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Potential pathways to HIV/AIDS transmission in the Niger Delta of Nigeria: Poverty, migration and commercial sex

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Abstract

HIV prevalence in the Niger Delta of Nigeria is generally attributed to concurrent sexual partnerships and weak public sector health care and education systems. This paper examines the likelihood of additional factors, such as the intersection of widespread poverty, migration, and sex work, as contributory channels of HIV transmission in the region. To explore this issue, we conducted a Delphi survey with 27 experts to formulate consensus about the impact of poverty, migration, and commercial sex on AIDS in the Niger Delta. Results suggest that these factors and others have exacerbated the epidemic in the region. To stop the further spread of HIV in the region, efforts to address poverty, sex work, and multiple sexual partnerships require building a public-private partnership which involves participatory action strategies among key stakeholders.

INTRODUCTION

Nigeria has the second largest absolute number of people living with HIV/AIDS (PLWHAs) in the world at 2.9 million, following South Africa's estimated 5.5 million (UNAIDS, 2006; 2007; WHO, 2007). Approximately 3.9% of adult women aged 15–49 were HIV-positive as of 2005 (UNAIDS, 2006). HIV prevalence is estimated to be 75% among Nigeria's estimated one million sex workers (Federal Ministry of Health, 2005; Onoja et al., 2004).

The Niger Delta region has the second highest HIV prevalence in Nigeria, at 5.3%, with the highest prevalence (6.1%) in the north-central region and the lowest prevalence in the south-west region (2.6%) (NASCP, 2005). However, though not population-based, two clinic-based studies have reported higher HIV prevalence among pregnant women in the Niger Delta (Akani et al., 2006; Macilwain, 2007). The spread of HIV in the Niger Delta has been suspected to be linked to underrepresentation in the national government, disproportionately smaller share of donor funding, and region-specific political economic conditions, such as poverty, migration, and sex work (Udoh, 2006; Udoh et al., in press). These factors are believed to increase vulnerability to HIV/AIDS and other sexually transmitted diseases (STIs) in this region, particularly among women and youth (Omorodion, 2004; 2006). In this study, we used the Delphi method to examine the beliefs of HIV/AIDS research experts, advocates and activists

about the linkage between poverty, migration, sex work and HIV/AIDS in the Niger Delta. We selected this region for study because of its high HIV prevalence.

Poverty and HIV/AIDS

In many sub-Saharan African societies, high HIV/AIDS prevalence is hypothesized as an outcome of as well as a contributor to poverty (Gillies et al., 1996; UNAIDS, 2004; Zwi, 1991). It has been suggested that the decline of agriculture in the Niger Delta results in shortages of food and employment, increases vulnerability to HIV, and complicates the management of AIDS-related opportunistic infections because of hunger and malnutrition (CWIQ, 2003; Udoh et al., in press).

The 2005 Nigerian National Bureau of Statistics' (NBS, 2005) assessment that the Niger Delta's poverty was less than the national average has been questioned by the UNDP (2006) as underestimating the higher price trends and environmental costs resulting from the activities of multinational oil companies in the Niger Delta. Poverty, as an outcome of the collapse of the rural agrarian economy in the Niger Delta, is believed to trigger rural-to-urban migration, fostering sex work and other sexual risk behaviors that make people vulnerable to HIV and other STIs (Human Rights Watch, 1999; Ile & Akukwe, 2001; Oyefara, 2007; Turner, 2001; Udonwa et al., 2004; Udoh, 2006; Udoh et al., in press).

Migration, Sex Work, and HIV/AIDS

Research suggests a close correlation between labor migration and the spread of HIV/AIDS in sub-Saharan Africa (Alubo et al., 2002; Hill, 2005; Nnaemeka, 1990; Posel, 2004; Quinn, 1994; Zwi & Cabral, 1991). Udonwa and colleagues (2004) and Adeokun (2006) reiterate that the Niger Delta's historical association with commerce, oil mineral extraction, and influx of foreigners has made it an epicenter of STI susceptibility among the local population, long before the HIV virus was discovered.

