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# At Risk? Exploring the relationship between HIV-related knowledge and risky behavior in young females in Jamaica.

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# *AT RISK?*

# EXPLORING THE RELATIONSHIP BETWEEN HIV-RELATED KNOWLEDGE AND RISKY BEHAVIOR IN YOUNG FEMALES IN JAMAICA

HONORS PROJECT

DEPARTMENT OF GEOGRAPHY

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BY

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SAINT PAUL, MINNESOTA

4 MAY 2009

*To my parents, Cyril and Penny*

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## ABSTRACT

Young females are at three times higher risk of contracting HIV than their male counterparts in Jamaica. Using Jamaica's 2004 Knowledge, Attitudes, Behaviour and Practices survey, this research investigates factors contributing to HIV/AIDS-related risky behaviors of young females. Risk perception as a function of knowledge and as an influence on behavior is also examined. The findings reveal that only older females, 25 to 49 years, practice safer behaviors in response to increased knowledge. This highlights the disjunction between knowledge and behavior, emphasizing the need for a holistic approach to addressing the social context within which adolescents are put at risk.

# CHAPTER 1

# INTRODUCTION

Just as HIV is more than a biological phenomenon, so risk is more than just a statistic, the likelihood for some event. Within the context of HIV/AIDS, risk varies by place, by sex, by age, by race and ethnicity, by culture, and other socio-demographics characteristics. HIV acts like a magnifying glass, amplifying existing social inequities along lines of political disempowerment. In effect, HIV serves to make the vulnerable even more vulnerable. One vulnerable group is women and girls, the focus of this study. Worldwide, the National AIDS Committee (2003) and UNAIDS and the World Health Organization (2004) estimate that adolescent girls, 10 to 19 years, are at two to five times higher risk of HIV infection than are their male counterparts. In Jamaica, female adolescents have been found to be at three times higher risk to contracting HIV than their male counterparts (Lewis 2008).

Using the 2004 Knowledge, Attitudes, Behaviour and Practices (KABP) national survey, this research investigates factors contributing to HIV/AIDS-related risky sexual behavior in Jamaica, applying the theoretical underpinnings behind the concept of "risk" to elucidate the relative vulnerability of different demographic groups. In particular, how is risk defined and by whom, and how does this shape the risk environment for HIV/AIDS. The social construction of "risk" is explored as an act of translation of science, whose formalized and institutionalized meanings do not always match up to the individual's perception of personal risk to HIV/AIDS.

Despite increased levels of knowledge and awareness of HIV/AIDS in Jamaica, youth continue to practice behaviors that put them at risk to HIV infection. Young

people, including female adolescents, are at a particularly high risk to HIV infection due to a combination of inherent biological and exogenous social vulnerabilities (see DiClemente, Zorn and Temoshok 1986, 1987; DiClemente, Boyer and Morales 1988; Futterman, Chabon, and Hoffman 2000; Hutchison et al 2007; Malow et al. 2007). This disjunction between knowledge and actual behavioral practices must be addressed in HIV/AIDS policy and related education and youth prevention programs if they are to be effective.

The research project is divided into the following five sections. First, in the remainder of this chapter, I outline the objectives of this study, clarifying the critical concepts of risk and vulnerability which will form the focus of my discussion. I then situate my work within the existing literature and present the main conversations in the risk discourse relevant to HIV/AIDS (chapter 2). The goal of chapter 2 is to re-evaluate the concept of risk and risk factors for HIV/AIDS, moving from a biomedical understanding of risk to an appreciation of risk as a social and cultural construction. Chapter 2 ends with a description of the theoretical approach I use to frame this research and which shaped my methodology. Chapter 3 provides a brief background of the epidemic in Jamaica, outlining the importance of the research. Chapter 4 details my methodology as well as the data sources I used to answer my two research objectives, as described below. In the final section, I interpret my results, before providing my recommendations.

## Research Objectives

The main objective of this study was to examine the relationship between knowledge about HIV/AIDS and sexual behavioral practices. It is often asserted that increased knowledge about HIV/AIDS and ways to protect oneself will result in safer sexual practices; after all, this is the premise upon which educational and media campaigns are based (UNAIDS 2008b). In the absence of a vaccine, education is considered to be the first and most effective step in prevention of new HIV infections (Nyamath et al. 1993). Education campaigns aim to change people's behavior regarding issues such as sexual practices, condom use, number of partners, getting tested and knowing HIV status, and common myths and misconceptions of HIV/AIDS by providing people with information that is considered to be critical to making "wise choices." This study investigates whether having that information inevitably leads to "wise choices."

The secondary objective was to explore the role of personal risk perception as a factor influencing a person's sexual behavioral practices. The relationship between perceived risk and behavior can work in two ways: perception can be a determinant of behavior or subject to the influences of behavior (Akwara et al. 2003). For example, a person who regards him or herself as having little chance of getting infected with HIV may be more willing to practice risky sexual behaviors; in this scenario, perception is a *determinant* of behavior. Conversely, it could also be contended that risky sexual behavior is the *influencing* factor on perceived risk (Akwara et al. 2003). In this situation, a person who is already practicing high-risk behaviors would perceive their risk of HIV exposure to be high. While recognizing this two-way relationship, the focus of this paper

is on perception as the explanatory variable and sexual behavior as the outcome or dependent variable.

## Risk versus vulnerability

At the outset, it is important to distinguish between two terms, which are often used interchangeably, but whose subtle distinction is important to the argument of this paper: *risk* and *vulnerability*. In the broadest of terms, risk refers to the mathematical likelihood or probability of a particular event occurring (in this context, contracting HIV), while vulnerability refers to the degree to which an individual's unique characteristics and circumstances increase his or her chances of contracting HIV.

Within the discipline of geography, specifically hazards geography, there has traditionally been a strong emphasis on geological, meteorological, and other physical hazards. This focus is reflected in the way in which the International Strategy for Disaster Reduction (2004) defines risk:

> The probability of harmful consequences, or expected losses (deaths, injuries, property, livelihoods, economic activity disrupted or environment damage) resulting from interactions between natural or human-induced hazards and vulnerable conditions.

Natural hazards are no longer restricted to physical events such as earthquakes and floods, however. In light of the global AIDS pandemic and the resurgence of ancient diseases like malaria and tuberculosis, it has become critical to expand this focus to include an in-depth examination of biological hazards such as disease.

While straightforward notion of risk is important, it is imperative also to consider that risks vary by the social, economic and political contexts in which a particular hazard occurs, as well as by characteristics of the individual. This notion is reflected in the

concept of vulnerability. The relationship between risk and vulnerability is sometimes described by the following notation, which suggests that risk is an interaction of individual and structural vulnerabilities in combination with exposure to a particular hazard:

Risk = Hazard(s) x Vulnerability (UN/ISDR 2004).

In the context of this paper, HIV/AIDS represents the hazard, and vulnerability refers to those conditions that influence an individual or community's level of susceptibility to the impact of HIV/AIDS, as determined by physical, social, political economic and environmental processes (UN/ISDR 2004). One key aspect of vulnerability is exposure, in this case to the virus, which varies by characteristics of both individual and place. Exposure to HIV is largely determined by the frequency of behaviors that put a person in situations involving points of transmission (for example, frequency of sexual contacts, use of infected needles, need for blood transfusions, and mother-to-child transmission through birth or breast-feeding). Timing is also critical, which influences viral load of carrier. The other component of risk is structural vulnerability, which can also be thought of as the intensity or magnitude of exposure. Risk and vulnerability are therefore not interchangeable. For instance, an individual could be vulnerable to AIDS because of factors such as low socioeconomic status and high prevalence of HIV in the local community, but their risk may be negligible if they are taking measures to prevent exposure.

Risks can either be inherently produced or be created by and exist within social systems (UN/ISDR 2004). Lay perceptions of risk by the public often do not coincide with scientifically produced risks (Cutter 2003), and tend to be a reflection of "moral,

political, and economic choices that were themselves value-laden and socially constructed" (see Douglas and Wildavsky 1982; cited in Cutter 2003, 2). Risk should be understood at the scale of the individual and his/her underlying perception(s) of exposure to the risks of the hazard. Any risk assessment or study should therefore ask and attempt to answer the following questions: *What are the risks? Who or what defines the risks? How are the risks defined?*—and all must be put within the relevant spatial and temporal contexts. These questions will be explored in the subsequent chapter.

