

Factors Determining Nursing Students' Attitude Towards AIDS: A Cross-Sectional Research

Hemşirelik Öğrencilerinin AIDS'e Yönelik Tutumunu Belirleyen Faktörler: Kesitsel Araştırma

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ABSTRACT Objective: This study aimed to determine the factors affecting nursing students' attitudes towards acquired immune deficiency syndrome (AIDS). **Material and Methods:** This is descriptive and cross-sectional study. The study was conducted with 335 students studying at the nursing faculty. The data were collected with face-to-face interviews conducted with students by using the Sociodemographic Characteristics Form, AIDS Knowledge Scale, AIDS Attitude Scale, and Ethical Attitudes in Nursing Care Scale. Percentages, mean, standard deviation and hierarchical linear regression analysis were used to evaluate the data. **Results:** It was found that 64.2% of the students who participated in the present study were female, 66.0% were in the 3rd academic year, 66.6% grew up in the city center and 97.4% had not been tested for AIDS. It was determined that the place where the students grew up, AIDS knowledge, father's education level and having had an AIDS test were predictors of AIDS attitude. **Conclusion:** The AIDS attitudes and knowledge of the students were found to be at a moderate level, and their ethical attitudes were found to be at a low level in nursing care. It is suggested to organize educational activities for students to raise awareness. It may be recommended to make improvements to make the ethics lesson given in undergraduate education more effective.

Keywords: Acquired immunodeficiency syndrome; attitude; students; health knowledge; ethics

ÖZET Amaç: Bu çalışmada, hemşirelik öğrencilerinin edinilmiş bağışıklık eksikliği sendromu [acquired immune deficiency syndrome (AIDS)] tutumları üzerinde etkili olan faktörlerin belirlenmesi amaçlanmıştır. **Gereç ve Yöntemler:** Tanımlayıcı ve kesitsel bir çalışmadır. Çalışma hemşirelik fakültesinde öğrenim gören 335 öğrenci ile yürütülmüştür. Veriler, Sosyodemografik Özellikler Formu, AIDS Bilgi Ölçeği, AIDS Tutum Ölçeği ve Hemşirelik Bakımında Etik Tutumlar Ölçeği kullanılarak öğrencilerle yapılan yüz yüze görüşmelerle toplanmıştır. Yüzde, ortalama, standart sapma ve hiyerarşik lineer regresyon analizi verileri değerlendirmek için kullanılmıştır. **Bulgular:** Mevcut çalışmaya katılan öğrencilerin %64,2'sinin kadın, %66,0'ının üçüncü akademik yılda, %66,6'sının şehir merkezinde büyüdüğü ve %97,4'ünün AIDS testi yaptırmadığı bulunmuştur. Öğrencilerin büyüdüğü yer, AIDS bilgisi, babanın eğitim seviyesi ve AIDS testi yaptırmış olmasının AIDS tutumunu belirleyen faktörler olduğu belirlenmiştir. **Sonuç:** Öğrencilerin AIDS tutumları ve bilgileri orta seviyede bulunmuş, hemşirelik bakımında etik tutumları ise düşük seviyede bulunmuştur. Farkındalığı artırmak için öğrencilere yönelik eğitim faaliyetleri düzenlenmesi önerilmektedir. Lisans eğitiminde verilen etik dersinin daha etkili hâle getirilmesi için iyileştirmeler yapılması önerilebilir.

Anahtar Kelimeler: Edinilmiş bağışıklık yetmezliği sendromu; tutum; öğrenciler; sağlık bilgisi; etik

Human immunodeficiency virus/ acquired immune deficiency syndrome (HIV/AIDS) has become increasingly common in our present day as a global epidemic. According to the United Nations Program on HIV/AIDS global HIV and AIDS statistics 2023 report, 39 million people on a global scale are living

with HIV and approximately 4,000 people are diagnosed with HIV every day. Also, 1.3 million people were diagnosed with HIV in 2022 on a global scale.¹ According to the data of the Türkiye General Directorate of Public Health of the Ministry of Health, there were 30,293 HIV(+) people and 2,083 AIDS

