Stigma Toward People With HIV/AIDS among Health Science Students in Indonesia

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Abstract

Currently, people living with HIV/AIDS (PLWHA) still feel stigma and discrimination from their families, communities, and health workers, despite the successful management of the HIV infections. Stigma from health services can hinder PLWHA from accessing care, affecting their quality of life. Increased knowledge and clinical exposure among medical students can increase positive attitudes toward PLWHA.

The purpose of this study is to describe stigma toward PLWHA from students at the health science faculties of Universitas Indonesia.

This study used a descriptive cross-sectional method to study 1400 students of the university's health science faculties (Faculty of Medicine, Faculty of Dentistry, and Faculty of Nursing) using a previously published questionnaire that had been adapted cross-culturally into Indonesian. The questionnaire consisted of three domains, namely the students' personal/cultural beliefs about HIV, knowledge of HIV, and clinical interaction toward HIV patients.

This study demonstrated that even though the students performed well overall on the survey, there were replies to some specific items that pointed to HIV knowledge gaps and differences in personal/cultural beliefs about the disease. It found that age, year of entry, and study major were associated with the participants' stigma across the three domains. A significant relationship existed between the total subscore and personal/cultural beliefs about HIV, HIV knowledge, and clinical interactions with HIV-positive patients.

Stigma toward PLWHA among the students in this study was distinguished by age, year of entry, and study major. The study concluded that stigma toward PLWHA was low among most health students in the health science faculties at Universitas Indonesia; however, some students still had stigma due to HIV knowledge gaps and differences in personal/cultural beliefs about the disease.

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Introduction

HIV infection continues to be a major global public health issue, and it is estimated that about 40 million people are living with the disease.[1] Currently, the prevention, diagnosis, treatment, and care of patients with HIV infection have improved, although a cure is still not available.[2] Improvements have led to HIV infection being a manageable chronic condition, and the people living with it can maintain a long and healthy life.[3] Nevertheless, people living with HIV/AIDS (PLWHA) still experience stigma and discrimination, resulting in this group facing major barriers to gaining treatment and there being limited data on the use of interventions among PLWHA.[4,5]

PLWHA still feel stigma and discrimination within the family environment and from the surrounding community.[6] Based on the available data, as many as 50% of men and women face stigma and discriminatory treatment due to their HIV status in about one-third of the countries globally.[5,7,8] Previous research on health workers in Africa found that half of the respondents were afraid to work with PLWHA because they were concerned about contracting the disease and felt insecure.[5,9] Research conducted in Indonesia identified that some PLWHA patients had been subjected to verbal abuse because of their condition and received

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specific codes regarding their HIV positivity.[10] Several previous studies found stigma and discrimination against PLWHA among medical and dental students and that those students felt unsure about providing qualified and fair care to such patients.[11-14]

A study on dental students in the United States showed there had been an increase in knowledge and attitudes related to dental care for PLWHA, which is in line with the clinical experiences of students both during dental education and after graduation.[15] This shows that increased knowledge and clinical exposure should be the focus for increasing positive attitudes toward PLHIV among students in the health sector, who will become practitioners or leaders in the future.[12,15] This will provide a starting point for positive attitude changes in the next generation that will eventually reduce the stigma associated with HIV/AIDS to improve patient's health status.[16] However, there is still limited data related to HIV stigma among Indonesian students studying health sciences, including medical, dental, and nursing students. Previous research has been performed in Indonesia across a limited number of medical, nursing, and midwifery students.[17,18] This study aims to assess stigma toward PLWHA among students of health sciences at Universitas Indonesia and analyze the demographic factors associated with it. The data from the study will be useful in providing a basis for the education improvements needed to reduce any stigma identified.

