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Original Research Article

HIV-related stigmatized attitudes among health care providers in Aceh, Indonesia: The findings from a very low HIV case-load region☆

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ABSTRACT

Introduction: Study of HIV-related stigmatized and discriminatory attitudes is predominantly conducted in the regions with high HIV prevalence; therefore, understanding about stigmatized and discriminatory attitudes dynamic in the region with a very low HIV prevalence is needed.

Aim: To identify the levels of stigmatized attitudes toward people living with HIV (PLHIV) and their predictors among health care providers (HCPs) in Aceh, the lowest HIV prevalence province in Indonesia.

Material and methods: A cross-sectional study was conducted in seven regencies in Aceh. Structured questionnaires were used to collect data from 589 HCPs (doctors, nurses, midwifes and supporting staffs). Univariate analyses including one-way analysis of variance, *t*-test and correlation test were performed according to data type. Multiple linear regression was conducted to identify the predictors of stigmatized attitudes.

Results and discussion: The level of HIV-stigmatized attitudes among HCPs in Aceh was high. Univariate analysis revealed that location, experience of direct contact with PLHIV, knowledge on HIV transmission and prevention, value-driven stigma and overestimated risk to HIV transmission were associated significantly with stigmatized attitudes levels ($P < 0.05$).

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A multiple linear regression model identified that high level of value-driven stigma and high level of overestimated risk to HIV transmission were robust predictor factors for stigmatized attitudes ($R^2 = 0.212$; $F = 14.113$; $P < 0.001$).

Conclusions: This study demonstrates that the value-driven stigma and overestimated risk to HIV transmission are the major predictors of stigmatized attitudes toward PLHIV among HCPs in Aceh. Therefore, programs to reduce value-driven stigma and overestimated risk are needed.

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1. Introduction

HIV-related stigmatized and discriminatory attitudes are negative factors in the crusade to diminish the prevalence and the effects of HIV/AIDS pandemic. They are the major barriers to effective and sustainable prevention, care, treatment, and support programs.[1] As a consequence they create a HIV hidden epidemic.[2] HIV-related stigmatized and discriminatory attitudes also cause people living with HIV (PLHIV) feel anxiety, depression, guilt, isolated, low self-esteem, physical and emotional violence, intensification of grief, and loss of social support[3–5] which in turn affect PLHIV in seeking voluntary counseling and testing, accessing HIV treatment and care, adhering to antiretroviral therapies and accessing education and information on preventive behaviors.[5–8] In addition, HIV-related stigmatized attitudes tend to build and reinforce negative connotations through the association of HIV and AIDS with already-marginalized behaviors, such as prostitution, drug usage, homosexuality, and transgender sexual practice.[9]

Studies on stigmatized and discriminatory attitudes toward PLHIV among health care providers (HCPs) have been conducted in some countries.[3,10–15] Some studies found that the levels of stigmatized and discriminatory attitudes were high among HCPs, including HIV testing without informed consent, verbal abuse/gossip, designating patients as HIV positive on charts or in wards, verbally harassing, isolating HIV-positive patients, denial of treatment and using gloves during all interactions.[2,11,14,15]

Studies from different countries found that various factors affect stigmatized and discriminatory attitudes toward PLHIV among HCPs. Studies in Bangladesh demonstrated that the factors associated with high level of stigmatized and discriminatory attitudes among the HCPs were irrational fears of HIV transmission, working in teaching hospital rather than in non-teaching hospital and diagnostic centers, low level of education, and being male.[11,16] A study in Malaysia found that the key factors affecting stigmatized and discriminatory attitudes were high-risk taking behavior, individuals related to stigmatized identities, sources of HIV infection, stage of the disease, relationship with PLHIV, and ethnicity and urban–rural locality.[17] Additionally, another study indicated that stigmatized attitudes in health care setting related to the fact that HIV/AIDS has strong connection with social or moral problems, such as promiscuity, homosexuality, drug addiction, or prostitution.[18]

In 2009, the number of PLHIV in Indonesia was 310 000.[19] Although the national HIV prevalence is less than 0.2%, in a particular province, Papua, HIV prevalence is approximately 2.4%.[20] Aceh has the lowest HIV prevalence among other provinces in Indonesia. In 2012, there were 33 PLHIV cases only in Aceh.[21] However, recently, HIV prevalence is increasing significantly. Up to date, there is no data available regarding HIV-related stigmatized attitudes either in public or in health care setting in Aceh. In addition, research related to HIV-related stigmatized and discriminatory attitudes was predominantly conducted in the regions with high HIV prevalence.[2,4,10,12–15,22] Therefore, the objective of this study was to identify the levels of stigmatized attitudes among HCPs toward PLHIV and their explanatory factors in Aceh.

