HIV Rates in the State of Georgia: A Growing Threat among Predominantly African American Populations

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ABSTRACT

Background: US rates of HIV/AIDS continue to rise with over 55% of new cases identified in southern states in 2003. The objective of this study was to determine the magnitude of HIV/AIDS cases in rural southeast Georgia in comparison to urban areas of the state.
Methods: County level data was acquired using OASIS. Rates of HIV infections by gender and race (black vs. white) were aggregated over a five year period (2000–2005) and indirectly adjusted using Georgia as the standard. Rates for rural counties, (populations less than 35,000), were statistically compared to urban rates ($\alpha = 0.05$).
Results: HIV infections in urban counties were significantly higher as compared to rural counties. Statistically high infection rates in urban areas were also evident when controlling race and gender. Black males and black females in urban counties were the groups most heavily impacted.
Conclusions: HIV/AIDS is an increasingly complex problem throughout the state of Georgia. Although urban areas continue to be significantly impacted, HIV infections among rural populations, especially black residents, represent a serious and growing threat.

INTRODUCTION

According to CDC, every year approximately 40,000 people are infected with HIV in United States. In 2005, the highest number of HIV/AIDS cases were diagnosed in men having sex with men (MSM), and then followed by the adults and adolescent who contracted HIV through heterosexual contact. Of the total 81% new diagnosed HIV/AIDS cases in 2005, MSM accounted for 49% and people involved in high risk heterosexual activities account for 32% (CDC, HIV/AIDS Surveillance Report, 2005). In United States, highest prevalence of HIV/AIDS is found among African American population. In 2005, rates of HIV/AIDS cases for African Americans was 72.8 per 100,000 population, for Hispanic was 28.5 per 100,000 population, for American Indian/Alaska Native was 10.6 per 100,000 population, for white was 9.0 per 100,000 population, and for Asian/Pacific Islander was 7.6 per 100,000 population (CDC, HIV/AIDS Surveillance Report, 2005). African Americans, who make up approximately 13% of the U.S. population, are disproportionately affected by HIV/AIDS as compared to other groups. According to long-term confidential name-based reporting system African Americans accounted for 49% of incident HIV/AIDS cases in 2005 (CDC, HIV/AIDS Fact Sheet, 2006). In 2005, adolescent and adult males accounted for 70% of all HIV cases and the remaining 30 % was for females. (CDC, HIV/AIDS Surveillance Report, 2005).

In 2005, rates of AIDS cases were 59.0 per 100,000 population in the African Americans, 19.8 per 100,000 population in the Hispanics, 8.0 per 100,000 population in the American Indian/Alaska Native, 6.3 per 100,000 population in the whites, and 4.0 per 100,000 populations in the Asian/Pacific Islanders (CDC, HIV/AIDS Surveillance Report, 2005). Rates of AIDS cases in 2005 were 27.2 per 100,000 among males and 9.4 per 100,000 among females. In 2005, adolescent and adult males accounted for 74% of all AIDS cases and the remaining 26 % were females. (CDC, HIV/AIDS Surveillance Report, 2005). In 2005, African Americans accounted for 50% of the estimated 44,198 AIDS diagnosed cases in United States and District of Columbia (CDC, HIV/AIDS Surveillance Report, 2005).

In 2005, an estimated 27,000 people were living with HIV (not AIDS) in Georgia. According to Georgia Division of Public Health there are 855 newly diagnosed AIDS cases in 2005 compared to 1,435 newly diagnosed AIDS cases in 2004. Of the total newly diagnosed cases in 2004, 73% were males and 27% were females. In 2004, African American accounted for 76% of newly diagnosed AIDS in Georgia, followed by White (19%), then Hispanics, and Latinos (4%). MSM accounted for 31% of newly reported AIDS cases. 76% of the new diagnosed HIV/AIDS cases in 2004 were among African Americans. The AIDS rate in 2004 among African Americans (423 cases per 100,000 population) was eight times higher than Whites (5 cases per 100, 000).

METHODS

County-level data necessary for analysis were acquired using the Georgia Division of Public Health's Online Analytical Statistical Information System database (GDHR, 2007). OASIS (Online Analytical Statistical Information System) is a suite of tools used to access the Georgia Department of Human Resources, Division of Public Health's standardized health data repository. This tool allows information to be obtained regarding Georgia vital statistics by county, public health district and demographic cluster for 1994-current year, hospital discharge and morbidity data for 1999-current year, choosing from a set of measures such as: age, race, ethnicity, sex and cause-specific mortality/morbidity rates. All rates are per 100,000 population. For the analysis, rates of HIV/AIDS infections by gender and race (black vs. white) were aggregated over a five year period (2000 – 2004) and indirectly adjusted using Georgia as the standard. Population data for year 2000 is from the actual Census count and for years 2001 and higher, population estimates data in 5-year groups are also prepared by the U.S. Bureau of the Census. Rates for rural counties, defined as populations less than 35,000, were statistically compared to urban rates using a test of proportions ($\alpha = 0.05$).

