ESSENCE: Environmental and Biological Factors on Sexual Violence and HIV Risk among Black Women
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Background

Black women are disproportionately affected by HIV, with the highest HIV incidence rate and HIV-related mortality among women in the U.S.1 Baltimore, MD has the 9th highest HIV rate in the nation with a racial make-up of 63% Black.2,3

Women who experience sexual violence have up to 9 times greater risk for HIV.4 Black women are disproportionately affected by sexual violence, with 44% of Black women reporting rape by a partner, compared to 35% of White Women.5 In recent years, Baltimore saw a 68% increase in the number of reported rapes.5 Sexual violence contributes significantly to women’s risk for HIV,6 directly when forced sex is perpetrated by an HIV-infected person and indirectly through engagement in high-risk coping behaviors (e.g., substance use) that may increase sexual risk behaviors.

The physical/structural and social characteristics that comprise a neighborhood, such as residential segregation, neighborhood disorder, and physical/sexual assault rates contribute to violence against women and HIV risk. Black men and women are disproportionately clustered in impoverished and racially segregated neighborhoods, rendering Blacks more susceptible to negative health outcomes. The ESSENCE Project [Examining Stress, Sexual Experiences, and Neighborhood Correlates of HIV Risk among Black Women] examines how modifiable environmental characteristics and neighborhood-level factors affect sexual violence.

The ESSENCE Project also investigates how physiological or biological changes of the stress response—represented by cortisol levels—following forced sex experiences can weaken the immune system, thereby increasing women’s susceptibility to HIV infection. Stress responses may remain heightened even years after an initial trauma. Therefore, The ESSENCE Project examines the isolated effect of the stress-response resulting from a history of forced sex on HIV risk and sexually transmitted infections.

Goals

The ESSENCE Project addresses a 2013 White House Report by examining the intersection of violence against women, HIV, and gender-based health disparities.7 Namely, The ESSENCE Project evaluates the impact of neighborhood environment and explains how forced sex and physiological factors influence behavioral mechanisms that increase risk for HIV infection among Black women.

References

Methods

HIV-negative Black women with an increased risk for HIV (n=400) were recruited from low-income STD clinics in Baltimore, MD. Participants were between 18-45 years old, sexually active in the previous 6 months, and reported one or more sexual risk behaviors in the previous 12 months.

By study design, at least one-third of women have experienced forced sex since 18 years of age and two-thirds have not experienced any abuse in their lifetime. Participants completed a quantitative cross-sectional survey. Population level neighborhood data was collected via U.S. Census Data, Baltimore City Access Database (Open Baltimore), and NIfETy: Neighborhood Inventory for Environmental Typology (see Figure 1). Participants completed self-collected physiological assessments to measure saliva-based cortisol-awakening response across three consecutive days, measuring the chronic stress response (see Figure 2). Additionally, a subset of women with a history of sexual violence (n=20) participated in qualitative in-depth interviews to contextualize the complex interplay of factors.

The ESSENCE Project is the first study to evaluate the combined influence of environmental factors and physiological alterations that may contribute to increased vulnerability to HIV.

Impact

The ESSENCE Project will elucidate the overlapping and multi-level relationship between sexual violence against women and HIV-risks, at the individual and neighborhood levels. Findings will directly inform multi-level interventions that target environmental, neighborhood, and biological pathways, situating risk behavior within social and physical contexts. Interventions may include social and community mobilization in impoverished urban communities to address norms of violence against women and clinical and community programs aimed to stabilize the physiological stress response, improve behavioral coping, and reduce the risk of HIV for Black women.

Recommendations

1. Increase funding to advance research on the intersection of HIV, violence against women and girls, and gender-related health disparities.
2. Expand upon and train scientists in innovative, multiple-pathway methodologies utilizing the HPA axis sampling to understand the chronic stress response.
3. Engage health clinic doctors, nurses, and staff on the effects of the stress response for at-risk patients and the need for linking patients to immediate care.
4. Develop multi-level interventions that address sexual violence, environmental, neighborhood, and biological pathways to decrease HIV risk among vulnerable women.


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