The evidence suggests a pattern of HIV transmission where predominantly male unemployed adolescents and adults leave their rural homes and families in search of work in urban centers, such as Aba, Calabar, and Port Harcourt. Migrants often live under squalid circumstances due to unemployment (Davis & Kalu-Nwiwu, 2001; Marx, 1986; Odulana & Olomajeye, 1999). Additionally, migrating women and girls who find no employment frequently resort to commercial sex, thereby increasing potential exposure to HIV/AIDS. HIV+ migrants returning to their rural communities may transmit the virus to sex partners. Sex becomes a tool of commerce, available to those who have the means to pay for it and sustaining those who exchange sexual favors for subsistence (Nwauche & Akani, 2006a; 2006b; Omorodion, 2004; 2006). In this script, Msimang (2003) argues that HIV follows poverty, infiltrating regions where hunger, unemployment, and conflict prevail.

METHODS

Delphi Method

A three-round web-based Delphi survey provided an opportunity to understand how the interplay of structural factors may exacerbate the HIV epidemic in the Niger Delta. This method involves a systematic use of knowledgeable experts to gather and collate informed judgments on specific issues where information is scant (Price, 2005) by using an iterative participant feedback process to achieve consensus (Dalkey & Helmer, 1962; Neiger et al., 2001; Udoh et al., in press). Like most Delphi research, the primary focus of this study was not causal inference. The Delphi method has been used in at least five HIV/AIDS studies (Adams et al., 1992; Chin et al., 1990; Copenhaver & Fisher, 2006; Sowell, 2000; UNAIDS/WHO Statement, 2006).

Participant Recruitment

Because the power of the Delphi method is based upon the degree to which participants are indeed experts (Hasson, 2000; Powell, 2003; Udoh et al., in press), selection of participants is based on participant expertise rather than on a random process (Adams et al., 1992; Pollard & Tomplin, 2001). For this study, we developed nomination criteria for two groups of experts. Group 1 Experts consisted of HIV/AIDS researchers or advocates who (a) either lived in or focused on sub-Saharan Africa, Nigeria, or the Niger Delta, and (b) had at least five years of experience with HIV/AIDS in these regions. Group 2 Experts had to (a) be knowledgeable about the social, economic and political determinants of health in sub-Saharan Africa, Nigeria, or the Niger Delta; (b) be Nigerian by birth or a current resident of Nigeria; or (c) have five years of professional experience in Nigeria.

First, experts were nominated through a snowball sampling method. Second, we identified 70 published scholars from refereed journals and books on HIV/AIDS in sub-Saharan Africa. To ensure institutional and regional diversity, we used a stratified sampling process to select 50 experts from the original list of 120 (Group 1 = 30; Group 2 = 20).

Procedures

Sample Selection—An email letter was sent in December 2005 inviting each of the selected 50 experts to participate of which 27 (54%) consented to participate (Group 1 = 13 and Group 2 = 14). Six of the Group 1 experts and two of Group 2 experts were female. A sample of 15 participants in a Delphi study is considered to be adequate to obtain a high degree of reliability (Dalkey & Helmer, 1962).

Experts included Africa and Nigeria-focused HIV/AIDS research scientists and public health experts from research and advocacy institutes, and schools of psychology, education, public health, medicine, communication, political science, geography, and rural health in North America, Europe, Australia, and sub-Saharan Africa. Nineteen experts held Ph.D. degrees, five held a M.D. degree, and three were Ph.D. candidates.

The Institutional Review Board of North Dakota State University approved the study protocol and instruments and a web-based informed consent was administered to potential participants. Study participation was confidential, not anonymous.

Delphi Questionnaire and Survey—The eight statements discussed in this paper, a subset of a larger questionnaire developed from a literature review, included three statements about poverty and HIV/AIDS in the Niger Delta; four statements about commercial sex and HIV/AIDS in the region; and one statement on migration and HIV/AIDS.

