

Attitudes towards Key Populations in Three Fast Track Caribbean Countries: Haiti, Jamaica and the Dominican Republic

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Received: 15 Jul, 2018 | Accepted: 17 Aug, 2018 | Published: 23 Aug, 2018

Citation: Beck EJ, Mandalia S, Barrow C, Massiah E, Nunez C (2018) Attitudes towards Key Populations in Three Fast Track Caribbean Countries: Haiti, Jamaica and the Dominican Republic. J HIV AIDS 4(3): dx.doi.org/10.16966/2380-5536.157

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Abstract

Introduction: Attitudes and behavior of the general population of a country towards people living with HIV (PLHIV), homosexuals, lesbians, sex workers and sex work, influence the successful implementation of that country's HIV response. The degree of stigmatization and discrimination of the general public in Haiti, Jamaica and the Dominican Republic was ascertained through the use of opinion polls, in these HIV high burden and Fast Track countries. The global *Fast Track* strategy has targets to "end AIDS by 2030", including zero discrimination against key populations, significant reductions in the annual number of people newly infected with HIV and ensuring that most PLHIV are appropriately managed and receiving anti-retroviral treatment.

Methods: Opinion polls of the general populations using standardized questionnaires adapted to local conditions were performed in Haiti (2017), Jamaica (2016) and the Dominican Republic (2015).

Results: 73% of Haitians, 29% of Jamaicans and 15% of Dominicans indicated that they "hate" homosexuals and lesbians; 21% of Haitians, 64% of the Jamaicans and 39% Dominicans "tolerate" them, while 6% of Haitians, 7% Jamaicans and 46% of Dominicans said they "accept" homosexuals and lesbians. Most Haitian respondents were against these populations having equal rights and in favour of penalizing some behaviors, while substantial number of respondents in Jamaica and the Dominican Republic held similar discriminatory views. Overall, women were more accepting of and less discriminatory towards people from these populations than men.

Conclusions: The reasons for the high degree of stigma and discrimination towards these populations need to be further explored through in-depth mixed method studies to devise and implement context-specific, cultured-centred and culture sensitive campaigns focused to reduce stigma and discrimination by the "general" population against these populations. To reduce stigma and discrimination, punitive laws also need to be revised and abolished, and laws that reduce stigma and discrimination against these populations introduced and implemented. Unless these issues are addressed it is unlikely that the Fast Track targets can be met in these countries.

Keywords: Attitudes; Stigma & discrimination; General and key populations; Fast Track targets; Haiti Jamaica Dominican Republic

Introduction

Since 2014, the Global HIV Response has involved a 'Fast-Track strategy' to "end the AIDS epidemic by 2030", a strategy with the following targets by 2020; zero discrimination against key populations, 500,000 people are newly infected with HIV instead of the 1.8 million in 2016, and the 90-90-90 targets that apply to children and adults, men and women living in low-, middle- and high-income countries

[1]. The 90-90-90 targets refer to "90% of people living with HIV know their HIV status, 90% of people who know their status are receiving treatment and 90% of people on HIV treatment have a suppressed viral load so ... they are no longer infectious" [1].

To attain an effective and efficient country's HIV response, it requires stakeholders "to know their epidemic and their response" and identify those communities most adversely affected by the HIV epidemic. In many countries homosexuals, lesbians and sex

workers (SW) have more PLHIV compared with other populations [2]. Recently, 25% of Caribbean ‘men who have sex with men’ were estimated to be living with HIV [3] and 9% of the HIV burden among women in the Caribbean has been attributed to female sex workers [4].

Any effective country HIV response requires a combination of biomedical, behavioural and structural interventions. The norms, mores, attitudes and opinions of the general public are part of the structural factors or societal fabric that influence a country’s HIV response [5,6]. These include prevalent ideas on sexuality, sex and sex work, and attitudes towards PLHIV, homosexuals, lesbians and SW, as well as laws that affect these populations that may further stigmatize, discriminate or marginalize them.

A country’s legal framework is also part of these structural factors and Haiti, Jamaica and the Dominican Republic have laws, policies, and practices that support or block universal access to HIV prevention, treatment, and care (Table 1). A number of Caribbean countries, especially those with a British colonial history, have “buggery or sodomy laws” prohibiting anal sex between men. While few prosecutions occur, they remain on the statute books [7] and reflect and reinforce a persistent degree of stigmatization and discrimination against these men [8,9]. In many countries PLHIV, homosexuals, lesbians and SW are stigmatized and are subjected to social and institutional discrimination [6,10-12].

