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Stigmatization of Patients with HIV/AIDS among Doctors and Nurses in Belize

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Abstract

This study, conducted from August to September 2007, utilized a population-based survey to investigate stigmatizing attitudes and acts of discrimination against HIV/AIDS patients among doctors and nurses working in public hospitals in Belize. A total of 230 subjects (81.0%) completed the survey. The mean age was 36.8 years; 75% were women; 61% were nurses; 74% were Belizean. Stigmatization was greatest for "attitudes of blame/judgment"; disclosing a patient's HIV/AIDS status to colleagues was the most frequent act of discrimination (29%). Formal HIV/AIDS training was significantly associated with less stigmatization for "attitudes towards imposed measures" ($p < .01$); "attitudes of blame/judgment" ($p < 0.05$); and testing without consent ($p < 0.05$). Doctors showed more stigmatization in "attitudes towards imposed measures," conducted HIV tests without consent and disclosed patient status to colleagues more frequently than nurses ($p < 0.05$) while nurses gave differential care to patients based on HIV status more frequently ($p < 0.01$) than doctors. Female and religious health care workers (HCWs) were more stigmatizing in their "attitudes of blame/judgment" than male and nonreligious HCWs ($p < 0.05$). Cuban HCWs were more stigmatizing in their "attitudes toward imposed measures" and were less comfortable dealing with HIV/AIDS patients than their Belizean counterparts ($p < 0.01$). Older age was associated with less frequent disclosure of patients' HIV status ($p < 0.05$). HIV/AIDS training that incorporates stigma reduction strategies tailored to the target groups identified is needed. Additionally, we recommend that the effectiveness of national HIV/AIDS policies be investigated.

Introduction

The 2007 United Nations Agency for International development (UNAIDS) and the World Health Organization (WHO) estimate that 33.2 million people worldwide have HIV/AIDS with an estimated 1.6 million living in Latin America and 230,000 living in the Caribbean.[1] In 2004, Belize, which is a middle-income country and a part of Latin America and the Caribbean, had the highest prevalence of HIV infection in Central America, estimated at 2.4% in a population of 282,600 (according to the mid-year 2004 census).[2] HIV/AIDS stigma and discrimination compound the challenge of getting the pandemic under control and several international agencies including the WHO, UNAIDS, and the United States Agency for International Development (USAID) have made combating this phenomenon a top priority.[3]

Erving Goffman conceptualized a stigma framework and described it as an attribute that was deeply discrediting within a particular social interaction.[4] His theory is grounded in the concept of social identity that is based on establishing those who are "normal" from those who are different or "deviant," the stigmatized. Goffman also described the relationship between stigmatizing attitudes and acts of discrimination, with the former often resulting in the latter. In the current literature, acts of discrimination are often referred to as "enacted stigma," while stigmatizing attitudes are often referred to as "expressed stigma."[5] According to Herek et al.,[6] AIDS shares many characteristics with other diseases that are highly stigmatized, such as its perception to be unalterable, degenerative, and fatal, its contagiousness and transmissibility, and the repellent, ugly, and upsetting appearance of the afflicted in the advanced stages of the disease. They go on to state that this reaction is amplified by a tendency among a significant portion of the public to blame people living with HIV/AIDS (PLWHA) for their illness, since the acquisition is perceived to be as a result of immoral and voluntary actions, for example in homosexual and promiscuous sex and the sharing of infected needles among injection drug users.

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Parker and Aggleton[7] recognized HIV/AIDS stigma and discrimination as complex social processes that interact with and reinforce preexisting stigma and discrimination associated with sexuality, gender, race, and poverty. Furthermore, they underscored the need to understand these phenomena across various settings and cultural contexts.

The health care setting has been identified as one of the major settings in which stigmatization urgently needs to be addressed. While many of the studies conducted thus far were conducted among health care workers (HCWs) in Africa, fewer studies have investigated the phenomena among HCWs in Latin America and the Caribbean. A study conducted among sports coaches in Barbados emphasized the need for understanding the experience and expression of AIDS stigma among those delivering HIV/AIDS services (such as health care providers) in diverse cultures as a first step toward the development and cross-cultural validation of tools for assessing stigma and subsequently, the design of targeted interventions.[8] As a corollary, little is known or documented about the attitudes and practices of HCWs in Belize regarding treatment of HIV/AIDS patients. In this study, we investigated stigmatizing attitudes and acts of discrimination against HIV/AIDS patients and determined the associated factors among doctors and nurses employed in public hospitals in Belize.

