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Original Article

Discriminatory attitudes toward people living with HIV among health care workers in Aceh, Indonesia: A vista from a very low HIV caseload region

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ABSTRACT

Background: The aim of this study was to identify the level of discriminatory attitudes towards people living with HIV (PLHIV) among health care workers (HCWs) and the factors influencing discriminatory attitudes in very low HIV load region.

Methods: This research was conducted at seven regencies in Aceh, Indonesia. A cross-sectional study design was adopted and 589 HCWs selected purposively were included in this study. Research was conducted from October 2012 to January 2013. Correlation analysis, analysis of variance and independent sample t test analysis were used according to the type of data. Multiple linear regression models were used to identify the predictor factors.

Results: It was observed that the level of discriminatory attitudes is high. Bivariate analysis showed that regency, education, type of HCW, religion, direct contact experience with PLHIV, HIV/AIDS-related training, knowledge on transmission and prevention of HIV, value-driven stigma, overestimated risk to HIV transmission, and facility profile were significantly related to the level of discriminatory attitudes ($p < 0.05$). A multiple linear

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regression model identified the following correlate to discriminatory attitudes: being Muslim, low-level of knowledge on transmission and prevention of HIV, and high level of value-driven stigma and overestimated risk to HIV transmission ($R^2 = 0.205$).

Conclusions: Our study found that knowledge on transmission and prevention of HIV, value-driven stigma and overestimated risk to HIV transmission are the only significant predictors of discriminatory attitudes towards PLHIV among HCWs in Aceh. Therefore to reduce those factors, trainings on HIV-related discrimination to HCWs and clear guidelines and protocols related to PLHIV care are urgently needed.

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1. Introduction

In 2009, there were 33.3 million people living with HIV (PLHIV) around the globe, about 1.8 million AIDS-related deaths happen every year and 2.6 million people are newly infected with HIV.¹ In the same year, there were 3,10,000 PLHIV in Indonesia. Although national HIV prevalence is less than 0.2%, in some area, for instance Papua, HIV prevalence is 2.4%.^{1,2} Aceh is one of region that has the lowest HIV prevalence in Indonesia. In mid 2009, there were 29 PLHIV cases only registered in Aceh Provincial Health Office.³

Discrimination is an aspect of stigma – a dynamic process of devaluation that ‘significantly discredits’ an individual in the eyes of others thus reducing that individual’s status in the eye of society – defined as a form of exclusion, restriction of expression, marginalization, or prevention from access to something or services.^{4,5} Discrimination is described as a behavior in which a distinction that is made about a person that results in their being treated unfairly or unjustly on the basis of their belonging or being perceived to belong to a particular group.⁶ HIV-related discrimination refers to any forms of arbitrary distinction, exclusion, or restriction affecting PLHIV.⁷ HIV-related discrimination is the major barrier to effective and sustainable prevention, care, treatment, and support efforts in HIV/AIDS control program.^{8,9} It tends to create a hidden epidemic of the disease based on socially-shared ignorance, fear, misinformation, and denial.^{7,10} Studies found that experience of discrimination or fear of being discriminated produce anxiety, depression, guilt, isolation, low self-esteem, disruption of family dynamics, physical and emotional violence, intensification of grief, and loss of social support, which in turn influence the PLHIV to accessing voluntary counseling and testing, HIV treatment, care and support services, low adherence to antiretroviral therapies, all of which have a great impact on public health.^{8,11}

Discriminatory attitudes toward PLHIV do not exist only among the general public, several studies from developing and developed countries have indicated that the existence of high levels of discriminatory attitudes amongst health care workers (HCWs) also.^{12–15} HCWs’ discriminatory attitudes include providing differential treatment, refused of treatment, testing and disclosing HIV status without consent, giving verbal abuse/gossip, designating patients as HIV positive on charts or in wards, verbally harassing patients, avoiding and isolating HIV-positive patients, referring patients for HIV

testing without counseling and using gloves during all interactions.^{9,16}

Studies from different countries found that various factors affect discriminatory attitudes toward PLHIV amongst HCWs and that vary among countries.^{8,13,17–19} The study on HIV/AIDS-related discrimination is important from both public health and human rights perspectives.⁷ Therefore, understanding the magnitude and causes underlying HIV/AIDS-related discrimination amongst HCWs is necessary to develop anti-discrimination strategies and programs. However, recently, there has been no study of HIV/AIDS-related discrimination amongst HCWs in Aceh, Indonesia. In Banda Aceh, a small-scale research has been conducted by Harapan et al.,²⁰ but that study did not represent the general situation in Aceh. In this context, this study was conducted to explore discriminatory attitudes towards PLHIV amongst HCWs in Aceh. Most of the described research was conducted in regions with high HIV prevalence; with this work we tried to understand discrimination dynamic in region with very low HIV prevalence.