2. Aim

The aim of this present study was to provide scientific evidence of HIV-related stigmatized attitudes dynamic among HCPs toward PLHIV as a basic strategy to design intervention programs to decrease stigma and discrimination toward PLIHV in health care settings in Aceh.

3. Material and methods

3.1. *Study design*

This study was a part of the study designed to identify the dynamics of stigmatized and discriminatory attitudes in health care settings. Discriminatory attitudes report has been published elsewhere.[23] In this paper, the stigmatized attitudes report is presented. This study was cross-sectional, conducted in seven regencies (Bireuen, Sigli, Sabang, Lhokseumawe, Tamiang, Langsa, and Takengon) of Aceh which have affiliation teaching hospital with School of Medicine, Syiah Kuala University. HCPs (doctors, nurses, midwifery, and support staffs) were recruited from teaching hospital of those regencies. Data were collected from October 2012 to January 2013. This study was approved by the Institutional Review Board (IRB) School of Medicine, Syiah Kuala University, Banda Aceh, Indonesia and Provincial Health Office No. 050/3080/X/2012.

The experimental procedure used in this study is based on US Agency for International Development (USAID) recommendation.[24] Briefly, the interviewers read a prepared script that consisted of the study aims, risks, and benefits and obtained informed consent from all who participated. Each informed consent form and its questionnaire were assigned a unique

three-digit code and this code was used in all analyses to protect confidentiality. The interviewers proceeded to conduct an interview after obtaining informed consent. No incentive was given to the participants.

3.2. Target population and sampling procedure

Target population of this study was all HCPs in Aceh who provide health care services. In 2011, there were 18 686 HCPs in Aceh including doctors, nurses, midwifes, and supporting staffs (nutritionists and therapists).[25] To capture a representative sample of this target population with 80% confidence and a 5% margin of error and 50% of the response distribution, 377 HCPs were required to achieve the minimum recommended sample size (Raosoft Inc sample size calculator).

To recruit the samples, the hospitals were selected randomly from a list of affiliation teaching hospitals of School of Medicine Syiah Kuala University. Seven hundred HCPs from selected-hospitals, 100 from each hospital, were recruited to participate in this study by direct invitation from ward or department. HCPs were selected purposively in the ward or department level. The number of HCPs from each HCP type (doctor, nurses, midwife and supporting staff) was selected proportionally with their actual number.

3.3. Study instrument

Previously validated structured questionnaires[1,11,24] were used for data collection. The questionnaires covered stigmatized attitudes toward PLHIV, socio-demographic, cultural and religious variables, experience direct contact with PLHIV, knowledge on transmission and prevention of HIV, irrational fear of HIV transmission, value-driven stigma, overestimated risk and facility profile. The questionnaires were tested for reliability prior used in the actual study. The internal consistencies of instruments that measured the domain of stigmatized attitudes, knowledge on transmission and prevention of HIV, irrational fear of HIV transmission, value-driven stigma, overestimated risk and working facility profile fulfilled the good internal consistency with Cronbach's $\alpha \geq 0.7$.

3.4. Observed phenomena

3.4.1. Observed outcome

The observed outcome or response variable in this study was stigmatized attitudes among HCPs toward PLHIV. Stigmatized attitudes were measured with a 15-item questionnaire covering both social- and health care-related stigmatized attitudes toward PLHIV. The items were selected from previous research.[11,26] To measure the stigmatized attitudes, the HCPs were asked to rate each item on a five-point Likert scale, indicating their agreement or disagreement (1 – Disagree strongly; 2 – Disagree somewhat; 3 – Neither agree nor disagree; 4 – Agree somewhat; and 5 – Strongly agree). The higher the score on this scale, the higher the level of stigmatized attitudes.