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cases whose confirmation test results were positive and between 1985-December 31, 2021. The age groups where cases were most common were the 25-29 and 30-34 age groups. An increase in the disease trend was detected over the years. Although the number of HIV-positive people was 1,917 in 2014, the number of HIV-positive people was 2,922 in 2021.²

HIV-related stigmatization is considered an important problem because it causes an obstacle to preventing the disease, accessing care and treatment services, and causing familial, social, and economic harm.³ Especially, the prejudice of healthcare staff against individuals who have AIDS prevents these patients from receiving healthcare services. The main reason for prejudice among health staff is lack of education. The most effective and rational solution in this respect is for nurses and nursing students to receive a good education regarding AIDS.⁴

In a study that was conducted with nursing students, 65% of students said they would stay away from people they know to have AIDS and 17.9% said patients with AIDS must be kept away from society.⁵ Similarly, it was reported in a study was conducted by Altınok et al. that nursing students had incorrect information about AIDS and, based on this information, had negative attitudes toward individuals who have AIDS.⁶ Also, there are studies in the literature reporting that the levels of AIDS knowledge of students who were studying health sciences are at a moderate level.⁷⁻⁹

Widespread ignorance, limited or incomplete knowledge, and misconceptions respecting HIV/AIDS are responsible for social stigmatization and discrimination.¹⁰ All countries have a responsibility to reduce stigmatization and discrimination regarding HIV/AIDS, protect individuals from HIV/AIDS infection, and ensure that individuals who have HIV/AIDS receive appropriate care and treatment.¹¹ Healthcare staff has important responsibilities in providing appropriate healthcare services to individuals who have HIV/AIDS, preventing stigmatization and transmission of the disease, and conveying disease prevention methods.¹² It is imperative to develop ethical decision-making mechanisms to solve ethical problems in the care services nurses provide to patients with AIDS. As it continues as a

global epidemic, it has also challenged nursing students to have appropriate knowledge and attitudes toward the care of people living with HIV/AIDS. However, the prejudice of nursing students, who will be in contact with society as future healthcare staff will be an obstacle to their responsibilities in this respect. It has become clear that the knowledge and attitude levels of students about HIV/AIDS and the factors affecting this must be determined and appropriate initiatives must be taken. Studies conducted in the literature have mostly focused on determining levels of knowledge and attitudes. In 2 different studies, it was examined and determined that having a religious belief and knowing the modes of transmission affect attitudes towards AIDS.¹²⁻¹³ However, detailed studies on attitudes towards AIDS have not been conducted.

The present study aimed to determine the factors affecting nursing students' attitudes towards AIDS. Research questions:

- What is the AIDS knowledge, AIDS attitudes and Ethical Care Attitude level of students?
- Are students' sociodemographic characteristics, AIDS knowledge and ethical attitude in nursing care predictors of AIDS attitude?

MATERIAL AND METHODS

STUDY DESIGN

It's a cross-sectional and descriptive design.

DATA AND SAMPLE

The study was conducted at faculty of nursing, a state university in İzmir. This study was conducted at December 2023-March 2024, with a face-to-face data collection method with 2nd- and 3rd-year nursing students. The population of the study consists of a total of 546 students studying in the 2nd and 3rd years at the nursing faculty. The inclusion and exclusion criteria for the study sample are specified below. The study was completed with 335 students who voluntarily agreed to participate. As a result, approximately 62% of the universe has been reached.

Sampling Inclusion Criteria

- Being a 2nd/3rd-year student at the faculty of nursing (chosen because the basic inclusion criterion

was that the ethics course was taken in the 2nd year of the education curriculum and that the student went into clinical practice. Also, the 3rd-year students were included because the subject of HIV/AIDS is covered within the scope of the gynecology and obstetrics nursing course in the 3rd year.

- Volunteering to participate in the study

Exclusion Criteria from the Sample

- Students who were in the 1st and 4th academic years (1st academic years were excluded because they did not take ethics courses, and 4th academic years were excluded from the sample because they were difficult to reach because of their internship)

- Filling out the scale forms incompletely

DATA COLLECTION FORMS AND DATA COLLECTION

The data were collected with the “Sociodemographic Characteristics Form”, “AIDS Knowledge Scale”, “AIDS Attitude Scale”, and “Ethical Attitudes in Nursing Care Scale (EANCS)”.

