CHAPTER 4

FINDINGS AND DISCUSSION

This descriptive study was conducted to describe the knowledge, attitudes and risk behaviors regarding HIV/AIDS among Chinese adolescents. Data were collected from December 1999 to January 2000 in the Beijing University of Aeronautics and Astronautics and the Beijing Finance and Economy University, Beijing, P. R. China. Three hundred subjects participated in the study and 294 subjects completed questionnaires yielding a respondent of 98%. The results of this study are presented into four parts:

Part one:	The demographic data of the subjects
Part two:	The knowledge regarding HIV/AIDS of the subjects
Part three:	The attitudes regarding AIDS of the subjects
Part four:	The risk behaviors regarding HIV/AIDS of the subjects

Part one: Description of demographic data of the subjects

Table 1

Frequency and percentage of the subjects' demographic characteristics (n=294)

Variable	(n)	(%)
Age (years old)		
18	14	4.70
19	59	20.10
20	119	40.50
21	102	34.70
($\bar{X}$= 20.11, SD = .93)		
Gender		
Male	144	49
Female	150	51
Type of family		
Nuclear family	242	82.30
Extended family	46	15.70
Others (Divorced, Orphan etc.)	6	2.00
Living arrangement		
University's dormitory	290	98.60
Others (Rent, Relative's home etc.)	4	1.40
Monthly living allowances (yuan/month)		
< 100	23	7.80
101-500	203	69.10
501-1000	66	22.40
> 1000	2	0.70
($\bar{X}$ = 452.93, SD =243.29)		

Table 1 showed that the majority of the subjects (40.50%) were aged 20 years old ($\bar{X}$=20.11, SD=.93), 51% of them were female and the rest were male. Most of the subjects (82.30%) came from nuclear families. For living, arrangements, 98.60% of them lived in the universities' dormitories. Regarding their living allowance, the majority of the subjects (69.10%) received 100 to 500 yuan per month.

Table 2

Frequency and percentage of subject's receiving information regarding HIV/AIDS and the sources of information (n=294)

Variable	(n)	(%)
Subject's receiving information regarding HIV/AIDS		
Yes	282	95.90
No	12	4.10
The sources of information regarding HIV/AIDS (select more than one item)		
Newspaper, magazine	282	100
Television	256	89.20
Others (talking with students, joining some surveys like this, publicity etc.)	111	38.70

Table 2 showed that most of the subjects (95.90%) received information regarding HIV/AIDS. Of the 282 subjects who received the information, all of them (100%) received it from newspapers and magazines, 89.20% of them got the information from the television. None of the subjects gained the information from classes at school.

Part two: Knowledge regarding HIV/AIDS of the subjects

Table 3

Frequency and percentage of subjects classified by level of knowledge regarding HIV/AIDS (n=294)

Level of knowledge regarding HIV/AIDS	(n)	(%)
Poor	11	3.74
Fair	189	64.29
Good	94	31.97
Total	294	100

$\bar{X}$=17.28 SD=3.76

Table 3 showed that the majority of the subjects (64.29%) had fair level of knowledge regarding HIV/AIDS.

Table 4

Mean, standard deviation, range and level of knowledge regarding HIV/AIDS of the subjects (n=294)

Knowledge regarding HIV/AIDS	Range	Mean	SD	Level
AIDS causal agent	0-3	1.98	0.91	fair
Transmission	0-10	8.03	1.45	good
Manifestation	0-6	3.61	1.53	fair
Risk behavior	0-9	5.29	1.59	fair
Total	(5-27)	17.28	3.76	fair

Table 4 indicated that the total mean score of knowledge regarding HIV/AIDS of the subjects was at fair level ($\bar{X}$ =17.28, SD. =3.76). With respect to the subparts of knowledge regarding HIV/AIDS the mean score of the transmission aspect was at a good level. The mean score of another three aspects were at fair levels.