Materials and methods

Study Design

This cross-sectional study aimed to assess HIV stigma among students from three faculties of health sciences at Universitas Indonesia, namely the Faculty of Medicine (FM), Faculty of Dentistry (FD), and Faculty of Nursing (FN). It was approved by the Research Ethics Committee of the Faculty of Dentistry, Universitas Indonesia (No. 104/Ethical Approval/FKGUI/IX/2019). The questions used in the study were taken from a previous study in Tanzania.[12]

Questionnaire

The questionnaire used in the previous study adopted cross-cultural guidelines to produce an Indonesian version for this study. The questionnaire consisted of three domains, namely personal or community beliefs about stigma toward HIV/AIDS, knowledge of HIV/AIDS, and clinical interaction. The questions in each domain were subcategorized into those that were stigmatizing and non-stigmatizing. The participants who responded with "agree" and "do not know" to the stigmatizing questions scored 0, and those who responded with "disagree" scored 1. For the non-stigmatizing questions, the respondents who answered "agree" and "do not know" scored 1, and those who answered "disagree" scored 0. A higher score indicated a lower level of stigma.

Domain 1 concerned individual and community beliefs about stigma toward HIV/AIDS and consisted of nine statements that were divided into two subcategories, namely those that were stigmatizing and non-stigmatizing, to produce a maximum score of 9. The confidence variable was assessed as low with scores of 0–4 and high if they were 5–9. Domain 2 concerned knowledge of HIV/AIDS and consisted of five stigmatizing statements with a maximum value of 5. The knowledge variable was divided into two categories; that is, scores of 0–1 were considered low, and those of 2–5 were high. Domain 3 concerned clinical interaction and included four stigmatizing statements with a maximum value of 4. The domain was divided into low and high scores, with scores of 0–3 considered low and a score of 4 considered high. The data analysis was based on the scores of the respondents in each category (low or high stigma) of each domain and also on the median score of the domains. The questionnaire was tested for validity and reliability before being tested on the participants using Cronbach's alpha and test–retest reliability analysis.

Study Participants

All students of the Faculties of Medicine, Dentistry, and Nursing at Universitas Indonesia who had enrolled between 2016 and 2019 were invited to participate in the study. Permission was granted by the deans of each faculty before the distribution of the questionnaire. The questionnaire was transferred into an electronic form (Google Forms) for data collection and distributed to all of the students through the coordinator of each faculty using WhatsApp groups. The questionnaire was open for two weeks. Students provided informed consent to voluntarily participate in the study. Data were

collected during October 2019.

Data Analysis

Descriptive statistics were calculated and bivariate analyses performed using SPSS software version 23.0. The scores of the students, based on their classification of the three domains of stigma toward HIV/AIDS, were compared with their demographic characteristics using the Mann–Whitney and Kruskal–Wallis tests. A significance level of 0.05 was used for all the analyses.

Results

The questionnaire was successfully cross-adapted into Indonesian. Face validity of the items of the questionnaire was performed. The Cronbach's Alpha of the questionnaire was 0.666 and the test–retest reliability was 0.97, showing that the questionnaire was reliable for use.

Demographic Data

A total of 1400 students from the health cluster faculties participated in the study. About two-thirds of these were aged below 21 years, and female students predominated. The participation of students from each year of entry and faculty was almost equal (Table 1).

Participants characteristics		N (%)
Age	< 21 y.o	1063 (75,9)
	≥ 21 y.o	337 (24,1)
Gender	Male	387 (27,6)
	Female	1013 (72,4)
Year of Entry	2016	329 (23,5)
	2017	352 (25,1)
	2018	343 (24,5)
	2019	376 (26,9)
Faculty	Medicine	506 (36,1)
	Dentistry	471 (33,6)
	Nursing	423 (30,2)

Table 1. The demographic characteristics of the study participants.

Personal/Cultural Beliefs about HIV

The first assessment of student stigma toward HIV/AIDS concerned personal/cultural beliefs about HIV. Table 2 combines all the scores from the participants' answers on their personal/cultural beliefs about HIV. The results showed that although 68% participants had high scores, there were still approximately 32% participants with low scores, indicating that there was a high level of stigma toward HIV based on personal/cultural beliefs. The responses to each of the questions within the domains of the questionnaire are recorded in Table 3. Of the nine questions on personal/cultural beliefs about HIV, six were stigmatizing. Based on the participants' personal/cultural beliefs, the highest level of stigma was related to the statement on whether they would feel ashamed if they were infected with HIV, with almost 80% of participants having a low score. This was followed by about 73% of participants with low scores for the statement that PLWHA should still be allowed to have children if they so wished, and some 50.2% participants who scored low for the statement that PLWHA who contracted the disease from sex or drug use deserved it because of their behavior.