Sociodemographic Characteristics Form

It was prepared by researchers based on the literature regarding the sociodemographic characteristics of students.¹²⁻¹³ The form consists of a total of 13 questions related to the students’ gender, class, place of upbringing, parents’ education level, and AIDS.

AIDS Knowledge Scale

It was developed by Aydemir et al. in 2018.¹⁴ It consisted of 3 sub-dimensions (routes of transmission (7 items), protection and general information (9 items), and treatment (5 items) in a total of 21 items. There are options “True”, “I am undecided” and “False” and 12 items in the scale express misinformation. The highest score that can be obtained from the scale is 21 and a higher score means higher knowledge. The Kuder-Richardson-20 coefficient was calculated to determine the reliability of the Knowledge Scale and the overall reliability of the knowledge scale was found as 0.76 (0.62-0.63-0.85 for the subscales). In this study, the Cronbach Alpha value was 0.78 for the total scale (0.73-0.78 for the subscales).

AIDS Attitude Scale

Developed by Aydemir et al. in 2018, the scale has subscales (negative attitude towards people with AIDS (12 items) and Stigmatization (5 items) in a total of 17 items.¹⁴ For each statement, there is a 5-point Likert evaluation as “from *I Completely Agree* to *I Strongly Disagree* and 12 items in the scale are reverse-scored. The maximum score of the scale is 85 and a high score indicates a positive attitude towards the individual with AIDS. Cronbach’s Alpha values were calculated as 0.90 for the scale (0.75-0.91 for the subscales). In this study, Cronbach’s Alpha values were 0.75-0.78 for the subscales and 0.84 for the total scale.

ETHICAL ATTITUDE IN NURSING CARE SCALE

The scale was developed by Ozciftci and Akin in 2020 and consists of one single sub-dimension and 34 items.¹⁵ The scale has a 5-point Likert design and the response options of the scale are 1: I strongly agree, 2: I agree, 3: I am undecided, 4: I disagree, 5: I strongly disagree. The highest score that can be obtained from the scale is 170, the lowest score is 34 and an increase in the total score on the scale reflects a positive ethical attitude. Cronbach’s Alpha value of the scale was calculated as 0.96. Cronbach’s Alpha value in this study was 0.76.

VARIABLES OF THE STUDY

The independent variables of this study were students’ sociodemographic characteristics, AIDS Knowledge, Ethical Attitudes in Nursing Care; the dependent variable was AIDS Attitude.

DATA ANALYSIS

The data were evaluated by using the SPSS (24.0) programme. Sociodemographic characteristics of the students were presented with numbers and percentages, scale scores were presented with minimum-maximum values and mean and standard deviation. Hierarchical linear regression analysis was used to investigate how well sociodemographic characteristics, AIDS knowledge and ethical attitudes predicted AIDS attitudes when controlling for sex, academic year, mother’s and father’s education level, where he/she grew up, some variables associated with

AIDS. The assumptions of linearity, normally distributed and uncorrelated errors were checked and met. The demographic variables to be taken into the model were decided in accordance with the literature and by considering univariate analyses. The analysis had 3 steps (sociodemographic characteristics of participants were included in the model, the features of AIDS knowledge and ethical attitude on nursing care were included, and finally, the hierarchical linear regression analysis was conducted).

ETHICAL CONSIDERATION

Institutional permission was obtained from faculty of nursing and then written permission from the Non-Interventional Ethics Committee of the Dokuz Eylul University (date: December 28, 2023, no: 2022/42-08). The participants who met inclusion criteria were informed about the purpose of study and verbal and written consent was obtained from students. The study was conducted in accordance with ethical principles of Declaration of Helsinki and informed consent was obtained from all participants.

RESULTS

Table 1 shows scale total scores and Table 2 shows some sociodemographic and AIDS-related characteristics of the students.