Materials and Methods

Study population and setting

A population-based survey consisting of doctors and nurses employed in the country's seven public district hospitals was conducted between August 3 and September 15, 2007. All doctors and nurses who were employed for 6 months or more and who were actively working at the time of the survey were deemed eligible for the study. Of a total of 284 eligible HCWs, 244 participated in the survey, and 230 completed questionnaires were obtained, yielding response and completion rates of 85.9% and 81.0%, respectively. Only completed questionnaires were assessed.

Measurement

The questionnaire, which was anonymous and self-administered, consisted of structured closed-ended questions. Personal and professional characteristics, disease knowledge, and awareness of policy were treated as the explanatory variables while stigmatizing attitudes and discriminatory acts were treated as the outcome variables. Personal information included religion, religiousness, gender, and age. Nationality was included because the public health sector of Belize relies greatly on foreign doctors and nurses to meet human resource needs and provide services. Professional information included type and level of profession, completion of formal HIV/AIDS training, awareness of the existence of a policy regarding HIV testing, and the number of known HIV/AIDS cases encountered within the past 6 months. The Belize national policy regarding HIV testing, which has been in place since 2003, stipulates that all HIV testing be voluntary and accompanied by written informed consent, that pretest and posttest counseling be available, and that an individual has the right to opt out of an HIV test at any point in the testing process.[9] HCWs were categorized as follows: doctors were either medical officers or specialists, with the term "medical officer" referring to generalist doctors; nurses were either registered nurses or practical nurses, based on having had 5 or 3 years of academic training, respectively. HIV/AIDS knowledge was assessed using six items for which the overall percentage of accurate responses was calculated (items are listed in Table 1).

Instruments to measure the outcome variables of interest, stigmatizing attitudes and discriminatory acts, have not been validated in the Belizean context, and no psychometric data are available for their use in this population. For this reason, instruments were designed specifically for this study, with content chosen to be relevant to and culturally acceptable in this context. The questionnaire was approved by three experts who assessed its content validity.

The items assessing stigmatizing attitudes were ranked on five-point Likert-type scales. Responses to each statement ranged from 1 (strongly disagree) to 5 (strongly agree). The items assessing acts of discrimination were similarly ranked

Table 1. Health care workers' HIV/AIDS knowledge;

Item	*Correct responses* n *(%)*
One can contract HIV infection by sharing meals with an HIV-infected person. (F)	223 (97.0)
Procedures for avoiding Hepatitis B and HIV infection are similar. (T)	184 (80.0)
Most newborns born to HIV-positive women have HIV/AIDS infection at birth. (F)	125 (54.3)
After needle stick injury with a needle from an HIV-infected person, the chance of contracting HIV virus is less than 1%. (T)	115 (50.0)
After needle stick injury with a needle from an HIV-infected patient, immediately gently expressing blood form the puncture site reduces the risk of contracting HIV infection. (T)	108 (47.0)
Through sexual contact gonorrhea is more easily transmitted than HIV virus. (T)	100 (43.5)

Note: Items listed in order from highest percentage of accurate responses to lowest.

with responses to those statements ranging from 1 (never) to 5 (all of the time). A score of 1 was regarded as least stigmatizing or discriminatory and 5 being most stigmatizing or discriminatory with a higher score therefore indicating a more stigmatizing attitude or a higher frequency of committing a discriminatory act. Reverse coding was applied where necessary so that the direction of association was consistent. Principal components factor analysis, utilizing varimax rotation with Kaiser normalization, a loading criterion of 0.6, and eigenvalues of one or greater, was conducted on the attitudinal items. Based on these criteria, the nine items fit into three subscales: (1) Attitudes toward imposed measures—4 items, Cronbach α 0.71; (2) Attitudes of blame/judgment—3 items, Cronbach α 0.60; and (3) Comfortableness in dealing with HIV/AIDS patients—2 items, Cronbach α 0.83. These items were summed and averaged to give stigmatization scores for each subscale which were then used in the analysis. The results of factor analysis for attitudinal items are displayed in Table 2. The five items used to assess discriminatory acts were treated separately in the analysis.

Prior to distribution of the questionnaire, it was tested among five HCWs working at a clinic in Belize City to ensure that questions were understandable and culturally acceptable. The study was approved by the Institutional Review Board of the Ministry of Health, Belize.

Statistical analysis

Statistical analysis was conducted using the SPSS version 10.0 (SPSS Inc., Chicago, IL). Frequencies, percentages, means, and standard deviations were used to describe personal and professional data as well as to describe the findings for items measuring stigma and discrimination among HCWs in this study.

Independent samples *t* tests and one-way analysis of variance (ANOVA) were used to assess the associations between explanatory and outcome variables. In order to achieve a small to moderate effect size of 0.2, a type I error of 0.05 and power of 0.80, a sample size of 197 was required.[10] The 230 completed questionnaires therefore satisfied these criteria.

