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Rate of new HIV diagnoses among Latinos living in Florida: disparities by country/region of birth

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Abstract

HIV incidence in the US is three times higher for Latinos than for non-Latino whites. Latinos differ in educational attainment, poverty, insurance coverage, and healthcare access, factors that affect HIV knowledge, risk behaviors and testing. The purpose of this study was to identify differences in demographics, risk factors, and rate of new HIV diagnoses by birth country/region among Latinos in Florida to guide the targeting of primary and secondary prevention programs. Using Florida HIV/AIDS surveillance data from 2007–2011 and the American Community Survey, we compared demographic and risk factors, and calculated annual and five-year age-adjusted rates of new HIV diagnoses for 5,801 Latinos by birth country/region. Compared to US-born Latinos, those born in Cuba and South America were significantly more likely to report the HIV transmission mode of MSM; those born in the Dominican Republic heterosexual transmission; and those born in Puerto Rico injection drug use. Mexican- and Central American-born Latinos were more likely to be diagnosed with AIDS within a month of HIV diagnosis. The

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rate of new HIV diagnoses among Latinos declined 33% from 2007 to 2011. HIV diagnoses over time decreased significantly for Latinos born in Mexico and increased non-significantly for those born in the Dominican Republic. Although this study was limited to Latinos living in Florida, results suggest that tailoring HIV primary prevention and testing initiatives to specific Latino groups may be warranted.

Keywords

human immunodeficiency virus; acquired immune deficiency syndrome; Latinos; country of birth; HIV incidence

Introduction

HIV incidence in the US is three times higher for Latinos than for non-Latino whites (NCHHSTP Atlas, 2013). Moreover, 23% of HIV-positive Latinos are diagnosed concurrently with HIV and AIDS (Hanna, Pfeiffer, Torian, & Sackoff, 2008). Latinos of varying ethnic origins living in the US differ in educational attainment, poverty, insurance coverage (Motel & Patten, 2012), and healthcare access (Weinick, Jacobs, Stone, & Ortega, 2004), factors that affect HIV knowledge (Ritieni, Moskowitz, & Tholandi, 2008), risk behaviors (Arnold, Raymond, & McFarland, 2011), and testing (Lopez-Quintero, Shtarkshall, & Neumark, 2005). Despite these differences, only one study has examined HIV incidence among Latinos by birth country/region (Espinoza, Hall, & Hu, 2012).

Florida is a unique location to study HIV among Latinos due to its large and diverse Latino population (US Census Bureau, 2013f). Moreover, HIV incidence among Latinos in Florida was 40% higher than the national rate for Latinos in 2011 (NCHHSTP Atlas, 2013). The purpose of this study is to identify differences in demographics, risk factors (HIV transmission mode and HIV-to-AIDS interval), and rate of new HIV diagnoses by birth country/region among Latinos in Florida. Findings can help to guide the targeting of primary and secondary prevention programs to Latinos of varying ethnic origins.

Methods

HIV surveillance data were obtained from the Florida Department of Health Enhanced HIV/AIDS Reporting System (eHARS). The eHARS is a passive and active surveillance system that uses the Centers for Disease Control and Prevention (CDC) HIV case definition (CDC, 2008). Data, including race/ethnicity and HIV transmission mode, come from health care provider reports, laboratory reports, and medical records. Cases classified as “Latino/Hispanic,” of any race, and diagnosed from 2007 to 2011 were analyzed. Demographic and risk characteristics were compared between birth countries/regions using chi-square tests, with Bonferroni adjustment. The “other” Latino category in the bivariate analysis contains Latinos with unknown birth country (84%) and Latinos born in countries exclusive of the US, Puerto Rico (PR), Mexico, Cuba, Dominican Republic (DR), and Central and South America (16%).

Age-adjusted annual rates of HIV diagnoses and five year rates for 2007–2011 by birth country/region were calculated. Numerator data were obtained from the eHARS, and denominator data were obtained from the American Community Survey (ACS) one-year Florida estimates (US Census Bureau, 2013a–e). The ACS is a nationwide self-administered survey conducted by the US Census Bureau. Randomly selected participants are obligated by law to respond. Direct standardization to the 2000 US population (US Census Bureau, 2013g) was used following the CDC and the National Center for Health Statistics (Keppel, Garcia, Hallquist, Ryskulova, & Agress, 2008). Five-year rates were calculated by dividing the average number of cases by the average population for the defined period. A trend analysis was performed by modeling the natural logarithm of the rates using ordinary least squares regressions (Rosenberg, 1997). ACS public use datasets do not provide estimates by gender and age for US- or PR-born Latinos by state. Therefore, denominator data for the "US/PR" Latino category was obtained by subtracting the populations from Cuba, Mexico, DR, Central and South America from the total Latino population in Florida. Numerator data for Latinos born in the US, PR, "other" countries, and with unknown birth country were combined to match the denominator.

