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An assessment of health-care students' attitudes toward patients with or at high risk for HIV: implications for education and cultural competency

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Abstract

Stigma perpetuated by health-care providers has been found to be a barrier to care for vulnerable populations, including HIV-infected, people who inject drugs (PWIDs), and men who have sex with men (MSM) in multiple clinical contexts and remains unexamined among professional health-care students in Malaysia. This cross-sectional, anonymous, and Internet-based survey assessed the attitudes of medical and dental students toward HIV-infected, PWID, and MSM patients. Survey invitation was emailed to 3191 students at 8 professional schools; 1296 (40.6%) responded and scored their attitudes toward these patient groups using a feeling thermometer, indicating their attitudes on a sliding scale from 0 (most negative) to 100 (most positive). Compared to general patients (mean = 76.50), the mean scores for HIV-infected (mean = 54.04; $p < 0.001$), PWID (mean = 37.50; $p < 0.001$), and MSM (mean=32.13; $p < 0.001$) patients were significantly lower and significantly different between each group comparison. Within group differences, most notably religion, ethnicity, and personally knowing someone from these populations were associated with significant differences in attitudes. No differences were noted between pre-clinical and clinical year of training. Health-care students represent the next generation of clinicians who will be responsible for future HIV prevention and treatment efforts. Our findings suggest alarmingly negative attitudes toward these patients, especially MSM, necessitating prompt and effective interventions designed to ameliorate the negative attitudes of health-care students toward vulnerable populations, specifically HIV-infected, PWID, and MSM patients in Malaysia.

Keywords

stigma; HIV/AIDS; people who inject drugs; men who have sex with men; professional health-care students

Introduction

Stigma or social devaluation and discrediting associated with a mark, characteristic, or attribute (Goffman, 1963), within the health-care sector is a barrier for marginalized populations to accessing and utilizing health services (Kinsler, Wong, Sayles, Davis, & Cunningham, 2007; Kuthy, McQuistan, Riniker, Heller, & Qian, 2005; Sadoh, Sadoh, Fawole, Oladimeji, & Sotiloye, 2009). Health-care workers who harbor negative attitudes toward their patients provide them suboptimal care (Araújo, Montagner, da Silva, Lopes, & de Freitas 2009; Genberg et al., 2009; Korszun, Dinos, Ahmed, & Bhui, 2012). Stigma needs to be addressed to provide an equitable standard of care to the entire public (Altice, Kamarulzaman, Soriano, Schechter, & Friedland, 2010). This is particularly true within the context of the HIV pandemic, where stigma toward both people at risk of HIV and people living with HIV (PLWHA) is high in many places globally and undermines global efforts aimed at detection and treatment (Martinez et al., 2012).

Stigma associated with HIV, drug use, and sexual orientation has been investigated in several contexts (Ahern, Stuber, & Galea, 2007; Genberg et al., 2009; Li et al., 2012; Sayles, Ryan, Silver, Sarkisian, & Cunningham, 2007), yet little is known about stigma associated with these characteristics within health-care contexts in general or in Malaysia, a country where HIV is primarily transmitted among PWIDs, but where HIV incidence among MSM is climbing rapidly. The goal of this study is to assess the attitudes that medical and dental students harbor toward HIV-infected, PWID, and MSM patients to better understand the extent to which stigma may impair health-care delivery in Malaysian health-care settings. This study also aims to identify how attitudes vary by socio-demographics and other characteristics to develop stigma-ameliorating interventions.

Methods

Participants and procedures

A cross-sectional anonymous online survey was conducted in seven Malaysian universities in 2012: University of Malaya, National University of Malaysia, International Islamic University Malaysia, Universiti Malaysia Sarawak, Penang International Dental College, Universiti Teknologi MARA Malaysia, and Universiti Sains Malaysia. The study population consisted of undergraduate medical and dental students pursuing a Bachelor of Medicine, Bachelor of Surgery or a Bachelor of Dental Surgery. The 88-item online survey, which required approximately 30 minutes to complete, was uploaded onto Qualtrics Survey Tool and distributed to the students' university emails from their respective university dean's office. Students were informed that participation was voluntary, their answers would remain anonymous and not jeopardize their student status. No incentives were provided. The study

was approved by institutional review boards at Yale University and at participating universities.