Results

Characteristics of the study participants

The mean age of the study participants was 36.8 years (standard deviation [SD], 8.5) and 75% were women. Roughly 74% were Belizean, 9% were Cuban; 9% were from Central American countries other than Belize, and 8% were from "other" territories. Eighty-four percent of the participants listed themselves as either somewhat or very religious. Forty-one percent reported they were Catholic, 13% were Anglican, 34% were from "other" denominations, and 12% had no religious affiliation. Registered nurses comprised the largest professional group of the four, accounting for 47% of the HCWs in this study. This was followed by practical nurses comprising 24% of subjects, medical officers comprising 17%, and medical specialists comprising 13%. Sixty-three percent of the HCWs had had formal HIV training and 73% had had contact with 0 to 10 HIV/AIDS cases within the past 6 months. In addition, 189 of the 230 respondents, roughly 82%, were aware that there was a national policy regarding HIV testing. The sample characteristics are displayed in Table 3.

In terms of disease knowledge, 57% of the HCWs answered at least 4 of the 6 items correctly, for a score of 67%.

Table 2. Factor Analysis for Stigmatizing Attitudes

Item	Factor loadings		
	Imposed measures	*Blame/ judgment*	*Comfortableness dealing with patients*
All patients admitted to hospital should be HIV tested.	**0.68**	0.22	0.19
Relatives/sexual partners of patients with HIV/AIDS should be notified of the patient's status even without his/her consent.	**0.72**	0.08	0.04
Patients with HIV/AIDS should be cared for and treated in their own hospitals and facilities away from other patients who do not have HIV/AIDS.	**0.80**	0.13	0.004
A health professional with HIV/AIDS should not be working in any area of health care that requires patient contact.	**0.66**	0.18	0.06
I feel more sympathetic toward people who get AIDS from blood transfusions than those who get it from intravenous drug abuse.	0.15	**0.77**	0.08
I feel that if a child contracts the HIV/AIDS virus from its mother through mother-to-child or vertical transmission, the mother is to blame for the child's disease.	0.09	**0.64**	−0.05
I have little sympathy for people who get AIDS from sexual promiscuity.	0.25	**0.77**	−0.03
I am comfortable providing health services to clients who are HIV positive.	0.11	−0.03	**0.92**
I am comfortable putting a drip in someone who is showing signs of AIDS.	0.08	0.03	**0.92**
Eigenvalues	2.86	1.05	1.69
% of variance	31.81	11.69	18.7

Table 3. Characteristics of the Study Participants

Variables	n	%
Age (years)		
21–30	61	26.5
31–40	99	43.0
41–50	53	23.0
> 50	17	7.4
Gender		
Male	57	24.8
Female	173	75.2
Nationality		
Belizean	170	73.9
Cuban	21	9.1
Central American	21	9.1
Other	18	7.8
Religion		
None	27	11.7
Catholic	94	40.9
Anglican	30	13.0
Other	79	34.3
Religiousness		
Very	61	26.5
Somewhat	133	57.8
None	36	15.7
Profession		
Medical officer	38	16.6
Physician specialist	29	12.6
Registered nurse	109	47.4
Practical nurse	54	23.5
Formal HIV/AIDS training		
Yes	145	63.0
No	85	37.0
No. of HIV/AIDS cases encountered		
None	20	8.7
< 5	76	33.0
5–10	73	31.7
11–20	27	11.7
> 20	34	14.8
Awareness of HIV testing policy		
Yes	189	82.2
No	41	17.8
HIV/AIDS knowledge score		
< 67%	99	43.0
≥ 67%	131	57.0

Scores ranged from 17% (1 item correct) to 100%. Knowledge regarding casual contact was high, with 97% of respondents answering accurately that the disease could not be contracted by sharing meals with an infected person. Knowledge was somewhat deficient regarding sexual transmission, vertical transmission and infection following accidental needle-stick injury. The results for disease knowledge by item are displayed in Table 1.

Stigmatizing attitudes toward patients with HIV/AIDS

The highest stigmatization score was for the subscale "attitudes of blame/judgment" (mean, 2.83; SD, 0.95), followed by "attitudes toward imposed measures" (mean 2.70; SD, 0.95). The lowest stigmatization score was for the subscale "comfortableness in dealing with HIV/AIDS patients" (mean 2.12; SD, 0.89). The item, "All patients admitted to the hospital should be HIV tested," had the highest stigmatization score at 3.14 (SD 1.43) and with just over 50% of the HCWs agreeing with this statement. The other item that had a mean score of more than 3 concerned persons who had contracted HIV through injection drug use, with 45% of the HCW agreeing with the statement, "I feel more sympathetic toward people who get AIDS from blood transfusions than those who get it from intravenous drug abuse," with a mean stigmatization score of 3.12 (SD 1.33). Detailed results of each item are displayed in Table 4.