# CHAPTER 2

# LITERATURE REVIEW

> "Neither science, nor the politics in power, nor the mass media, nor business, nor the law nor even the military are in a position to define or control risks rationally."
>
> Ulrich Beck

> "While considerations of risk have always been intrinsic to the ways in which individuals and institutions have oriented themselves to their environments, what is qualitatively different about today is how much more explicitly *conscious* those individuals and institutions are about the risks they confront."
>
> Dannreuther and Lekhi

## Re-evaluating the concept of risk and risk factors for HIV/AIDS

We are obsessed with risk. Not only are we increasingly risk conscious, as Dannreuther and Lekhi (2000) describe in the above quotation, but we exist within what can be known as a risk society (Beck 1992). Beck defines this risk society as "a systematic solution for managing the risks and insecurities introduced by modernisation, which has altered the dynamics of social organisation during this process" (Fundación CIDOB 2006). According to Beck (2006), risk then represents the anticipation of some catastrophe, a perception that often ignores the very preconditions that generated the disaster; HIV/AIDS is one such modern catastrophe.

In order to make sense of the social disorder that has resulted from this emerging epidemic, we have resorted to the use of categorizations that focus on identifying the individual behaviors that put an individual at risk to HIV/AIDS rather than emphasizing the structural constraints that force people to undertake such risky behaviors, the *risk*

*environment*. This tendency is epitomized by the notion of the 4-H club, which identifies groups at greatest risk of contracting HIV/AIDS: homosexuals, hemophiliacs, heroin users, and Haitians (eventually prostitutes were added to the list) (citation). The understanding of these risk groups changed from one based on statistical probability to a "'risk' which 'they' (those who possess that observed characteristic but may not be infected) pose to 'us' the uninfected" (Barnett and Whiteside 1999, 206). In response, public health discourse has acknowledged the racialized and discriminatory nature of these categories, and has shifted its lens of understanding from risk groups to *risk factors* or *behaviors* (citation).[1]

The risk environment is therefore a social and economic environment which facilitates or increases chances of disease transmission (Barnett and Whiteside 1999). Any behavior practiced within the risk environment that could facilitate transmission (for example, sexual intercourse) then becomes a *risk behavior* (Barnett and Whiteside 1999). In this context, the focus moves from the individual to the behavior, hopefully lessening stigma on the previously-identified groups. Of particular importance to geographers, the notion of the risk environment focuses on the importance of place in the discussions of vulnerability. The risk environment will be elaborated on further in the chapter.

This chapter seeks to address the theoretical underpinnings behind the concept of risk and the emergence of the debate between biomedicine and the social sciences in defining risk. The overarching questions that will be examined are: how does one define risk and, according to whom or which institutions do we define risk? How does an

[1] On a side note, I argue that this shift did not necessarily improve the realities on the ground, particularly in terms of changing attitudes towards the previously identified "risk groups." Instead, these social (and, what used to be, medical and formal) categories continue to disproportionately influence AIDS policy and the politics surrounding this subject.

individual assess his or her level of personal risk to HIV? Furthermore, is there a disjunction between formalized HIV risk factors as defined by public health and individualized risk factors? Lastly, what is the role of geography in shaping the risk environment, that is the social context within which certain exogenous factors interact with the individual to increase vulnerability to HIV infection?

Connecting all of these questions is my assertion that risk, as a category, is a form of subjectification that, once internalized by the individual who engages in societal-prescribed forms of risk aversion, becomes a process of self-subjectification. Expanding on this, we can assume that any discussion of risk is rooted in the dynamics of power relations, and more specifically power dynamics that are playing out at the scale of the subject body. Risk categorizations can be thought of as a public health technology, one that seeks to mediate the blurred line between the known and the unknown. Furthermore, this is a technology which, through its actions on the subject body, also indirectly controls people's bodies and their behavior; what can be called a *re-colonization of the body*.[2]

## HIV/AIDS and Risk:
## A strange silence in geography

There has been what Craddock (2000, 153) calls a "strange silence" in the geographic literature on AIDS looking at risk and its geographic dimensions. With the onset of the AIDS epidemic in the 1980s, Craddock (2000) argues that geographers have

[2] See Arnold (1993) for a discussion of the way in which the treatment and control of smallpox, cholera and plague acted as forms of European colonial rule of the Indians.

failed, and continue to do so even today[3], to address questions of risk and the social context within which the virus is transmitted and the ways in which certain groups of individuals become vulnerable. Geographic work has, however, expanded our understanding of the diffusion of the epidemic through time and across space (Brown 2000).[4] Additionally, a growing body of work in geography focuses on the influence of political economy on the HIV/AIDS epidemic (see Barnett and Blaikie 1992; Asthana and Oostvogels 1996; Asthana 1997; Brown 1995, 1997; Mayer 1997; Barnett and Whiteside 1999; Craddock 2000; Kalipeni et al. 2004), and yet the notion of risk as a way to contextualize the disease remains understudied.

This gap in the geographic literature with respect to risk could be remedied by the transition within the larger sub-discipline from 'medical geography' to a critical 'geography of health'. This new 'geography of health' encourages us to move beyond a Western biomedical framework for health and consider the social, political, and cultural issues that influence health and healthcare (see Kearns 1993; Dorn and Laws 1994; Dyck 1999). Brown (2000, 1271) argues that "an overreliance on the biomedical model of disease [has] resulted in a neglect of individuals… and a temptation to reduce the social and cultural contexts of place [and people within] to a few carefully chosen behavioural traits." Critical health geographers also recognize that, contrary to Warren's study (1999), place is a "socially constructed and complex phenomenon"; a reflection of the need for a more place-specific focus in medical and health geography (Kearns and Moon 2002, 610). Within this context, place is no longer just a physical environment, but is

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[3] Susan Craddock, pers. comm.

[4] For example, Warren (1999) explicitly studies the role of geography in the variation of HIV-related knowledge and attitudes among girls in Jamaica. However, the definition of "geography" is reduced to a dichotomous view of place: an urban place or a remote place.

constructed in two ways: "human actions shape the physical environment, and human conceptions filter the experience of it" (Rhodes et al. 2005, 1027).

Considering the "growing recognition inside and out of geography that HIV/AIDS…is *place specific* in its patterns of transmission, constituting not one pandemic but countless epidemics characterized by regional coordinates of risk and vulnerability" (Asthana and Oostvogels 1996; Schoepf 1993; cited in Craddock 2000, 153, original emphasis), the potential for geographic study of the disease is obvious. However, as noted by Kearns and Moon (2002), other disciplines, anthropology in particular, are filling this highly geographic gap in the literature (see Farmer 1992; Schoepf 1993, 1998; Goldstein and Manlowe 1997).

As a result, geographers have begun to look outside of their discipline to explore new avenues in framing knowledge and strengthening the sub-discipline (Kearns and Moon 2002). As a "magpie discipline," our theories tend to be based on other theories from other disciplines, reworked to fit applications within health geography (Kearns and Moon 2002). For risk studies, this could include the works of sociologists, in particular Bunton and Macdonald (1992), Lupton (1993), Bunton et al. (1995), and Peterson and Lupton (1996). Anthropologists, too, have been active in criticizing the dominant paradigm of biomedicine as failing to account for the exogenous factors that act upon the behaviors and practices of the individual. More importantly, anthropological work has shifted focus from one-dimensional behavioral risks in an epidemiological framework to two emerging foci: the interpretation of cultural meanings and social contexts, and the impact of structural factors in shaping vulnerability to HIV infection (see Treichler 1999; Farmer 1992; Farmer et al. 1996; Schoepf 1992a, 1992b, 1992c; Schoepf et al. 1988).

Kearns and Moon (2002) critique geographers for not recognizing and assimilating notable works such as these, despite there being a clear neglect from the discipline on studying risk within the new geography of health.

This paper aims to continue to fill this gap in the geographic literature, focusing on what can be learned from Jamaica's current struggle with HIV/AIDS. Of course, no single case study can answer all critical questions; indeed, one should be wary of using case studies to fit the niche of the research and understand that the translation of meanings and interpretations is lost across populations, countries, and case studies (Parker 1987, 1988; Carrier 1989; de Zalduondo et al 1991; Wilson 1995). Nonetheless, as will be discussed in the following chapter, Jamaica's experience provides opportunities to expand our understanding of the interface between individuals and the risk environment.

After I deconstruct the concept of risk, demonstrating the varied meanings by social contexts and by intentions, I will arrive at the theoretical framework of the risk environment that shaped the outcome of this research. Before proceeding to the next section, Data and Methods, I will lay the groundwork by providing an overview of the theoretical underpinnings of HIV prevention and health promotion models. I argue that these interventions are based on the notion of individual risk behavior whilst failing to account for the risk environment.

## Constructions of risk

As outlined above, risk in its most basic sense is the likelihood of being exposed to a source of danger or a hazard. Jane Franklin (1998, 1) notes that "[t]here has always

been a contingent edge to life," and that we use the term "risk" to talk about this contingency. Dannreuther and Lekhi (2000) define risk as a "conceptual mechanism through which to determine the possible and/or likely outcomes of our actions in the face of the structural uncertainties thrown up by the social and natural world" (575). To put this in other words, "risk helps to mediate between the known and unknown by helping [us] to construct a social context within which our actions have a definite range of definable outcomes" (Dannreuther and Lekhi 2000, 575). Social context is a very important factor to appreciate; it is defined as the "interplay of social, cultural, historical, political, and economic factors which may influence [sexual] practice" (Karlyn 2005, 280). Therefore, an understanding of social context is necessary to give meaning to sexual, or in general risky, behavior and practices (Parker 1994; cited in Karlyn 2005).