Measures

Attitudes toward four patient groups (HIV-infected, PWID, MSM, and general patients) were measured using feeling thermometers developed for the current study. Students were asked to “Please indicate how you feel about <patient group> on a scale from very negative (1) to very positive (100)”. Feeling thermometers are reliable survey tools (Alwin, 1997) that are often used to measure attitudes toward stigmatized groups because the perpetuation of stigma is characterized in part by decreased affect (Allport, 1954; Brewer, 2007). Lower scores on feeling thermometers indicate less positive attitudes, or greater stigma, toward the measured group. Additionally, demographic information was collected, including sex, age, religion, ethnicity, year of study, pre-university qualifications, and whether the respondents personally knew someone who was HIV-infected, a PWID, or a MSM.

Data analysis

All analyses were performed using Statistical Analysis System 9.2. Univariate analyses were performed to summarize the respondents’ demographic information, as well as the primary dependent variables’ values. Mean attitude scores were calculated, and one-way analysis of variance (ANOVA)/Duncan tests were used to compare the attitude scores associated with each of the three patient groups and the general medical comparison group. General linear models were created to identify differences in levels of stigma and attitudes when stratified by the independent variables.

Results

Emails inviting participation were sent to 3191 students (1149 medical and 2042 dental students), with a representative sample population 1296 students (40.6%) responding to the survey [486 medical (42.5%), 658 dental (57.5%), and 152 who did not report the degree which they are pursuing]. Table 1 describes the characteristics of the students who participated in the survey.

Table 2 provides mean attitude scores and subgroup analyses. The overall mean attitude scores were normally distributed and significantly higher for the general patient population, and significantly and incrementally lower for HIV-infected patients, PWID patients, and MSM patients (see Figure 1). Mean scores were significantly different for all patient populations ($p < 0.001$ for all comparisons). The medical students’ mean attitude scores toward treating general patients and HIV-infected patients were statistically more positive than those of dental students (Figure 1). Religion did not affect the students’ attitudes toward general, HIV-infected, or PWID patients; however, it was significantly different for attitudes toward MSM, with Muslim students reporting significantly more negative attitudes toward MSM patients, compared to other religions. No significant differences in attitudes toward HIV-infected, PWID, or general patients were identified when the study population was stratified by student ethnicity; however, the mean score for Malay students toward MSM patients was significantly more negative than the scores of students of other ethnicities.

Students who personally know PWID and MSM patient communities were significantly more likely to report a more positive attitude toward that group compared to their counterparts who did not.

No statistically significant differences in attitudes were found when stratified by sex toward any of the patient populations except for HIV-infected patients, toward whom male students had significantly more positive attitudes than female students.

Discussion

The current study demonstrates that Malaysian medical and dental students endorse poorer attitudes toward HIV-infected, PWID, and MSM patients in comparison to general patients. Attitudes toward MSM and PWID patients, the groups at highest risk for HIV in Malaysia, were particularly low. Results further demonstrate that attitudes vary by demographic characteristics, including religion and ethnicity, and that personally knowing someone from vulnerable populations significantly improved attitudes toward them. Improving the attitudes of medical and dental students, the next generation of health-care workers, toward HIV-infected, PWID, and MSM patients is integral for the public health of Malaysia. Findings within this study suggest two opportunities for intervention.

First, results reinforce the contact hypothesis, which posits that increasing exposure of one population to another improves intergroup attitudes (Allport, 1954; Brewer, 2007). Given that students who personally know people from vulnerable populations demonstrated significantly more positive attitudes toward them compared to students who do not, curriculum changes that promote cultural diversity and sensitivity may be warranted. Changes may include increasing clinical exposure to these vulnerable populations through carefully coordinated efforts. A framework for improving cultural competency in medical school curriculums has been suggested (Robins, Fantone, Hermann, Alexander, & Zweifler, 1998). Such curriculum changes have resulted in improved health-care outcomes for patients with mental illness (Korszun et al., 2012).

Second, results indicate that Malay Muslim students have more negative attitudes toward MSM patients. Structuring interventions aimed at improving cultural competency may have great potential in improving the student populations' overall attitudes toward MSM patients. Fostering favorable attitudes toward traditionally stigmatized groups is not an easy task, especially when certain stigmatized behaviors conflict with religious beliefs. The influence of religious leaders may be the key to improving attitudes of health-care providers (Kamarulzaman & Saifuddeen, 2010; Todd, Nassiramanesh, Stanekzai, & Kamarulzaman, 2007). In 2012, a mosque located in Kuala Lumpur began offering methadone treatment for opioid dependent PWIDs in response to alarming rates of HIV infection among this population (Gooch, 2012). Such partnerships between the health sector and religious leadership have great potential to breach the divide between health-care provision and religious tolerance.