Part three: attitudes regarding HIV/AIDS of the subjects

Table 5

Frequency and percentage of subjects classified by level of attitudes regarding HIV/AIDS (n=294)

Level of attitudes regarding HIV/AIDS	(n)	(%)
Low	0	0
Medium	89	30.27
High	205	69.73
Total	294	100

$\bar{X}$=38.61 SD=4.40

Table 5 showed that the majority of the subjects (69.73%) had high levels of attitudes regarding HIV/AIDS.

Table 6

Mean, standard deviation, range and level of attitudes regarding HIV/AIDS of the subjects (n=294)

Variables	Range	Mean	SD	Level
Attitudes regarding HIV/AIDS	27-50	38.61	4.40	high

Table 6 showed that the total mean scores of attitudes regarding HIV/AIDS of subjects was at a high level ($\bar{X}$=38.61, SD=4.40).

Part four: Risk behaviors regarding HIV/AIDS of the subjects

Table 7

Frequency and percentage of subjects' risk behaviors regarding HIV/AIDS (n=294)

Items	Yes		No	
	n	%	n	%
Having sexual experience	24	8.16	270	91.84
Having tried substance	0	0	0	0
Having tried intravenous drug	0	0	0	0

$\bar{X}$=.11, SD=.40

Table 7 showed that the majority of subjects (91.84%) had not had any sexual intercourse and none of them have tried substances. The mean score of these 3 items was 0.11 and the standard deviation was 0.40.

Table 8

Mean, standard deviation, range and level of high risk behaviors regarding HIV/AIDS of the subjects (n=24)

Variables	Range	Mean	SD	Level
High risk behaviors regarding HIV/AIDS	0-11	2.53	1.02	Low

Table 8 showed that the mean score of risk behaviors regarding HIV/AIDS of the subjects who had had sexual experience was at a low level ($\bar{X}$=2.53, SD=1.02).

Table 9

Frequency and Percentage of risk behaviors regarding HIV/AIDS of the subjects who have had sexual experience (n=24)

Items N=24	Frequency Percentage (%)			
	Never	Some Times	Often	Always
Having more than one sexual partner.	13 (54.20)	7 (29.20)	1 (4.20)	3 (12.40)
Having had homosexual experience.	22 (91.70)	2 (8.30)	0 (0)	0 (0)
Having had oral sexual experience.	17 (70.80)	5 (20.80)	2 (8.40)	0 (0)
Having had anal sexual experience.	22 (91.70)	0 (0)	2 (8.30)	0 (0)
Using condom every time while having sexual activities.	8 (33.30)	11 (45.80)	3 (12.50)	2 (8.40)
Having suffered from sexual transmitted disease (STD).	23 (95.80)	1 (4.20)	0 (0)	0 (0)
Drinking alcohol before having sexual activities.	19 (79.20)	4 (16.70)	0 (0)	1 (4.10)

The Table 9 showed that 54.2% of the subjects never had more than one sexual partner. Regarding homosexual, oral and anal sexual experiences, the majority of the subjects reported not having the experiences with the percentage of

91.7%, 70.80% and 91.70% respectively. Only 8.40% of them always used condoms. Ninety five point eight percent of them had never had STDs and only 4.10% drank alcohol before sexual activities.

Discussion

In this part, the researcher discussed the findings according to the objectives of this study.

Research objective 1: To describe the knowledge regarding HIV/AIDS among Chinese adolescents

In this study, the knowledge regarding HIV/AIDS of adolescents was described at fair level (Table 3). Lack of education about sexual and HIV/AIDS in school is one of the reasons for the knowledge deficit. Education about human behavior and sexuality is important and appropriate to a young person's particular stage of development and culture (WHO, 1992). Education relating to HIV/AIDS was proved to be effective to increase knowledge regarding HIV/AIDS (Turner, Dorothy, Ellison, & Greiner, 1988). In the demographic data (Table 2), 282 students had received information regarding HIV/AIDS, but none of them reported obtaining the knowledge from school. Lack of correct sources of information about HIV/AIDS also influenced on the students' knowledge regarding HIV/AIDS. Twelve students (4.10%) had never heard of any information regarding HIV/AIDS (Table 2). Most of the students received the information of knowledge regarding HIV/AIDS from the mass media such as newspapers, magazines

and television, or talking with their friends, joining surveys and reading related material available publicly. Few subjects got the information from teachers, parents or books. Due to the lack of HIV and AIDS education at schools and homes, Chinese adolescents have to rely on other sources of information which are generally less comprehensive and potentially less reliable (Davis, et al. 1999). The information available through mass media is usually superficial and lacks direction in accordance with adolescents' special characteristics and needs. Also the adolescents may have misconceptions from these sources. Although knowledge regarding HIV/AIDS is currently more available in Beijing mostly through mass media, the findings of the present study showed that the adolescents still had insufficient knowledge about HIV and AIDS.