Because our perception of risk depends on what we know and do not know, based largely on our experiences, the study of risk can be regarded as, at once, "both a powerful and a contested concept" (Dannreuther and Lekhi, 2000). This "risk consciousness" has clear examples in the context of HIV/AIDS. From risk groups to risk factors and high-risk behavior, the prevailing paradigms related to the disease focus on what puts an individual at risk and how we can protect ourselves from these risks. Risk can thus be regarded as having "a direct and tangible impact on the actions of the individual actors; on the calculations made by public and private institutions [namely, public health]; on processes of policy formulation; on conceptions of governance and regulation… and on the articulation of political ideologies" (Dannreuther and Lekhi 2000, 576). This demonstrates clearly that risk can be discussed in many varied social contexts; therefore,

the question emerges: how does the way risk is framed influence our actions? (Dannreuther and Lekhi 2000).

### *I. Risk as a social and cultural construction*

One of the approaches most relevant to the study of the AIDS epidemic is risk as a social and cultural construction. From a cultural perspective, risk is "socially constructed and relates to culturally informed perceptions" (Douglas and Wildavsky 1982; Royal Society Study Group 1992; cited in Dannreuther and Lekhi 2000, 579). It is widely understood that, contrary to the principles of economics and the rational-actor paradigm[5] (Jaeger et al. 2003), individuals in actuality rarely make decisions on "the basis of the functional requirements of their position, in the light of full information or by purely rational choices, but rather in response to the rules and norms that delimit appropriate action" (Dannreuther and Lekhi 2000, 579). In this view, risk is embedded in the same cultural values and norms that tell us what is right and wrong, what constitutes a democracy, what informs our political…and even our sexual…identity. These rules are related to "shared understandings, habits and traditions of authority [and power] based on previous decisions made within the constraints of history" (Dannreuther and Lekhi 2000, 580).

The literature shows that there has been a shift in focus from the risk behavior (in and of itself) to the cultural and social contexts within which this behavior manifests

[5] The rational-actor paradigm argues that human beings are rational in their decisions to maximize individual gain, but still motivated by self-interests (Jaeger et al. 2003; cited in Cutter 2003, 2). Cutter critiques this paradigm as being insufficient to explain "non-rational" behavior (from a Western perspective); instead, rational decision-making should be framed within relative terms where "the same risky behavior…would seem perfectly rational in one setting…but appear as totally irrational in another…" (Cutter 2003, 2).

itself (Bolton 1992; Kendall 1995; Altman 1999; Lyttleton 2000; Paiva 2000; Karnik 2001). Beck (1992) contends that the boundaries of risk groups are no longer obvious, which requires the careful delineation of the boundaries around which we have drawn our social consciousness (cited in Dannreuther and Lekhi 2000, 581). This produces categories of exclusion. Keeler (2007, 613) argues that many of these categories are so deeply held that often, as social actors, "we are not conscious of their use in making sense of our experiences and observations." Not only do they have a significant impact on our belief system, but they also influence our attitudes and behaviors.

The use of categories differentiates those at risk from those not at risk and has served to provide a means of tracking the spread of the epidemic and constructing prevention strategies (mostly geared towards health education). This framework was based on the notion that 'at-risk' 'sub-groups' were somehow different from the wider public/population. For such reasons, Schiller contends that ethnographers were called into action to find this distinction and, as such, "the study of the transmission of HIV in social behavior became the study of behavior of members of 'risk groups'" (1994, 1338).

The Centers for Disease Control *AIDS Public Information Data Set, Division for HIV/AIDS* (1989) provides a clear example of such an approach. It employs a two-stage method of categorizing risk groups. First, groups at risk for AIDS include "homosexual or bisexual men, intravenous drug users, transfusion or tissue transplant recipients, heterosexual partners of infected persons (including persons born in 'Pattern-II' countries – Caribbean and central African countries where heterosexual transmission predominates), children born to infected mothers and persons with mucous membrane and percutaneous exposure to blood and body fluids of infected persons (e.g. health-care

workers)" (Schiller et al. 1994, 1338). The second step involves placing these groups within a 'hierarchy of exposure' categories: (1) 'male homosexual/bisexual contact' (2) intravenous (IV) drug use (female and heterosexual male)' (3) 'homosexual/bisexual contact and IV drug use' (4) 'hemophilia/coagulation disorder' and (5) 'heterosexual contact with a person with, or at increased risk for, HIV infection' (Schoepf 1991; cited in Schiller et al. 1994).

Schiller et al. (1994) put forward some observations on the CDC's method. Within this framework, Schiller et al. (1994) contend that culture is used as the set of criteria that define membership in 'high risk groups,' and to explain why members of these groups still knowingly practice 'risky behavior' that can lead to increased exposure to HIV. The authors further note that, "cases were only assigned to the 'heterosexual transmission' category if no higher ranked factors were present and the sexual contact was known to be infected or at 'increased risk'" (1338). On the other hand, any report of male homosexuality or bisexuality and intravenous drug use remained at the top of this hierarchy; they were the "basis for assignment to categories without specification as to the infectiousness of the partner" (Schiller et al. 1994, 1338). What this implies is that these categories or behaviors themselves are considered inherently risky in terms of HIV transmission/exposure, regardless of the infectiousness of the partner(s) involved AND disregarding the plain fact that any of these behaviors are "risky" if they involve contact with an already infected individual.

Schiller et al. (1994) argue that the cultural categorization of 'high risk groups' as a mode of explanation for why certain sub-groups practice 'risky behavior' vests the concept of culture with the power to distance and subordinate. Furthermore, this

construction of HIV/AIDS has allowed for "distancing and denial" of personal risk by individuals who do not consider themselves to be part of these 'high risk groups' (Schiller et al. 1994). The labeling of risk groups as deviants "acted to (re)produce stigmatising boundaries between so-called 'at risk' and 'normal' populations. Such boundaries were maintained through the normalisation of this difference" (Grover 1987, cited in Brown 2000, 1274). Essentially, these forms of exclusion impede prevention efforts and may even have exacerbated an underground spread of the disease via so-called 'non-risky' behaviors and practices.

By contrast, the National Research Council's *AIDS, Sexual Behavior and Intravenous Drug Use* (1989) reported, "AIDS is the product of human behaviors enacted in social contexts. Both the behaviors and the circumstances in which they occur are conditioned and shaped by culture and the larger social structure" (Schiller et al 1994, 1337). As opposed to the calculus of behavioral frequencies, this framework of risk involves the interpretation of cultural meanings as being central to both understanding the sexual transmission of HIV in different settings and informing the "design of more culturally appropriate prevention programs" (Treichler 1999; Parker 2001, 165).

***II. Translation of risk in national and international contexts***

The social construction of HIV/AIDS in United States policy highlights the role of categories and labeling of risk in influencing the response of the government to the epidemic. Mark Donovan (1993) notes political ramifications of the government's decision to label AIDS as a sexually transmitted disease rather than as a viral disease like

hepatitis B (Donovan 1993, 9; cited in Keeler 2007, 615). Essentially, what this classification did was to attach moral judgment and stigma to the disease and to those with HIV (Donovan 1993). Keeler (2007) expands on this, stating that it "draws attention to behaviors that are often considered deviant or promiscuous, contributing to a less-than-sympathetic attitude toward those afflicted" (615). As such, we have two broad groups of those afflicted with HIV/AIDS: carriers and victims.

Furthermore, risk categories must be studied within the specificities of the place from which they emerged, that is the indigenous cultural categories. Niranjan Karnik (2001) cautions the translation of HIV/AIDS risk categories from Western biomedical discourse to the local cultures of India. Karnik (2001) provides a historical account of the transfer of conceptual categories of HIV/AIDS from the dominant discourse and media of the United States to the cultural context of India, examining the ways in which categories of 'risk' and 'high-risk groups' have been reproduced, transmitted and inserted into the global arena (344). This binary of high and low risk for HIV/AIDS is a manifestation of the social construction of the disease, its meanings embedded in underlying power structures, infrastructural factors, politics and, of course, culture. These categories can be considered mechanisms of power themselves, becoming powerful and influential as their definitions are taken as "common knowledge" or the truth (regardless of conflicting, or lack of, evidence). Many of the key categories and classifications of risk groups in biomedicine are not relevant across cultural contexts; for instance, Karnik (2001) highlights the omission of the category "homosexual" in Indian HIV risk discourse which resulted in an over-emphasis of prevention efforts targeted towards prostitutes and truck drivers but a lack thereof on men who have sex with men.