As crystallized by Goffman: “... of course, we believe the person with a stigma is not quite human. On this assumption we exercise varieties of discrimination, through which we effectively, if often un-thinkingly, reduce his life chances. We construct a stigma theory, an ideology to explain his inferiority and account for the danger he represents, sometimes rationalizing an animosity based on other differences, such as those of social class [13].

Perceived or actual stigma and discrimination affects the access and use of hospital and social services. Many homosexuals fear public exposure and therefore access health or social services late if at all [14,15]. As the CARIMIS survey [16] recently demonstrated, Caribbean ‘men who have sex with other men’ can identify from being “gay”, “homosexual”, “bisexual” or “straight” and this can also affect when they use services, as stigma can operate at individual, community and societal levels, sectors that interact dynamically with each other [8].

Recent opinion polls conducted in seven Caribbean countries, found that 53% of respondents in St. Vincent indicated they “hate” homosexuals compared to 12% in Suriname [6]. Countries with higher “hate” responses had lower “accept” responses and vice-versa.

Respondents that accepted or tolerated homosexuals were more likely to socialize with them. Women were more likely to “accept” and socialize with homosexuals, as were respondents with higher education and “passive” religious believers [6].

In terms of HIV transmission in these countries, mode of HIV transmission studies (MOTs) performed in these three countries indicated that in the Dominican Republic and Jamaica 30% of newly infected people were homosexuals, compared with 8% in Haiti [17-19]. In Haiti 13% of people newly diagnosed with HIV were sex workers compared with 3% in the Dominican Republic and 2% in Jamaica; 21% of newly diagnosed Haitian PLHIV were clients of sex workers compared with 6% in the Dominican Republic and 5% in Jamaica [17-19]. HIV transmission in both the Dominican Republic and Jamaica involved both homo- and heterosexual routes, while in Haiti heterosexual transmission seemed the predominant transmission route, significantly involving sex work.

To date, the HIV responses to their respective HIV epidemics have had success. HIV prevalence rates in these countries have decreased over time to 2.1, 1.7 and 1.0 respectively in 2016. The number of people newly infected with HIV decreased by 63% in Haiti and 88% in the Dominican Republic in 2016, while PLHIV dying from AIDS decreased by 62% in Haiti, 40% in Jamaica and 68% in the Dominican Republic. In 2016 the percentage of PLHIV on anti-retroviral therapy (ART) was 55% in Haiti, 35% in Jamaica and 46% in the Dominican Republic [2].

Of the 310,000 PLHIV in the Caribbean in 2016, 80% lived in Haiti, Jamaica and the Dominican Republic [2]. Success in addressing the HIV epidemics in these high burden countries affects the regional Caribbean response and is part of the rationale of the *Fast Track* initiative in these HIV high-burden countries [1].

The results of the polls described in this paper, and those published in a previous paper in seven smaller Caribbean countries [6], were performed as part of an UNAIDS Caribbean-wide strategy to review the degree of stigma and discrimination that key populations experience in these countries. Such information should enable policy-makers and other stakeholders to develop and implement strategies to reduce existing stigma and discrimination, and build on the successes of their HIV responses achieved to date.

Methods

Attitudes of the general public towards PLHIV, homosexuals, lesbians and sex workers, and legal issues affecting these populations were obtained by performing public opinion polls in the Dominican Republic in 2015, Jamaica in 2016 and Haiti in 2017.

Table 1: Laws, policies, and practices that support or block access to universal access to HIV prevention, treatment, and care (2017).

Country	Protective Laws		Punitive Laws					
	Laws and regulations that specifically protect people living with HIV against discrimination	Non-discrimination laws or regulations that specify protections for vulnerable subpopulations	Laws, regulations or policies that present obstacles to access to prevention, treatment, care and support for vulnerable subpopulations	HIV-specific restrictions on entry, stay or residence	Laws that specifically criminalise HIV transmission or exposure	Laws that criminalise same-sex sexual activities between consenting adults	Laws deeming sex work prostitution to be illegal	Laws that impose compulsory treatment for people who use drugs or provide for death penalty for drug offences
Haiti	No	No	No	No	No	Yes	No	No
Jamaica	No	Yes	Yes	No	No	Yes	Yes	No
Dominican Republic	Yes	Yes	Yes	Yes	Yes	No	No	No

Development of the questionnaires

The questionnaires used for the polls in Haiti, Jamaica and the Dominican Republic were based on a questionnaire used in seven other Caribbean countries: Guyana (2013), Trinidad & Tobago (2013), Grenada (2013), Belize (2013), Suriname (2013), St Lucia (2014) and St Vincent (2014) [6]. This seven-country questionnaire was based on four older studies on *Attitudes towards Homosexuals* that were performed in Barbados in 2004 and 2013, Guyana and Trinidad and Tobago in 2013 [20-23].