The result in Table 4 showed that the subjects had different scores in each aspect of knowledge regarding HIV/AIDS. The findings suggested that students posses some knowledge of AIDS, although this knowledge was uneven.

The first subpart of knowledge was about the causal agent for AIDS and the subjects had fair knowledge. From the data shown in Table C1 appendix C, more than half the subjects correctly indicated that AIDS is caused by HIV. However, only 55.40% of subjects were aware that "AIDS is caused by a virus which can weaken the body's ability to protect itself against disease."

With respect to HIV/AIDS transmission (Table C1 Appendix C), the subjects had a good level of knowledge. The

majority of the subjects can identify sharing a needle with a drug user who has HIV/AIDS (96.60%), receiving an HIV infected blood transfusion (92.90%) and that having sex with someone with AIDS (94.20%) can cause one to be infected by HIV. The finding was similar with the study of DiClemente, Zorn and Temoshok (1986) among adolescents in San Francisco. In their survey, 90% of the subjects correctly indicated that "sexual intercourse was one mode of contacting AIDS." Most adolescents were aware that receiving infected blood from a transfusion (84%) or sharing intravenous drug needles (81%) were also identified as routes of disease transmission. On the other hand, this table also indicated that more than half the subjects were aware that AIDS could not be spread in daily life. For example, using someone's personal belongings, kissing, shaking hands and living with AIDS patients were not the route of AIDS transmission. This was consistent with the survey conducted by Diclemente and his colleagues in 1986. However, some still believed HIV could be acquired when using toilet seats with AIDS persons (11.90%), and when donating blood (78.20%). Also, 4.80% did not think and 2.70% did not know a woman could transmit the virus to an unborn baby. The findings of this study showed that the level of knowledge regarding HIV/AIDS among Chinese adolescents is consistent with previous studies in North America in the mid-1980s. There was an inadequate level at that time because of lack of effective education of HIV/AIDS knowledge (DiClemente, Zorn & Temoshok, 1986; Price, et al., 1985; Strunin & Hingson, 1987). The reason for the result

may relate to lack of sexual and HIV/AIDS education in school and a superficial level of HIV/AIDS knowledge in China. Nevertheless, the result was different from the other previous studies by Hingson, Strunin and Berlin, Krasnik and Wangel in 1990 in which almost all the participants were familiar with the modes of transmission of HIV. This may be explained in that there has been a general trend toward increased knowledge about HIV and AIDS among adolescents since 1988. It is benefitial to give education to adolescents in schools and society based on the previous studies (Brown & Lourie 1994; Rozmus & Edgil, 1993; Zimet, et al., 1993).

Regarding the aspect of the manifestation of HIV/AIDS only 58.8% students knew that the time from getting HIV until a person become sick with AIDS can be as short as 6 months to as long as 10 years or more. Thirty two point seven percent of students did not think that a person could pass on HIV even though he/she has no signs or symptoms of AIDS. On the other hand, less than half the students could correctly describe the manifestation of AIDS. The findings indicated that there was a special deficit in this aspect of HIV/AIDS knowledge in China. The insufficient knowledge of manifestation of HIV infection may lead to ignoring the dangers of HIV infection among adolescents.