The Delphi survey consisted of three rounds in which participants were required to rate eight statements based on a five-point Likert scale (ranging from Strongly Agree = 4; Agree = 3; Disagree = 2; Strongly Disagree = 1; Don't Know = null). "Don't Know," infrequently selected, was excluded from the analysis. Panelists were also asked to suggest comments that could be used to improve the statements for subsequent rounds of the survey.

Data Analysis—Consensus was assessed in two ways. For each statement we calculated mean scores and standard deviations: A mean score of ≥ 3.00 (Agree) with a standard deviation of ≤ 1.0 indicated agreement, whereas a mean response of ≤ 2.00 (Disagree) with a standard deviation of less than ≤ 1.0 indicated disagreement with a statement. Secondly, a proportion of minimally 80% of (strongly) agree or (strongly) disagree answers indicated agreement or disagreement, respectively. According to Eighmy (1995), this is a high standard for consensus.

RESULTS

As Table 1 shows, the expert panel agreed at the third round that the high HIV epidemic in the Niger Delta is caused by a number of structural factors, including poverty, transactional sex, concurrent sexual partnerships, and intra-regional migration patterns (described in statements 1, 4, 5, 8). These factors provide answers to the three research questions that guided our analysis.

Question 1 — Is the high prevalence of HIV/AIDS in the Niger Delta of Nigeria due to widespread poverty in the region?

The experts agreed that widespread poverty is a contributing factor to HIV/AIDS transmission in the Niger Delta (Statement 1). A few panelists, however, questioned any assertion that poverty "caused" HIV transmission and observed that poverty alone could not explain the high transmission rates in this region since other similarly impoverished regions in Nigeria should have high levels of HIV/AIDS. One panelist said: *HIV is transmitted through sexual intercourse mainly, and the association between poverty and high risk behavior is not linear*. Another suggested that illiteracy, which feeds ignorance, more than poverty, could be a primary contributor to HIV/AIDS transmission.

A little more than half of the panelists from both groups disagreed with Statement 2 that a country's per capita gross national product determines its HIV/AIDS prevalence rate. One panelist said that such a correlation would be weak, and another stated, *there is evidence to the contrary. If this hypothesis holds true, then the significantly least developed countries in sub-Saharan Africa based on UNDP human resource index (e.g., Sierra Leone, Liberia, etc.) would account for significantly greater HIV prevalence than countries like South Africa, Botswana, etc., which are better off financially*. Many experts suggested that income inequality and poverty should be considered more so than GNP.

The high agreement with Statement 3 (91.3%) shows that water and sanitation are critical for effectively preventing AIDS. As one participant stated, *lack of access to clean water usually contributes to poor care for people already living with HIV/AIDS* by making it difficult to manage the AIDS-related opportunistic infections.

Question 2—Is the high prevalence of HIV/AIDS in the Niger Delta of Nigeria due to risky sexual practices in the region?

The experts agreed that many women who are caught in a web of concurrent sexual partnerships, maintained by well-financed patrons, face a situation of increased vulnerability to HIV. Statement 4 aimed to ascertain the circumstances that make females particularly vulnerable to HIV/AIDS in the Niger Delta. It stated that girls and women engage in extramarital sex primarily in exchange for material benefit. Although participants concurred that material sustenance could be an incentive for engaging in risky sexual practices, they questioned any assumption that "material benefit" was the primary motivation for engaging in sex work. One participant suggested that this is "a very western view of African sexuality" and "a terrible and discriminatory sweeping generalization" against women. Participants strongly agreed that concurrent multiple sexual partnering, particularly by wealthy men, is a common risk factor (Statement 5). A panelist commented that some adolescents who engage in multiple partnerships are driven by poverty and the need to find security, thereby associating with sexual partners who have the means to provide for them. Another said that women often resort to multiple sexual practices to survive because they have little or no power in an *exploitative and manipulative* economic system.

Almost all panelists agreed with Statement 6 describing sex workers as a key avenue of HIV transmission. Some panelists suggested that there could be other, more critical, transmission channels than sex work as the epidemic in the region is already currently in advanced stages. One stated, usually *sex workers are designated as the responsibles [sic] of epidemic but more often it is at the beginning of the epidemic. In the Nigeria epidemic is already 20 years old. Then they are usually one of the groups most aware of the HIV infection and disease*. Another panelist reiterated that unsafe sex with multiple concurrent partners, more than sex workers, is the driving force of HIV transmission in the Niger Delta.