RESULTS

Although variation exists, data suggest that the rate of HIV/AIDS is an urban problem, disproportionately impacting the African American population, especially males. Table 1 illustrates the infection rates of HIV/AIDS by race and gender in urban and rural counties in Georgia. HIV infections in urban counties (44.3/100,000) were significantly higher as compared to rural counties (19.6/100,000). Statistically high infection rates in urban areas were also evident when controlling race and gender. Males in urban counties were more heavily impacted compared to males in rural counties. HIV infection rates for urban white males were 19.86 per 100,000 population as compared to rural white males with rates of 9.24 per 100,000 population. Statistical significance exists among urban black males (167.56/100,000) when compared to rural black males (67.0/100,000). No significant differences were noted for white females. Also, statistical significance exists among HIV infection rates among urban black females (71.55/100,000) as compared to black females in rural counties (46.22/100,000).

Table 1: Infection Rates of HIV by Race and Gender in Urban and Rural Georgia

Demographic Group	*Area of Comparison*	*Number of Cases†*	*Population†*	*Unadjusted Rate/100,000*	*Adjusted Rate/100,000*	*Risk Ratio (95% CI)*
White Male	Urban	2,288	11,339,104	20.2	19.9*	2.15
	Rural	254	2,931,544	8.7	9.2	(1.87, 2.43)
White Female	Urban	418	11,278,244	3.7	3.7	1.24
	Rural	82	2,961,157	2.8	3.0	(0.94, 1.53)
Black Male	Urban	8,116	4,791,871	169.4	167.6*	2.50
	Rural	670	1,051,863	63.7	67.0	(2.30, 2.70)
Black Female	Urban	3,903	5,367,790	72.7	71.6*	1.54
	Rural	488	1,136,297	43.0	46.5	(1.39, 1.68)
Total	Urban	14,734	32,777,009	45.0	44.3*	2.26
	Rural	1,494	8,080,861	18.5	19.6	(2.14, 2.38)

† Aggregated over 5 years (2000 – 2004)
* Significant at $\alpha = 0.05$

DISCUSSION

Throughout the United States, the public health sector continues to invest enormous resources to combat the impact of the HIV/AIDS epidemic that is plaguing the American population. According to CDC, every year approximately 40,000 people get infected from HIV in the United States. In the United States, the highest prevalence of HIV/AIDS is found among African American population. In 2005, according to the long-term confidential name-based HIV reporting, there were 38,096 cases of HIV/AIDS in 33 states. The rate of HIV/AIDS in 33 states in 2005 was 20.2 per 100,000 population (CDC, HIV/AIDS Surveillance Report, 2005). From 2001 to 2005 the estimated number of HIV/AIDS cases increased approximately by 2% among males and decreased by 17% among females. In 2005, the largest number of HIV/AIDS cases occurred among persons aged 35-39 years and accounted for 16% of all HIV/AIDS cases diagnosed. At the end of 2005, the estimated prevalence rate of HIV infection (not AIDS) among adults and adolescents was 136.5 per 100,000 and 7.4 per 100,000 population among children living in the 37 areas (CDC, HIV/AIDS Surveillance Report, 2005). Pertaining to AIDS, at the end of 2005, the estimated prevalence rate of AIDS among adults and adolescents was 176.2 per 100,000 population and 2.7 per 100,000 population among children (HIV.AIDS Surveillance

Report, 2005). Overall, the estimated number of AIDS cases increased in all regions from 2001-2005, 38% in the Midwest, 19% in the South, 9% in the West, and 8% in the Northeast.

In Georgia there were 17,344 people living with AIDS in 2005. In 2005, the estimated rate of AIDS among adolescents or adults living in Georgia was 218.9 and 3.2 per 100,000 population for children (Georgia HIV/AIDS Surveillance Summary, 2005).

In 2005, 40% of the 35,537 cases of HIV infection were reported by New York, Florida, and Georgia. The combined AIDS rate from 2004 to 2005 for Georgia was 25.7 per 100,000 population. In 2004, the highest AIDS prevalent age group of newly diagnosed cases was 35-44, of which 19% were in ages 35-39, 20% were in ages 40-44. Pertaining to Georgia Health Districts, Fulton Health District had the highest HIV/AIDS incident rate of 60.2 per 100,000 population followed by Dekalb Health District with 32.7 per 100,000 population (Georgia HIV/AIDS Surveillance Summary, 2005).