HIV Education/Knowledge

In the second domain, all the items consisted of stigmatizing questions (Table 2). Participants' level of stigma, based on their HIV education and knowledge, was shown to be relatively high for the statements that PLWHA could have avoided HIV if they had wanted to (80%) and that PLHWA had many sexual partners (66%). Meanwhile, for the other three questions, the number of participants whose answers related to higher and lower stigma were quite equal. Table 3 shows the combined scores of the participants in terms of stigma related to HIV education/knowledge. The results showed that almost 40% of participants had low scores, indicating a high level of stigma toward HIV.

Clinical Interaction with HIV-Positive Patients

Between 3% and 10% of participants answered that they disagreed, which showed they had stigma related to clinical interaction with PLWHA (Table 2). The majority of study participants had high scores in the domain of clinical interaction (Table 3), although there were still about 19% who had a high level of stigma toward HIV.

Factors Associated with Stigma

This study found that age, year of entry, and study major were associated with participants' level of stigma related to the three

domains (p <0.05) (Table 4). There was a higher proportion of students in the younger group who had a high level of stigma, compared with those in the older group, in all the domains. The difference in the mean score was statistically significant (p <0.05). The percentage of male students who had a high level of stigma, compared with that of female students, was significantly higher in the HIV knowledge domain (p <0.05). The students' year of entry also accounted for different levels of stigma in all domains. A higher percentage of students who had started their studies earlier had higher scores than those who had started later, and the difference was statistically significant. Lastly, the study major also showed different levels of stigma toward HIV. FD had the highest percentage of students with high levels of stigma in all three domains, compared with FN and FM (p <0.05). Further analyses to compare the total score across all three domains were performed, with the data shown in Table 5. There was a significant difference between the total score for students aged under 21 years and that of those who were older (p <0.05). The Kruskal–Wallis test showed that the total score significantly differed by the year of entry and the study major (p <0.05).

Domains*	Score		
	Low (High stigma)	High (Low stigma)	Mean ±SD [Median]
	n(%)	n(%)	
Personal/cultural beliefs about HIV (Low score: 0-4; High score: 5-9) (max 9)	447(31.9)	953(68.1)	5.04 ±1,465 [5]
HIV eductaion/knowledge (Low score 0-1; High score: 2-5) (max 5)	550(39.3)	850(60.7)	2,02 ±1,434 [2]
Clinical interaction with HIV-positive patients (Low score 0-3, High score 4) (max 4)	268(19.1)	1132(80.9)	3,71 ±0,633 [4]

Table 3. Classification of the participants' level of stigma based on the scores in each domain of the questionnaire.

*The participants who answered "agree" and "do not know" to the stigmatizing questions scored 0, and those who answered "disagree" scored 1; those who answered "agree" and "do not know" to the non-stigmatizing questions scored 1, and those who answered "disagree" scored 0. Higher scores indicate low stigma.