Acts of discrimination among HCWs

Comparing responses item by item, giving differential treatment to patients based on HIV status was the act of discrimination reported by the greatest proportion of HCWs, with 29% of HCWs indicating that they did this to varying degrees. Furthermore, the mean score for this item was the second highest at 1.36 (SD, 0.63) which meant it was second highest in terms of frequency of occurrence. Second highest in terms of proportion was the item, "Do you disclose a patient's HIV status to a colleague who is not directly involved in the management of that case." For this item, approximately 78% of the HCWs surveyed indicated that they never disclosed HIV/AIDS status to colleagues, leaving 22% that did. This item also had highest mean score of all items, at 1.37 (SD, 0.79), meaning that this was the most frequent act of discrimination. Furthermore, 10% of HCWs indicated that they let another HCW deal with a patient suspected to be HIV positive, that they did not always get consent before conducting an HIV test, and that they disclosed a patient's HIV status to a friend. A more detailed description of the findings is presented in Table 5.

Factors associated with HIV/AIDS stigmatizing attitudes and acts of discrimination

HCWs who had had formal HIV/AIDS training had significantly lower stigma scores for "attitudes toward imposed measures" ($p < 0.01$) and "attitudes of blame/judgment" ($p < 0.05$) and also conducted HIV tests without the patient's consent less frequently than their untrained counterparts ($p < 0.05$). Doctors were more stigmatizing in "attitudes toward imposed measures," and conducted HIV tests without consent and disclosed patients' status to colleagues more frequently than nurses ($p < 0.05$) while nurses gave differential care to patients based on HIV status more frequently ($p < 0.01$) than doctors. Belizeans were less stigmatizing in "attitudes toward imposed measures" ($p < 0.01$) and were more comfortable dealing with patients than Cubans ($p < 0.01$). Being male and being nonreligious were associated with less stigmatizing "attitudes of blame/judgment" ($p < 0.05$). Those HCWs who were not aware of the policy regarding testing for HIV had higher stigma scores for "attitudes toward imposed measures" than their counterparts who were aware of this policy ($p < 0.05$). HCWs who were older than the mean age of 37 years disclosed patients' HIV/AIDS status to colleagues and friends less frequently ($p < 0.05$) than those 37 years of age or less. The findings for factors associated with HIV/AIDS stigmatizing attitudes and acts of discrimination are displayed in Tables 6 and 7.

Table 4. Attitudes toward HIV/AIDS Patients among Health Care Workers

Subscales and items	No. of respondents (%)					Mean (SD)
	Strongly disagree[a]	Disagree	No opinion	Agree	Strongly agree	
Attitudes of blame/judgment						2.83 (0.95)
I feel more sympathetic toward people who get AIDS from blood transfusions than those who get it from intravenous drug abuse.	27 (11.7)	67 (29.1)	32 (13.9)	60 (26.1)	44 (19.1)	3.12 (1.33)
I feel that if a child contracts the HIV/AIDS virus from its mother through mother-to-child or vertical transmission, the mother is to blame for the child's disease.	34 (14.8)	68 (29.6)	39 (17.0)	63 (27.4)	26 (11.3)	2.9 (1.27)
I have little sympathy for people who get AIDS from sexual promiscuity.	54 (23.5)	82 (35.7)	46 (20.0)	31 (13.5)	17 (7.4)	2.46 (1.22)
Attitudes toward imposed measures						2.70 (0.95)
All patients admitted to the hospital should be HIV-tested.	31 (13.5)	68 (29.6)	15 (6.5)	61 (26.5)	55 (23.9)	3.18 (1.43)
Relatives/sexual partners of patients with HIV/AIDS should be notified of the patient's status even without his/her consent.	42 (18.3)	76 (33.0)	10 (4.3)	59 (25.7)	43 (18.7)	2.93 (1.44)
Patients with HIV/AIDS should be cared for and treated in their own hospitals and facilities, away from other patients who do not have HIV/AIDS.	41 (17.8)	107 (46.5)	18 (7.8)	45 (19.6)	19 (8.3)	2.54 (1.22)
A health professional with HIV/AIDS should not be working in any area of health care that requires patient contact.	56 (24.3)	120 (52.2)	22 (9.6)	22 (9.6)	10 (4.3)	2.17 (1.04)
Comfortableness dealing with HIV/AIDS patients						2.12 (0.89)
I am comfortable providing health services to clients who are HIV positive.[b]	5 (2.2)	17 (7.4)	18 (7.8)	127 (55.2)	63 (27.4)	2.02 (0.92)
I am comfortable putting a drip in someone who is showing signs of AIDS.[b]	5 (2.2)	30 (13.0)	23 (10.0)	124 (53.9)	48 (20.9)	2.22 (0.99)

[a]The scores for responses were as follows: "strongly disagree" = 5; "disagree" = 4; "no opinion" = 3 ; "agree" = 2; "strongly agree".