Likewise, categories of risk are acts of translation, both literally as they are disseminated transnationally in a West to East direction, and figuratively as they are inserted into a pre-existing historically and culturally contingent environment. Being embedded in social relations, categories of risk are translated into the social environment in India, such that homosexuals as a risk group are omitted while prostitutes are targeted. These categories act as dividing practices, targeting the lower-class social groups, namely prostitutes and truck drivers in India, and thereby reinforcing existing social categories and further marginalizing these groups. Furthermore, these acts of translation through categorization of risk help to reinforce the existing Global North and South dualism or, as Karnik (2001) describes, a West-East dependency. Another consequence is the association of high risk with the geography of blame; in other words, those considered most at risk are those to be blamed the most. Nevertheless, this social construction of "risk" does not account for the roles of poverty and gender relations, which bring us to the next construction of risk, that is, as a form of structural violence.

### *III. Risk and structural violence*

Concurrently, the work of Paul Farmer and others (see Farmer 1992; Schoepf 1992a, b, c; Schoepf et al. 1988; Farmer et al. 1996; Treichler 1999) has revealed the role of structural factors in conditioning an individual's vulnerability to HIV infection and also in constraining the field of possibilities for sexual risk reduction in diverse social contexts (Parker 2001, 166). This emphasis on political and economic risk factors has come to be known as "structural violence," which as a form of subjectification influences the social vulnerability of an individual to HIV infection.

There has been an increasing focus on the ways in which societies structure the possibilities for sexual interaction between actors, including the ways in which they "define the available range of potential sexual partners and practices, as well as the ways in which they impose both the sexual possibilities and options that will be open to differentially situated actors" (Parker 2001, 169). This field of possibilities is defined through the rules and regulations that have been imposed upon humans by the "sexual cultures of specific communities as well as the economic and political power relations that underpin these sexual cultures" (Parker 2001, 169). Henceforth, it is imperative for any explanation of sexual cultures to involve issues like race, ethnicity, class, and gender – representations which society uses to organize systems of social disorder and inequality. This organization of what Beck calls our 'risk society' helps to constrain the possibilities for social interactions along or across lines of social difference (Parker 2001).

## Post-medical geography: A critique of health promotion models

Within the last decade, mirroring the development of these new strands of thought related to risk, there has been a distinct paradigm shift in the prevailing discourse of public health, and more specifically of global AIDS policy and politics related to the definition and measurement of risk. The dominant discourse within public health, and more specifically global HIV/AIDS policy, has traditionally been based on a reductionist approach to disease. Largely influenced by biomedicine in the construction of groups as being "at risk," individuals were reduced to specific causal behaviors and then assigned

to a particular group according to the "belief that such behaviours were common to all" (Brown 2000,1274). This model draws upon the contagion theory of disease (which evolved into germ theory) that contends that the cause of disease is some infective agent, or germ, which passes from an infected individual to an uninfected, often unsuspecting, individual (Chan and Reidpath 2003).

This focus on the causal link between disease agents, risky behavior, and lifestyle shifted the responsibility of disease control and prevention to the individual; individuals being the host of the disease and source of further infection, the ones who "make up the groups…associated with the routes of disease transmission (also termed high risk groups)" (Chan and Reidpath 2003, 40). Disease was, thus, transformed from an "ever-present danger" into a "lifestyle-related risk"; furthermore, it is assumed that "increased knowledge about the causal links [between high-risk behavior, lifestyle and HIV infection] would enable individuals to make rational decisions and avoid risks" (Ahlberg, Jylkas, and Krantz 2001, 32). HIV/AIDS prevention and health promotion models have therefore been based on this assumption that individuals could be persuaded to change their behaviors in ways that would ultimately reduce the risk of HIV infection. Hence, we observe an emphasis on health education programs such as the ABC model of *A*bstain, *B*e faithful and use *C*ondoms (Turner et al. 1989; Parker 2001).

The assumption being made is that informed individuals will make rational decisions that will protect themselves and others from disease transmission. Through this delimiting process on their field of possibilities, people act as moral citizens. Increasingly, scholars have shown that the links between knowledge, behavior, and lifestyle are actually much more complex, and that decision-making is not necessarily

wholly rational or, if it is, that the rational choices people are making are very different from those desired by policymakers (Cutter 2003). For instance, it has repeatedly been found that some people insist on staying in their homes in the path of hurricanes despite repeated warnings to evacuate to the frustration of evacuation coordinators. While such behavior may seem irrational from the outside, factors such as economic vulnerability may mean that people select to risk their lives for fear of losing their property, for instance (see Wisner et al. 2004).

Traditional models regard individuals as independent of the social contexts in which they operate; in other words, they are rational actors or subjects. In the context of health education these models have failed repeatedly, as increased knowledge repeatedly fails to change actual risk-taking behavior. Lifestyle interventions place the responsibility for avoiding, and blame for engaging in, high-risk behaviors on the individual, while also assuming that everyone has the same degree of agency to control the risks in their immediate living and working environments (Lupton 1993). Such lifestyle interventions assume, misguidedly, a direct causal pathway between knowledge and behavior (Bunton et al. 1995). Interestingly, the lifestyle risk discourse disregards the notion that "health hazards in postindustrial society are out of the individual's control," in contradiction to Beck's construction of the risk society (Lupton 1993, 429). Likewise, health education and promotion models distinguish between self-inherent risks and those created by and that exist within society, out of the control of the individual (Lupton 1993).

New critical geographies of health, by contrast, suggest that translating knowledge into the practice of protective behaviors is mediated by social and political economic factors, including gender norms, social class, race and ethnicity (Ferreira et al.

2008), necessitating culturally-specific education programs. Furthermore, one-size-fits-all models of health promotion do not allow for uneven distributions of knowledge, varied risk perceptions and the differing social contexts.

In response to such critiques, alternative perspectives have begun to emerge, which theorize risk as a social and cultural construction. Analyzing the risk environment can therefore highlight ways in which an individual's actions and choices are constrained by the socio-economic and political context within which the individual operates, thereby contributing to the individual's risk of exposure and contracting the disease. As anthropologist Richard Parker (2001, 165) summarizes, "a far more complex set of social, structural, and cultural factors mediate the structure of risk in every population group, and…the dynamics of individual psychology cannot be expected to fully explain, let alone produce, changes in sexual conduct without taking these broader issues into account."

This shift in the paradigm of risk analysis from the biomedical model of disease to a social model of health was also mirrored in geography (Kearns 1993). In this alternative 'post-medical' geographical framework:

> Disease was no longer to be seen as simply a biological phenomenon; the body was no longer to be regarded solely as a site of pathological lesion(s) and curative biomedical interventions were no longer to be viewed as the primary means of securing better health. (Brown and Duncan 2002, 361).

Brown and Duncan (2002) suggest that research within this 'post-medical' model be encompassed as the "geographies of public health, consistent with the 'new' public health movement.

**Risk environment**

The notion of the 'risk environment' is one framework through which this critical approach to HIV/AIDS could be operationalized within geography. The risk environment is described as "the space (social and physical) in which a variety of factors exogenous to the individual intersect to increase vulnerability to HIV" (Rhodes et al. 2005, 220). Rhodes et al. (2005) build off the concept of structural violence: risk exposure understood as a combination of risk perception and risk assessment, both of which are placed within a wider *risk environment* (see Singer 1994; Barnett and Whiteside 1999; Rhodes 2002). The interaction between the risk environment and the actors within can work both ways: as a *facilitator* of individual's HIV risk and as a (direct or indirect) *barrier* to individual prevention behaviors (Rhodes et al. 2005). As individuals, we can be proactive in modifying the social, cultural and political economic environmental factors in order to reduce our risks, while at the same time we are receptive to these same factors which interact with our behaviors to make them high-risk. Barnett and Blaikie (1992, 68) provide some instructive examples in this regard:

> For example: the spread of [HIV] through sex tourism in parts of south-east Asia… [in] Bangkok and Manila, reflects the relative incomes of prostitutes and their clients. The gross income inequalities…indicates on the one hand the high disposable income available to men in countries of North America, Western Europe and Australia, and [on the other hand] the rural and urban poverty [endemic to] Thailand and the Philippines that drives women into prostitution. Or, to take another case, the spread of the virus among homosexuals in the United States in the 1970s took place among a relatively high income group involved in a political reaction against a discriminatory moral milieu. High incomes and protest led to the promiscuity associated with the 'bath houses' of San Francisco in the 1970s (Shilts 1987).

From these two examples, we observe in each case individual behaviors occurring in a particular risk environment (or social context) that shaped the epidemic. However, this still encourages focus on the individual's actions, providing a clear target for

"scapegoating" (Barnett and Blaikie 1992)–a form of subjectification since it identifies those who are most vulnerable to infection and, therefore, produces categories of exclusion. Another example further elucidates how the subtle framing of risk can instead move some responsibility from the individual behavior to the environment.