The results of this study indicated that the rate of HIV infections in urban counties (44.3/100,000) were significantly higher than those in rural counties (19.6/100,000) even when controlling for race and gender. Pertaining to gender, males in urban counties (white =19.86/100,000 and black = 167.56/100,000) had significantly higher rates of HIV than males in rural counties (white = 9.24/100,000 and black = 67.0/100/000) and females in either county. Like males, females in urban counties had higher rates of HIV than those in rural counties. Overall, black females (urban = 71.55/100,000 and rural = 67.0/100,000) had higher rates of HIV when compared to white females in each these counties (urban = 3.65/100,000 and rural = 2.95/100,000). Pertaining to race, black males in both urban (167.56/10000) and rural (67.0/100,000) counties had the highest rates of HIV than black females, white males, and white females in each county.

Limitations to the Study

Conclusions drawn from this study relied solely on the use of a secondary data source acquired from Georgia's Division of Public Health. The primary disadvantage to using any secondary data source, for this study or similar studies, is the potential for errors associated with data quality. Any researcher using secondary sources is at the mercy of those that collected. Additionally, the researcher is unable to control or account for poor data quality associated with data cleaning or data entry.

This particular study relied on the use of adjusted rates to control for age differences in race and gender. A significant limitation of adjusted rates is that they are calculated using a statistical transformation process designed to equalize differences in population proportions. Consequently, adjusted rates are fictional and do not necessarily represent the true state of morbidity for HIV/AIDS in Georgia. Moreover, this study used Georgia as the standard to calculate the adjusted rates because the intent was to estimate trends only in the state. However, the use of this standard prohibits a direct comparison of infection rates to areas outside of Georgia.

Lastly, this study is limited because it was unable to assess other social and economic factors contributing to risk. Age, gender, race, and geographic residence (urban vs. rural) were the only factors considered in this analysis. Therefore, this research was unable to account for many factors known to be associated with risk of HIV infection, including socio-economic status, education, or religiosity. Readers should be cautioned to consider the possibility of an ecological fallacy when interpreting the results of this study.

Further Implications for Health Practitioners

The State of Georgia continues to report HIV transmitted infections at an alarming rate. The disproportionate impact of minorities is evident, although further assessment of the variation between urban and rural areas is warranted, as found in this study. Targeted interventions to modify sexual behaviors should rely on individual and community-level approaches to reduce the risk of infection in Georgia. Further, these targeted interventions should utilize a theoretical framework and should be tailored to ensure cultural competence. To achieve the objective of promoting population-level risk behavior reduction, individual and community-level interventions must attempt to bring about changes in safer sex knowledge, attitudes, intentions, and peer norms among members of the entire target population.

According to the CDC, the prevention and control of HIV transmission is based on the following five major concepts: a) education and counseling of persons at risk on ways to adopt safer sexual behavior; b) identification of asymptomatically infected persons and of symptomatic persons unlikely to seek diagnostic and treatment services; c) effective diagnosis and treatment of infected persons; d) evaluation, treatment, and counseling of sex partners of persons who are infected with HIV/AIDS(CDC: Sexually Transmitted Diseases Treatment Guidelines, 2002).

Physicians and other health-care providers play a critical role in preventing and treating HIV infection. Prevention messages should be tailored to the patient, with consideration given to the patient's specific risk factors for transmitting HIV/AIDS. Moreover, messages should include a description of specific actions that the patient can take to avoid acquiring or transmitting HIV (e.g., abstinence from sexual activity or using a condom during every sexual encounter). If risk factors are identified, providers should encourage patients to adopt safer sexual behaviors. Counseling skills (e.g., respect, compassion, and a nonjudgmental attitude) are essential to the effective delivery of prevention messages. Techniques that can be effective in facilitating rapport with the patient include using open-ended questions, using understandable language, and reassuring the patient that treatment will be provided regardless of circumstances unique to individual patients (including ability to pay, citizenship or immigration status, language spoken, or lifestyle).

Interactive counseling approaches directed at a patient's personal risk, the situations in which risk occurs, and use of goal-setting strategies are effective in HIV/AIDS prevention (CDC MMWR, 2001). In addition to prevention counseling, certain videos and large group presentations that provide explicit information about how to use condoms correctly have been effective in reducing the occurrence of additional HIV infection among persons at high risk, including clinic patients and adolescents. Interactive counseling strategies can be effectively used by most health-care providers, regardless of educational background or demographic profile. High-quality counseling is best ensured when clinicians are provided basic training in prevention counseling methods and skills building approaches, periodic supervisor observation of counseling with immediate feedback to counselors, periodic counselor and/or patient satisfaction evaluations, and regularly scheduled meetings of counselors and supervisors to discuss difficult situations. Prevention counseling is believed to be more effective if provided in a non-judgmental manner appropriate to the patient's culture, language, sex, sexual orientation, age, and developmental level. Although study limitations are evident, findings from this research can be used initially target at-risk populations at the county level. Moreover, this research may serve as a catalyst for local public health professionals to more diligently seek out vulnerable populations for more intense prevention and health promotion efforts.

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