3.4.2. Explanatory factors

The explanatory factors that might influence the observed outcome or response variable are knowledge on transmission and prevention of HIV, irrational fear of HIV transmission, value-driven stigma, overestimated risk, working facility profile, number of HIV/AIDS related training received within past one year, having direct contact experience with PLHIV at work, and the length of year of working. In addition, other factors such as age, sex, education, marital status, importance of religion in the HCP's life, and type of HCP were also considerate as explanatory factors.

3.4.2.1. Knowledge on transmission and prevention of HIV. A 10-item questionnaire adopted from previous studies was used to measure the knowledge on transmission and prevention of HIV among HCPs.[11,26] Respondents were asked about the causes of HIV transmission, the means to prevent HIV, and how the disease progresses from HIV to AIDS. Responses were ''true,'' ''false,'' and ''do not know.'' For a correct response, a numerical value 1 was allocated whereas for an incorrect response 0 was allocated. Higher scores indicate better knowledge on transmission and prevention of HIV.

3.4.2.2. Irrational fear of HIV transmission. A 12-item questionnaire, adopted from previous studies, was used to measure the irrational fear of HIV transmission among HCPs.[11,26] Item responses were ''true,'' ''false,'' and ''do not know.'' For an irrational response, a numerical value 1 was allocated whereas for a rational response 0 was allocated. Higher scores indicate more irrational fear of HIV transmission.

3.4.2.3. Value-driven stigma. To assess value-driven stigma, a 9-item questionnaire was made using previously validated questions.[1] The items aimed to measuring attitudes associated with HCPs' shame and blame toward PLHIV. Factors emerged in this questionnaire including attitudes about blame, shame associated with PLHIV and attitudes related to provide health care service to PLHIV separately. Items were measured on a five-point Likert scale indicating HCP value-driven stigma agreement or disagreement as follows: 1 – Disagree strongly; 2 – Disagree somewhat; 3 – Neither agree nor disagree; 4 – Agree somewhat; and 5 – Strongly agree.

3.4.2.4. Overestimated risk. A validated questionnaire from previous USAID study[24] was used to assess HCPs perceptions of HIV transmission risk related to various medical procedures. Overestimated risk is definite as activities that HCPs viewed as posing a risk of transmitting HIV but that actually pose no such risk. Each answer on the ''Fears and Perceived Risks Scale'' was numerically scored using a Likert scale of 1–4, where higher scores represent higher levels of overestimated risk.

3.4.2.5. Facility profile. A set of items from previously validated questions was used to measure facility profile including the availability of policies, guidelines and protocols related to HIV/AIDS and their enforcement to HCPs.[3] Item responses were ''yes'' or ''no.'' For a ''yes'' answer, a numerical value of 1 was allocated whereas 0 was allocated for ''no'' response. Higher scores indicate a better facility profile for proving care to PLHIV.

3.5. Statistical analysis

Pearson correlation coefficients were used to examine the relationship between the observed outcome and continuous- or

scale-type explanatory factors. One-way analysis of variance (ANOVA) and student *t*-test were used for examining the association between the observed outcome and categorical- or ordinal-type explanatory factors. Two side of testing was used for all comparison to evaluated statistical a $P \leq 0.05$ as significant. In the next step, significant explanatory factors ($P \leq 0.05$) were entered into the multiple linear regression model to determine their correlation with stigmatized attitudes. The multicollinearity was assessed among the relevant factors before entering the explanatory factors into the regression model using ordinary least squares and variance inflation factor method. The data were analyzed using Statistical Package for the Social Sciences (SPSS for Windows, Version 15, Chicago, IL).

4. Results

4.1. *Sample characteristics*

A total of 589 HCPs (from 700 invitations) were interviewed face-to-face by authors in seven hospitals in seven regencies. The characteristics of HCPs in this study have been published elsewhere.[23] Briefly, the average age of the respondents was 28.73 years and vast majority (76.4%) of the participants were female. More than a half of participants were married and just over third part (38.2%) of respondents had had direct contact with PLHIV in their workplace. In terms of importance of religion in respondent's life, the vast majority (87.9%) of respondents stated that religion is very important. In addition, on average, HCPs attended HIV/AIDS-related training once within the past 12 months.

