ORIGINAL ARTICLE

The Role of Citizenship Status in HIV Testing among Rural Communities of the Dominican Republic

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ABSTRACT

Objective: *To evaluate the role of citizenship and the sociodemographic status of batey residents in HIV-related behaviours and testing in rural Dominican Republic to gain a better understanding of access barriers to care that will inform public health measures aimed at HIV surveillance and eliminating transmission.*

Methods: *A cross-sectional survey about HIV testing history and perceptions regarding HIV infection was administered to 1197 batey inhabitants in 20 rural communities in the province of Monte Plata, Dominican Republic.*

Results: *Overall, 63% of respondents reported having had an HIV test performed: 67.6% of citizens and 44.8% of non-citizens. Non-citizens were 34% less likely to have had an HIV test performed than citizens (*$p < 0.0001$*). Overall, men were 31% less likely to have had an HIV test than women (RR: 0.69; 95% CI: 0.63, 0.76). Non-citizen men and women were 47% and 25% less likely, respectively, to have had an HIV test compared to citizens (both men and women,* $p < 0.0001$*).*

Conclusion: *Citizenship is an important and overlooked determinant of health awareness. Non-citizens are less likely to know their HIV status, a key component in the propagation of the HIV pandemic. Considering that batey residents already comprise a vulnerable population and have limited access to health services, advancements in combating HIV would likely be achieved through domestic public health measures more inclusive of residents, irrespective of legal status.*

Keywords: Dominican Republic, epidemiology, HIV, migration, poverty

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INTRODUCTION

Barriers to health services, whether real or perceived, can lead to adverse health outcomes (1). Economic, structural, or social barriers to access of health can be complicated by other socio-economic factors and historical processes such as migration and citizenship (2, 3). The HIV epidemic has brought public health to the forefront of political attention in the Caribbean, where regional migration is common. In the Dominican Republic, legal citizenship status affects access to health insurance, education and employment for residents. Nowhere in the Dominican society is this more evidenced than by the hundreds of thousands of Haitian migrants and Dominican-born people of Haitian descent who face privation of health and societal services because of lack of official citizenship (4, 5).

The Dominican economy of the 20th century revolved around sugar production, an industry that became dependent on Haitian migrant labour. Sugar cane cutters, residing in rural company towns called bateyes, were subject to the demands of the sugar industry, unprotected by Haitian and Dominican authorities, and under a system of social exclusion that provided inadequate housing and public services (6). Following the 1999 privatization of the country's largest sugar exporter, production of sugar abruptly halted in much of the country, leaving the bateyes without a source of employment and geographically and socially isolated (7). Over the last two decades, hundreds of the country's bateyes have transitioned from company towns populated seasonally and transiently by visiting Haitian men to heterogeneous Haitian-Dominican rural communities. However, these modern bateyes have inherited a legacy of marginalization, lacking access to water, electricity, education, healthcare and employment (7, 8).

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The pandemic of HIV has demonstrated the inherent relationship between social, behavioural and biologic determinants of disease (9, 10). Haiti, the poorest nation in the Western Hemisphere, shares a border with the Dominican Republic on the island of Hispaniola. Together, the island accounts for three-quarters of all HIV infections in the Caribbean. HIV seroprevalence among adults aged 15–49 years in the Dominican Republic is estimated to be 0.8% (11, 12). The most vulnerable populations are men who have sex with men (MSM), sex-workers, Haitians and Haitian-Dominican batey residents (13, 14).

Considering the inextricable linkage between poverty and infectious disease and the four-fold per capita gross domestic product (GDP) differential between Haiti and the Dominican Republic, it is not surprising that health conditions and cross-border migration have been closely linked throughout the 20th century. Several health indices suggest that migrant workers and undocumented batey inhabitants face greater challenges in accessing social and health services than do Dominican citizens, and that they are at greater risk for disease (8, 13, 15, 16). For instance, HIV prevalence among adult batey inhabitants aged 15−49 years is 3.2%, about four times the national average (12). Nonetheless, it is unclear the extent to which citizenship influences batey residents' familial support networks, history of HIV testing and attitudes regarding HIV infection. This study examines the relationship between citizenship and selected HIV testing behaviours and attitudes in batey communities in the Dominican Republic.