Several study limitations must be acknowledged. First, the cross-sectional nature of the study does not address causality. Moreover, findings cannot be extrapolated to all Malaysian

medical or dental students (e.g., those at private universities). Despite these limitations, this study represents the first known investigation into attitudes of Malaysian medical and dental students from numerous universities toward HIV-infected, PWID, and MSM patients, and the findings of the study are currently being used to adjust the curriculum in a few of the training programs. By documenting these attitudes, this study provides critical insight into the extent to which stigma toward HIV-infected, PWID, and MSM patients is endorsed by Malaysian students and highlights the need for stigma reduction interventions within Malaysian medical and dental school settings. Supplemental education and community investment may be crucial for reducing negative attitudes among this population, and continuing research is required to better understand the factors that perpetuate and sustain HIV/AIDS stigma in Malaysia.

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References

- Ahern J, Stuber J, Galea S. Stigma, discrimination and the health of illicit drug users. *Drug Alcohol Dependence*. 2007; 88:188–196.10.1016/j.drugalcdep.2006.10.014 [PubMed: 17118578]
- Allport, GW. *The nature of prejudice*. Cambridge, MA: Addison-Wesley; 1954.
- Altice FL, Kamarulzaman A, Soriano VV, Schechter M, Friedland GH. Treatment of medical, psychiatric, and substance-use comorbidities in people infected with HIV who use drugs. *Lancet*. 2010; 376:367–387.10.1016/S0140-6736(10)60829-X [PubMed: 20650518]
- Alwin DF. Feeling thermometers versus 7-point scales: Which are better? *Sociological Methods & Research*. 1997; 25:318–340.10.1177/0049124197025003003
- Araújo MA, Montagner MA, da Silva RM, Lopes FL, de Freitas MM. Symbolic violence experienced by men who have sex with men in the primary health service in Fortaleza, Ceara, Brazil: Negotiating identity under stigma. *AIDS Patient Care and STDS*. 2009; 23:663–668.10.1089/apc.2008.0123 [PubMed: 19630518]
- Brewer, MB. The social psychology of intergroup relations: Social categorization, ingroup bias, and outgroup prejudice. In: Kruglanski, AW.; Higgins, ET., editors. *Social psychology: Handbook of basic principles*. New York, NY: The Guilford Press; 2007. p. 695-715.
- Genberg BL, Hlavka Z, Konda KA, Maman S, Chariyalertsak S, Chingono A, Celentano DD. A comparison of HIV/AIDS-related stigma in four countries: Negative attitudes and perceived acts of discrimination towards people living with HIV/AIDS. *Social Science and Medicine*. 2009; 68:2279–2287.10.1016/j.socscimed.2009.04.005 [PubMed: 19427086]
- Goffman, E. *Stigma; notes on the management of spoiled identity*. Englewood Cliffs, NJ: Prentice-Hall; 1963.
- Gooch, L. Malaysian mosque is also a methadone clinic. *New York Times*. 2012 Mar 28. Retrieved October 20, 2012, from <http://www.nytimes.com/2012/03/29/world/asia/malaysian-mosque-is-also-methadone-clinic.html?pagewanted=all>
- Kamarulzaman A, Saifuddeen SM. Islam and harm reduction. *International Journal of Drug Policy*. 2010; 21:115–118.10.1016/j.drugpo.2009.11.003 [PubMed: 20006483]