4.2. *Analysis of stigmatized attitudes and their predictors*

The level of stigmatized attitudes varied significantly across the different locations and the type of HCPs. The level of stigmatized attitudes among HCPs in Bireuen was higher than other locations. Two of eight categorical explanatory factors (the location, and experience of direct contact with PLHIV at work) were significantly related to stigmatized attitudes (Table 1). In addition, the level of stigmatized attitudes increased with high level of value-driven stigma ($r = 0.364$, $P < 0.001$) and overestimated risk ($r = 0.203$, $P < 0.001$). In contrast, the level of stigmatized attitudes was low among HCPs who had accurate knowledge of transmission and

Table 1 – One-way ANOVA or *t*-test of stigmatized attitudes in hypothetical situations among health care providers.

Explanatory factors	Stigmatized attitudes				P value
	N	Mean	95% CI for mean		
			Lower limit	Upper limit	
Location					0.001*
Bireuen	68	41.21	39.23	43.19	
Sigli	66	38.18	36.24	40.12	
Sabang	94	40.07	38.30	41.85	
Lhokseumawe	100	36.65	35.22	38.08	
Tamiang	95	39.79	38.44	41.14	
Langsa	66	40.50	38.79	42.21	
Takengon	100	38.72	37.34	40.10	
Sex					0.853
Male	139	39.08	37.72	40.44	
Female	450	39.22	38.53	39.91	
Education					0.719
Senior high school	49	39.65	37.29	42.02	
Diploma III	352	39.39	38.62	40.15	
Bachelor	49	38.41	36.34	40.48	
Postgraduate	139	38.78	37.40	40.15	
Type of HCP					0.212
Doctor	136	39.05	37.67	40.43	
Nurse	304	38.93	38.04	39.83	
Midwife	89	38.91	37.72	40.10	
Supporting staff	60	41.15	39.29	43.01	
Marital status					0.166
Single	245	38.67	37.66	39.68	
Married	344	39.55	38.78	40.32	
Had any direct contact with PLHIV at work					0.005*
Yes	225	38.06	37.02	39.10	
No	364	39.88	39.13	40.63	
Importance of religion in respondent's life					0.618
Important	71	37.16	37.16	40.36	
Very important	518	38.58	38.58	39.91	

* Statistically significant values.

Table 2 – Correlation analysis between stigmatized attitudes of health care providers and ratio scale explanatory factors.

Explanatory factors	N	Stigmatized attitudes Pearson correlation	P value
Age	589	−0.049	0.230
Length of time working	589	−0.035	0.402
Received HIV/AIDS related training	589	−0.076	0.066
Knowledge on transmission and prevention of HIV	589	−0.084	0.043*
Value-driven stigma	589	0.364	<0.001*
Irrational fear of HIV transmission	589	0.009	0.835
Overestimated risk	589	0.203	<0.001*
Facility profile	589	0.002	0.962

* Statistically significant values.

prevention of HIV ($r = -0.084$, $P = 0.043$) (Table 2). These indicate that value-driven stigma and overestimated risk of HIV transmission increased the stigmatized attitudes levels among HCPs whereas accurate knowledge of HIV transmission and prevention and having experience interact with PLHIV at workplace decreased stigmatized attitudes.

The explanatory factors that were significant statistically ($P < 0.05$) at univariate analysis level then entered into multiple linear regression models. There was no multicollinearity found among explanatory factors. The full regression model for stigmatized attitudes was highly significant ($F = 14.113$; $P < 0.001$), with $R^2 = 0.212$ (Table 3). In the full-regression model, the explanatory factors that remained significant after controlling for the effect of other factors were location, value-driven stigma and overestimated risk. The reduced-regression model also found consistent finding with full regression model after controlling the effect of other factors ($F = 24.950$; $P < 0.001$), with $R^2 = 0.205$.

5. Discussion

Several studies have been conducted to determine some factors effecting stigmatized attitudes toward PLHIV in health care setting. Previous study found that there were three major causes of stigmatized attitudes among HCPs: insufficient awareness of stigma and its consequences, fear of HIV transmission in the workplace, and attitudes that associate HIV with immoral behaviors.[27] This study found that HCPs were living in Lhokseumawe or Sigli, having low value-driven stigma level and overestimated risk, and having accurate knowledge on HIV transmission and prevention were associated with better stigmatized attitudes toward PLHIV. Lhokseumawe and Sigli are two of the most developed and modern cities in Aceh after Banda Aceh, the capital city of Aceh. This fact might be sufficient to explain why HCPs from both cities had better stigmatized attitudes.