SUBJECT AND METHODS

We interviewed 1197 batey inhabitants in 20 rural communities in the Dominican Republic with questions about their HIV testing history and perceptions regarding HIV infection. This survey was conducted in collaboration with the Dominican non-governmental organization Batey Relief Alliance (BRA-Dominicana). The interviews were performed by community health workers (CHWs) associated with BRA-Dominicana over seven days in March of 2011. Sixty individuals were recruited from each of the 20 rural batey communities surveyed in the interior province of Monte Plata. Adults (ages 18^{+} years) were sampled according to three age groups based on the proportion of mean batey population stratification (12).

Training workshops instructed the CHWs on sampling and interview survey methodology. Responses were limited to one respondent per household, for a total of 60 households per community. Community maps were used to plot survey methods for each community. An additional training session was held for bilingual CHWs (Haitian Creole and Spanish), to ensure uniformity of translation and clarity of wording for surveys with Creole-only speaking batey residents. As CHWs were largely Creole illiterate, the survey was not translated into Creole language. A proposal for this study was submitted to the Dominican National Bioethic Committee (CONABIOS). The study was exempted by CONABIOS because the proposed investigation did not involve interventions with human subjects, and therefore did not require the approval of CONABIOS for its execution.

In order to gather information regarding personal and community perspectives about HIV in the bateyes, respondents were asked a series of questions about demographics, use of healthcare services, and health-related beliefs. Five hypothetical questions were asked to assess attitudes and behaviours with respect to social interactions with HIV-positive persons in their communities: 1) Would you buy fruits or vegetables from an HIV-positive person? 2) Would you prefer to keep secret that a family member became infected with HIV? 3) Would you take in and care for a family member that had become infected with HIV? 4) Do you believe that an HIV-positive teacher should be permitted to continue teaching? 5) Do you believe that an HIV-positive child should be permitted to continue attending school? All but the fifth question were adapted from an earlier study (12).

Citizenship among respondents was defined as holders of an official *cédula* (legal Dominican citizenship ID cards). Respondents who did not answer particular questions were excluded from those question-specific analyses. Epi Info software (CDC) was used for tabulation, analysis of data and statistical testing. Two-tailed *p*-values were calculated using the Fisher's exact test from contingency tables; *p*-values from Table 3 reflect gender-specific age variation among young and elderly terciles.

RESULTS

Of the 1197 respondents from the 20 batey communities surveyed, 76.6% were considered legal citizens of the Dominican Republic (Table 1).

Table 1: Gender and citizenship status of study participants

	Number of persons interviewed	Number of persons with legal Dominican citizenship	
		Count	%
Female	619	478	77.2
Age (year)			
18−30	212	154	72.6
31−50	215	180	83.7
51−94	192	144	75
Male	578	439	76
Age (year)			
18−30	188	139	73.9
31−50	195	164	84.1
51−94	195	136	69.7
Total	**1197**	**917**	**76.6**

We found that 63% of respondents reported having had an HIV test performed (Table 2). Testing rates for HIV were 67.6% for citizens and 44.8% for non-citizens; batey residents lacking legal citizenship were 34% less likely to have

Table 2: Results of survey regarding HIV testing history, perceived discrimination and family support

		Citizen n (%)	Non-citizen n (%)	Total n (%)
History of HIV testing	Yes	602 (67.6)	100 (44.8)	702 (63.1)
	No	288 (32.4)	123 (55.2)	411 (36.9)
	RR (95% CI)	1.0 (Ref)	0.66 (0.57, 0.77)	1113
Perceived HIV-related discrimination in community	Yes, a lot/little	582 (64.6)	112 (50.2)	694 (61.7)
	No, none	319 (35.4)	111 (49.8)	430 (38.3)
	RR (95% CI)	1.0 (Ref)	0.78 (0.68, 0.89)	1124
Family support	Yes, full/partial	818 (91.5)	177 (77.3)	995 (88.6)
	No, none	76 (8.5)	52 (22.7)	128 (11.4)
	RR (95% CI)	1.0 (Ref)	0.84 (0.79, 0.91)	1123

had an HIV test performed than citizens ($p < 0.0001$). Gender was correlated with HIV testing rates: men were 31% less likely to have had an HIV test than women (RR: 0.69; 95% CI: 0.63, 0.76). Non-citizen men and women were 47% and 25% less likely, respectively, to have had an HIV test compared to citizens (both men and women, $p < 0.0001$).