[b]Reverse coding applied to these items when scores allotted.
SD, standard deviation.

Discussion

Stigmatizing attitudes and acts of discrimination against patients with HIV/AIDS

This study revealed the existence of stigmatization of patients with HIV/AIDS among doctors and nurses working in public health hospitals in Belize. The highest stigmatization score was for the subscale "attitudes of blame/judgment." The tendency for HCWs to be more stigmatizing toward those patients belonging to marginalized groups in society such as homosexuals, injection drug users, and commercial sex workers, who are believed to have contracted the virus through morally sanctioned practices, is well established.[11–14] Similar to this study, a study conducted among Thai nurses and nursing trainees also detected stigmatizing attitudes toward injection drug users and also, strong interactions between the stigmas associated with HIV/AIDS, commercial sex, and intravenous drug use.[14] Those results suggest that addressing these costigmas could be vital to the success of efforts aimed at reducing HIV/AIDS stigma.

With respect to "attitudes toward imposed measures," responses in the affirmative were interpreted to reflect stigmatization. This was due in part to the fact that the Belize national AIDS policy, developed specifically to protect PLWHA from stigma and discrimination, stipulates that testing be voluntary and that results be confidential,[9] so that responses to the contrary were interpreted to be the result of stigma. In addition, the common thread for these items is the lack of choice on the part of the person(s) in question so that the nature of the affirmative responses are more consistent with attitudes supporting measures that are coercive in nature, such as isolation and quarantine and mandatory testing. Despite this policy, our results found that more than half of HCWs agree that, "All patients admitted to the hospital should be HIV tested," which suggests the need for better communication of the policy to HCWs. Over 85% of HCWs in this survey indicated that they are comfortable dealing with HIV/AIDS patients. Similarly, one study reported that 80% of physicians in Barbados felt comfortable dealing with these patients.[15]

A 2001 multicountry study initiated by the Panos Institute Global AIDS Programme and UNICEF reported that acts of discrimination in the health care setting included patients being left in the corridors of hospital; refusal to give medical care and treatment, degrading treatment and breaches of confidentiality.[16] Similarly, 9% of Nigerian HCWs surveyed indi-

Table 5. Acts of Discrimination by Health Care Workers

Item	No. of respondents (%)					
	Never	A little of the time	Some of the time	Most of the time	All of the time	Mean (SD)
I give the same amount of attention to all my patients regardless of their HIV status.[a]	1 (0.4)	1 (0.4)	10 (4.3)	55 (23.9)	163 (70.9)	1.36 (0.63)
Do you ever disclose a patient's HIV status to a colleague who is not directly involved in the management of that case?	179 (77.8)	24 (10.4)	23 (10.0)	1 (0.4)	3 (1.3)	1.37 (0.79)
Because I suspected a patient to be HIV-positive, I let another health care worker deal with that patient.	209 (90.9)	12 (5.2)	7 (3.0)	2 (0.9)	0 (0)	1.14 (0.48)
Do you ever disclose a patient's HIV status to a friend?	208 (90.4)	17 (7.4)	5 (2.2)	0(0)	0 (0)	1.12 (0.38)
I get consent from the patient before testing his/her blood for HIV.[a]	0 (0)	1 (0.4)	3 (1.3)	17 (7.4)	209 (90.9)	1.11 (0.39)

[a]Reverse coding applied to these items when scores allotted.

cated that they had refused to treat an HIV-positive patient in the past, while 38% and 12% indicated they had revealed confidential information to family members and nonfamily members, respectively.[17] In this study all acts of discrimination assessed had occurred. The scores for these items were very low, however, implying that these acts occur infrequently within this population. On the other hand, this may be a reflection of social desirability bias leading the HCWs to give socially desirable answers. Unfortunately, this cannot be ruled out and there is a possibility that our study underestimated the extent of the problem.