In this study, the questionnaire of value-driven stigma measured three components: attitudes about blame, shame associated with PLHIV and attitudes related to provide separate spaces for PLHIV in the hospital. This study clearly revealed that value-driven stigma was associated strongly with stigmatized attitudes. Aceh is the only province in Indonesia that implements Holistic Islamic Law (Syarià Law) in which HIV/AIDS is judged as ''disease of bad person'' that has strong connection with prostitution, homosexuality and drug abuse. Therefore, this condition might drive the attitudes about blame and shame associated with PLHIV

Table 3 – Multiple regression model predicting health care providers' stigmatized attitudes toward PLHIV.

Explanatory factors	Unstandardized coefficients (B)	Standardized coefficients (Beta)	t	P value
Full model ($R^2 = 0.212$, $P < 0.001$)				
Location (Bireuen as RC)				
Sigli	−2.513	−0.104	−2.093	0.037
Sabang	−1.678	−0.081	−1.516	0.130
Lhokseumawe	−5.141	−0.254	−4.580	0.000*
Tamiang	−1.156	−0.056	−1.061	0.289
Langsa	−0.369	−0.015	−0.297	0.767
Takengon	−3.204	−0.158	−2.972	0.003*
Had any direct contact with PLHIV at work (No as RC)	−1.079	−0.069	−1.748	0.081
Knowledge on transmission and prevention of HIV	−0.062	−0.017	−0.413	0.680
Value-driven stigma	0.456	0.331	8.286	0.000*
Overestimated risk	0.136	0.130	3.072	0.002*
Reduced model ($R^2 = 0.205$, $P < 0.001$)				
Location (Bireuen as RC)				
Sigli	−1.401	−0.058	−1.517	0.130*
Lhokseumawe	−4.534	−0.224	−5.386	0.000*
Takengon	−2.377	−0.118	−3.017	0.003*
Value-driven stigma	0.468	0.340	8.598	0.000*
Overestimated risk	0.130	0.124	2.937	0.003*

* Statistically significant values.

leading to increase stigmatized attitudes among HCPs toward PLHIV.

Rational fear of exposure to HIV among HCPs is an important factor to prevent HIV transmission to HCPs. Previous study suggested that fear of HIV exposure was one of the main drivers of stigmatized attitudes among HCPs.[28] This study revealed that high level of overestimated risk of HIV transmission was associated with high stigmatized attitudes. Interestingly, although previous studies found that irrational fear of HIV transmission was one of the predictors for stigmatized attitudes toward PLHIV,[11,29] this study found no correlation between irrational fear and stigmatized attitudes. This result supports the previous finding.[24]

Overestimated risk is component of HCP perception of risk that is defined as activities that HCPs viewed as posing a risk of transmitting HIV but that actually pose no such risk.[24] The instruments used to measure overestimated risk and irrational fear were similar in function. However, the first instrument measured the fear and perceived risk of HCPs in hospital-based setting whereas the second instrument measured the fear and perceived risk of HCPs in general and social situation. The findings from this study indicate that HCPs put more attention on HIV transmission within workplace than in general setting. Interestingly, as predicted, this study revealed that overestimated risk was low among HCPs who frequently attended HIV/AIDS-related trainings and worked in hospital with good infrastructure (data not shown).

In addition, this study also found that the accurate knowledge on HIV transmission and prevention was associated with better stigmatized attitudes toward PLHIV. This finding supported by previous studies that found HCPs who had better knowledge of transmission and prevention of HIV tend to have lower stigmatized attitudes levels compared to their counterparts who had low knowledge of HIV transmission and prevention.[1,11,24,29–32] Theoretically, the knowledge of transmission and prevention could be achieved from formal education or HIV/AIDS training. However, interestingly, studies found conflicting results when evaluating the association between higher formal education and better stigmatized attitudes.[11,29,33] This study also failed to demonstrate the positive association between higher formal education and better stigmatized attitudes. In addition, although studies indicated that formal HIV/AIDS trainings were significantly associated with low stigmatized attitudes,[1,11,30] this study found that there was no association between HIV/AIDS training and stigmatized attitudes.