2. Methods

2.1. Study design and participants recruitment

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. HCWs (doctors, nurses, midwifery, and support staff) were recruited from teaching hospital of those regencies. A total of 589 HCWs was interviewed face-to-face. All HCWs were asked to participate and there was no incentive was given to the participants. HCWs were selected purposively.

2.2. Procedure

The procedure used in this study was based on USAID recommendation.²¹ Briefly, interviewers read a prepared script that provided an overview of the study aims, risks, and benefits and obtained an informed consent from the HCWs. Each informed consent form and its matching questionnaire were assigned a unique three-digit identifier. To protect confidentiality, these numbers were used in all analyses. Once informed consent was obtained, the interviewer conducted a structured interview.

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.

2.3. Questionnaire

Some previous validated structured questionnaires were used for data collection.^{8,13,21} The questionnaire covered socio-demographic, cultural and religious variables, direct contact experience with PLHIV, knowledge on transmission and prevention of HIV, irrational fear of HIV transmission, value-driven stigma, facility profile and discriminatory attitudes toward PLHIV. The questionnaire used in this study has been validated in this population.

2.4. Measures

2.4.1. Dependent variables

Discriminatory attitudes were measured via 16 items selected covering both social- and health care-related discriminatory attitudes towards PLHIV as previously described.^{13,20} Items were measured on a 5-point Likert-type 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 average score on the discriminatory attitudes scale was 36.4, ranging from 16 to 80. The higher score on this scale reflected the higher level of discriminatory attitudes. Based on previous study the reliability coefficient of this scale was 0.92, indicating high internal consistency amongst the items.¹³

2.4.2. Independent variables

2.4.2.1. *Knowledge on transmission and prevention of HIV.* A 10-item instrument adopted from previous studies was used to measure the knowledge on transmission and prevention of HIV amongst the HCWs.^{13,20} The 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, numerical value 1 was allocated, whereas for an incorrect response, 0 was allocated. Higher scores indicate greater knowledge on transmission and prevention of HIV. In the previous study the reliability coefficient of these items was 0.71.¹³

2.4.2.2. *Value-driven stigma.* To assess value-driven stigma, a 9-item questionnaire was used from previously validated questions.⁸ The items aimed to measure attitudes associated with shame and blame toward PLHIV. Factors emerged in this questionnaire including attitudes about blame, shame associated to the PLHIV and attitudes related to providing health care service to PLHIV separately. Items were measured on a 5-point Likert-type scale indicating their agreement or disagreement: 1 = *Disagree strongly*; 2 = *Disagree somewhat*; 3 = *Neither agree nor disagree*; 4 = *Agree somewhat*; and 5 = *Strongly agree*.

2.4.2.3. *Irrational fear of HIV transmission.* A 12-item instrument adopted from previous studies was used to measure the

irrational fear of HIV transmission amongst the HCWs.^{13,20} Items responses were “true”, “false”, and “do not know”. For a correct response, numerical value 1 was allocated, whereas for an incorrect response, 0 was allocated. Higher scores indicate more irrational fear of HIV transmission. In the previous study the reliability coefficient of these items was 0.91.¹³

2.4.2.4. *Overestimated risk.* To further understand risk provider perception, we used validated questionnaire from a study published by USAID.²¹ Overestimated risk is definite as activities that HCWs see as posing a risk of transmitting HIV but that actually pose no such risk. Each answer on the Fears and Perceived Risks Scale (for overestimated risk points) was numerically scored using a Likert scale of 1–4, and higher scores representing higher levels of overestimated risk.

2.4.2.5. *Facility profile.* A set of questionnaire also used from previously validated questions was to measure facility profile including the availability of policies, guidelines and protocols related to HIV/AIDS and their enforcement to HCWs.⁸ Items responses were “yes” or “no”. For a “yes” answer, numerical value 1 was allocated, whereas for “no” response 0 was allocated. Higher scores indicate better facility profile.

