

# **Epidemiology Bulletin**

1 Nursing Students' and  
Nurses' Knowledge of and  
Attitudes toward AIDS and  
Their Willingness to Care  
for AIDS Patients  
9 Cases of Notifiable and  
Reportable Diseases, the  
Taiwan Area

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## **Nursing students' and Nurses' Knowledge of and Attitudes toward AIDS and Their Willingness to Care for AIDS Patients**

### **1. Introduction**

Experts of the 8th International Congress on AIDS held in Amsterdam, the Netherlands, in May 1992 estimated a world total of 10 to 12 million persons infected by AIDS viruses. The number of AIDS-infected persons in Taiwan, according to the report of the Department of Health, was 407 as of 31 December 1992, and the number of heterosexual patients was also increasing. The estimate of Dr James Chin, Chief of Global AIDS program, put the number of persons infected with AIDS viruses in the Taiwan area at above 3,000. Dr H.T. Lin, Director of the Taipei VD Center, estimates that by 1997, the number of AIDS carriers in Taiwan would exceed 10,000, with an additional 30,000 to 50,000 potential carriers. Thus, the AIDS carriers and AIDS patients will soon become a serious challenge to medical care workers. To care for AIDS patients requires not only enormous medical care costs, the discrimination and prejudice that some people hold against AIDS as a consequence of the mass media's frequent reportings on AIDS can also be a serious barrier. Medical care personnel even insist that they have the right to decide whether or not to care for AIDS patients.

Lester and Beard<sup>(1)</sup>, in their study of 177 nursing college students, report that nursing students tend to fear and reject AIDS patients, and are not willing to care for them. Though 97% of the students believe AIDS patients should receive equal treatment as other patients, only 33% indicate that they would be willing to provide these services to them, while 36% say they should not be assigned to care for them. The authors suggest that school teachers provide students with a better knowledge of AIDS so as to help them develop reasonable attitudes toward AIDS. It is only through teaching, group or individual counseling that this prejudice can be corrected.

Lawrence and Lawrence<sup>(2)</sup>, in their study of 60 registered nurses, 50 nursing school students, 42 students of liberal arts and 30 adults of non-nursing background, report that registered nurses often have more knowledge of AIDS and are more positive to AIDS patients. Post-graduate nursing students as compared to undergraduate nursing students know more about and are more tolerant of AIDS. Nursing students and students of

liberal arts know just as much about AIDS. However, through education on AIDS, more positive attitudes toward AIDS can be developed. Nursing students have changed their attitudes more significantly than students of liberal arts. Also, the extent of the knowledge of AIDS is found to be related to the attitudes toward AIDS.

The study by Kelly et al<sup>(3)</sup>. of American medical students reveals that medical students tend to have discrimination and prejudice against AIDS and homosexual patients. They suggest that medical students be given more education on AIDS to help them develop a better knowledge of and more favorable attitudes toward AIDS and its patients.

The study by Wiley et al<sup>(4)</sup>. of nurses and nursing school students on the risks of AIDS infection in their work shows that 54% of those interviewed insist that they have the right to refuse to care for AIDS patients, and that 45% of undergraduate nursing students, 40% of registered nurses and 21% of post-graduate nursing students are either sure or likely to refuse to care for AIDS patients.

Barrick<sup>(5)</sup> shows in his study that the negative attitudes that nurses hold against homosexuals are related to their willingness to care for AIDS patients. Many studies<sup>(6,7,8)</sup> show that it is a common belief that homosexuals deserve to be infected with AIDS.

Gignac and Oermann<sup>(9)</sup> in their study of Canadian nursing students show that, in general, nursing students and nurses are not quite willing to care for AIDS patients. Later studies show, however, that the more knowledge of AIDS the students have, the more willing they are to care for AIDS patients. The more senior students, having more knowledge of AIDS and personally some homosexuals, are more willing to care for AIDS patients.

The present study intends to investigate the extent of knowledge of and the attitudes toward AIDS that students of two nursing schools and nurses of four hospitals have, in order to lessen the fear towards AIDS and its patients that these and other professional workers have.

## **2. Materials and Methods**

A questionnaire has been designed for the survey. Subjects of this survey are students of the Jenteh (572 students) and Fuying (265) nursing schools and nurses of the National Taiwan University Hospital (50 nurses), the Tzuchi General Hospital (46), the Mackay Memorial Hospital (49) and the 817 Army General Hospital (63), totaling 1,045. Questionnaires were distributed to the subjects through a liaison person in each institution, to be filled out anonymously. 1,027 of the subjects completed and returned them.