Domain and Questions	Responses (N=1400)		
	Agree	Disagree	Don't know
	n(%)	n(%)	n(%)
Domain 1			
Personal/cultural beliefs about HIV			
HIV is a punishement for bad behavior*	187(13.4)	1165(83.2)	48(3.4)
People living with HIV should feel ashamed of themselves	111(7.9)	1218(87)	71(5.1)
People living with HIV should be allowed to have babies if they wish	848(60.6)	379(27.1)	173(12.4)
People who get HIV/AIDS through sex or drug use got what they deserved*	514(36.7)	697(49.8)	189(13.5)
I am afraid of people who are HIV-positive	326(23.2)	946(67.6)	128(9.1)
I would feel ashamed if someone in my family got HIV/AIDS*	313(22.4)	868(62)	219(15.6)
I would feel ashamed if someone I know got HIV/AIDS*	111(7.9)	1180(84.3)	109(7.8)
I would feel ashamed if a classmate got HIV/AIDS*	96(6.9)	1201(85.8)	103(7.4)
I would feel ashamed if I were infected with HIV*	900(64.3)	281(20.1)	219(15.6)
Domain 2			
HIV education/knowledge			
Most people living with HIV have had many sexual partners*	699(49.9)	476(34)	225(16.1)
People living with HIV could have avoided HIV if they had wanted to*	978(69.8)	274(19.6)	148(10.6)
People get infected with HIV because of irresponsible behaviours*	529(37.8)	746(53.3)	125(8.9)
I would not share eating utensils with people who have HIV/AIDS because of I am afraid of HIV infection*	590(42.1)	658(47)	152(10.9)
I will not buy from a vendor who has HIV/AIDS*	522(37.3)	660(47.1)	218(15.6)
Domain 3			
Clinical interaction with patients with HIV-postive patients			
I am willing to work with patients with HIV-positive patients	1038(74.1)	147(10.5)	215(15.4)
If I worked with HIV-positive patients, I would provide the same quality of care to them that I provide to other patients	1192(85.1)	119(8.5)	89(6.4)
If asked, I am willing to do physical examination of an HIV-positive patient	1159(82.8)	67(4.8)	174(12.4)
If I worked with HIV-positive patients, I would talk to them just like other patients	1312(93.7)	41(2.9)	47(3.4)

Table 2. Study participants' responses to each question.

* Stigmatizing questions; For further analysis, the participants who answered "agree" and "do not know" to the stigmatizing questions scored 0, and those who answered "disagree" scored 1; those who answered "agree" and "do not know" to the non-stigmatizing questions scored 1, and those who answered "disagree" scored 0.

Characteristics		Median (min-max)	P
Age	< 21 y.o	11 (2-16)	*0.001
	≥ 21 y.o	12 (4-16)	
Gender	Male	11 (2-16)	0.323
	Female	11 (3-16)	
Year of entry	2016	12 (4-16)	**0.001
	2017	11 (3-16)	
	2018	11 (2-16)	
	2019	10 (3-16)	
Faculty	Medicine	12 (2-16)	**0.001
	Dentistry	10 (3-16)	
	Nursing	11 (3-16)	

Table 5. Comparison of the scores of all domains based on the demographic characteristics of the participants.

Discussion

This study explored several factors related to stigma toward PLWHA among students of health sciences at Universitas Indonesia. It was performed in response to the worldwide trend of HIV infection and attributed to a recent publication related to HIV education that stated that there was a need to evaluate the format and content of courses to appropriately provide education and training for health sciences students.[17-20] The medical, dental, and nursing students were equally represented, with a similar composition of age and year of entry. However, female students had higher representation in the study, since they dominate dental and nursing schools in Indonesia. This composition may have contributed to response bias in the study. This study applied an English language questionnaire that was used in a study in Africa.[12] The original questionnaire was cross-culturally adapted into Indonesian using previously published methods.[21,22]

This study demonstrated that even though the students performed well overall in the survey, the replies to some specific items pointed to HIV knowledge gaps and differences in personal/cultural beliefs about the disease. In the HIV knowledge domain, more than two-thirds of respondents believed that HIV could have been avoided by PLWHA if they had wanted to, and over half believed that PLWHA had many sexual partners. The responses suggest that the students were unaware of other HIV transmission routes in addition to the behavioral ones associated with drug use and sexual activities. Other HIV transmission methods include mother-to-child transmission, women getting the virus from their spouses, and healthcare personnel contracting it from their work.[23] Revisiting educational materials on HIV transmission routes may increase students' empathy toward PLWHA.[19]