In 2012 representatives from the Guyanese *Society Against Sexual Orientation Discrimination* (SASOD), Trinidad and Tobago's *Coalition Advocating for Inclusion of Sexual Orientation* (CAISO), *The United Gays & Lesbians Against AIDS Barbados* (UGLAAB), *Caribbean Development Research Services Incorporated* (CADRES), University of the West Indies and UNAIDS met in Port of Spain. The 2004 Barbados study was discussed and its methodology refined for the development and implementation of the seven-country questionnaire. Approved questions including the terms "hate" "accept" and "tolerate" and "homosexual" and these were considered most appropriate for the questionnaire.

The English language template for the questionnaire used in Haiti, Jamaica and the Dominican Republic was based on the seven-country questionnaire. This template was discussed by stakeholder groups in each of the three participating countries and adapted to their local context, while retaining a common core of questions. The questions analyzed in this paper were questions that all three countries had retained and in common. The final questionnaire was translated into Spanish in the Dominican Republic and Creole in Haiti. The opinion polls were performed by in-country polling organizations, each with a solid track record of social, economic and political research: *Sigmados Dominican Republic* in the Dominican Republic [24], *Market Research Services Ltd* in Jamaica [25] and *Societe d'Etudes et de Formation en Information Strategique (SEFIS)* in Haiti [26].

Data collection

Approvals to conduct the polls were obtained from relevant policy-makers in each of the three countries by one of the authors (EM) and the results of the polls were subsequently discussed with stakeholders in each country.

Each poll employed a multi-stage stratified random sampling process to obtain representative samples of adults in all of the administrative regions of each country; Haitian Departments, Jamaican Parishes and Dominican Health Regions. Municipalities, neighborhoods or enumeration districts were first randomly selected within these geographic areas. Subsequently households and adult respondents within each household were selected: the unit of analysis for each poll was an adult person, selected on the basis of standard geographical distribution of households. Demographic quotas of age, gender and social class were used to ensure that the sample was representative of the country's adult population. Respondents were asked to classify themselves in terms of age, sex, and other demographic characteristics. Interviewers were instructed to adhere to protocols that demanded quotas for these characteristics. All interviews were conducted face-to-face and none of the interviews were conducted in public areas. Interviews were not performed in bars or among community groups. Samples sizes aimed for were achieved and based on the premise that a 95% confidence level can be achieved with a minimal sample of 1000 respondents [27].

Respondents were asked about their attitude to PLHIV, homosexuals, lesbians, sex workers, and legal issues relating to these key-populations.

In all three countries they were asked whether they "accept, tolerate or hate homosexuals" and whether they would socialize, "hang-out" or "lime", with a PLHIV, homosexual, lesbian or sex worker. "Liming" is a Caribbean expression for socializing or "hanging-out". These terms had been used in the previous polls [6] and were kept in as they were considered most appropriate.

Potential respondents were told of the nature of the poll and verbal permission to participate was obtained from each. Participation was voluntary and the type of questions contained in the survey was discussed and their approval sought prior to proceeding. Respondents were in principle asked all questions but they could decline to answer specific questions or to participate further at any stage during the interview. If questions were irrelevant or respondents did not know or want to answer them, that response was recorded.

Data analyses

Between countries comparisons of categorical data were analysed using the χ^2 test statistics. Further comparisons were stratified by sex and age groups, categorised into 18-30 years (youngest); 31-50 years (middle-aged) and 51 years and older (older) and they were analysed using the χ^2 statistics; where appropriate Yates' correction was applied. The denominators used in the analyses have been presented, excluding missing data. All data analyses were carried out using SAS statistical software version 9.4 and all p-values quoted are two-tailed [28].