- Kinsler JJ, Wong MD, Sayles JN, Davis C, Cunningham WE. The effect of perceived stigma from a health care provider on access to care among a low-income HIV-positive population. *AIDS Patient Care and STDS*. 2007; 21:584–592.10.1089/apc.2006.0202 [PubMed: 17711383]
- Korszun A, Dinios S, Ahmed K, Bhui K. Medical student attitudes about mental illness: Does medical-school education reduce stigma? *Academic Psychiatry*. 2012; 36:197–204.10.1176/appi.ap.10110159 [PubMed: 22751821]
- Kuthy RA, McQuistan MR, Riniker KJ, Heller KE, Qian F. Students' comfort level in treating vulnerable populations and future willingness to treat: Results prior to *extramural* participation. *Journal of Dental Education*. 2005; 69:1307–1314. [PubMed: 16352766]
- Li L, Wu Z, Liang LJ, Lin C, Guan J, Jia M, Yan Z. Reducing HIV-related stigma in health care settings: A randomized controlled trial in China. *American Journal of Public Health*. 2012; 3:286–292. [PubMed: 23237175]
- Martinez J, Harper G, Carleton RA, Hosek S, Bojan K, Glum G. Adolescent Medicine Trials N. The impact of stigma on medication adherence among HIV-positive adolescent and young adult females and the moderating effects of coping and satisfaction with health care. *AIDS Patient Care and STDS*. 2012; 26:108–115.10.1089/apc.2011.0178 [PubMed: 22149767]
- Robins LS, Fantone JC, Hermann J, Alexander GL, Zweifler AJ. Improving cultural awareness and sensitivity training in medical school. *Academic Medicine*. 1998; 73(Suppl 10):S31–S34.10.1097/00001888-199810000-00037 [PubMed: 9795644]
- Sadot AE, Sadot WE, Fawole AO, Oladimeji A, Sotiloye O. Attitude of health care workers to patients and colleagues infected with human immunodeficiency virus. *Journal of Social Aspects of HIV/AIDS*. 2009; 6(1):17–23.10.1080/17290376.2009.9724925 [PubMed: 19399312]
- Sayles JN, Ryan GW, Silver JS, Sarkisian CA, Cunningham WE. Experiences of social stigma and implications for healthcare among a diverse population of HIV positive adults. *Journal of Urban Health*. 2007; 84:814–828.10.1007/s11524-007-9220-4 [PubMed: 17786561]
- Todd CS, Nassiramanesh B, Stanekzai MR, Kamarulzaman A. Emerging HIV epidemics in *Muslim* countries: Assessment of different cultural responses to harm reduction and implications for HIV control. *Current HIV/AIDS Reports*. 2007; 4:151–157.10.1007/s11904-007-0022-9 [PubMed: 18366945]

Figure 1.
Attitudes toward traditionally stigmatized patients.

Table 1

Comparison of the characteristics of medical and dental students.

Characteristic	Total sample ^a 1296 (100%)	Medical students ^a 486 (42.5%)	Dental students ^a 658 (57.5%)	<i>p</i> ^b
Age (years), mean $\pm$ SD	22.4 $\pm$ 1.65	22.5 $\pm$ 1.61	22.4 $\pm$ 1.68	0.3976
Sex				<0.0001
Male	369 (31.7%)	204 (42.1%)	161 (24.5%)	
Female	793 (68.3%)	280 (57.9%)	497 (74.5%)	
Race/ethnicity				0.0003
Malay	720 (62.1%)	330 (68.0%)	376 (57.5%)	
Chinese	353 (29.6%)	119 (24.5%)	220 (33.6%)	
Indian	56 (4.8%)	16 (3.3%)	40 (6.1%)	
Other	40 (3.5%)	21 (4.1%)	18 (2.8%)	
Religion				0.0001
Muslim	744 (64.0%)	344 (70.9%)	386 (58.7%)	
Buddhist	257 (22.1%)	86 (17.7%)	170 (25.8%)	
Christian	97 (8.3%)	40 (8.2%)	55 (8.4%)	
Hindu	42 (3.6%)	8 (1.6%)	33 (5.0%)	
Other	23 (2.0%)	8 (1.6%)	14 (2.1%)	
Year of study				0.0521
1	182 (15.7%)	59 (12.2%)	123 (18.7%)	
2	180 (15.5%)	83 (17.1%)	96 (14.6%)	
3	210 (18.1%)	87 (17.9%)	121 (18.4%)	
4	273 (23.5%)	111 (22.9%)	152 (23.0%)	
5	316 (27.2%)	143 (29.9%)	163 (25.3%)	
Clinical training				0.0126
Pre-clinical	396 (34.2%)	147 (30.3%)	245 (37.3%)	
Clinical	761 (65.8%)	338 (69.7%)	411 (62.7%)	
Personally know anyone living with HIV/AIDS				0.0182
Yes	144 (12.5%)	72 (14.8%)	67 (10.2%)	
No	1006 (87.5%)	414 (85.2%)	584 (89.8%)	
Personally know anyone who is a person who injects drugs				<0.0001
Yes	208 (17.9%)	113 (23.3%)	91 (13.9%)	
No	952 (82.1%)	373 (76.7%)	565 (86.1%)	
Personally know anyone who is a man who has sex with men				0.0263
Yes	160 (13.8%)	80 (16.5%)	78 (11.9%)	
No	1000 (86.2%)	405 (83.5%)	579 (88.1%)	

Note:

^aNumbers may not sum to total due to missing data, and percentages may not sum to 100% due to rounding.^b*p*-value χ^2 -test for categorical variables or *t*-test for age.