Factors associated with HIV/AIDS stigmatizing attitudes and acts of discrimination

Several factors were found to be significantly associated with HIV/AIDS stigmatizing attitudes and acts of discrimination in this population. The association of formal HIV/AIDS training with lower levels of stigmatization,[18,19] especially if that training incorporates stigma reduction strategies, is well established.[20,21] One study employing PLWHA to educate health professionals reported positive outcomes among HCWs, including insight, understanding and compassion for people living with HIV, as well as insight into their own feelings and attitudes.[22] The finding that those HCWs who described themselves as being religious were more stigmatizing in "attitudes of blame/judgment" is in concordance with the general literature that has shown that HCWs who are more religious tend to be more stigmatizing toward those patients believed to have contracted the virus through morally sanctioned practices.[12]

The finding that awareness of policy was associated with lower scores for "attitudes toward imposed measures" is logical, in that some of the key issues assessed by this subscale such as consent for testing, confidentiality and disclosure are clearly spelled out by this policy. It is reasonable that HCWs who are familiar with this policy would have given answers that were more in accordance with the leanings of this policy.

The findings for several of the other associated variables such as professional type, gender, age, case load, and disease knowledge have varied in the literature. Furthermore, the various dimensions and domains of stigma and discrimination that are measured often differ in various studies, making comparisons more difficult. One study conducted among Nigerian HCWs for example, found no consistent pattern of differences in negative attitudes and practices across the different health specialties surveyed.[17] Conversely, a study conducted among dentists, doctors, and nurses in Singapore found significant differences among these groups for several attitudes including concerns about needle-stick injury, open wounds, and attitude toward homosexuality.[13] In this study, doctors were more stigmatizing in "attitudes toward imposed measures," conducted HIV tests without consent and disclosed patients' status to colleagues more frequently than nurses, while nurses gave differential care to patients based on HIV status more frequently than doctors. These results may in part be explained by differences in the roles and responsibilities of these two professional groups in this population. For example, doctors, as the heads of medical management teams, largely dictate what is done with patients. This would include ordering tests, disclosing results, and discussing prognoses. Nurses, on the other hand, as members of these management teams, follow doctors' orders and tend to deal with the practical aspects of patient care such as toiletry and feeding of patients. These realities were probably reflected in some of the responses given.

Older subjects had a lower frequency of disclosure. The literature has typically shown a negative association between age and HIV/AIDS stigma and discrimination. One study among general practitioners in New South Wales, for exam-

Table 6. Factors Associated with Stigmatizing Attitudes among Healthcare Workers

	Attitudes towards imposed measures		*Attitudes of blame/judgmen*		*Comfortableness dealing with HIV/AIDS cases*	
Attitudinal subscale	*Mean (SD)*	p	*Mean (SD)*	p	*Mean (SD)*	p
Age		0.51		0.83		0.74
⩽37	2.74 (0.86)		2.84 (0.95)		2.13 (0.83)	
>37	2.64 (1.04)		2.81 (0.94)		2.08 (1.03)	
Gender		0.41		0.04[a]		0.14
Male	2.79 (0.96)		2.60 (0.93)		1.96 (0.90)	
Female	2.67 (0.94)		2.90 (0.94)		2.17 (0.88)	
Nationality		0.002[b]		0.47		0.002[b]
Belizean	**2.59 (0.92)**		2.86 (0.99)		1.99 (0.79)	
Cuban	**3.39 (1.07)**		2.71 (0.70)		2.64 (1.04)	
Central America	2.89 (0.83)		2.56 (0.74)		2.35 (0.89)	
Other	2.76 (0.88)		2.94 (0.96)		2.42 (1.23)	
Religion		0.37		0.30		0.73
None	2.86 (0.96)		2.59 (0.93)		2.09 (0.91)	
Catholic	2.66 (1.02)		2.78 (1.02)		2.07 (0.88)	
Anglican	2.92 (0.86)		2.81 (0.86)		2.05 (0.84)	
Other	2.62 (0.88)		2.97 (0.88)		2.21 (0.91)	
Religiousness		0.37		0.03[a]		0.43
Somewhat/very	2.84 (1.01)		2.52 (0.84)		2.24 (0.98)	
Not	2.68 (0.93)		2.88 (0.95)		2.10 (0.87)	
Formal training		<.001[b]		0.02[a]		0.75
Yes	2.54 (0.96)		2.71 (0.95)		2.10 (0.90)	
No	2.99 (0.87)		3.02 (0.93)		2.14 (0.86)	
Awareness of policy		0.03[a]		0.37		0.27
Yes	2.63 (0.93)		2.80 (0.94)		2.09 (0.90)	
No	3.01 (0.93)		2.95 (0.98)		2.26 (0.81)	
No. of HIV/AIDS cases encountered within past 6 months		0.39		0.85		0.90
⩽10	2.67 (0.90)		2.82 (0.95)		2.12 (0.84)	
> 10	2.79 (1.08)		2.85 (0.95)		2.11 (0.95)	
Profession		0.01[a]		0.86	0.86	0.63
Doctor	2.90 (0.99)		2.13 (0.91)		2.78 (0.94)	
Nurse	2.60 (0.91)		2.11 (0.88)		2.85 (0.95)	
HIV/AIDS knowledge		0.09		0.55		0.94
< 67%	2.82 (0.88)		2.87 (0.89)		2.11 (0.88)	
⩾67%	2.61 (0.99)		2.79 (0.98)		2.12 (0.90)	