The questionnaire consists of seven parts: (1) symptoms of AIDS, (2) routes of transmission of AIDS, (3) epidemiology of AIDS, (4) disinfection of AIDS viruses, (5) knowledge that nursing students and nurses should have while taking care of AIDS patients, (6) personal view on AIDS and its patients, including attitudes and views on

the control measures and the investment that the government is making in the control of AIDS, (7) personal background information. The individual variables of the first six parts have been factor-analyzed with SAS software, those with higher homogeneity were selected and then statistically analyzed with SAS software.

(a) variables selected for symptoms of AIDS are: (1) coughing, fever, (2) sustained diarrhea, (3) significant loss of body weight, (4) tiredness, (5) swelling of lymphatic gland, (6) sweating, and (7) oral candidiasis. One point is given to each correct answer, totaling seven points in part 1.

(b) variables selected for the routes of transmission are: (1) use of public bath-houses, (2) eating together, (3) hand-shaking, (4) sharing of toilet, (5) mosquito bites, (6) coughing, sneezing, and (7) wearing clothes of AIDS patients. The total score in part 2 is seven points.

(c) variables selected for the epidemiology of AIDS: (1) many people develop AIDS symptoms in a few days after infection, (2) all AIDS patients look unhealthy, (3) no vaccine is currently available to prevent AIDS, and (4) douching immediately after sex can prevent the infection of AIDS virus. The total score in part 3 is four points.

(d) variables selected for the disinfection of AIDS viruses: (1) soap and water, tincture of iodine, alcohol, and (2) bleaching powder, Savlon, lysol. The total score of part 4 is four points.

(e) variables selected for knowledge of nurses: (1) pregnant staffs are not allowed to directly care for AIDS patients, (2) unburnable objects contaminated by AIDS patients should be sterilized with high pressure vapor before disposal, and (3) disposable utensils should be used for AIDS patients. The total score for part 5 is three points.

(f) variables selected for attitudes toward AIDS: (1) I would rather resign than care for AIDS patients, (2) if I had a choice, I would refuse to care for AIDS patients, (3) I fear that if I care for AIDS patients I would bring viruses home to my family, (4) my family will object to my caring for AIDS patients, and (5) if friends of mine know that I care for AIDS patients, they may not want to see me as often. The total score for part 5 is five points.

Subjects are considered positive to the care of AIDS patients if the following variables are selected: (1) to be assigned to care for AIDS patients is a confirmation of the ability of a nurse, (2) the care of AIDS patients is a rare and invaluable experience for nurses, (3) AIDS patients are like hepatitis B patients, so with care, there is nothing to be afraid of, and (4) with adequate preventive measures, I am confident that I would not be infected while caring for AIDS patients.

Subjects are supportive of the current control measures against AIDS if the following variables are selected: (1) I think it is necessary that the government include the testing of AIDS viruses as one of the items of pre-marital health examination, (2) during pre-marital health examination, I will request for the testing of AIDS virus for both

myself and my partner, (3) to protect workers, AIDS patients and carriers should be made known to all workers concerned, (4) medical personnel should receive regular screening for AIDS virus antibodies, and (5) to protect nurses, they should wear gloves while handling blood. The total score is five points.

Subjects are considered supportive of government investment in AIDS control if they do not agree to the following variables: (1) AIDS is just another infectious disease, hospitals should not invest too much manpower or funds to care for AIDS patients, and (2) I do not agree to the large investment of government in public education on AIDS. The total score is two points.

### 3. Findings

Of a total of 1,045 persons, 1,027 have completed the questionnaires. Most of them (90.8%) are younger than 30 years, 91.6% female, 84.5% unmarried, 32.9% no religious affiliation, 38% buddhist, 12.5% Taoist, and 10.8% Christian. In terms of education, 54.5% are graduates of senior vocational schools, 23.1% graduates of five-year junior colleges, 15% graduates of two-year junior colleges, 4.2% with bachelor's degree, and 2% at the post-graduate level. In terms of occupation, 26.1% are second-grade students, 19.8% first-grade students, 16.9% fourth-grade students, 6.9% third-grade students, and 6.5% nurses. 4.4% of them have cared for AIDS patients. 16.9% are working in out-patient clinics, and 7.5% in operation rooms. 21.2% have attended lectures on AIDS, 12.7% have participated in seminars on AIDS. 74.1% have read about AIDS, and 16.8% have participated in training for nurses. 98% know about AIDS through mass media, and 80.8% through talks with friends and colleagues. 64.3% say their schools have taught them about AIDS.