A hierarchical linear regression model was used to investigate the effects of sociodemographic characteristics, AIDS knowledge and ethical care on AIDS attitude (Table 3). When sex, academic year, where he/she grew up, mother's and father's education level were included, the resulting model predicted AIDS attitudes significantly ($F=3,011$, $p=0,011$, adjusted $R^2=0,029$). However, as the R^2 value showed, only 2% of the variance in AIDS attitude could be predicted by where he/she grew up. When knowledge characteristics about AIDS were added, the whole set of variables predicted AIDS attitudes significantly (R^2 variation=0,083; $F=3,887$; $p<0,001$), and 9% of the variance in AIDS attitudes could be predicted. In the 3rd step, when the ethical attitude variable was added, a total of 9% of the variance in AIDS attitudes could be predicted (R^2 change: 0,003). Where he/she grew up ($b=0,154$), father's education level ($b=-0,139$), having tested for AIDS

TABLE 1: Descriptive variables of students (n=335)

Characteristics	Variables	n	%
Sex	Female	215	64.2
	Male	120	35.8
Academic year	2 nd grade	114	34.0
	3 rd grade	221	66.0
Grew up in a	Village	63	18.8
	District	49	14.6
	City	223	66.6
Having sexual intercourse	Yes	59	17.6
	No	276	82.4
Being tested for STDs*	Yes	12	3.6
	No	323	96.4
Having tested for AIDS	Yes	8	2.4
	No	327	97.6
Having heard about AIDS	Yes	317	94.6
	No	18	5.4
Having read about AIDS	Yes	248	74.0
	No	87	26.0
Recognizing someone with AIDS	Yes	17	5.1
	No	318	94.9

*Sexual transmission diseases. STD: Sexually transmitted infection; AIDS: Acquired immune deficiency syndrome

TABLE 2: Mean scores of scales (n=335)

Scales/Subscales	\bar{X}	SD	Minimum	Maximum
AIDS Attitude Scale	53.17	10.47	17	85
Negative Attitude	35.26	8.18	12	60
Stigmatization	17.90	3.99	5	25
AIDS Knowledge Scale	11.56	4.65	0	21
Ways of transmission	3.21	2.51	0	7
Protection and general information	6.28	2.26	0	9
Treatment	2.05	1.60	0	5
Ethical Attitude in Nursing Care Scale	52.90	20.15	34	170

SD: Standard deviation

($b=0,232$), and AIDS knowledge ($b=0,169$) were found to be associated with AIDS attitudes statistically and significantly ($F=3,664$, $p<0,001$, adjusted $R^2=0,094$).

DISCUSSION

Nursing students are the nurses of the future, and the experiences and knowledge they acquire during their education will shape their future professional practices and patient care approaches.¹⁶

For nursing students, it is important to have accurate knowledge about HIV/AIDS and to have pos-

TABLE 3: Effects of sociodemographic characteristics, AIDS Knowledge and ethical care on AIDS attitude:
Hierarchical linear regression analysis (n=335)

Model	Step 1			Step 2			Step 3		
Variables	B	SEB	β	B	SEB	β	B	SEB	β
Sex	-0.812	1.198	-.037	-1.413	1.249	-0.065	-1.569	1.259	-0.072
Academic year	-1.287	1.208	-.058	-1.707	1.179	-0.077	-1.796	1.182	-0.081
Where he/she grew up	2.436	0.752	0.184*	2.097	0.742	0.159*	2.035	0.744	0.154*
Mother's education level	0.682	0.867	0.053	0.725	0.843	0.056	0.733	0.843	0.057
Father's education level	-1.320	0.805	-.109	-1.744	0.796	-0.144*	-1.686	0.798	-0.139*
Having sexual intercourse				1.579	1.592	0.057	1.641	1.593	0.060
Being tested for STDs				2.388	4.218	0.042	2.266	4.220	0.040
Having tested for AIDS				-6.016	5.222	0.234*	-15.910	5.224	0.232*
Having heard about AIDS				3.094	2.574	0.067	3.116	2.574	0.067
Having read about AIDS				-1.831	1.331	-0.077	-2.027	1.345	-0.085
Recognizing someone with AIDS				-3.096	2.660	-0.065	-3.010	2.661	-0.063
AIDS knowledge				0.358	0.124	0.159*	0.379	0.126	0.169*
Ethical attitude on nursing care							0.028	0.029	0.055
Constant	52.216	3.739		80.590	10.451		79.158	10.550	
R ²	0.044			0.127			0.129		
Adjusted R ²	0.029			0.094			0.094		
R ² change	0.044			0.083			0.003		
Significance of F change	0.011			<0.001			0.321		
p	0.011			<0.001			<0.001		
Durbin-Watson	1.641								