Respondents were asked about the extent, if any, of HIV-related discrimination in their communities. Just under 62% of respondents perceived there to be discrimination toward HIV-positive individuals (Table 2). Citizens and non-citizens who did not perceive HIV-related discrimination were 35.4% and 49.8%, respectively. Non-citizen batey residents were 29% less likely to perceive discrimination compared to citizens ($p < 0.0001$).

Nearly 89% of respondents indicated that they had partial or strong family support: 91.5% of citizens and 77.3% of non-citizens (Table 2). Non-citizen batey residents were 16% less likely to have the support of a family network compared to citizens ($p < 0.0001$).

Young female respondents consistently demonstrated the greatest level of acceptance regarding HIV (Table 3). On the contrary, older respondents (and particularly men over age 50 years) had the greatest propensity to express negative attitudes toward HIV-positive persons. Nonetheless, an overwhelming majority of the respondents (88.1%) would be willing to take care of a family member should they become infected with HIV.

Table 3: Results of survey – community perspective toward HIV

Respondents that:	would buy fruits and vegetables from an HIV-positive vendor (%)	would not maintain secrecy of HIV status if a family member were to become infected (%)	would be willing to care for family member if he or she became infected with HIV (%)	believe that an HIV-positive teacher should be allowed to continue teaching (%)	believe that an HIV-positive child should be allowed to continue attending school (%)	Respondents that expressed acceptance to all five attitudes (%)
Women	**442 (72.5)**	**421 (69.0)**	**568 (93.6)**	**491 (81.0)**	**535 (87.7)**	**272 (45.0)**
Age (years)						
18 – 30	165 (78.9)	143 (68.4)	197 (94.7)	179 (86.5)	197 (94.3)	103 (49.8)
31 – 50	160 (75.5)	146 (68.9)	197 (93.4)	171 (81.0)	187 (88.2)	100 (47.6)
51 – 94	117 (61.9)	132 (69.8)	174 (92.6)	141 (75.0)	151 (79.9)	69 (36.7)
(*p*-value)	($p < 0.01$)	($p = 0.83$)	($p = 0.41$)	($p < 0.01$)	($p < 0.01$)	($p = 0.01$)
Men	**370 (65.7)**	**405 (73.5)**	**486 (87.3)**	**392 (70.6)**	**438 (78.9)**	**208 (38.0)**
Age (years)						
18 – 30	139 (76.0)	130 (73.0)	165 (91.7)	141 (78.8)	157 (87.7)	83 (46.9)
31 – 50	126 (66.3)	136 (73.1)	168 (89.4)	139 (74.3)	158 (84.5)	74 (40.2)
51 – 94	105 (55.3)	139 (74.3)	153 (81.0)	112 (59.3)	123 (65.1)	51 (27.3)
(*p*-value)	($p < 0.01$)	($p = 0.81$)	($p < 0.01$)	($p < 0.01$)	($p < 0.01$)	($p < 0.01$)
Gender RR	**1.11**	**0.94**	**1.07**	**1.15**	**1.11**	**1.18**
(*p*-value)	($p < 0.01$)	($p = 0.10$)	($p < 0.01$)	($p < 0.01$)	($p < 0.01$)	($p = 0.02$)

DISCUSSION

Citizenship is an important and salient exposure in HIV testing behaviours and attitudes in batey communities in the Dominican Republic. Non-citizens are less informed with regard to their HIV status. Interestingly, there was less perceived HIV-related discrimination among non-citizens in batey communities than among citizens. Considering the rampant social stigma associated with HIV infection in the bateyes (16), this difference is somewhat surprising. A possible explanation might be that Dominican society has associated the HIV epidemic with Haitians since its inception in the 1980s, thereby creating a propensity of dominant society to disassociate fault from itself. The resultant hypersensitive Dominican populous is thus more likely to recognize and propagate HIV-related stigma. An alternate possibility to explain the lessened stigma among non-citizens could be a greater social cohesion among the oppressed non-citizens in the bateyes. Consistent with the legacy of the bateyes, we found that non-citizens were less likely to have a support network than were citizens. This was especially true among elderly men (data not shown), who now represent an emerging vulnerable group in the Dominican Republic.

Marginalization of HIV-positive migrants surged early on in the epidemic, and the issue was deemed a "Haitian problem" (5, 17). Early seroprevalence studies estimated HIV prevalence among batey residents to be 5−13%, several-fold the national averages (16, 18). Today, the bateyes have a prevalence of HIV at four times the national average (12), and account for about 9% of annual incidence of new cases in the country (14). Despite the fact that batey residents account for only 1.1% of the population in the Dominican Republic, an estimated 4.5% of HIV-positive persons reside in bateyes (19). A particularly high prevalence of HIV among batey residents is among uneducated men and women and those living in extreme poverty (12). The high prevalence of sexually transmitted infections (STIs) among women that live in bateyes may play a role in increased HIV transmission.