About 50% of those interviewed do not know about the routes of AIDS transmission. It was erroneously believed that AIDS can be transmitted through the use of public bath-houses (70%), eating together (50%), hand-shaking (15%), sharing of public toilets (60%), mosquito-bite (55%), coughing and sneezing (55%), and wearing clothes of AIDS carriers (35%).

Table 1 shows that the more interviewees know about the routes of transmission and the disinfection of AIDS, the less they fear AIDS, and the more positive they are toward the care of AIDS patients. The more they know about the epidemiology and disinfection of AIDS, the more supportive they are of the current control measures. The more they know about the routes of transmission of AIDS, the more supportive they are of the government's investment in AIDS control.

On the other hand, the more they know about the epidemiology and the precautions of nurses in caring for AIDS patients, the more scared they are toward AIDS. The more they know about the epidemiology of AIDS, the more negative they are toward the care of AIDS patients.

Many say they are scared of AIDS. Table 2 shows that 37% of those interviewed

would rather resign than care for AIDS patients, 59.3% will refuse to care if they have a choice, and 73.2% fear that in taking care of AIDS patients, they could bring home the viruses. 80.6% believe that their families would object to their caring for AIDS patients, and 50% believe that their friends will meet them less frequently if friends know they are caring for AIDS patients. These figures show that there is a considerable fear of AIDS.

However, many are positive about caring for AIDS patients. 60.4% of those interviewed say that being assigned to care for AIDS patients is a confirmation of their abilities, 74.3% believe it is a rare and invaluable experience for nurses to look after AIDS patients, 81.6% believe that AIDS is like hepatitis B, so with care, there is nothing to be afraid of, and 74.5% believe that with adequate preventive measures, one would not be infected.

Table 3 shows that most interviewees are supportive of the current control measures and the government investments in AIDS control. The fact that no difference is observed between schools and hospitals in this regard shows that this support of control measures and government investments is common. Further analysis shows that whether one has the experience of caring for AIDS patients does not seem to affect one's fear of AIDS, nor one's support of the control measures; it, however, has some effect on the attitudes toward caring for AIDS patients and the support of government expenditures on AIDS. Those who have never cared for are more positive and are more supportive of government expenditures on AIDS than those who have cared for. In terms of religious affiliations, Taoists are more scared of and less positive about AIDS. Persons with religious affiliations are more supportive of the control measures. No religious difference, however, is found in the support of government expenditures on AIDS. In terms of education, graduates of two-year and five-year junior colleges are more scared of and less positive toward AIDS than master's degree holders, graduates of senior vocational high schools and bachelor's degree holders. Graduates of the five-year junior colleges are more supportive of the control measures. Graduates of senior vocational high schools are more supportive of government expenditures on AIDS than master's degree holders and graduates of two-year junior colleges. Senior registered nurses, registered nurses and fourth-grade students are more scared of AIDS than deputy nursing chiefs, teachers and students of the first and second grades. Teachers and students of the first, second, third and fourth grades are more positive about AIDS than registered and senior registered nurses. Senior registered nurses are more supportive than teachers of the control measures. Students of all grades are more supportive of government expenditures on AIDS than registered, senior registered nurses and deputy nursing chiefs.

#### 4. Discussion

Studies on the knowledge of AIDS and willingness to care for AIDS patients of nursing students and nurses have shown that the more knowledge one has, the more willing one is to care for AIDS patients. The present study shows that though many nurses and nursing students fear AIDS, many are positive about care of AIDS

patients. On the other hand, about 50% of them do not know the routes of transmission of AIDS, so their knowledge should be improved. Students of the Fuying Nursing School (59.5%) and the Jenteh Nursing School (69.5%) consider care of AIDS patients and honor and a confirmation of their professional work, whereas many practicing nurses in hospitals do not share the same attitude (only 22.9% of the National Taiwan University Hospital nurses, 34.7% of the Mackay Memorial Hospital, 47.5% of the Tzuchi General Hospital, and 50% of the Army General Hospital think so). Among nurses, and particularly among nursing students, there seems to be an inconsistent attitude toward AIDS-fear and yet willingness to care for patients. Support of the current control measures against AIDS is generally high.