2.4.2.6. *Other measures.* In addition to the above-mentioned independent variables, the following variables were also considered in analyzing the correlation of discriminatory attitudes towards PLHIV: age, sex, education, religion, marital status, length of time of working, direct contact experience with PLHIV at work, importance of religion in the HCW’s life, number of HIV/AIDS related training received, HIV/AIDS-related training within past one year, and type of HCW.

2.5. Statistical analysis

Data were analyzed in two ways. One-way ANOVA was applied to determinate the differences in levels of discriminatory attitudes for the categorical and ordinal variables. The strength of relationship between discriminatory attitudes and the continuous variables was examined through correlation coefficient. The variables that were statistically significant in Bivariate analysis ($p \leq 0.05$) were entered into a multiple linear regression model. Multiple linear regression was used to determine the variables that correlated with discriminatory attitudes. The multicollinearity was assessed among the relevant variables before entering the variables into the regression model.

3. Results

3.1. Sample characteristics

Sample characteristics of participants of this study are presented in Table 1. The average age of the respondents was 28.73 years and vast majority (76.4%) of the participants was female. The large majority (97.6%) of the HCWs was Islam and 58.4% participants were married and just over one third (38.2%) of the respondents had had direct contact with PLHIV in their workplace. In term of importance of religion in

Table 1 – Sample characteristics of HCWs by their occupational position.

Sample characteristics	Percentage of health care workers				
	Doctor (n = 136)	Nurse (n = 304)	Midwife (n = 89)	Supporting staff (n = 60)	Total (n = 589)
Age (average in years)	27.69	28.86	28.61	30.65	28.73
Sex					
Male	22.8	30.3	0.0	26.7	23.6
Female	77.2	69.7	100	73.3	76.4
Education					
Senior high school	0.0	10.2	7.9	18.3	8.3
Diploma III	2.9	75.0	89.9	66.7	59.8
Bachelor	2.9	11.2	2.2	15.0	8.3
Postgraduate	94.2	3.6	0.0	0.0	23.6
Religion					
Islam	98.5	99.7	98.9	83.3	97.6
Non-Islam	1.5	0.3	1.1	16.7	2.4
Marital status					
Single	57.4	36.2	34.8	43.3	41.6
Married	42.6	63.8	65.20	56.7	58.4
Length of time working in (average in years)	2.81	5.87	5.22	4.74	4.95
Had any direct contact with PLHIV at work					
Yes	61.8	35.5	18.0	28.3	38.2
No	38.2	64.5	82.0	71.7	61.8
Importance of religion in respondent's life					
Important	13.2	9.2	21.3	10.0	12.1
Very important	86.8	90.8	78.7	90.0	87.9
Received HIV/AIDS related training within the past 12 months (average training number)	1.46	0.88	0.91	1.22	1.05

PLHIV: People living with HIV.

respondent's life, vast majority (87.9%) of participants stated that religion was very important, and in general, in the past 12 months, respondent attended one HIV/AIDS related training only.

3.2. Level and correlation of discriminatory attitudes

The average score of the scale on discriminatory attitudes toward PLHIV amongst HCWs was 35.85 and there was a significant difference among types of HCW. Five out of 8 variables indicated significant ($p < 0.05$) differences in the levels of discriminatory attitudes (Table 2). These variables were location (regency), education, type of HCW, religion, and direct contact experience with PLHIV at work.

The results of the correlation coefficient between discriminatory attitudes and five of eight of continuous variables (knowledge on transmission and prevention of HIV, value-driven stigma, overestimated risk and facility profile) were statistically very significant ($p < 0.00$) (Table 3). It was observed that the level of discriminatory attitudes increased with high value-driven stigma ($r = 0.158$, $p < 0.000$) and overestimated risk ($r = 0.230$, $p < 0.000$). On the other hand, discriminatory attitudes were lowest among those who received diverse HIV/AIDS related trainings ($r = -0.199$, $p < 0.000$), who have knowledge in transmission and prevention of HIV ($r = -0.187$, $p < 0.000$) and with better facility profile ($r = -0.117$, $p < 0.00$). Thus, the level of discriminatory attitudes increases with the increment of value-driven stigma and overestimated risk of HIV transmission. Equally, high number of HIV/AIDS related training remove, high knowledge

on transmission and prevention of HIV and better facility in hospital produce less discriminatory attitudes toward PLHIV.