Table 2

Mean attitude scores comparing general medical patients with each of the vulnerable populations.

Characteristics	General patients mean (SD)	Column <i>p</i> -value	HIV-positive patients mean (SD)	Column <i>p</i> -value	PWID patients mean (SD)	Column <i>p</i> -value	MSM patients mean (SD)	Column <i>p</i> -value
Overall mean score	76.50 (20.35)		54.04 (20.99)		37.50 (24.41)		32.13 (29.33)	
Type of student								
Medical	80.05 (17.95)	<0.0001	58.89 (20.94)		39.48 (24.00)	0.0124	32.90 (29.91)	0.4649
Dental	73.84 (21.69)		51.93 (20.63)		35.77 (24.56)		31.59 (28.92)	
Sex								
Male	77.95 (19.40)	0.0952	57.08 (21.69)		39.52 (24.95)	0.0623	34.22 (30.92)	0.1115
Female	75.78 (20.74)		52.67 (20.47)		36.54 (24.14)		31.09 (28.52)	
Race/ethnicity								
Malay	76.14 (21.42)	0.0683	54.04 (21.08)		38.22 (25.33)	0.4124	24.01 (27.58)	<0.0001
Chinese	75.77 (18.70)		53.53 (20.52)		35.92 (22.45)		43.78 (26.67)	
Indian	82.36 (15.65)		56.58 (21.14)		36.70 (24.21)		51.70 (28.88)	
Other	81.00 (17.85)		58.13 (21.10)		41.13 (24.52)		42.33 (32.30)	
Religion								
Muslim	76.23 (21.36)	0.0943	53.94 (21.03)		37.95 (25.23)	0.0031	24.02 (27.60)	<0.0001
Buddhist	76.52 (18.21)		52.58 (20.49)		33.56 (22.52)		44.84 (26.15)	
Christian	75.31 (19.35)		57.90 (18.47)		45.13 (20.03)		40.15 (26.64)	
Hindu	85.13 (15.15)		57.08 (23.29)		36.79 (23.87)		56.05 (29.08)	
Other	74.68 (20.26)		56.82 (25.83)		36.05 (29.11)		59.09 (28.43)	
Training status								
Clinical	76.47 (20.15)	0.8936	53.75 (21.23)		37.05 (23.83)	0.3284	34.11 (29.79)	0.0021
Pre-clinical	76.64 (20.78)		54.97 (20.11)		38.56 (25.51)		28.17 (28.06)	
Personally knows someone with HIV/AIDS								
Yes	77.95 (21.45)	0.3686	57.91 (21.08)		41.53 (25.69)	0.0400	31.09 (30.46)	0.6739
No	76.43 (20.07)		53.65 (20.84)		36.95 (24.20)		32.34 (29.22)	
Personally knows a PWID								
Yes	78.41 (20.22)	0.1391	54.87 (22.19)		42.41 (27.84)	0.0017	30.21 (30.63)	0.3219
No	76.11 (20.33)		53.97 (20.65)		36.43 (23.50)		32.60 (29.06)	

Characteristics	General patients mean (SD)	HIV-positive patients mean (SD)	Column <i>p</i> -value	PWID patients mean (SD)	Column <i>p</i> -value	MSM patients mean (SD)	Column <i>p</i> -value
Personally knows a MSM			0.6949		0.0176		0.1162
Yes	75.90 (21.24)	57.78 (22.11)		40.43 (26.30)		51.76 (31.35)	
No	76.64 (20.19)	53.59 (20.64)		37.10 (23.09)		28.99 (27.75)	

Note: A Bonferroni-adjusted **significance level of 0.002** was used to account for the increased possibility of type-I error. All row *p*-values are <0.0001. Bolded *p*-values indicate statistical significance.