The knowledge of risk behavior reduction of HIV/AIDS infection was one important aspect in knowledge regarding AIDS. In this study (appendix c1), most of them could identify some risk behaviors (i.e., multiple sexual

partners, drug abuse, and sharing needles with others) for contracting AIDS. Eighty three point seven percent of adolescents knew that not using intravenous drugs are very good ways for teenagers to avoid getting HIV. Moreover, less than half the students (46.90%) agreed that someone could protected themselves from HIV through delaying sex. And only 22.40% thought that not having sexual intercourse too early is the most effected way to avoid being infected with HIV. The finding was similar to the study of Davis and coinvestigators in 1998. This finding revealed the misconception of students about risk behavior of HIV infection. Although they can identify some extreme behaviors, they may not relate risk behaviors to them selves. In China, mass media is too broad to give the students a specific education, and there is no curriculum about sexuality in school. So it is easy for misinformation and superficial levels of knowledge of AIDS to result.

About the knowledge of condom use (Table C_1 Appendix C), more than half the subjects knew that one could get HIV if one only has sex once without using a condom or using condom correctly (79.60%) and every time one has sexual intercourse (61.60%) can protect one from HIV. This was consistent with the study by Friesen and coinvestigators in 1996 in which 72% of the subjects knew that using a condom at every sexual encounter was a way of protection from HIV infection. But there were still 20.40% and 38.40% of subjects that did not think or did not know condom was a good way to protect someone from HIV/AIDS. The finding in

this study may be influenced by lack of education of HIV/AIDS in school. Nonetheless, students should be knowledgeable about the risk behavior so as to protect themselves from HIV/AIDS infection correctly.

Research objective 2: To describe the attitudes regarding HIV/AIDS of Chinese adolescents

In this study, the mean score of attitudes regarding HIV/AIDS was at a high level ($\bar{X}$=38.61 SD=4.40) (Table 6). From Table 5, most of the subjects (69.73%) perceived that AIDS is a critical public health problem, they worried about getting the disease, were willing to accept the related education of sexuality and HIV/AIDS in school, and hoped to get the appropriate information on HIV/AIDS from public mass media. These findings were consistent with previous studies (Abram & Monteriro, 1990; Clark, Dear & Moore, 1994; DiClemente, Zorn & Temoshok, 1986; Laurance, Lery & Rubinson, 1990; Millstein, Mocicki & Broering, 1994; Wolfert & Wan, 1993).

When analyzing the findings showed in appendix C, the following results were found. AIDS is a life-threatening, transmissible disease (Aboagye-Kwarteng & Moodie, 1995). Because of its high mortality, it has evoked serious anxiety in the world (Herek, 1988). In the study, most of the subjects expressed that they were afraid of getting AIDS. Although most students had no experience of blood tests, there were 74% of the students reported they would like to have the free blood test to see if they have

the HIV virus. The results indicated that the students have realized the severity of AIDS and have paid attention to this problem. The finding was also similar to many previous studies where fear AIDS was always the common feeling in the survey of focusing on the attitudes regarding HIV/AIDS. In the study of DiClemente, Zorn and Temoshok in 1986, 73.70 per cent reported being "worried about contacting the disease." Over half the adolescents surveyed (50.60%) would rather contract "any other disease than AIDS." And Clark, Abram and Monteriro (1991) found that over 80% of the 56 girls aged 12 to 16 years old fear AIDS. The other study of Dear and Moore (1994) noted when they did the interview to ascertain the attitudes of students, teenagers were fearful of contracting AIDS and overall children said AIDS is a sad or bad disease.

In this study, the majority of the students strongly agreed or agreed that it is important that students learn about AIDS in school and that it is necessary to provide information regarding HIV/AIDS through mass media (Table C2 Appendix C). The findings indicated that Chinese adolescents have realized the importance of enhancing education and media disseminating of the knowledge regarding HIV/AIDS in school and society so as to protect them from HIV infection.

Attention should be paid to the fact that 72% of the subjects agreed or strongly agreed that they were not the kind of person who was likely to get AIDS although the subjects in this study were at a high level in attitude

regarding HIV/AIDS. The finding was similar to the result in the study by Doodmen & Cohall 1989 who reported that 47% of the subjects never or rarely worried about AIDS. This may be suggested by the notion of "it can't happen to me". The study of Wolfert and Wan (1993) also reported that many adolescents fest that they were immune to HIV infection despite their risk behaviors, because they were young, heterosexual and healthy.