This study also demonstrated that about one-third of the students had high levels of stigma based on their personal/cultural beliefs. More than two-thirds of the students in this study would feel ashamed if they were infected with HIV. These results indicated that the students had internalized stigma, which is an important factor related to HIV continuum care, since it contributes to depression and social isolation among PLWHA and a low rate of HIV status disclosure that could lead to greater public health consequences.[6,24,25] Attempts to expose students to the concepts, measurement, and interventions related to HIV-related stigma would improve understanding of the issue of internalized stigma that is faced by PLWHA and therefore lower their stigma toward HIV.[6] Furthermore, two-thirds of the students also believed that PLWHA should be allowed to have children if they so wished. These results indicate that the students still had a strong cultural belief in the reproductive rights of PLWHA, which is an important issue in HIV advocacy worldwide.[26,27] Intervention should be taken to control mother–child transmission, since without it, there would be 30–45% virus transmission during pregnancy and breastfeeding. Increased services for HIV-positive mothers who live with their infants, prevention of unwanted pregnancy among HIV-positive women, prevention of HIV infection among childbearing women, and support and care for mothers living with HIV, their children, and family are just a few of the prevention measures.[27-29] About half of the students believed that PLWHA who had contracted the disease through sex or drug use deserved it because it was a punishment for their behavior. These results indicate that there is a strong cultural belief among students to blame PLWHA, which is similar to the findings of other studies.[12,30-32]

This study found age, year of entry, and study major to be associated with the participants' stigma related to the three domains. A higher proportion of students in the younger age group had a high level of stigma, compared with the older group in all domains. These results are similar to those of other studies.[12,17,18,30] In line with previous research, age relates to the ability to obtain additional and pertinent knowledge deemed necessary for daily living. Greater exposure to sexual health education, such as instruction in sexual health and HIV/AIDS, can be attributed to those who are older.[32] Furthermore, the older students in the study would have had more study experience and exposure. Male students were found to have higher stigma toward HIV. Studies of the general population have shown that males are targeted for stigma reduction and an increase in HIV testing.[33,34] An education strategy to increase students' knowledge is needed to reduce stigma related to HIV knowledge. The students' year of entry also differentiated stigma across all domains. There was a higher percentage of students who started their studies earlier and had a low level of stigma, compared with those who stared later, and the difference was statistically significant. Students with an earlier year of entry will have been exposed to clinical activities during their training.[13] A previous study on dental students in Indonesia found that knowledge of HIV also increased with the duration of study.[14] Other studies have shown that increasing interpersonal interactions with a particular group of patients results in prejudice reduction toward the group; therefore, students who have direct contact with PLWHA will have less stigmatizing attitudes.[35,36]

The overall results of the study showed an association between the students' study major and stigmatizing attitudes. The dental students had the highest percentage of a high level of stigma, compared with the nursing and medical students. The possible high level of stigma among dental students may be related to more intense clinical interaction related to the dental needs of PLWHA, compared with their need for doctors and nurses. Dental students are prospective dentists who will later work in the oral cavities of PLWHA and use a wide variety of dental instruments that require detailed infection control. They may worry more about HIV transmission related to the infection control procedures during their work.[14] Furthermore, the nursing students in this study may have gained exposure to clinical activities earlier than the dental students. The higher risk of disease transmission related to dental work is also a possible cause.[37] Improvement is required in HIV education materials for the dental curriculum, including those covering the ethics and legal considerations for the care of PLWHA.[19,15,37,38] Universitas Indonesia has also implemented interprofessional education (IPE) to help build a collaborative practice environment and optimize patient care in the undergraduate program. IPE will help students develop collaborative skills and behavior to improve patient care.[39,40]

Overall, the students in the study had a low level of stigma related to clinical interaction with HIV-positive patients, with less than one-fifth having a high level of stigma in this domain. These results are a good sign that these future healthcare practitioners will be ready to treat PLWHA as part of their work. However, a previous study showed an association between stigma from persona/cultural beliefs about HIV and clinical interaction, which may influence the quality of care delivered to PLWHA. Reducing this stigma is important in overcome the problem. Evaluation of and improvements in health science education curricula may be needed. Methods of learning by involving PLWHA in programs will enable more interaction, which may reduce stigma among health-care providers. Future studies for the evaluation and implementation of programs is needed.[19]

This study has some limitations. The participants were from a single university, and although they were from different regions of Indonesia, it is not possible to generalize the findings to all Indonesian students studying health sciences. Additionally, because the study was conducted using an electronic form, it is impossible to verify that all of the students simultaneously completed the questionnaire. Despite these drawbacks, the survey is the first to provide information on HIV stigma among students of the health sciences, namely those studying medicine, dentistry, and nursing.