Responses to questions on attitudes towards PLHIV, homosexuals, lesbians or sex workers were given a score of "1" if they indicated a favourable attitude and were aggregated; similarly, responses to legal questions that favoured legal sanctions against these key-populations were also given a score of "1" and aggregated. Once aggregated, the attitudinal and legal responses were divided by the total number of responses to these questions to provide an indication of the proportion of respondents that had favourable attitudes towards these populations and the extent that legal sanctions were favoured by them. None of the scored questions were weighted.

Results

In terms of the demographic characteristics of the populations polled (Table 2), more women were interviewed than men (Table 2a). Haiti had a greater proportion of younger respondents than Jamaica and the Dominican Republic (Table 2b). Jamaica had fewer respondents without formal education and a higher percentage with tertiary education compared with Haitians and Dominicans (Table 2c).

Attitudes towards PLHIV

Haitians were more likely to feel ashamed if a family member was living with HIV compared with Jamaicans and Dominicans (Table 2d). No significant differences were observed between men and women, and fewer younger respondents would feel ashamed compared with older ones.

Fewer Haitians were likely to socialize with a PLHIV, compared with Jamaicans and Dominicans (Table 2e) while few differences were observed between men and women. Older respondents were less likely to socialize with PLHIV compared with younger respondents.

More Jamaicans indicated that a teacher living with HIV should be allowed to continue to teach, compared with Dominicans and Haitians (Table 2f). Few differences existed between men and women, while older respondents were less likely to agree to this than younger respondents. When asked whether respondents would buy vegetables from a shopkeeper living with HIV, only 30% of Haitians compared

Table 2: Demographic characteristics and attitudes towards people living with HIV.

	Haiti N=1089	Jamaica N=1087	Dominican Republic N=2812	p-value
Sampling error (95% CI)	+/- 4.5%	+/- 3%	+/- 1.8%	
PLHIV on ART	55% (50% to 61%)	35% (29% to 41%)	46% (35% to 63%)	
2a) Sex: Women	610 (56%)	587 (54%)	1434 (51%)	0.0201
Men	479 (44%)	500 (46%)	1378 (49%)	
2b) Age: 18-30 (years)	523 (48%)	326 (30%)	984 (35%)	<0.0001
31-50 (years)	370 (34%)	446 (41%)	1097 (39%)	
>50 (years)	196 (18%)	315 (29%)	731 (26%)	
2c) Education: None	175 (16%)	9 (1%)	281 (10%)	<0.0001
Primary	294 (27%)	110 (14%)	152 (37%)	
Secondary	665 (61%)	283 (36%)	391 (36%)	
Vocational/Tertiary	55 (5%)	393 (49%)	533 (17%)	
2d) Not ashamed if family member living with HIV	602 (56%)	922 (87%)	2420 (87%)	<0.0001
Total	1077	1059	2780	
2e) Would hang out with PLHIV	423 (39%)	794 (78%)	2423 (87%)	<0.0001
Total	1080	1024	2777	
2f) A teacher living with HIV should be allowed to continue teaching	457 (43%)	849 (81%)	1630 (61%)	<0.0001
Total	1057	1050	2695	
2g) Would buy vegetables from a shopkeeper living with HIV	321 (30%)	426 (42%)	1269 (47%)	<0.0001
Total	1076	1010	2708	

p-value using χ^2 test

Total is non-missing response to question

with 42% Jamaicans and 47% of Dominicans said they would do so (Table 2g). Around 40% of men and women would buy vegetables from a shopkeeper living with HIV, while fewer older respondents would do so compared with younger respondents.

Attitudes towards homosexuals/lesbians

Only 6% of Haitians and 7% Jamaicans said they “accept” homosexuals and lesbians, compared with 46% of Dominicans (Figure 1; Table 3a). Conversely, 73% of Haitians, 29% Jamaicans and 15% of Dominicans indicated that they “hate” homosexuals and lesbians. The respondents who “tolerate” them, ranged from 21% of Haitians, 39% Dominicans to 64% of the Jamaicans (Table 3a). Thirty-three percent of women compared with 26% of men “accept” them, while 26% of women indicated they “hate” homosexuals and lesbians compared with 34% of men (Table 3b). Fewer older respondents accepted homosexuals and lesbians and these were more likely to hate or tolerate them (Table 3c).

Few Haitians supported equal rights for homosexuals and lesbians, compared with Jamaicans and Dominicans (Tables 3d and 3e); Haitians were more likely not to support equal rights for homosexuals and lesbians compared with Jamaicans and Dominicans (Tables 3d and 3e). More Haitians were in favour that national laws should penalize homosexuals and lesbians for having sex in private than Jamaicans and Dominicans (Tables 4a and 4b). Slightly more men than women were in favour of such laws but no significant age differences were observed.