Although 99% of the Dominican populace is aware of the existence of HIV (11), the attitudes and acceptance regarding HIV vary throughout the country, and the bateyes have the most limited knowledge of HIV. Limited understanding has fostered an environment where erroneous concepts stem fear and other discriminatory attitudes toward HIV-positive persons – all of which negatively impact personal and public health (20). This study found that the attitudes and behaviours pertaining to HIV vary significantly with regard to gender and age in modern batey communities. However, the bateyes of the interior province of Monte Plata reflected less discriminatory attitudes toward HIV when compared to bateyes nationwide.

Comparing the results of this survey (n = 1197) with the 2007 Center for Demographic Studies (CESDEM) survey of state-owned bateyes in various provinces throughout the country (n = 3164), this study found a higher rate of acceptance and tolerance regarding HIV-related attitudes and behaviours in the bateyes of Monte Plata. Of the 20 communities surveyed, 44.7% of respondents (18−50 years old) demonstrated acceptance to the first four questions pertaining to acceptance of people with HIV, compared with just 12.2% in bateyes nationwide (12). The four-year difference between the two studies may explain a rise in HIV awareness nationwide, but more likely is a testament to ongoing educational efforts undertaken by local non-governmental organizations working in bateyes throughout Monte Plata.

Several studies suggest immigrants are less likely to undergo health screening, yet few have examined the role of citizenship. A study by Echeverria and Carrasquillo looking at the role of citizenship status and health insurance in breast and cervical cancer screening in the United States of America (USA) revealed self-reported testing disparities among non-citizens and US-born women (21). Non-citizens were less likely to report mammography and Pap smear screening than were US-born women. The observed mammography screening disparity was markedly attenuated after controlling for insurance status. In the Dominican Republic, though the demography of migrants is starkly different from the USA, the same screening disparities are observed. It must be noted, however, that it would be difficult to correct for health insurance, as non-citizens cannot obtain government health insurance due to citizenship requirements for enrolment. Further, the process of obtaining citizenship is arduous, if not impossible for migrants, Dominican-born children of migrants and rural Dominicans who lack the necessary paperwork to demonstrate legal status. A 2010 Constitutional change to the criteria for Dominican citizenship made an estimated 200 000 persons stateless overnight (22), and exacerbated an already prejudiced and discriminatory atmosphere for dark-skinned Dominicans and persons of Haitian ancestry (23).

Limitations

The strengths of this study were its sample size, methodology and its uniqueness in addressing the multifactorial role of citizenship related to HIV in Dominican batey communities. Weaknesses of the study include the validity of respondents' answers of specific behaviours and HIV testing not being independently verified. Regarding survey methodology, interviews conducted in either Spanish or Creole utilized the same Spanish-language survey form, thereby introducing a potential for measurement bias in the questioning. Ideally, the CHWs facilitating the interviews would have a Creole version to ask uniform questions, however, due to the fact that CHWs were not bilingually literate, this translation had to suffice.

CONCLUSION

Migration is far from a new phenomenon, but the rate of movement has accelerated greatly in the last century. As foreign-born populations account for ever-greater percent-

ages of the populations in many countries in the developed world, and the disparities between neighbouring nations increase, the migration of disease will likely follow. Ironically, as Carballo and Nerukar point out, it is the poor living and working conditions in the more prosperous countries that predispose immigrants to poor health in the country of relocation (24). Factors such as language, health insurance eligibility and social exclusion can often dictate a migrant's health, as has been seen in the bateyes of the Dominican countryside.

Citizenship is an important and overlooked determinant of health awareness. Non-citizens are less likely to know their HIV status, a key component in the propagation of the HIV pandemic. Considering that batey residents already comprise a vulnerable population and have limited access to health services, advancements in combating HIV would likely be achieved through domestic public health measures more inclusive of residents, irrespective of legal status. Further research is needed to better elucidate health disparities and health outcomes based on citizenship. Changes to health policy and implementation in the Dominican Republic to become more inclusive of all persons regardless of their citizenship status would likely improve the health of those on the fringes of society and, in turn, the public health of the nation.

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