> Vehicle theft is a common occurrence. Is it that the owner has indulged in risky behaviour by owning a car in an inner-city area in the US or Europe, or is it more informative to suggest that owning a car in that particular *place* is the risk? (Barnett and Blaikie 1992, 69).

As simple as this example may be, Barnett and Blaikie caution that it should not take away from the complexities behind the dynamic interplay between risk behavior and risk environment; from the way in which both endogenous and exogenous forces transform the landscape into what it is today; and of how within the social context, the question is not necessarily of certain sexual behaviours being risky, but of *all sexual behavior being risky* because the environment itself is one of high risk (Barnett and Blaikie 1992, 69).

In light of such understandings, HIV prevention and treatment strategies must shift their lens from high-risk groups and individual routes of transmission to treating the epidemic as a population priority. Disease not only affects the physical body, but also the "social body," that is relationships between people (Barnett and Blaikie 1992, 3). As with any other form of disability, AIDS makes people dependent, less productive, and it may even put them into a "condition of socially defined 'impurity'" (Douglas 1966; cited in Barnett and Blaikie 1992). And, while societies demand that their citizens act in a rational and moral fashion, taking responsibility for reducing both their own risk of infection and their chance of infecting others, it seems only fair that the institutions themselves provide a means of support for their citizens through transfer of agency.

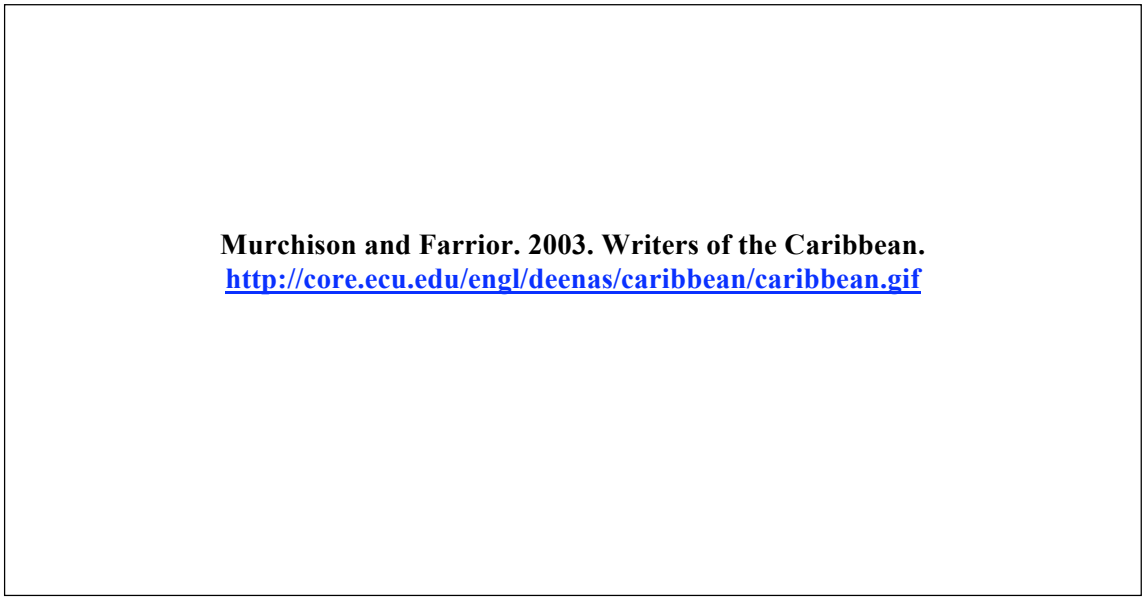
I argue that categorization of risk as a mode of translation, producing social categories of exclusion and vulnerability to HIV infection, is rooted in differential power relations. It is not as simple as focusing on risk behaviors—it is more complex than just our actions. With that said, this premise follows from the shift from individual psychology and subjectivity to a social constructionist framework that is centered on intersubjective cultural meanings related to sexuality (Parker 2001), while taking account of the structural factors that act on our field of possible actions. All of these factors are situated within the risk environment. As such, the risk environment provides a useful framework to observe and investigate the interactions between the individual and the environment.

# CHAPTER 3

# HIV/AIDS IN JAMAICA

"…to describe the HIV epidemic in any given country, surveillance systems should collect information from different sources, different vulnerable groups, different age groups and different geographic areas to satisfy needs for planning and selection of prevention and control strategies to be implemented at the national level."

Caribbean Epidemiology Centre 2002



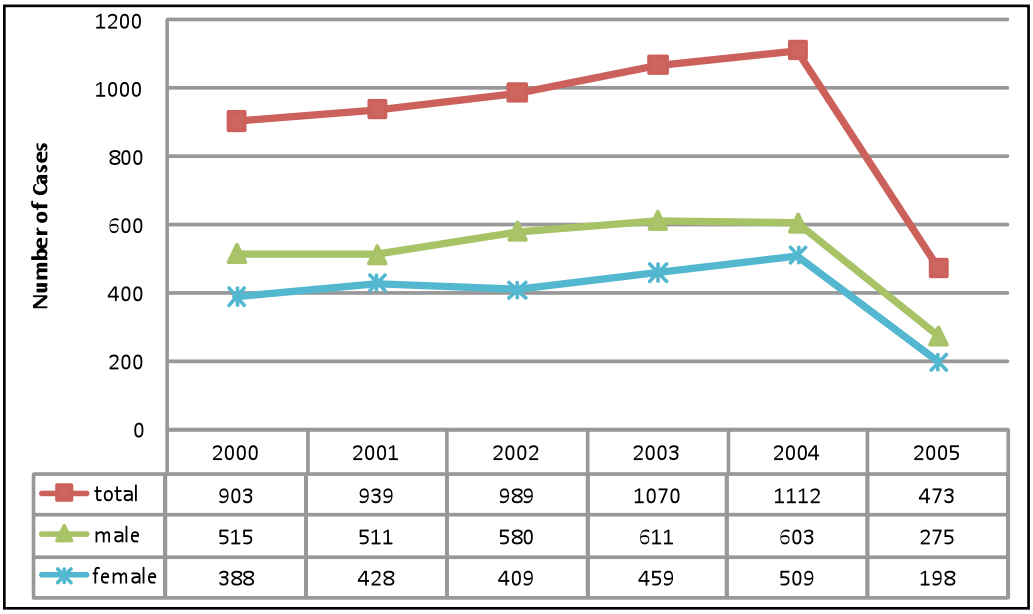
**Murchison and Farrior. 2003. Writers of the Caribbean.**
**http://core.ecu.edu/engl/deenas/caribbean/caribbean.gif**

**Figure 1. Map of the Caribbean region.**

The Caribbean region is experiencing the highest rate of HIV/AIDS in the Western Hemisphere, globally second only to sub-Saharan Africa. In Jamaica, the third largest island in the Caribbean, an estimated 1.5 percent of the adult population was living with HIV/AIDS in 2004 (Jamaica National HIV/STI Programme Annual Report 2006). The number of HIV cases is predicted to increase significantly over the next

decade due to the effects of globalization, regional and cultural integration, increasing mobility, changing sociocultural and sexual behavioral patterns, drug use and sustained underlying, but powerful, religious and cultural taboos (Inciardi, Syversten, and Surratt 2005).

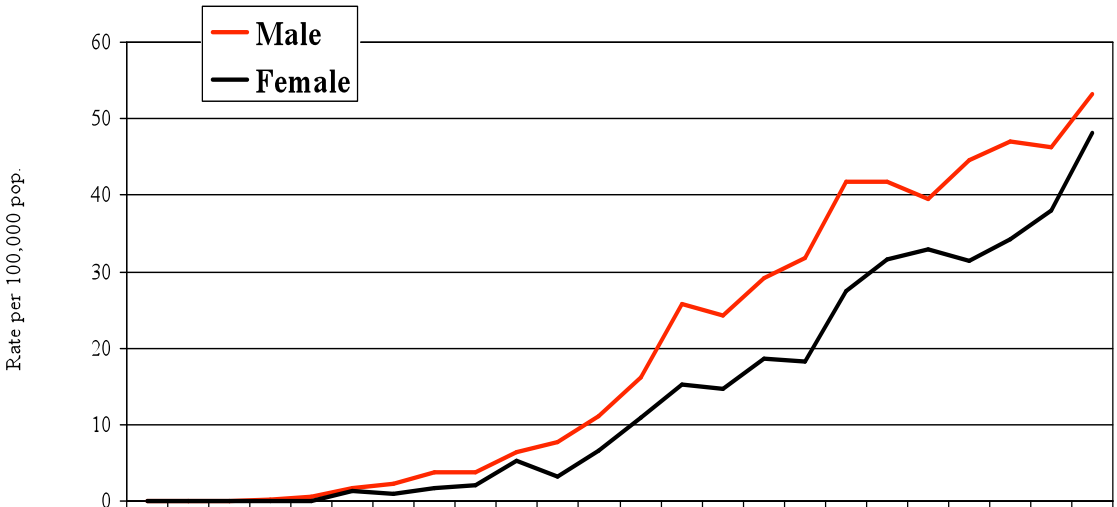
It is important to note that while there has been a declining trend in the number of AIDS cases (figure 2), this pattern shows spatial variation, with the most urbanized parishes, Kingston and St. Andrew (KSA Metropolitan Area) and St. James, experiencing the highest incidence of the disease: 595.5 cases and 830.0 cases per 100,000 population respectively in 2005 (Jamaica National HIV/STI Programme 2006). Commercial sex tourism is cited as the largest factor driving the epidemic in St. James (Dr. Kevin Harvey, pers. comm.).




| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|
| total | 903 | 939 | 989 | 1070 | 1112 | 473 |
| male | 515 | 511 | 580 | 611 | 603 | 275 |
| female | 388 | 428 | 409 | 459 | 509 | 198 |

**Figure 2. Summary of AIDS cases in Jamaica, 2000-2005. (Data from Jamaica NHP 2006).**

There are also gendered differences in HIV/AIDS rates (figure 3). Although men have traditionally had higher rates of HIV/AIDS in Jamaica, that gap is now rapidly closing as women are increasingly affected, with the adult male to female ratio of HIV cases declining from 2.6 to 1 in 1988 to 1.3 to 1 in 2000. As a region, the Caribbean has the second highest youth prevalence rate in the world with an estimated two percent of young people, 15 to 24 years, living with HIV; of this age group, more than two-thirds are female (Norman et al. 2007). In addition to bearing a disproportionate burden of HIV/AIDS in the Caribbean, girls and young women, 15 to 25 years, are currently at particular risk of acquiring HIV infection (Hutchinson et al. 2007; Norman et al. 2007).




| | 82 | 83 | 84 | 85 | 86 | 87 | 88 | 89 | 90 | 91 | 92 | 93 | 94 | 95 | 96 | 97 | 98 | 99 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Male | 0.09 | 0.09 | 0 | 0.26 | 0.6 | 1.69 | 2.2 | 3.85 | 3.8 | 6.39 | 7.7 | 11.01 | 16.13 | 25.69 | 24.23 | 29.06 | 31.87 | 41.68 | 41.74 | 39.55 | 44.5 | 46.93 | 46.32 | 53.25 |
| Female | 0 | 0 | 0 | 0 | 0 | 1.28 | 0.85 | 1.6 | 1.99 | 5.35 | 3.26 | 6.62 | 10.95 | 15.16 | 14.6 | 18.61 | 18.21 | 27.45 | 31.63 | 32.97 | 31.32 | 34.26 | 37.99 | 48.22 |

**Figure 3. Graph showing annual AIDS case rates by sex in Jamaica, 1982-2005. (Figueroa, J. Peter. 2007. The national HIV/AIDS/STI program in Jamaica: Critical challenges and priorities. www.med.unc.edu/medicine/id/slideshow)**

Jamaica serves as an excellent case study for a number of reasons. First, Jamaica is experiencing a generalized HIV/AIDS epidemic with a sero-prevalence rate of 1.5

percent in 2006 (Jamaica NHP 2006). Out of a population of 1.4 million adults[6], this is approximately 25,000 adults living with HIV, 5,000 persons with advanced HIV and an estimated 15,000 individuals unaware of their status (Figueroa 2007). A generalized epidemic allows us to make inferences about the whole population, and not focus on certain high-risk groups such as men who have sex with men, intravenous drug users or those involved in transactional or commercial sex.

Second, in the age-sex breakdown, the HIV prevalence rates among young people differ by sex. For 15 to 24 year olds, the prevalence rate is about 1.7 percent (ranging from 0.8 – 2.8 percent) for males and 0.9 percent (0.5 – 1.4 percent) for females (UNAIDS/WHO 2004). However, prevalence rates can be misleading in risk assessments. It is young females, 15 to 24 years, who are considered at a higher risk to HIV infection than their male counterparts. In fact, the preliminary findings of the 2008 KABP survey reported, "girls 15 to 19 years are at three times higher risk of infection than males in the same age group" (*Jamaica Observer* 28 November 2008). Dr. Campbell Forrester, chief medical officer at the Jamaican Ministry of Health, cites sexual practices, in particular the pattern of non-regular sex partners, as a contributing factor (*Jamaica Observer* 2008). Between 1982 and 2006, eighty percent of all reported risk behaviors was multiple sexual partners or contacts (Jamaica NHP Report 2006). Combined with the fact that AIDS was the second leading cause of death for 15 to 24 year olds (KABP 2004), this highlights the urgency of unraveling how and why youths, and especially young females, are at such high risk.

[6] Total population of Jamaica in 2007 was approximately 2.71 million (UNAIDS 2008).

Third, the increased commitment of the Jamaican government to the fight against HIV/AIDS is demonstrated partly by the significant jump in domestically-sourced national funds allocated to the response efforts from US$6.8 million in 2006 to US$9.2 million in 2007 (UNAIDS 2008a). The Jamaican National HIV/STI Control Programme adopts a holistic framework in its national multi-sectoral response to the challenge of sexually transmitted infections, targeting four priority areas: Prevention (through behavior change); Treatment, Care and Support; Empowerment and Governance; and Enabling Environment and Human Rights (Ministry of Health Jamaica 2007). Youth/adolescent interventions, which fall under 'Prevention,' mobilize young people in and out of school in their strategic response efforts. From school interventions and peer strategy to summer youth camps and party interventions, the national response has provided opportunities for increased involvement of youth (Jamaica NHP 2006). For instance, in 2006, eight summer camps reached out to 80 adolescents, 13 to 17 years, for the purposes of promoting delay of sex, consistent condom use, and encouraging accurate individual HIV risk assessment (Jamaica NHP 2006). The programme's engagement with youth bestows upon this vulnerable sub-population a voice, an influential source for understanding the individual risk behaviors that tend to be characteristic of all youths.

Fourth, in recent years the epidemic has been showing signs of slowing down, with prevalence rates remaining almost stable (Figueroa 2007; UNAIDS 2008). However, these stable prevalence rates are still high rates, which can persist for a long time partly due to people with HIV/AIDS living longer in response to effective anti-retroviral therapy and thus representing a potential source of new infections. The task at hand becomes prevention of further transmission as the way to reverse the epidemic (UNAIDS

2008). With no prospect of a vaccine in the near future, education is the first step in this endeavor (Nyamathi et al 1993, UNAIDS 2008b).

Yet, challenges remain. While knowledge and awareness of HIV/AIDS have increased, probably partly in response to such prevention strategies, risky sexual behavioral practices have also increased, particularly in youths. This provides a clear rationale for my analysis of the 2004 KABP survey, which attempts to piece together the possible reasons for this disjunction while discerning the significant social, cultural and behavioral factors which together compose the risk environment of young females to HIV in Jamaica.