Very few Haitians indicated that they would socialize with a homosexual or lesbian, compared with Jamaicans and Dominicans (Tables 4c and 4d). Women were more likely to socialize with a

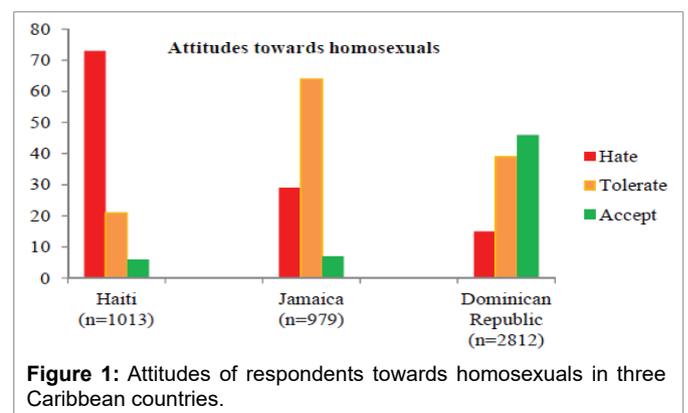


Figure 1: Attitudes of respondents towards homosexuals in three Caribbean countries.

homosexual compared with men, while more men than women would socialize with a lesbian; older respondents were less likely to socialize with a homosexual or a lesbian.

Only a minority of Haitians indicated that a homosexual teacher should be allowed to continue teaching, compared with Jamaicans and especially Dominicans (Table 4e). No differences were observed between men and women, while fewer older respondents would allow homosexual teachers continue to teach. More Jamaicans and Dominicans, indicated that they would use the services of a homosexual doctor compared with Haitians (Table 4f); fewer men said they would use the services of a known homosexual doctor, while older respondents were also less likely to do so.

Attitudes towards sex work and sex workers

Few respondents indicated that all sex work should be legal, of those that did most were Dominicans (Table 4g). More respondents

Table 3a-c: Attitudes towards homosexuals and lesbians for different populations (N=total population; n=sample for question; %=percentage).

	3a (n, %)				3b (n, %)			3c (n, %)			
	Haiti N=1089	Jamaica N=1087	Dominican Republic N=2812	p-value	Men N=2364	Women N=2620	p-value	Age group in years			p-value
								18-30	31-50	>50	
Total	n=1010	n=974	n=2812		n=2279	n=2513		n=1729	n=1835	n=1167	
Accept	62	71	1291	<0.0001	590	831	<0.0001	560	577	283	<0.0001
	6%	7%	46%		26%	33%		32%	31%	24%	
Tolerate	207	619	1103		911	1017		598	752	527	
	21%	64%	39%		40%	41%		35%	41%	45%	
Hate	741	284	418		778	665		571	506	357	
	73%	29%	15%		34%	26%		33%	28%	31%	

p-value using χ^2 test; Total is non-missing response to question

Tables 3d and e: Attitudes towards rights for homosexuals and Lesbians.

	3d. (n,%)				3e. (n,%)			
	Haiti N=1089	Jamaica N=1087	Dominican Republic N=2812	p-value	Haiti N=1089	Jamaica N=1087	Dominican Republic N=2812	p-value
Total	n=1069	n=1075	n=2765		n=1072	n=1074	n=2761	
Support them to get equal rights	39	94	1107	<0.0001	32	105	1102	<0.0001
	4%	9%	40%		3%	10%	40%	
Indifferent for them to get equal rights	32	218	807		33	229	833	
	3%	20%	29%		3%	21%	30%	
Do not support them to get equal rights	998	763	851		1007	740	826	
	93%	71%	31%		94%	69%	30%	

were in favour of sex work to be legal in private locations, again they were mostly Dominicans. A third of all respondents considered that it should be illegal anywhere, with 68% of Haitians expressing this opinion (Table 4g).

Most Haitians were in favour of penalizing sex work on the street and in private, compared with Jamaicans and Dominicans (Tables 4h and 4i). While more women than men indicated that sex work on the street should be penalized, some women and men wanted sex work in private to be penalized. No major age-related differences were observed concerning private sex-work or that performed in the streets.