Std. Error (SEB), *p<0.05; B: unstandardized Coefficient of Beta; β : standardized coefficient of Beta. AIDS: Acquired immune deficiency syndrome

itive attitudes toward people with HIV/AIDS to ensure that they can provide high-quality and effective care to their patients.¹⁷ The AIDS attitudes and knowledge of students who participated in study were found to be at a moderate level, and their ethical attitudes in nursing care were at a low level (Table 2). Similar to the results in this study, studies reported nursing students' AIDS knowledge and attitudes to be at moderate or low levels.^{5,17-18} The ethical attitude of nurses was found to be high in different studies that were conducted with intensive care unit nurses and pediatric nurses in our country.¹⁹⁻²⁰ It was reported that as the length of time working in the profession increased, ethical attitude also increased with increasing professional competence.²¹ The reason why our students had different levels of ethical attitudes might be that they did not have an active professional life.

It was determined that academic year level was not a determinant in the AIDS attitude of students participating in our study (Table 3). It is argued that as students' academic year level and educational status increase, their attitude toward HIV/AIDS improves.^{12,22} Ceylan and Koc found in their single group pre-test post-test experimental study that students' attitudes towards AIDS increased positively after peer education.²³ It is also argued that students with lower academic years are more likely to be stigmatized against HIV/AIDS.²⁴ Sallam et al. found that pre-clinical students showed more negative attitudes towards individuals living with an AIDS patient than clinical students.¹⁶ Our results differ compared to these studies. In a previous study conducted with nurses in Jordan, it was found that nurses had a more negative attitude towards patients with AIDS because of fear of infection and social stigmatization.²⁵ The

fear of HIV/AIDS infection may have been effective in the more negative attitudes of our students with high HIV/AIDS knowledge. In addition, the fact that our students did not encounter many AIDS patients in the clinics where they practiced may also have been effective.

It was found that the place where the students grew up affected their attitudes towards AIDS (Table 3). Sukartini et al. reported that education levels, knowledge levels, and places of residence were not determinants of the willingness to provide care to an individual with AIDS, but that the willingness to provide care was higher among those who were living in the city than those living in rural areas.²⁶ It is already known that geographical location is an important factor in accessing health services. HIV/AIDS knowledge of our students might have increased with the awareness programs implemented in the city center. It is necessary to look at the geographical location from a different perspective, not only in terms of access to healthcare services. In determining our health behaviors, the influence of culture and religion must be taken into consideration. Varas-Díaz et al. reported that having high religious knowledge and religious belief was a marker in the stigmatization of the individual with AIDS which might be the reason why individuals living in rural areas attach more importance to religion and in the present study, students growing up in rural areas showed more negative attitudes.²⁷

In the hierarchical linear regression analysis, it was found that father's education level was a negative predictor of AIDS attitude (Table 3). The majority of the students who participated in the study were girls and sexuality issues are still taboo in our culture.²⁸ It was assumed that there was no transmission of information from the father and that it was not discussed with family members and especially with the father. This variable is thought to be a coincidental negative predictor and should be examined in detail in future studies.