Conclusions

This study explored several factors related to stigma toward HIV among health science students at Universitas Indonesia. It

demonstrated that even though the students performed well on the overall survey, there were replies to some specific items that pointed to HIV knowledge gaps and differences in personal/cultural beliefs regarding the disease. The findings showed age, year of entry, and study major to be associated with the participants' level of stigma related to the three domains. The dental students had the highest percentage of a high level of stigma across all three domains, compared with nursing and medical students. The students in the study had low level of stigma related to clinical interaction with HIV-positive patients. Reducing stigma related to personal/cultural beliefs is important for overcoming the problem. Evaluation of and improvement in health science education curricula may be needed.

Declaration of Interest

The authors report no conflict of interest.

Sociodemographic factors		Cultural Beliefs HIV			HIV Education			Clinical interaction HIV-positive		
		Stigma			Stigma			Stigma		
		High	Low	Mean ±SD [Median]	High	Low	Mean ±SD [Median]	High	Low	Mean ±SD [Median]
		n(%)	n(%)		n(%)	n(%)		n(%)	n(%)	
Age	21 y.o	361(34)	702(66)	4,97 ±1,49 [5]	446(42)	617(58)	1,92 ± 1,42 [2]	216(20.3)	847(79.7)	3,71 ± 0,65 [4]
	≥ 21 y.o	86(25.5)	251(74.5)	5,25 ± 1,35 [5]	104(30.9)	233(69.1)	2,28 ± 1,44 [2]	52(15.4)	285(84.6)	3,79 ± 0,56 [4]
p	**0.004***				**0.001***			**0.047***		
Gender	Male	132(34.1)	255(65.9)	4,98 ± 1,48[5]	169(43.7)	218(56.3)	1,95 ± 1,52[2]	68(17.6)	319(82.4)	3,74 ± 0,65[4]
	Female	315(31.1)	698(68.9)	5,05 ± 1,45[5]	381(37.6)	632(62.4)	2,03 ± 1,39[2]	200(19.7)	813(80.3)	3,73 ± 0,62[4]
p	**0.28**				**0.038***			**0.35**		
Year of entry	2016	79(24)	250(76)	5,29 ± 1,37[5]	84(25.5)	245(74.5)	2,46 ± 1,42[3]	44(13.4)	285(86.6)	3,82 ± 0,52[4]
	2017	100(28.4)	252(71.6)	5,08 ± 1,43[5]	132(37.5)	220(62.5)	2,03 ± 1,40[2]	60(17)	292(83)	3,78 ± 0,52[4]
	2018	102(29.7)	241(70.3)	5,08 ± 1,43[5]	141(41.1)	202(58.9)	1,96 ± 1,38[2]	82(23.9)	261(76.1)	3,63 ± 0,79[4]
	2019	166(44.1)	210)55.9)	4,63 ± 1,51[5]	193(51.3)	183(48.7)	1,65 ± 1,40[1]	82(21.8)	294(78.2)	3,70 ± 0,63[4]
p	**0.001***				**0.001***			**0.002***		
Faculty	Medicine	149(29.4)	357(70.6)	5,15 ± 1,47[5]	152(30)	354(70)	2,37 ± 1,46[2]	68(13.4)	438(86.6)	3,83 ± 0,5[4]
	Dentistry	187(39.7)	284(60.3)	5,08 ± 1,43[5]	254(53.9)	217(46.1)	1,52 ± 1,34[1]	135(28.7)	336(71.3)	3,57 ± 0,81[4]
	Nursing	111(26.2)	312(73.8)	5,20 ± 1,37[5]	144(34)	279(66)	2,13 ± 1,33[2]	65(15.4)	358(84.6)	3,8 ± 0,49[4]
p	**0.001***				**0.001***			**0.001***		

Table 4. Comparison of stigma according to the demographic characteristics of the participants.
The participants who answered "agree" and "do not know" to the stigmatizing questions scored 0, and those who answered "disagree" scored 1; those who answered "agree" and "do not know" to the non-stigmatizing questions scored 1, and those who answered "disagree" scored 0. Higher scores indicate low stigma. Chi-square *p <0.05 was considered significant.

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