Few Haitians would socialize with a female or male sex worker compared with Jamaicans; the majority of Dominicans, however, said they would socialize with a female sex worker (Tables 4j and 4k). More men would socialize with a female sex worker, while conversely more women would socialize with a male sex worker. No major differences were observed across age-groups.

Summary responses

Aggregating responses of the 11 questions on attitudes towards PLHIV, homosexuals, lesbians and sex workers, 52% of all responses conveyed positive attitudes towards these populations (Table 5a). However, only 22% of responses in Haiti were favourable, compared with 45% of Jamaican responses and 74% of Dominican responses. Conversely, of the aggregated legal questions, 44% of all responses were against providing equal rights for these populations and in

favour of legal sanctions against some of their behaviours; responses in favour of legal sanctions ranged from 80% of Haitian responses, 55% of Jamaican to 25% of Dominican responses (Table 5b).

Discussion

The HIV responses in each of these *Fast Track* countries have seen improvements in HIV incidence, HIV mortality and coverage with ART, successes that need to be maintained and built upon. These high-burden countries have different types of HIV epidemics: in Jamaica and the Dominican Republic HIV transmission among heterosexuals and homosexuals comprise major routes, while in Haiti sex work is an important route with fewer newly infected homosexuals. The polls indicate that in each of these countries structural barriers exist in terms of stigma and discrimination against these populations, and these barriers need to be addressed to ensure that improvements continue.

The number of respondents that 'hate' homosexuals was very high in Haiti. The high degree of homophobia in Haiti may have reduced the willingness of homosexuals to "come out" despite the assurance of anonymity, potentially under-representing them in the Haitian MOT study [19]. Recent figures on how many SW or homosexuals are living with HIV in Haiti are not available, and these are some of the questions to be addressed by in-depth mixed method studies.

Very few surveys have been recently performed in these three countries on attitudes towards these key-populations, one of the reasons for performing the poll. The authors of the Haiti Report

Table 4: Attitudes towards homosexuals and lesbians, laws relating to them, sex workers, sex work and related legal aspects (N=total population; n=sample for question; %=percentage).

	Haiti N=1089	Jamaica N=1087	Dominican Republic N=2812	p-value
Attitudes towards homosexuals and lesbians, and laws relating to them				
4a) National laws should penalize two men having sex in private	934 (89%)	560 (54%)	538 (20%)	<0.001
Total	n=1054	n=1037	n=2737	
4b) National laws should penalize two women having sex in private	930 (88%)	527 (51%)	526 (19%)	<0.001
Total	n=1059	n=1032	n=2739	
4c) Would hang out/lime with a homosexual	79 (7%)	304 (29%)	2015 (73%)	<0.001
Total	n=1082	n=1060	n=2778	
4d) Would hang out/lime with a lesbian	93 (9%)	388 (37%)	2067 (74%)	<0.001
Total	n=1076	n=1059	n=2788	
4e) homosexual teachers should be allowed to continue teaching	197 (18%)	435 (41%)	1580 (58%)	<0.001
Total	n=1070	n=1075	n=2716	
4f) Would use the services of an homosexual doctor	153 (14%)	282 (27%)	1623 (59%)	<0.001
Total	n=1072	n=1043	n=2748	
Attitudes towards sex workers, sex work and related legal aspects				
4g) Sex work should be completely legal anywhere	52 (5%)	80 (8%)	485 (18%)	
Should be completely illegal on the street but legal in private locations	275 (27%)	502 (48%)	1607 (61%)	<0.0001
Should be completely illegal anywhere	700 (68%)	455 (44%)	562 (21%)	
Total	n=1027	n=1037	n=2654	
4h) National laws should penalize sex work on the streets	818 (78%)	655 (63%)	1014 (37%)	<0.0001
Total	n=1043	n=1033	n=2714	
4i) National laws should penalize sex work in private locations	630 (60%)	326 (31%)	405 (15%)	
Total	n=1043	n=1047	n=2738	<0.0001
4j) Would hang-out/lime with a female sex worker	112 (10%)	444 (43%)	2135 (77%)	<0.0001
Total	n=1075	n=1030	n=2773	
4k) Would hang-out/lime with a male sex worker	64 (6%)	207 (20%)	1865 (67%)	<0.0001
Total	n=1076	n=1050	n=2774	

p-value using χ^2 test

Total is non-missing response to question

Table 5: Summary of positive responses of attitudes towards PLHIV, homosexuals, lesbians, sex workers, sex work and legal aspects related to these groups.