There was no multicollinearity was assessed among independent variables. The full regression model for discriminatory attitudes was highly significant ($F_{(19;569)} = 7.725$; $p < 0.000$), with an R^2 of 0.205 (Table 4). In the full model, the variables remained significant after controlling the effect of other variables are location, religion, knowledge on transmission and prevention of HIV, value-driven stigma, and overestimated risk. A reduced regression model, where only the significant variables of the full model were entered, was also significant after controlling the effect of other variables ($F_{(6;582)} = 19.858$; $p < 0.000$), with an R^2 of 0.170. By ignoring the location variable, the results show that the level of discriminatory attitudes increases with high-level of value-driven stigma and overestimated risk and low knowledge on transmission and prevention of HIV.

4. Discussion

Although the concept of discrimination (action) is often equated with stigma (attitudes), however, the reality is not always like that.¹³ This study adopted the oretical position that discrimination is an outcome of stigmatization and attempted to measure discrimination using hypothetical questions about readiness of HCWs to interact with or to provide health care services to PLHIV as previously described.^{14,21} The principal assumption underlying this

Table 2 – One-Way ANOVA of discrimination attitudes in hypothetical situations among HCWs.

Variable	Discrimination attitudes				p
	N	Mean	95% CI for mean		
			Lower limit	Upper limit	
Location					0.000
Bireuen	68	38.32	36.34	40.30	
Sigli	66	36.58	34.12	39.03	
Sabang	94	73.00	35.01	38.99	
Lhokseumawe	100	30.30	29.20	31.40	
Tamiang	95	38.28	36.74	39.83	
Langsa	66	36.91	35.34	38.48	
Takengon	100	35.19	33.56	36.82	
Sex					0.749
Male	139	36.06	34.60	37.52	
Female	450	35.80	35.02	36.57	
Education					0.000
Senior high school	49	38.96	36.05	41.87	
Diploma III	352	36.70	35.82	37.57	
Bachelor	49	34.67	32.32	37.02	
Postgraduate	139	33.06	31.82	34.30	
Type of HCW					0.000
Doctor	136	33.07	31.89	34.29	
Nurse	304	36.94	35.94	37.94	
Midwife	89	35.24	33.67	36.81	
Supporting staff	60	37.60	35.24	39.96	
Religion					0.004
Islam	575	36.01	35.32	36.71	
Non Islam	14	29.50	27.66	31.34	
Marital status					0.061
Single	245	35.08	34.02	36.14	
Married	344	36.41	35.52	37.30	
Had any direct contact with PLHIV at work					0.011
Yes	225	34.74	34.02	36.14	
No	364	36.55	35.52	37.30	
Importance of religion in respondent's life					0.250
Important	71	34.77	32.87	36.68	
Very Important	518	36.01	35.27	36.74	
ANOVA = Analysis of variance; CI = Confidence interval; HCW = Health care workers; PLHIV = People living with HIV.					

ANOVA = Analysis of variance; CI = Confidence interval; HCW = Health care workers; PLHIV = People living with HIV.

approach is that refusal to interact or provide treatment is a reflection of discrimination.¹³

In our study and in Hossain et al¹³ was observed that older HCWs are more discriminatory than young HCWs. The possible reasons are older HCWs may not have received a standardized HIV/AIDS information and may not have attended intensive HIV in-service programs or training courses on HIV/AIDS. Sex of HCWs is one of inconsistent predictors to discriminatory attitudes toward PLHIV amongst HCWs. Several studies found that female HCWs evoked less discriminatory attitudes.^{14,22} However, study in Belize and China found that female HCWs were more stigmatizing in their attitudes of blame/judgment than males.^{17,23} Andrewin and Chien¹⁷ stated that the possible reasons for this condition was women to be more homophobic than men and women also suffer greater social consequences for behavior that is

deemed to be sexually or morally deviant by society. According to general literature, HCWs who are more religious tend to be more discriminating toward PLHIV believing that they have contracted the virus through morally sanctioned practices. In term of HCWs' education, this study indicated that HCWs with higher education had lower discriminatory attitudes against PLHIV. These facts are supported by previous studies.^{8,24} The possible reason for this condition was that more educated HCWs received more curriculums with standardized HIV/AIDS information.

