairy leukoplakia, mucosal ulcers, atrophic glossitis, and submucosal fibrotic changes. The high prevalence of oral diseases associated with drug abuse is closely related to the specific pharmacological effects of the drugs themselves. Taking methamphetamine as an example, its users consistently exhibit a high incidence of periodontitis. Methamphetamine can enhance the response of

monocytes/macrophages to bacterial lipopolysaccharide stimulation, leading to increased expression of interleukin-1 $\beta$ , which results in chronic inflammation in the periodontal tissues [11]. The persisting presence of inflammation exacerbates the damage to the periodontal tissues. Methamphetamine also stimulates the sympathetic nervous system, activates adrenergic receptors in the salivary gland blood vessels, and downregulates salivary gland secretion, leading to decreased saliva production [12]. This impairs the protective function of saliva, induces xerostomia, disrupts the oral environment homeostasis, and aggravates oral tissue damage, thereby causing secondary development of various diseases.

When faced with the task of educating special groups such as teenagers, it is important to pay more attention to their psychological characteristics and social identities, and to provide tailored and differentiated education. Some scholars argue that when conducting positive propaganda for adolescents, the following points should be considered. Firstly, it is important to adhere to positive guidance. Due to their limited life experience and inadequate understanding of things, teenagers have a weak sense of crisis. Therefore, in the process of educating and preventing drug use and HIV/AIDS, it is necessary to establish correct values and awareness of the harm caused by drugs and AIDS to the body and society as a whole. Secondly, moderate education is essential. Because of their limited perspective, teenagers often find it difficult to consider things comprehensively and dialectically. Excessive and excessive propaganda of the harm and severity of drug use, drug trafficking, drug production, and AIDS in anti-drug campaigns aimed at teenagers can result in minimal impact on their attitudes and even lead to a loss of confidence in the current anti-drug and HIV/AIDS prevention work. Thirdly, it is important to adhere to a comprehensive and targeted approach to education. For the majority of teenagers, drug addiction and the consequences of AIDS are abstract and hollow concepts, making it difficult for them to establish a three-dimensional and multi-dimensional understanding. Therefore, it is necessary to invite professionals and use real cases to conduct prevention education, such as inviting dental doctors to conduct on-site oral health education or inviting police officers from drug rehabilitation centers to promote drug rehabilitation cases. Through multi-party collaboration and the selection of appropriate and suitable cases, targeted propaganda can be conducted to establish a comprehensive and strict sense of prevention and develop a conscious boundary between these dangerous behaviors and themselves.

College students in the new era not only have advanced theories and skills at the propaganda level, but also have certain organizational and communication skills. Through professionally trained graduate students and undergraduate teams, anti-drug and HIV/AIDS prevention publicity and education are carried out for remote teenagers, and oral health examinations are cooperated. It can not only raise the awareness of anti-drug and HIV/AIDS prevention among young people, but also improve the level of oral health in general [13]. It is crucial to closely monitor and address the

issues of drug abuse, HIV/AIDS, and oral health among young people. Deepening drug prevention and AIDS education, implementing measures to promote oral health among young people, and adhering to multi-faceted governance are essential [14]. Prevention should be prioritized, with a focus on grassroots work, conducting on-site research, and implementing decisions and arrangements made by the party central committee. Enhancing the well-being of the people, establishing a comprehensive and perfect ideological defense line against drugs, HIV/AIDS, and oral health, and eliminating problems before they arise are vital.

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