	Haiti	Jamaica	Dominican Republic
5a. Summary of positive responses of attitudes towards PLHIV, homosexuals, lesbians, and sex workers captured in the following questions: 2d (negative response), 2e, 2f, 2g, 3a (accepted), 4c, 4d, 4e, 4f, 4j, 4k	2563 (22%)	5122 (45%)	20318 (74%)
Total valid responses from all questions dealing with attitudes towards these populations	11751	11434	27571
5b. Summary of positive responses for questions that propose legal sanctions against homosexuals, lesbians and sex work: 3d (no support), 3e (no support), 4a, 4b, 4g (completely illegal), 4h, 4i	6017 (80%)	4026 (55%)	4722 (25%)
Total valid responses from all questions dealing with legal issues	7534	7356	18920

indicated that “In Haiti, the attitude and the behaviour of the adult population on stigma and discrimination toward people living with HIV and other vulnerable groups is not well documented”. [26]. However public demonstrations in Port-au-Prince in 2013 and 2017 against same-sex marriage provides an indication of the tensions that exist in Haiti. According to some “... homophobia is played out by two seemingly antithetical transnational social movements: evangelical Christianity and LGBTQI human rights. Debates are about whether

Haiti is too queer (the evangelical Christian discourse) or too homophobic (the LGBTQI rights discourse)” [29].

Some attitudes in Jamaica seem to be changing. In surveys performed in 2010 [30] and 2012 [31], 59% and 66% of respondents indicated that homosexuals were “repulsive or to be pitied”, 15% and 12% respectively considered that homosexuals should be “tolerated” while only 5% and 8% of respondents in respective years indicated that they should be “accepted or supported”. While the percentage of respondent that accept

homosexuals has remained similar since 2010/2012, the large number of respondents that now 'tolerate' homosexuals is encouraging.

While the Dominican Republic had the highest rating for acceptance of these key populations, this was not always the case. In an analysis of 2086 respondents interviewed in the Dominican Republic as part of a large cross-country study in 2008, 72% indicated that same-gender-sexual behaviour was "always wrong", 11% indicated that this was "almost always wrong", 8% was "wrong only sometimes" and 7% indicated that same-gender-sexual behaviour was "not wrong at all" [32].

These changes seem to be indicating that public opinion is changing in both Jamaica and the Dominican Republic. The percentage of positive attitudes towards these populations was least in Haiti, greater in Jamaica and highest in the Dominican Republic. Conversely Haitians were more likely to be against equal rights and in favour of legal sanctions towards the behaviours of key-populations compared with Jamaicans; Dominicans were least in favour of legal sanctions.

Men were more likely to hate homosexuals compared with women, while women were more willing to socialize with homosexuals compared with men. Similar findings were recently also reported from other Caribbean countries [6] and other regions of the world [12]. That more men 'hate' homosexuals may be related to prevailing Caribbean cultures of "compulsory heterosexuality" [33] or "hyper-masculinity" [34].

To change these complex situations multifaceted approaches are required in each of the countries that should be based on information obtained through detailed quantitative and qualitative, or mixed-method, research of both key and general populations that can lead to the development and implementation of targeted educational campaigns and appropriate legal changes.

All three countries need to address their existing legal framework; Haiti should introduce legislation to protect members of these populations and all three countries need to remove those laws that are obstacles for key- and vulnerable populations to access prevention, treatment, care and support services.

While Haiti had the least number of laws relating to same-sex practices and sex-work (Table 1), the recent adoption of a law against same-sex marriages by the Haitian Senate [35] seems to reflect the high level of homophobia that exists in Haiti and is likely to have an adverse effect on the future Haitian HIV response. A recent study based on data from the Centres of Disease Control in the US, indicated that legalizing same-sex marriage has improved access to health care for homosexuals [36].

Stigma is related to attributes considered to be strongly discrediting by dominant sections of society [9,11-13]. A perceived deviance, such as same-sex practices or being involved with sex work, result in sanctions that lead to stigma and discrimination within socially defined power situations and are likely to lead to reduced use and access to services by affected communities [11,37,38]. Some Caribbean studies have observed strong associations between discrimination, denial of healthcare services, sexuality-based blackmail, and fear of seeking access to healthcare services [14,15,39]. *"The design and delivery of HIV prevention services are limited by a reluctance to reach out to key populations. In many countries, they are pushed to the fringes of society by stigma and the criminalization of same-sex relationships, drug use and sex work. This marginalization limits their access to HIV services"* [40].