Our study clearly found that number of HIV/AIDS related training is correlated with discriminatory level. Moreover, analysis found that training was positively correlated with knowledge on transmission and prevention of HIV of HCWs. This finding is in agreement with previous studies that documented that HCW who had attended HIV/AIDS training had lower discriminatory attitudes when compared to those who had not.^{8,13,18,19} Medical doctors have showed the lowest level of discriminatory attitudes, followed by midwives, nurses and supporting staffs. The possible reason for this condition is that doctors have a higher knowledge on transmission and prevention of HIV followed by midwives and nurses. This is supported by previous study that found high levels of knowledge on transmission and prevention of HIV amongst higher occupational categories.²⁵ However, Li et al²⁶ found that higher-status medical professional with more medical education and those occupying positions at higher level medical facilities showed more prejudicial attitudes towards PLHIV and less willingness to have social interaction with PLHIV patients.

Our study indicated that knowledge on transmission and prevention of HIV was found to be one of the positive predictors of discriminatory attitudes toward PLHIV. More education and high-knowledge on transmission and prevention of HIV produces less discriminatory attitudes toward PLHIV and had a more positive feeling and view about care of PLHIV patients. Although physicians have knowledge about the routes of transmission, they do not believe it by heart. Therefore, the fear of being infected makes them discriminate PLHIV.¹⁵ Li et al²⁶ found that it was fear of infection rather than knowledge which was related to HCWs' willingness to interact with PLHIV. Interestingly, our analysis found that knowledge on transmission and prevention of HIV decreased overestimation of risk of HIV infection but not HCWs' irrational fear.

The concept of discrimination (action) and stigma (attitudes) is different.¹³ Discrimination is an aspect of stigma defined as a form of exclusion, or restriction of expression, marginalization, or prevention from access to something or services.⁵ When stigma is acted upon, the result is discrimination. Therefore in this study we used the component of stigma, value-driven stigma, as independent variable to discriminatory attitudes. We found that value-driven stigma correlated positively with discriminatory attitudes among HCWs, as predicted. In addition, further analysis found the level of irrational fear and overestimated risk had positive association with value-driven stigma.

Irrational fear of HIV transmission found to be one of predictors of discriminatory attitudes toward PLHIV.^{13,26} The causes of irrational fear of HIV transmission are complex.

Table 3 – Correlation analysis for discriminatory attitudes of HCWs with ratio scale independent variable.

Independent variable	n	Discriminatory attitudes	p
		Person correlation	
Age	589	−0.022	0.587
Length of time working	589	0.066	0.110
Received HIV/AIDS related training	589	−0.199	0.000
Knowledge on transmission and prevention of HIV	589	−0.187	0.000
Value-driven stigma	589	0.158	0.000
Irrational fear of HIV transmission	589	−0.053	0.198
Overestimated risk	589	0.230	0.000
Facility profile	589	−0.117	0.004

HCW = Health care workers.

Previous study found irrational fear of HIV transmission is associated with the positioning of PLHIV as “other”, already stigmatized groups in the society such as homosexuals, sex workers or injection-drug users.²⁷ Thus, the fear about

transmission of HIV is mostly psychological, based on prejudice and irrational beliefs. Deacon and Boule²⁸ stated that fear of infection in HCWs may be more likely to be related to the latter more specific forms of knowledge, to likely exposure, and to the capacity to manage the risk of infection than to general knowledge about transmission modes. However, the rational fear of exposure to HIV among HCWs is important to prevent transmission of HIV to HCWs.

In addition, previous study found that fear of HIV exposure has been purported to be one of the main drivers of stigma among HCWs.²⁹ Our study data found that overestimation of risk of HIV infection occurred among HCW. As predicted, our study found that this overestimated risk of infection is lower among HCW who frequently attended HIV/AIDS related training and that work in good facility profile.

Lack of specific policies or guidance related to PLHIV care increased discriminatory attitudes among HCWs.³⁰ HCWs who work in facilities that not always practice universal precautions against HIV transmission were more likely to favor restrictive policies towards PLHIV.¹⁴ Therefore, implementation of guidelines or policy related to PLHIV should be enforced to HCW in health facilities.

To reduce discriminatory attitude among HCWs, Nyblade et al³⁰ recommend that health facility programs aimed at

Table 4 – Multiple regression model predicting HCWs' discriminatory attitudes toward PLHIV.