# CHAPTER 4

# DATA AND METHODS

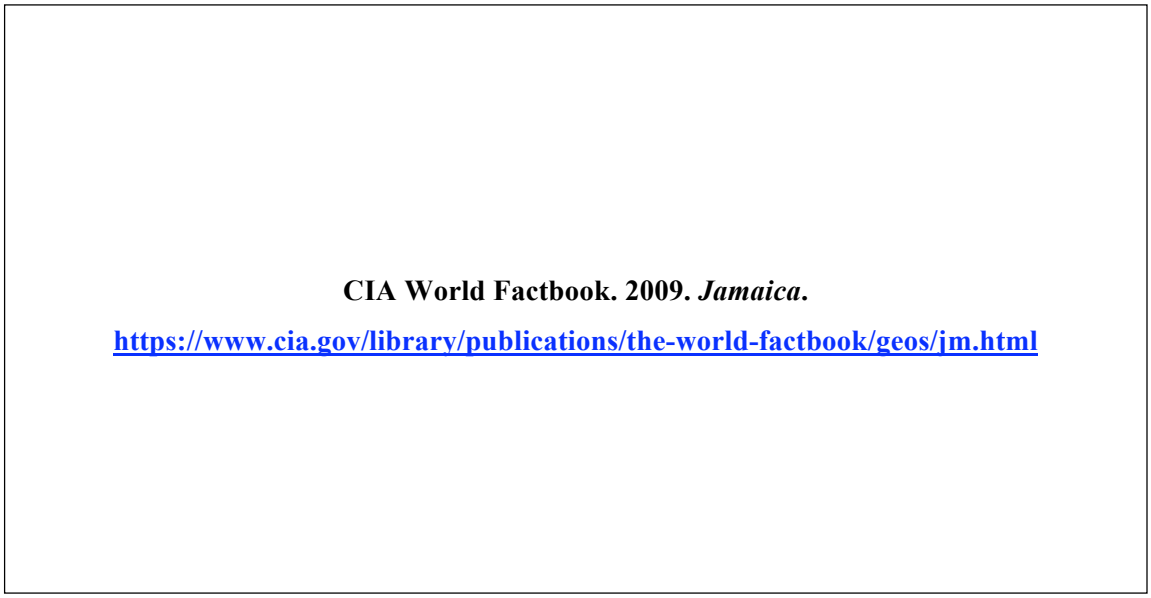
## Fieldwork

With the gracious help of the F. R. Bigelow Foundation Fund for summer action research, I conducted fieldwork in Jamaica for ten weeks from June to August 2008. Jamaica was partly selected for practical reasons. As a native of Jamaica, I was able to use my existing understanding of the country and contacts to assist with the development of the project. At the Ministry of Health in Kingston, Jamaica, I worked closely with Dr. Kevin Harvey, Senior Medical Officer for the National HIV/STI Control Programme (NHP), and Dr. Jacqueline Duncan, the Director of the Monitoring and Evaluation Unit of NHP. With permission granted from the Ministry of Health, and working under their supervision, I gained access to the raw data set for the 2004 KABP survey and publications from the Ministry of Health. I also conducted unstructured interviews with several Ministry of Health officials in order to gain insight into data availability and access as well as methodological issues, which ultimately shaped the outcome of my research process. Finally, I attended the press release of the preliminary findings for the 2008 KABP survey. This fieldwork formed the basis of this research.

## Data

The national Knowledge, Attitudes, Behaviour and Practices (KABP) Surveys are conducted every three to four years in Jamaica with the goal of measuring demographic trends and spatial patterns in people's knowledge, attitudes and actual behavioral

practices related to HIV/AIDS. These surveys are used to generate periodic reports on the state of HIV/AIDS in Jamaica. The last KABP report, on which this research is based, was published in 2004[7]. The KABP surveys provide national level measures of health indicators with an emphasis on observing trends in the following areas: "partner reduction, consistent use of condoms in regular and non-regular partnerships, delay of sexual activity among young persons, myths and appropriate practices regarding STI/HIV/AIDS, knowledge and awareness of STI, and condom accessibility" (Ministry of Health Jamaica 2007).



**CIA World Factbook. 2009. *Jamaica*.**
**https://www.cia.gov/library/publications/the-world-factbook/geos/jm.html**

**Figure 4. Map of Jamaica**

As a behavioral survey in the general population, the 2004 KABP was collected through a series of cross-sectional surveys of individuals in randomly selected samples,

[7] Fieldwork for the 2008 KABP survey was conducted during the period February to April 2008, but results have yet to be formally published. Preliminary findings, released at a press conference in June 2008, will be compared to the 2004 findings, where applicable.

defined by Enumeration Districts (EDs). First, the EDs were grouped such that no ED contained fewer than 80 dwellings. Next, all EDs were grouped into 234 strata of equal size (measured by the number of dwellings). These became the sampling regions. Each stratum comprised about 25,000 dwellings and the EDs were selected from each region with probability proportionate to the region's size (Ministry of Health Jamaica 2007). In the end, 23 EDs were sampled from Kingston Metropolitan Region (KMR) and Montego Bay (the parishes of highest prevalence), 25 EDs from other urban areas and 24 EDs from rural areas (figure 4). The rural/urban composition of the sample was representative of the country (Ministry of Health Jamaica 2007).

Data were collected in confidential face-to-face interviews by trained teams of two females, two males and a supervisor. The KABP uses a "paired selection design," and involves the maximum use of stratification whilst allowing for the calculation of variance (Lee and Forthofer 2005). The target groups were males and females 15 to 24 years and 25 to 49 years. Gender was controlled for such that the male to female ratio was 1 to 1. A sample size of 1800 persons should yield 95% confidence levels (± 2.3) indicating that the sample is representative of the whole population from which it is derived (Norman 2006).

Behavioral surveys like the 2004 KABP can provide an indication of the extent of risk behavior in the population and of the "links" between the national population and specific groups with known high(er) risk behavioral trends (Pisani et al. 1998). According to a joint report by Impact, UNAIDS and Family Health International (Pisani et al. 1998), the questions answered by such surveys are: "What puts people in the general population

at risk of HIV infection? Has risk behaviour changed over time? Which behaviours have not changed?" (28).

## Descriptive Analysis

An exploratory analysis of the 2004 KABP data set (n = 1800) was carried out, followed by a series of confirmatory tests using SPSS v. 17. Table 1 provides an overview of the characteristics of the sample and the main variables studied. These include both demographic variables like age, sex, education level, and employment, and behavioral factors like relationship status, ever had sex, age of first sex, mean number of partners and engagement in commercial sex (either as the one paid for sex or the one who pays for sex). The sample was grouped by age, 15–24 years and 25–49 years, as well as by sex, male and female. The KABP lacks information on race and ethnicity, and sexual orientation or gender preferences.

The age and sex composition is evenly distributed throughout the sample, such that there is an almost equal proportion of respondents in each sub-group: males and females, 15 to 24 years and 25 to 49 years (table 1). About three-quarters of the sample have reached secondary high school education or higher. The majority of the respondents report having had vaginal sex only, 85.7 percent; only one person reported having had anal sex only and fourteen persons both forms of intercourse. A total of 242 individuals, or 13.4 percent of the sample, reported never having had sexual intercourse at the time of the interview. With regards to union status, while only 9 percent of the respondents, 80 females and 82 males, are in regular, non-cohabiting partnerships, a much larger

percentage has either an occasional partner or is living with their partner (or married), at 25.4 percent and 31.2 percent respectively.

**Table 1. Distribution of individual characteristics from the 2004 KABP Survey in Jamaica**

| Characteristic | Sample (N = 1800) | Male (N = 878) | Female (N = 922) |
|---|---|---|---|
| **Age, years, %** | | | |
| 15-24 | 50 | 51.6 | 48.5 |
| 25-49 | 50 | 48.4 | 51.5 |
| **Education level, %** | | | |
| No formal schooling | 0.3 | 0.3 | 0.22 |
| Primary | 2.4 | 2.96 | 1.84 |
| All Age/Secondary or higher [a] | 97.0 | 96.6 | 97.4 |
| **Relationship status, %** | | | |
| Single | 34.4 | 29.5 | 39.0 |
| Occasional partner | 25.4 | 32.8 | 18.3 |
| Regular, non-cohabiting partner | 9.0 | 9.3 | 8.7 |
| Married/Living with a partner | 31.2 | 28.4 | 33.8 |
| No Answer | 0.1 | 0.0 | 0.2 |
| **Ever had sex, %** | | | |
| Yes: vaginal | 85.7 | 89.3 | 82.3 |
| Yes: anal | 0.1 | 0.1 | 0.0 |
| Yes: both | 0.8 | 0.7 | 0.9 |
| No to both | 13.4 | 9.9 | 16.8 |
| **Employed** | | | |
| Full time | 34.8 | 43.4 | 26.6 |
| Part-time | 11.2 | 14.6 | 7.9 |
| Unemployed | 31.3 | 21.2 | 40.9 |
| Student | 22.8 | 20.8 | 24.6 |
| **Median age at first sex, years** | | 14 | 17 |
| 15-24 | 15 | 14 | 16 |
| 25-49 | 16 | 15 | 17 |
| **Mean number of partners** | | | |
| In past 4 weeks | 1.24 | 1.50 | 0.97 |
| In past 12 months | 2.11 | 3.00 | 1.16 |
| **Engaged in commercial sex, %** | 2.9 | 5.1 | 0.9 |
| **Knowledge about AIDS, mean score [b]** | 6.12 | 6.09 | 6.15 |
| 15-24 years | 6.05 | 6.00 | $6.09_5$ |
| 25-49 years | $6.18_6$ | $6.17_5$ | $6.19_5$ |

[a] This includes tertiary, skills training, evening classes, community college and nursing school

[b] Index ranges from 0 to 7 and includes awareness of HIV, awareness of AIDS, knowledge that a healthy-looking person can be HIV positive, knowledge of methods of prevention (condom use, abstinence and having one uninfected, faithful partner), and rejection of all major misconceptions about HIV transmission.

Even though the 2004 KABP report states that young people are delaying the onset of sexual activity, the actual ages of sexual initiation are arguably still early for males, at a median age of 14 years, as compared to females at a median age of 17 years. Early sexual initiation could be argued to be one gateway to HIV infection based on the inherent biological vulnerabilities of adolescents (females in particular), a likely lack of complete knowledge of protective methods, limited or lack of access to protection and perhaps, even the lack of a supportive network vis-à-vis parents (see Miller et al 1997; Anderson et al. 2007). Early onset of sexual activity also puts one at risk in the most basic definition of the term, as a simple statistical probability: that is the chance of getting infected increases with the number of sexual events and so the earlier individuals become sexually active, the greater the chance of exposure.