Another factor that might affect stigmatized attitudes is direct contact with PLHIV. Some studies found that had any direct contact with PLHIV at work reduced stigmatized attitudes.[10,19,33,34] This study found that direct contact with PLHIV associated with stigmatized attitudes at univariate analysis but not at multivariate analysis level. Previous studies also found conflicting findings.[11,26] In addition, previous studies found that HCPs who were working with high HIV case-load had lower stigmatized attitudes scores compared to HCPs with low HIV case-load.[1,30,31] This study found that stigmatized attitudes toward PLHIV among HCPs with low HIV case-load were very common.

The findings of this study have serious implications because stigmatized attitudes undermine the fundamental rights of PLHIV including right to health. In addition, HCP stigmatized attitudes might influence the decision-making process among PLHIV and make them tend to stop seeking voluntary counseling and testing, care, support, and treatment services.[35–38] Additionally, the experience of stigmatization increases the depression level and reduces the level of self-esteem among PLHIV, which both create obstacles to effectively living with HIV and as a consequence it might cause high-risk behavior for transmitting HIV to others, low self-efficacy, and low adherence to antiretroviral therapy.[35–38]

Therefore, it is important to introduce appropriate intervention programs to reduce stigmatized attitudes toward PLHIV among HCPs by addressing related-predictor factors including: (a) to reduce value-driven stigma and overestimated risk among HCPs by increasing HCPs awareness and reducing the misconceptions associated with HIV transmission, and confronting the associations of immoral behavior with PLHIV; and (b) to improve accurate knowledge on HIV transmission and prevention of HCPs. These could be achieved by several action programs. First, HCPs should be required to consistently update their HIV/AIDS-related knowledge. Second, the hospitals and government should provide HCPs with formal HIV/AIDS-related trainings including HIV-related stigma and discrimination training in the regular basis. In addition, as this study also revealed that contact with PLHIV had a role in reducing stigmatized attitudes; therefore, utilizing PLHIV as speakers in formal HIV/AIDS-related training should be considerate as an alternative method to change perceptions and break down HIV/AIDS stereotypes among HCPs. Third, hospital and government should focus on HCPs' needs for supplies, support, and information provided at the facility that enables them to perform their duties aptly when practicing universal precautions and giving health service to PLHIV. Finally, hospitals have to provide clear guideline and protocols that provide information on how to care for PLHIV, and the policies need to be enforced and implemented consistently to all HCPs.

There are some limitations of this study. Instead of actual stigmatized attitudes, this study measured self-reported stigmatized attitudes by using specific hypothetical questions. Hypothetical questions may suffer from social desirability bias due to the possibility of respondents providing responses that are socially acceptable rather than being correct. In addition, the score of facility profile was generated based on the participant's perceptions and not based on actual facility practice. Therefore, this method may cause recall bias, inability to remember or to identify the policies, guideline or protocols related to HIV/AIDS that are available in their workplace. This might be the possible reason to explain why this study failed to reveal any correlation between the availability of HIV/AIDS-related policies, guideline or protocols in workplace and stigmatized attitudes, while previous study found the association.[28] However, we believe that this method provided more actual data about the enforcement and implementation of HIV/AIDS policies, guideline and protocols in HCPs.

This study provides the information about the dynamics of stigmatized attitudes among HCPs toward PLHIV in the lowest HIV case-load region in Indonesia. Therefore, comparison data from other regions in Indonesia with high HIV-case load are

needed to elucidate whether HIV case-load is one of the robust explanatory factors influencing stigmatized attitudes toward PLHIV in health care setting.

6. Conclusions

The level of stigmatized attitudes is high in Aceh, one of the lowest HIV case-load regions in Indonesia. The major explanatory factors that drive stigmatized attitudes among HCPs are high level of value-driven stigma and overestimated risk to HIV transmission. In addition, other factors evoking stigmatized attitudes are the lack of experience contact directly with HIV-positive patients and low level of knowledge on HIV transmission and prevention. Therefore, action programs to reduce value-driven stigma level and over-estimated risk, and to improve accurate knowledge of HCPs on HIV transmission and prevention should be established to address HIV-related stigmatized attitudes in hospital setting in Aceh.

Conflict of interest

All authors have none to declare.

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