[a]Difference is significant at .05 level (two-tailed)
[b]Difference is significant at .01 level (two-tailed)
Groups between which significant difference found by One-way ANOVA appear in bold print.

ple, found that younger practitioners were less stigmatizing in their attitudes toward these patients than older practitioners. Conversely, older practitioners tended to be less comfortable caring for these patients, and more negative in their attitudes.[21] Another study of Barbadian physicians detected similar trends.[16] It was also found that older physicians had seen fewer HIV/AIDS clients, and were less likely to have attended continuing education training courses on HIV/AIDS. They were also more likely to test for HIV/AIDS without informed consent. In the current study, perhaps older age reflected greater experience and maturity. A study conducted in Yunnan Province, China, found that although older HCWs did in fact have more prejudicial attitudes than younger ones, they reported less discriminatory intent. In a similar interpretation, this was attributed to their being more experienced and tending to follow a professional code of conduct more strictly.[22]

The Chinese study also found female HCWs had more prejudicial attitudes toward people with HIV/AIDS than males.[22] Another Chinese study similarly found male physicians to be more supportive of PLWHA than females.[23] In the former study, this finding was stated to be consistent with other studies that found women to be more homophobic than men. In our study population, society is male-dominated and women are held to a higher moral standard than men. Women also suffer much greater social consequences for behavior that is deemed to be sexually or morally deviant by society. These findings highlight the importance of understanding these phenomena across various contexts.

As a corollary, statistically significant results were found for one of the explanatory variables based specifically on the characteristics of this population: nationality. In our study, Cuban HCWs had higher scores for the subscales of "attitudes toward imposed measures" and "comfortableness in dealing with HIV/AIDS patients" than their counterparts. This implies a more stigmatizing attitude. This finding could,