The Pew Research Center reported that greater acceptance of homosexuality was observed in North America, the European Union, and much of Latin America [12]. Their Latino roots may broadly explain why Dominicans are more accepting of people from these populations. Jamaica has a predominant British colonial heritage that may partly explain the degree of homophobia and condemnation of sex work. In poorer countries, with high levels of religiosity and lower educational systems, few believe homosexuality should be accepted by society [12], factors that may be operative in Haiti.

Sexuality embraces concepts like identity, attraction and behaviour [41] and in order to explain the observed difference between these three countries additional in-depth mixed methods studies need to be performed. Building on the understanding gained through such studies, effective targeted public messaging, communication and educational campaigns can be developed for the elimination of stigma and discrimination towards these populations and responses monitored over time through repeat polling [6].

The diversity of identification of men-who-have-sex-with-men in the Caribbean, as highlighted by the CARIMIS study, provide one indication that general top-down expert-driven messages and innovations, where "experts design health priorities, health policies, and health messages to be targeted toward recipient populations" [42] are inappropriate. Furthermore, the different cultural backgrounds of the populations within and between these countries further strengthen the need for context-specific, cultured-centered, and culture sensitive approaches [42].

The polls have a number of limitations, while the sample sizes for the Haitian and Jamaican polls were similar to those used for the polls conducted by the Pew Research Center [12], increased sample size, like those used in the Dominican Republic, might have improved the precision of the study findings in these two countries. However, many of the differences were already found to be statistically significant. While the polls were adapted to local conditions and requirements, the questions analyzed here were questions that all three countries had retained and in common.

In Haiti, younger respondents were over-represented compared with Jamaica and the Dominican Republic; conversely respondents with higher educational level were over-represented in Jamaica compared with Haiti and the Dominican Republic. The polls were conducted in three Caribbean countries, with different demographic characteristics, and cultural and colonial backgrounds.

A large number of analyses were performed, increasing the possibility of generating false-positive associations. The aggregated responses were not weighted in terms of severity and may provide slightly different responses if these are weighted. However, despite these limitations the results can guide the development and implementation of policies to reduce the amount of stigma and discrimination towards these individuals and communities and they should be strengthened by the performance of in-depth mixed-methods based research to obtain greater insights into these complex issues.

Conclusion

To build on the successes achieved by their respective HIV responses by these three countries, it is necessary to involve their key populations while also understanding and taking into consideration the views and opinions of the "general" public. Opinions about sexuality, sex and sex work are part of the structural factors that influence a country's response to its HIV epidemic. Greater and more

in-depth understanding of these issues in these and other countries, can potentially lead to more effective and efficient interventions to reduce stigma and discrimination in the “general” population and need to be part of any comprehensive HIV response. Only then can ‘zero discrimination’ be achieved as part of achieving the other *Fast Track* targets in order to end AIDS by 2030 in these countries and the Caribbean region as a whole.

Conflict of Interest

No conflicts of interest were reported by the authors.

Author Contributions

EM took part in the 2012 Port of Spain meeting where the seven-country questionnaire was developed and obtained permission from relevant policy makers in the three countries for conducting the polls. EJB and CB lead the review of the seven-country questionnaire and developed the English template that was used as a basis to develop the country specific questionnaire. EJB coordinated the implementation of the questionnaires in the three countries, conceived the three-country comparison and lead the writing of the manuscript. SM performed the analyses of the paper and CZ supervised the overall implementation of the polls. All authors reviewed drafts, contributed to writing the manuscript and agreed on the final version submitted for publication.

Acknowledgement

The authors thank the UNAIDS country staff for their roles in the implementation of the polls in the Dominican Republic, Jamaica and Haiti. We are grateful to all respondents participating in the country polls, the organizations that performed the polls and the reviewers of previous drafts for their participation and constructive comments. This paper reflects the views of the authors and not necessarily UNAIDS.

Ethics and Consent

Respondents who participated in the poll had been asked and given their consent at the time when the poll was performed. Approvals to conduct the polls were obtained from relevant policy-makers in each of the three countries by EM one of the authors.

Funding Information

The Norwegian Government and the Haitian Centres for Diseases Control and Prevention each part funded the studies, with the remainder of the resources coming from UNAIDS.

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