More respondents from Group 2 than Group 1 agreed with Statement 7, which describes sex workers as lonely and deserted young female migrants from rural-to-urban areas. Some participants commented that sex workers also include university girls and married women who live in rural communities. The difference in consensus between Groups 1 and 2 (72.7% and 50%, respectively) is possibly due to the fact that Group 2 participants, as Nigeria-focused experts, are more familiar with Nigeria's society than Group 1 panelists who are generally focused on sub-Saharan Africa.

Question 3—Is the high prevalence of HIV/AIDS in the Niger Delta of Nigeria due to migration for work in the oil industrial centers in the region?

Statement 8 was developed to assess the impact of rural-to-urban migration for employment as a potential avenue for transmitting HIV/AIDS. The panelists strongly agreed that unemployed city-bound young men in the oil industrial centers who become infected with the virus and then return to their rural communities may be a conduit for HIV transmission. Participants generally argued that labor migration is a vector because migrants are more likely to engage in risky sexual practices because of lack of social support and a desperate need for material resources. Others mentioned that migration also has been found to play a role in HIV transmission in other countries, particularly in societies such as the Niger Delta where the hope of finding urban-based employment in mineral extraction or factory industries prompts young men and women to leave their rural communities.

DISCUSSION

In this study, panelists' perceptions and opinions indicate that poverty, risky sexual practices, and migration combined contributed to the high HIV/AIDS prevalence in the Niger Delta. Although several other Niger Delta studies have identified each of these factors as potentially sexual risk variables (Akani et al., 2006; Ejele et al., 2004; Nwauche & Akani, 2006a, 2006b; Omorodion, 2004; 2006), our study suggests that none of the factors by themselves are solely responsible for the epidemic in the region. Their interaction, however, can result in gender inequality, social challenges, and economic need, and sexual risk-taking behavior (Aaron, 2005; Akpan, 2006; Omeje, 2005a; 2005b; Udoh, 2006; Udonwa et al., 2004). This situation describes the context of a mature epidemic which continues to be propelled by an interaction of specific micro- and macro-level economic processes (Carlson, 1996; Gaffeo, 2003, p. 32).

Study findings suggest that the Niger Delta society is caught in a confluence of poverty, migration, and sexual risk which defines the context of vulnerability to HIV/AIDS in the region. The separation of city-bound workers from spouses and extended family can lead to emotional and social loneliness which in turn triggers behaviors such as multiple sexual partnerships and unprotected sex with commercial sex workers, exposing them to the risk of STIs, including HIV/AIDS (Twenge et al., 2002).

How can poverty, social alienation, and risky sexual practices be remedied in the context of the Niger Delta? We argue that these issues can be addressed by a partnership of government, the private sector, and community-based institutions. Gray (2003, pp. 262–263), however,

warns that "innovative local projects [by individual organizations] are a modest contribution and have limitations in addressing the overall impact" of poverty. Programs need to be enacted and implemented as initiatives supported by a coalition of public and private community-based organizations. Accordingly, the recent HIV/AIDS initiative in Bonny Island by a coalition of oil companies in the Niger Delta (Macilwain, 2007) may have a local impact but overall be insufficient and inefficacious unless it is implemented within the context of grassroots participation, a broader partnership with other sectors, and a plan for project sustainability.

We recommend that HIV prevention initiatives in the region aim to increase the social capital enjoyed by individuals who migrate from rural villages to urban centers in search of city-based jobs. Migrants and commercial sex workers and other citizens who live in urban areas need to be encouraged to participate in organizations, interventions, and activities that may provide them with practical, realistic, and positive knowledge and skills for protecting themselves against HIV infection (Cattell, 2001; Holtgrave & Crosby, 2003). Research has shown that social capital moderates the relationship between poverty and health; the more social capital, the better the public health indicators (Cattell, 2001; Holtgrave & Crosby, 2003; Poundstone et al., 2004; Room, 1999). Increased social capital can provide socially alienated migrant workers and sex workers with social networks for gaining information, skills, and support to help them reduce or eliminate their sexual risks. People who live in the rural areas could benefit from a reconstruction and strengthening of the traditional social structure involving the lineage, village, and clan systems to provide more stable grassroots units of health education and prevention interventions.