Research objective 3: To describe the risk behavior regarding HIV/AIDS among Chinese adolescents

In this study, the mean score for the risk behavior of the subjects was 0.11 (Table 7), and the mean score for the risk behavior of the subjects who were sexually active was 2.53 (Table 8). Risk behavior regarding HIV/AIDS of adolescents was at a low level. The results revealed that many risk behaviors existed among the adolescent even though there was a low rate of engaging in sexual behavior.

In the findings (Table 7), only 8.16% of the subjects (n=294) had had sexual intercourse. This was similar to the study of Chen and her colleagues in 1997 where only 8.3% of the students had had sexual intercourse. It was also consistent with the study of Cheng and coinvestigators among adolescents in HongKong (1998). In their survey they reported that only 6% of Chinese students engaged in sexual behavior. This result is different from many previous studies in western countries where risk behavior regarding HIV/AIDS was at a high percentage among

college students having sexual intercourse (Laura, 1995; Wiley, James, Furney, & Jordan-Belver, 1996). A survey by Wiley, James, Furney, and Jordan-Belver in 1996 reported that risk behaviors indicated that 82% of the college population reported having sexual intercourse. The reason for this difference may be related to Chinese culture and must be taken with caution due to the reluctance of Chinese to discuss sensitive issues such as sexual behavior and substance use (Goodwin and Tang, 1996 cited in Davis et al. 1998). On the other hand, the demographic data of this study showed that about 98.60% of the subjects lived in universities dormitories. There are stringent standards for students' dormitory management and serious punishment for sexual behavior occurring in the school. Also, most of the subjects had monthly allowances of 100 to 500 yuan. This is not enough for them to spend on luxury (i.e., going to coffee shops, night clubs and having parties etc.), which may lead to a low level of risk behaviors.

The results in Table 9 showed that almost 45.8% of the sexually active college students (n=24) reported having more than one sexual partner. Twenty nine point two percent of them had had oral sex and 8.30% had had anal sex. Of those sexually active students there was one diagnosis of STD. These findings were similar to the study by Goodman and Cohall in 1989 where 41% of sexually active students had had oral sex and 13% had had anal sex. And in the report of CDC in 1998, 25% of the subjects reported having had anal intercourse of those sexually active students. The finding

was also consistent with the study by Macdonald and colleagues in 1990 where 5.5% of the sexually active students reported having had at least one diagnosed STD.

Condom use is one of the most important preventative measures in risk behavior regarding HIV/AIDS. It is the most effective way to prevent HIV infection. From Table 9, of the 24 persons who were sexually active 66.70% (16 persons) of them used condom, 45.80% (11 persons) used the condom sometimes, 12.50% (3 persons) used condoms often, 8.40% (2 persons) used condoms every time. This finding is consistent with the results of the knowledge of condom use in this study in which about 72% of the subjects knew that using condoms at every sexual encounter would protect them from HIV infection (Table C1 Appendix C). This finding was different from many previous studies. The study by Hingson, Strunin, Berlin and Heeren in 1990 showed that only 37% of sexually active adolescents reported consistent condom use. CDC (1992) also reported that only 44.7% of sexually active students or their partners had used a condom at the time of their last intercourse. These results may be related to the high level of attitude in this study. Some students were fearful of HIV/AIDS. Also, contraception might be another purpose for using condoms in this group.

About the aspect of alcohol use and substance use, 20.8% of sexually active subjects reported they had consumed alcohol before having being sexual active. None reported that they had tried substance or intravenous drugs before sexual intercourse. The findings of alcohol use were similar

to the study of McEwan and colleagues in 1992 that found that nationwide, among students who are currently sexually active, 24.8% reported that they had used alcohol at their last sexual intercourse. Nevertheless, the finding of substance use was different from the previous studies. The reason for this difference may be that most drug users are in the southwest of China (i.e, Yunnan, Xi'an, Guang Dong), and relatively, there are less in Beijing than in other cities (Wu, et al, 1997). It is also consistent with the result of the knowledge in this study. Most of the students realized that drug abuse and sharing needles with people with AIDS were one of the most important routes of HIV transmission.