Results

Of the 5,801 Latinos, the largest percentage was the US-born (34%) followed by Cuban-born (16%) (Table 1). Compared to US-born Latinos (80%), those born in Mexico (92%), Cuba (92%), and South America (89%) were more likely to be male (p-value <0.05). Those born outside of the US, including Latinos born in PR but with the exception of those born in Mexico, were older than US-born Latinos (p-value <0.05). Compared to US-born Latinos (58%), the men who have sex with men transmission mode was more common among Latinos born in Cuba (71%) and South America (70%) (p-value <0.05). Heterosexual transmission was reported more frequently among those born in the DR (52%). Injection drug use was most frequently reported by Latinos born in PR (15%). Latinos born in Mexico (32%), Central America (29%), and other countries (24%) were more likely to be diagnosed with AIDS within a month of HIV diagnosis than US-born Latinos (18%) (p-value <0.05). The rate of new diagnoses among Latinos declined 33% from 2007 to 2011, similar to whites and blacks (Table 2). Trend analysis showed a significant decrease in the diagnoses rate over time for Latinos as a whole and for those born in Mexico and the US/PR. The diagnoses rate increased for Latinos born in the DR non-significantly. The male-to-female rate ratio was highest among Cuban-born (12.0) and lowest among DR-born (1.7).

Discussion

This study indicates that Latinos living in the US with newly reported HIV infection are a heterogeneous group with differences in demographics, transmission mode, and timing of diagnosis. The finding that Latinos born in Mexico and Central America were more likely to be diagnosed with AIDS within 30 days of HIV diagnosis than US-born Latinos is supported by studies reporting late diagnosis (Espinoza, Hall, Selik, & Hu, 2008; Wohl, Tejero, & Frye, 2009), and lower three-year survival in these groups (Espinoza et al., 2012). These disparities may be related to less access to care (Freeman & Lethbridge-Cejku, 2006) and HIV knowledge (London & Driscoll, 1999).

Latinos who immigrate to the US may continue to be impacted by the state of their birth country's HIV epidemic. Our study found that Latinos born in the DR were more likely to be female and to report heterosexual transmission than US-born Latinos. This pattern is observed in places with a generalized outbreak (adult prevalence >1%) like the DR (2007 prevalence of 1.1%) (UNAIDS/WHO, 2008). Studies conducted in the DR indicate a high prevalence of multiple partner and hidden bisexual behavior (driven by pronounced stigma) among Dominican men (Halperin, de Moya, Perez-Then, Pappas, & Garcia Callejas, 2009) that may continue after immigration. Latinos born in Cuba and South America were more likely to be male which also reflects the HIV epidemiology in these countries (Teva, Bermudez, Ramiro, & Buela-Casal, 2012).

An individual's experience assimilating to the US culture may also affect HIV risk. Latinos who do not assimilate to the US culture report more HIV risk behaviors when compared to those who do assimilate (Farrelly, Cordova, Huang, Estrada, & Prado, 2013). Greater assimilation among HIV-positive Latinos has also been associated with treatment non-adherence (Sanchez, Rice, Stein, Milburn, & Rotheram-Borus, 2010). Moreover, the extent to which assimilation impacts risk behaviors differs for Latinos by birth country (Caetano, Ramisetty-Mikler, & Rodriguez, 2009).

Our study is not without limitations. First, US-born Latinos in Florida are not representative of the national US-born Latino population who is predominantly Mexican-American (Motel, 2012). This limits the generalizability of the Florida US-born results to US-born Latinos in the entire US. However, the very diversity of Florida Latino immigrants allowed us to analyze foreign-born Latinos from a variety of countries and not just Mexico. The second limitation pertains to the diagnoses rates. While our numerator was defined by birth country/region (which refers to birth place), our denominator was defined by ethnic origin (which refers to an ancestral or cultural identification). It is likely that the denominator for the non US-born groups included both non US-born and US-born people of a given origin. This would lead to lower observed rates among the non US-born groups relative to the US-born group. It should, however, not have affected the time trends observed or the sex ratios. In addition, 20% of the "US/PR" category included Latinos born in other countries and with unknown birth country. This classification significantly limits our interpretation of this group. Third, because population sizes were estimates, rates should be considered approximations. Moreover, Latinos are a highly mobile population (Schachter, 2003). It is possible that this variability, coupled with small numerator data for some groups, may be causing the fluctuation in yearly diagnoses rates for Latinos born in Mexico, the DR, and South America. We see a steadier decline for Latinos from larger and less mobile groups like those born in Cuba and US/PR. Finally, eHARS has no data about acculturation or years in the US so it was not possible to explore mechanisms for observed differences.

In a period of limited resources and the difficult goal of decreasing HIV incidence, epidemiologic data must be collected and analyzed in a useful manner for public health programs. Further research assessing HIV incidence and diagnoses rates for Latinos of varying ethnic origins and not just by birth country/region would be helpful. Research is needed to measure national trends of new HIV diagnoses among Latinos of varying ethnic origins. In particular, the lack of decrease in rate of diagnoses among Latinos born in the DR

should be explored. Research is also needed to understand the role that acculturation is playing in the differing patterns we observed by birth country. However, results of this study indicate that there are different epidemiologic patterns of HIV infection by birth country/region among Latinos and suggest that tailoring HIV primary prevention and testing initiatives to specific Latino groups may be warranted.