Variables	Unstandardized coefficients (B)	Standardized coefficients (Beta)	t	p
Full model ($R^2 = 0.205$; $F_{(19,569)} = 7.725$; $p < 0.000$)				
Location (Bireuen as RC)				
Sigli	−2.326	−0.087	−1.681	0.093
Sabang	−2.215	−0.096	−1.752	0.080
Lhokseumawe	−6.784	−0.302	−4.923	0.000
Tamiang	−0.309	−0.013	−0.246	0.806
Langsa	−2.405	−0.090	−1.696	0.091
Takengon	−3.605	−0.160	−2.917	0.004
Education (Senior High School as RC)				
Diploma III	−1.573	−0.091	−1.295	0.196
Bachelor	−2.685	−0.088	−1.661	0.097
Postgraduate	−3.984	−0.201	−1.842	0.066
Type of HCW (Doctor as RC)				
Nurse	−0.243	−0.014	−0.131	0.898
Midwife	−0.786	−0.033	−0.374	0.709
Supporting staff	1.934	0.069	0.921	0.358
Religion (Non-Islam as RC)	5.996	0.108	2.452	0.014
Had any direct contact with PLHIV at work (No as RC)	−0.625	−0.036	−0.849	0.396
Received HIV/AIDS related training	−0.141	−0.022	−0.489	0.625
Knowledge on transmission and prevention of HIV	−0.500	−0.124	−2.839	0.005
Value-driven stigma	0.278	0.182	4.412	0.000
Overestimated risk	0.115	0.099	2.222	0.027
Facility profile	0.640	0.049	1.134	0.257
Reduced model ($R^2 = 0.170$; $F_{(6,582)} = 19.858$; $p < 0.000$)				
Location (Bireuen as RC)				
Lhokseumawe	−5.841	−0.260	−6.004	0.000
Takengon	−2.705	−0.120	−3.062	0.002
Religion (Non-Islam as RC)	3.474	0.063	1.508	0.132
Knowledge on transmission and prevention of HIV	−0.581	−0.128	−3.259	0.001
Value-driven stigma	0.285	0.187	4.619	0.000
Overestimated risk	0.139	0.119	2.769	0.006

HCW = Health care workers; PLHIV = People living with HIV; RC = reference category.

reducing the causes and consequences of discrimination attitudes need to focus on interventions on individual, environmental, and policy levels. Previous studies found that several programs based on this recommendation have led to positive changes in HCWs' knowledge, attitudes and behaviors, and better quality of care for PLHIV patients.^{31,32}

The findings of this study have serious implications for public-health policy planners and human rights activists. High levels of discriminatory attitudes among the HCWs influence the decision-making process of the PLHIV and stop them from accessing VCT, care, support, and treatment services. Additionally, experience of discrimination increases the depression and reduces the level of self-esteem among the PLHIV, which is adversely related to a number of issues, for instance high-risk behavior for transmitting HIV to others, low self-efficacy, and low adherence to therapy. To have a full understanding of discriminatory attitudes of HCWs, they should be studied in the context of the broader socioeconomic milieu in which they live and work. This study is not, however, without limitations. First, we studied self-reported discriminatory attitudes, instead of actual discriminatory behaviors. These attitudes were measured by some specific hypothetical questions, and hypothetical questions may suffer from bias due to the possibility of respondents providing responses that are socially acceptable rather than being correct which can be termed by social desirability bias. The present study suggests that in terms of scope, a wider audience can be educated through well structured health talks and seminars which would include in-service training and continuing medical education specially designed for the particular target group.

We would like to forward several recommendations to HIV/AIDS concerned bodies. Provincial Health Office should provide HIV-related policies orientation to HCWs; hospitals should give the opportunity for trainings on HIV-related discrimination to HCWs consistently and provide HCWs with clear guidelines and protocols related to PLHIV care. HIV/AIDS-related organizations should enhance their programs to decrease HIV-related discrimination in general population and HCWs. In addition, HCW should strive to update their HIV/AIDS-related knowledge.

5. Conclusion

Our study found that level of discriminatory attitudes was high in Aceh with very low HIV caseload. The level of discriminatory attitudes was higher amongst HCWs with low-level of education, being other than doctor, Muslim and have not experience direct contact with HIV-positive patient, rarely attend trainings HIV/AIDS-related, with low-level of knowledge on transmission and prevention of HIV, with high-level of value-driven stigma and overestimated risk to HIV transmission, and working in bad health care facilities.

Conflicts of interest

All authors have none to declare.

Authors' contributions

HH was the principal investigator, responsible for study design, conducted study, data interpretation, and wrote the first draft and final manuscript. SAK, MZ, FN, RPP, SN, TNP, ISK, RP, EBJ, MPN participating in collecting data. SA analyzed and interpreted data. HK, MBH and MY advised on study design. All authors read and approved the final manuscript.

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