Another predictor variables affecting AIDS attitude was found to be AIDS knowledge and having tested for AIDS (Table 3). A positive correlation was detected between the AIDS knowledge and AIDS attitudes of the students in the present study. It is

known that those with low knowledge about AIDS have a more negative attitude towards people with AIDS.¹⁶ Moreover, a study by Nurwidiyanti et al. revealed a positive correlation between knowledge about HIV/AIDS and attitudes towards it, indicating that better knowledge led to more positive attitudes.²⁹ Unfortunately, increasing knowledge of AIDS alone will not be adequate to change people's attitudes and beliefs. However, the stigmatization faced by individuals who have AIDS is still an important public healthcare concern. It is already known that individuals who have low HIV/AIDS knowledge are more prone to stigmatization.³⁰ Developing the empathetic and positive ethical attitudes of nurses towards people living with HIV/AIDS is very important for the new generation of nurses.³¹ It is known that individuals who have AIDS are exposed to social stigmatization, including their families, and face social exclusion.³² It might cause missed nursing care, where individuals may be deprived of necessary nursing care because of stigmatization. The definition of missed nursing care refers to any planned nursing care that is not completed or delayed.³³

Limited studies have on HIV/AIDS attitudes and ethical care attitudes in nursing were detected in the literature review. However, the concept of willingness to care for an individual with HIV/AIDS has been studied. Although Chanvatanak et al. did not find a relationship between knowledge of AIDS and willingness to provide care, he found a positive and weak relationship between a positive attitude toward AIDS and willingness to provide care to an individual with AIDS.¹⁷ On the other hand, another study that was conducted in our country reported that nursing students' HIV/AIDS knowledge did not affect their attitudes toward individuals who had HIV/AIDS and their willingness to care.¹⁸ It is also known that ethical beliefs play an important role in understanding attitudes towards AIDS. Khan et al. found that ethical beliefs were a determinant influencing future attitudes towards individuals with HIV/AIDS when providing care.³⁴ However, this study found that ethical attitudes had no effect on students' attitudes towards AIDS, which is different from the literature (Table 3). In his study that examined the experiences of nurses caring for individuals who have AIDS,

Mashallahi et al. reported that nurses tried to stay away from people with AIDS because of the fear of contracting AIDS.³⁵ It was also reported that as knowledge about HIV/AIDS increased, fear and anxiety levels decreased.³⁶ It should be aimed to increase students' ability to have accurate information about AIDS transmission and to develop more positive attitudes.

LIMITATIONS

Since the study results were based on self-report and there was a possibility of cultural bias against HIV/AIDS, students may have given biased answers. In addition, the low number of students providing one-to-one care to patients with HIV/AIDS can also be considered a limitation.

CONCLUSIONS

In this study, it was found that nursing students' levels of knowledge, attitudes, and ethical care attitudes towards HIV/AIDS are still not at the desired level. AIDS, despite being one of the biggest global health issues, it is concerning that students' knowledge and attitudes are still not at the desired level. Therefore, it is recommended that the nursing curriculum be examined and adjustments made in this regard. Educational institutions where nurses, who hold a significant share among healthcare personnel, are trained are ideal environments for interventions to reduce HIV/AIDS stigma in the healthcare workforce and society. It is suggested to organize educational activities for students to raise awareness.

In this study, it was found that the place where students grew up, the father's education level, having previously been tested for AIDS, and knowledge

about AIDS were determining factors in attitudes towards AIDS. Additionally, it is recommended to conduct studies that help understand the individual and environmental determinants of HIV stigma among students and to identify the groups and geographical areas that most need to reduce stigma. The nursing profession is inherently a field that should possess ethical values. In this study, it was observed that students' ethical attitudes were low. Improvements can be suggested to make the ethics course offered in undergraduate education more effective. To contribute to the literature, it is suggested that future studies examine the ethical attitudes of nurses or students who provide direct care to AIDS patients.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: Burcu Cengiz; **Design:** Burcu Cengiz, Hülya Özberk; **Control/Supervision:** Burcu Cengiz, Hülya Özberk; **Data Collection and/or Processing:** Burcu Cengiz, Hülya Özberk; **Analysis and/or Interpretation:** Burcu Cengiz, Hülya Özberk; **Literature Review:** Burcu Cengiz; **Writing the Article:** Burcu Cengiz, Hülya Özberk; **Critical Review:** Hülya Özberk; **References and Fundings:** Burcu Cengiz, Hülya Özberk; **Materials:** Hülya Özberk, Burcu Cengiz.

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