Those nurses who have never cared for AIDS patients are more positive about AIDS than those who have cared for, and are also more supportive of government expenditures on AIDS. The reasons that those who have cared for AIDS patients are less positive about AIDS and are also less supportive of government expenditures on AIDS require further investigation. School teachers are expected to provide students with more knowledge on AIDS to help them develop more positive attitudes toward AIDS and its patients.

## 5. Conclusions

AIDS is a universal infectious disease and is considered to be the bubonic plague of the 20th century. The increase in the number of carriers in Taiwan indicates its seriousness. It has been reported that in the USA there have been AIDS-like patients without any AIDS virus, and the viruses vary from place to place. These facts make the control of AIDS more difficult. The present study shows that regardless of the extent of knowledge of AIDS the nurses and nursing students may have, the common fear of AIDS among them is not thus lessened.

Those who have not cared for AIDS patients are more positive about AIDS and more supportive of government expenditures on AIDS than those who have cared for. Teachers should, therefore, provide students with more knowledge about AIDS to help them develop more positive attitudes. The Department of Health should disseminate more information on control policies and measures to help medical personnel understand the action that the government is taking against AIDS. The control of AIDS requires the full participation of the general population.

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**Table 1. Correlation between Variables**

Pearson correlation coefficients/Prob > R under H <sub>0</sub> : Rho = 0/No. of Observations						
	VAR1	VAR2	VAR3	VAR4A	VAR4B	VAR5
VAR6a	0.0267	-0.1645	0.0770	0.0034	-0.1353	0.1468
	0.4021	0.0001	0.0154	0.9160	0.0001	0.0001
	991	991	991	991	991	991
VAR6b	-0.0051	0.0910	-0.0781	0.0403	0.0754	-0.0473
	0.8713	0.0039	0.0133	0.2023	0.0168	0.1337
	1005	1005	1005	1005	1005	1005
VAR6c	0.0059	0.0246	0.1089	0.1010	-0.0675	0.0559
	0.8498	0.4317	0.0005	0.0012	0.0309	0.0738
	1022	1022	1022	1022	1022	1022
VAR6d	-0.0378	0.1067	0.0606	0.0383	0.0237	0.0034
	0.2273	0.0006	0.0530	0.2223	0.4497	0.9130
	1020	1020	1020	1020	1020	1020

Notes:

VAR1 = symptoms of AIDS; VAR2 = routes of transmission of AIDS; VAR3 = epidemiology of AIDS; VAR4A, VAR4B = disinfection of AIDS virus; VAR5 = precautions in the care of patients; VAR6a = fear of AIDS; VAR6b = positive about care of patients; VAR6c = support of control measures; VAR6d = support of government expenditures.

**Table 2. % Fear of AIDS Expressed by VAR6a**

	VAR601	VAR602	VAR603	VAR604	VAR605
Total	36.9	59.3	73.2	80.6	49.9
Fuying	48.3	71.3	79.7	83.5	52.9
Jenteh	25.6	45.7	69.0	77.8	46.3
Tzuchi	51.1	75.6	75.6	86.7	51.1
NTUH	58.0	92.0	80.0	84.0	56.0
Mackay	59.2	83.7	93.9	89.8	63.3
Army	46.7	75.0	60.0	80.0	53.3

**Notes:**

VAR601 = I would rather resign than care for AIDS patients; VAR602 = I would refuse to care for AIDS patients if I had a choice; VAR603 = if I care for AIDS patients, I might bring home viruses; VAR604 = my family will object to my care for AIDS patients; VAR605 = my friends will see me less if I care for AIDS patients.

**Table 3. Knowledge of Attitude toward AIDS by Experience in the Care of AIDS Patients**

CAREHIV	N	Average of Variables			
		VAR6a	VAR6b	VAR6c	VAR6d
1	40	3.10+1.71	2.49+1.45	4.98+0.16	1.25+0.87
4	881	3.01+1.50	2.98+1.15	4.83+0.52	1.65+0.66
p value		0.7030	0.0104	0.0835	0.0002

**Notes:**

VAR6a = fear of AIDS; VAR6b = positive about care of patients; VAR6c = support of control measures; VAR6d = support of government expenditures.