TABLE 7. FACTORS ASSOCIATED WITH ACTS OF DISCRIMINATION

Items	*I give the same amount of attention to patients regardless of HIV status*		*Because I suspected a patient to be HIV-positive I let another health care worker deal with that patient*		*I get consent from the patient before testing his/her blood for HIV*		*Do you ever disclose a patient's HIV status to a colleague who is not directly involved in the management of that case*		*Do you ever disclose a patient's HIV status to a friend?*	
	Mean (SD)	p	*Mean (SD)*	p	*Mean (SD)*	p	*Mean (SD)*	p	*Mean (SD)*	p
Age		0.53		0.98		0.84		0.02[a]		0.04[a]
≤37	1.38 (0.60)		1.14 (0.48)		1.11 (0.40)		1.48 (0.86)		1.16 (0.45)	
> 37	1.33 (0.66)		1.14 (0.49)		1.12 (0.38)		1.23 (0.66)		1.06 (0.28)	
Gender		0.25		0.30		0.91		0.35		0.82
Male	1.26 (0.51)		1.08 (0.38)		1.11 (0.39)		1.45 (0.86)		1.13 (0.40)	
Female	1.36 (0.64)		1.15 (0.51)		1.10 (0.44)		1.34 (0.78)		1.05 (0.22)	
Nationality		0.83		0.54		0.57		0.68		0.48
Belizean	1.37 (0.60)		1.15 (0.49)		1.14 (0.36)		1.39 (0.79)		1.10 (0.30)	
Cuban	1.24 (0.89)		1.00 (0.00)		1.17 (0.38)		1.21 (0.62)		1.11 (0.47)	
Central America	1.33 (0.66)		1.19 (0.68)		1.19 (0.56)		1.43 (0.98)		1.11 (0.42)	
Other	1.39 (0.50)		1.11 (0.47)		1.07 (0.26)		1.22 (0.66)		1.12 (0.38)	
Religion		0.51		0.20		0.21		0.32		0.48
None	1.19 (0.48)		1.11 (0.58)		1.13 (0.43)		1.44 (1.15)		1.23 (0.57)	
Catholic	1.37 (0.69)		1.11 (0.40)		1.13 (0.43)		1.37 (0.77)		1.08 (0.29)	
Anglican	1.40 (0.67)		1.03 (0.18)		1.18 (0.43)		1.57 (1.01)		1.08 (0.33)	
Other	1.38 (0.58)		1.23 (0.60)		1.11 (0.38)		1.27 (0.63)		1.13 (0.38)	
Religiousness		0.16		0.26		0.61		0.34		0.55
Somewhat/very	1.22 (0.59)		1.06 (0.33)		1.08 (0.37)		1.25 (0.80)		1.08 (0.37)	
None	1.38 (0.63)		1.15 (0.51)		1.12 (0.40)		1.39 (0.78)		1.12 (0.79)	
Formal training		0.88		0.41		0.01[a]		0.19		0.72
Yes	1.35 (0.65)		1.12 (0.42)		1.06 (0.27)		1.32 (0.71)		1.12 (0.35)	
No	1.36 (0.59)		1.18 (0.58)		1.20 (0.53)		1.46 (0.89)		1.11 (0.41)	
Awareness of policy		0.58		0.93		0.14		0.48		0.29
Yes	1.34 (0.57)		1.14 (0.46)		1.10 (0.34)		1.39 (0.79)		1.13 (0.41)	
No	1.41 (0.81)		1.15 (0.57)		1.20 (0.56)		1.29 (0.75)		1.07 (0.26)	
No. of HIV/AIDS cases encounters within past 6 months		0.21		0.09		0.97		0.39		0.75
≤10	1.33 (0.56)		1.17 (0.15)		1.11 (0.40)		1.34 (0.79)		1.11 (0.38)	
> 10	1.44 (0.79)		1.05 (0.22)		1.11 (0.37)		1.44 (0.76)		1.13 (0.39)	
Profession		0.003[b]		0.20		0.04[a]		0.04[a]		0.45
Doctor	1.16 (.44)		1.07 (0.36)		1.19 (0.43)		1.54 (0.94)		1.09 (0.34)	
Nurse	1.44 (.69)		1.17 (0.52)		1.08 (0.37)		1.30 (0.70)		1.13 (0.40)	
HIV/AIDS knowledge		0.82		0.23		0.49		0.16		0.40
< 67%	1.37 (0.58)		1.18 (0.56)		1.09 (0.42)		1.29 (0.70)		1.14 (0.43)	
≥67%	1.35 (0.67)		1.11 (0.41)		1.13 (0.38)		1.43 (0.84)		1.10 (0.35)	

[a]Difference is significant at .05 level (two-tailed).

[b]Difference is significant at .01 level (two-tailed).

in part, be explained by Cuba's HIV/AIDS policies, which are well known to be of a more coercive nature. For example, up until the early 1990s, people with HIV/AIDS were still being quarantined in Cuba.[24] Although this practice was stopped in 1993, it is reasonable to speculate on the effects of this and other HIV/AIDS policies could have influenced Cuban HCW responses to these items. Further study is needed to validate this speculation.

In this study no statistically significant relationships were found between the number of cases seen in the previous 6 months and HCW stigmatizing attitudes or acts of discrimination. This differs from other studies in which HCWs with higher case loads had more positive attitudes toward HIV/AIDS patients.[21] Similarly, although gaps in HIV/AIDS knowledge were uncovered, no statistically significant relationships were found with the outcome variables under investigation. This finding concurs with studies in which no statistically significant correlation was detected between certain HCW attitudes and disease knowledge.[11] However, some studies have found that HCWs with higher levels of disease knowledge have more positive attitudes toward these patients.[23,25]

This study has demonstrated that stigmatizing attitudes and acts of discrimination toward patients with HIV/AIDS exist in the public hospitals of Belize. HIV/AIDS stigma and discrimination represent not only human rights violations, but also violations of the ethical principles on which the health care system is based. We recommend HIV/AIDS training with stigma reduction strategies incorporated for the target groups identified. Furthermore, because the national HIV policy specifically addresses matters relating to testing, confidentiality, and disclosure, the findings of this study may be an indication that other issues such as policy content familiarity and effectiveness of enforcement need to be investigated.

Study strengths and limitations

Because this was a cross-sectional study it was possible to establish associations, but not causal relationships. A second limitation of this study is the inability to rule out social desirability bias in the responses given, especially for the items assessing acts of discrimination. If the HCWs did in fact give responses based on social acceptability, the study will have underestimated the extent and scope of the problem. A third limitation of this study was that it was conducted among doctors and nurses working within public hospitals only and did not include other areas such as health centers or institutions in the private sector. Expanding this survey to include doctors and nurses in these other sectors would be of value in further elucidating stigmatization and discrimination phenomena, and should be considered for further research. Nonetheless, the fact that this was a population-based study of doctors and nurses employed in public hospitals allows us to generalize to this population and adds to its external validity.

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