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Table 1

haracteristics of Individuals Reported with HIV Infection in Florida – 2007–2011

				Place of Birth for Latinos							
	Latino (%)	Non-Latino White (%)	Non-Latino Black (%)	US-born Latino (%)	Puerto Rico (%)	Mexico (%)	Cuba (%)	D.R. (%)	Central Am.* (%)	South Am.** (%)	Other*** (%)
otal (No.)	5,801	7,708	13,396	1,976	478	342	956	101	555	604	789
ex			†			‡	‡	‡		‡	
Male	83	84	62	80	76	92	92	62	79	89	81
Female	17	16	38	20	24	8	8	38	21	11	19
ge		†	†		‡		‡	‡	‡	‡	‡
0 – 19	3	2	7	6	2	2	1	1	2	1	1
20 – 29	24	18	26	31	19	34	14	18	27	18	19
30 – 39	28	22	21	26	25	31	25	21	38	31	25
40 – 49	28	34	24	24	34	24	32	33	22	33	31
50 and over	17	24	22	13	20	9	28	27	11	17	24
Mode of transmission		†	†		‡	‡	‡	‡	‡	‡	‡
MSM	58	66	29	58	43	55	71	34	48	70	52
IDU	5	6	5	6	15	2	2	3	2	1	3
MSM/IDU	2	3	1	2	5	1	1	1	1	2	1
Heterosexual	23	15	50	23	29	27	19	52	36	18	21
Other/Unknown	12	10	15	11	8	15	7	10	13	9	23
HIV to AIDS						‡			‡		‡
<1 month	21	21	22	18	22	32	17	23	29	18	24

V, human immunodeficiency syndrome; US, United States; D.R., Dominican Republic; Am., America; No., number of HIV diagnoses; MSM, male to male sexual contact; IDU, injection drug use.

ta source: Florida enhanced HIV/AIDS Reporting System (eHARS), 2007–2011.

ble excludes 537 individuals reported with HIV from racial/ethnic groups other than non-Latino white, non-Latino black and Latino. Table also excludes 111 cases born in Brazil and categorized as ispanic/Latino" in the eHARS as individuals born in Brazil are not included in the American Community Survey definition of South Americans.

atinos born in Central America were mainly from Honduras (40%), Guatemala (23%), Nicaragua (22%) and El Salvador (8%).

Latinos born in South America were mainly from Colombia (39%), Venezuela (21%), Peru (13%) and Argentina (12%).

* Category includes Latinos born in other countries exclusive of the US, Puerto Rico, Mexico, Cuba, Dominican Republic, and Central and South America (103) and those with unknown country of birth 36).

† Latinos were significantly different from this race/ethnic group, Bonferroni adjusted p-value < 0.05.

‡ Latinos with this country of birth were significantly different from US-born Latinos, Bonferroni adjusted p-value < 0.05.

Table 2

Age-adjusted Annual and Five-Year Rates of New HIV diagnoses in Florida per 100,000 population – 2007–2011

	2007	2008	2009	2010	2011	5-year rate of new diagnoses* 2007–2011 All	Males	Females
Non-Latino White	18.6	15.8	13.0	11.5	12.9	14.3	39.4	7.7
Non-Latino Black†	113.7	113.0	94.2	81.4	76.7	95.3	212.6	120.5
Latino /Hispanic†	35.1	31.8	28.2	24.8	23.6	28.4	80.9	17.1
Country of birth								
Mexico†	24.6	22.9	14.5	16.2	14.2	18.0	46.4	7.2
Cuba	26.1	29.6	24.6	20.5	19.5	23.8	75.3	6.3
Dominican Republic	18.0	13.0	12.6	24.2	15.4	16.6	38.0	22.3
Central America	30.4	27.7	26.1	22.3	25.0	26.0	62.4	26.2
South America**	19.1	13.1	14.4	12.8	18.8	15.6	54.7	6.5
US/Puerto Rico***†	64.1	55.2	46.9	40.3	34.2	47.2	118.8	32.1

HIV, human immunodeficiency syndrome.

Rates of HIV diagnoses have been adjusted for age to the 2000 National US population.

* 5-year rates were calculated by using the average population for the 5 years.

** Excludes 111 cases born in Brazil and categorized as “Hispanic/Latino” in the eHARS because individuals born in Brazil are not included in the American Community Survey definition of South Americans.

*** This category includes Latinos born in the United States (64%), Puerto Rico (16%), other countries exclusive of Mexico, Cuba, Dominican Republic, Central and South America (3%), and Latinos with unknown country of birth (17%).

† Significant decrease in incidence rate over the 5-year period (2007–2011) based on trend analysis at p-value < 0.05.