We argue that the current efforts by the Nigerian government to implement HIV/AIDS prevention and treatment can boost the social capital in the region if these efforts are community-based and participatory. The national, state, and local agencies for the control of AIDS, as well as the Niger Delta Development Commission, need to be genuine grassroots channels which can be adopted, redefined, and managed by members of the community, with technical support from government. This approach can increase the reach of these bodies and ensure easier community identification, accessibility, and acceptability.

Although most of these experts were either Nigeria-focused scholars or citizens of Nigeria in the Diaspora, the fact that the experts in our Delphi study were physically removed from Nigerian society might have increased objectivity. Moreover, the findings from this study have been corroborated by recent empirical studies conducted in the region.

More research is needed for understanding the reasons why women and men engage in risky sex in this region. Research can also clarify whether or how significantly poverty, migration and sex work affect HIV transmission. Findings from such studies could provide evidence-based information for creating effective preventive interventions to empower vulnerable people in Nigeria's Niger Delta to protect themselves against HIV/AIDS.

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Table 1

Descriptive statistics on Delphi Panel responses on HIV/AIDS and poverty, migration, sexual norms, commercial sex at round 3

Statement	Mean (SD)			% Agreement		
	Group 1	Group 2	Total	Group 1	Group 2	Total
1. *Widespread poverty is a contributing factor to the transmission of HIV/AIDS in the Niger Delta.*	3.31 (.630)	3.29 (.469)	3.30 (.542)	92.3	92.4	96.3
2. *Generally, there is a relationship between a country's per capita gross national product (GNP) and the rates of HIV/AIDS among groups in that country (i.e., the higher the GNP, the lower the rates of HIV infection).*	2.46 (.660)	2.54 (.660)	2.50 (.648)	38.5	46.2	42.3
3. *Lack of access to clean water and means of sanitation has contributed to the spread of HIV/AIDS in the Niger Delta by weakening their immune system.*	2.36 (.674)	2.25 (.622)	2.30 (.365)	91.0	91.6	91.3
4. *Some girls and women, who engage in extra-marital sex in Nigeria, do so in order to receive some material benefit.*	3.17 (.937)	3.21 (.579)	3.19 (.749)	83.4	92.9	88.4
5. *In the Niger Delta, sexual promiscuity, a primary avenue of HIV transmission among adolescents, is largely enhanced by well to do men using money or other material resources to extract sexual favors from multiple female adolescent partners.*	3.18(.405)	3.38 (.605)	3.29 (.550)	100	92.4	95.8
6. *While prostitution is illegal in Nigeria, there are an estimated one million sex workers in the country, approximately 30% of whom are HIV- positive. Sex workers are a most likely avenue of HIV/AIDS transmission in the Niger Delta.*	2.85 (.555)	3.10 (.316)	2.96 (.475)	76.9	100	87.0
7. *Sex workers (prostitutes) in Nigeria are generally deserted or lonely young women, who migrate to urban centers from rural villages for economic reasons, including search for employment.*	2.91 (.701)	2.42 (.669)	2.65 (.714)	72.7	50	60.9
8. *Labor migration, where men and women leave their homes and families in the rural areas for many months on end in order to work in a factory or trade in urban centers, is common in the Niger Delta. This labor migration has been a main contributor to HIV/AIDS transmission in the Niger Delta of Nigeria*	3.23 (.599)	3.21 (.426)	3.22 (.506)	91.8	100	96.3

Notes: (Strongly Agree = 4; Agree = 3; Disagree = 2; Strongly Disagree = 1; Don't Know = null). Don't know was excluded from the analysis.