The mean number of partners in the past three weeks and the past twelve months also varied by sex. In fact, the preliminary findings of the 2008 KABP revealed an increased incidence of multiple sexual partnerships among young people compared with data from 2000 and 2004 (table 2). Sometimes referred to as the "umbrella" of all other risky behaviors, multiple partnerships are considered a significant risk factor for HIV infection. Males, on average, had had 1.5 partners in the past month and 3 in the past year. Females reported having fewer partners for both time periods, having had on average less than one partner in the past month and 1.16 in the past year. If we break this down further by age group, the differences become more apparent (table 3).

**Table 2. Percentage of youth engaging in multiple partnerships in past year, 2000, 2004 and 2008.**

| | 2000 | 2004 | 2008 |
|---|---|---|---|
| **Males, 15-24 years** | 57.6% | 56.0% | 76.2% |
| **Females, 15-24 years** | 19.8% | 16.0% | 21.4% |

*Source: 2008 KABP Press Release*

**Table 3. Percentage of respondents reporting multiple partnerships, by age and sex (KABP 2004).**

| | |
|---|---|
| Males 15-24 years | 56% |
| Females 15-24 years | 16% |
| --- | --- |
| Males 25-49 years | 39% |
| Females 25-49 years | 6.2% |

*Source: KAPB 2004, Hope Enterprises, Jamaica*

Even for commercial sex, we observe males having engaged in this form of risky behavior more than females, 5% versus less than 1% respectively. When compared to 2000 KABP findings, there is a significant increase in engagement in commercial sex among males for both age groups: p=0.004 for 15 to 24 years and p=0.000 for 25 to 49 years (2004 KABP). Additionally, the activity of one-night stands is highest among males 15 to 24 years (35 percent versus 8 percent for females of same age group).

In summary, according to these initial results, it appears that more males engage in high-risk behaviors, even though previous studies have indicated that young females 15 to 24 years are the ones at a higher risk of HIV infection. One of the avenues I explored to explain this contradiction is the disjunction between knowledge and behavior, as well as how risk perception influences risk-taking.

***Knowledge Index***

In order to explore the disjunction between knowledge and behavior, I created a Knowledge Index (for similar indices, see Stephenson 2009). This Knowledge Index serves as a proxy for an individual's level of knowledge about HIV/AIDS and includes the variables: awareness of HIV, awareness of AIDS, knowledge that a healthy-looking person can be infected, knowledge of the three ways to prevent HIV transmission (as defined by the Jamaican Ministry of Health[8]), and rejection of all major misconceptions about HIV transmission. (The myths considered consisted of the idea that a person could be infected if he/she shared food or touched someone with HIV/AIDS (PLWHA) or that a mosquito bite could transmit the virus.) This Knowledge Index uses a scale of zero to seven, with seven representing the most comprehensive knowledge of HIV/AIDS. Each of the five variables was assigned a value of 0 for negative responses and a value of 1 for positive responses. Table 1 shows the mean scores for the Knowledge Index, with females in the 25 to 49 year group having marginally higher scores. What these mean scores hide is the uneven distribution of the knowledge levels across ages for males and females (table 4). High percentages of men and women endorse the three prevention methods, with condom use leading at about 93 percent for both sexes, while rejecting the three major myths about HIV/AIDS. There are significant increases, as denoted by the asterisks in table 4, in the percentage of respondents who endorse having one faithful partner and who endorse condom use. On the other hand, while the percentage of

[8] The prevention methods that were considered as effective were condom use, abstinence, and having one uninfected, faithful partner. This follows the Jamaican Ministry of Health's definition of those with effective knowledge of ways to prevent HIV transmission as, "the percent of all respondents who, in response to prompted questions, say that a person can reduce their risk of contracting HIV by using condoms or having sex only with one faithful, uninfected" (2004 KABP, 25).

respondents who endorse myths is decreasing, these do not represent significant differences between 2000 and 2004. Overall, there are high levels of awareness of HIV/AIDS and of accurate knowledge of methods of transmission and of methods of protection.

**Table 4. Breakdown of Knowledge Index by sex and year.**

| | Male | | Female | |
|---|---|---|---|---|
| | 2004 N=878 % | 2000 N=754 % | 2004 N=922 % | 2000 N=744 % |
| **Knowledge of HIV** | 100 | -- | 99.8 | -- |
| **Knowledge of AIDS** | 100 | -- | 99.7 | -- |
| **Knowledge of asymptomatic transmission** | 96.4 | 96.3 | 96.1 | 96.5 |
| **Appropriate methods** | | | | |
| One faithful partner | 91.9* | 85.7 | 89.8* | 82.6 |
| Condom use | 93.8* | 87.3 | 93.1* | 86.3 |
| Abstinence | 84.1 | 82.1 | 85.7 | 83.6 |
| **Endorsement of myths** | | | | |
| Avoid mosquitoes or insect bites | 17.0 | 36.7 | 12.0 | 25.7 |
| Not sharing food with PLWHAs | 20.3 | 22.0 | 13.7 | 14.2 |
| Not touching someone with AIDS | 11.4 | 14.7 | 6.5 | 8.1 |

* *Denotes very significant increase from 2000 to 2004, p<0.01*

*Source: 2004 KABP, Jamaica.*

### *Self-Perceived Risk to HIV*

Risk perception was assessed by the question, "Following the normal course of your life, what do you think are the chances that you might catch HIV"? Respondents had the choice to classify their risk of getting AIDS as: no chance, little chance, moderate chance, good chance, already infected, and does not know. Almost half of respondents, 49.2 percent, stated that they think there is no chance of them getting infected (figure 5).

If we look at these figures by age and sex, we see a higher level of perceived immunity to HIV infection among the younger age groups, males and females 15 to 24 years (table 5). Based on their answers to questions about knowledge of AIDS, knowledge of preventative measures and knowledge of ways of infection, we can gain some insight into how the individuals' perceived risk matches their actual risk.

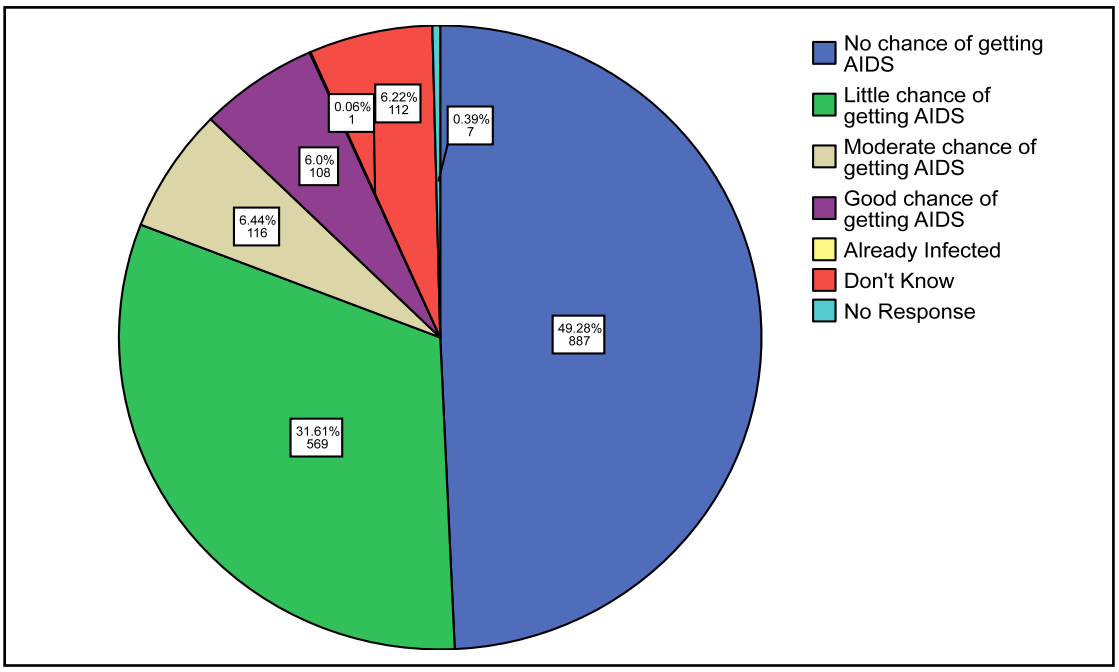



**Figure 5. Chances of Catching HIV (KABP 2004, Jamaica).**

**Table 5. Percent distribution of persons who stated having no chance of getting infected (KABP 2004).**

| | |
|---|---|
| Males 15-24 years | 56.0% |
| Males 25-49 years | 43.1% |
| Females 15-24 years | 56.6% |
| Females 25-49 years | 41.8% |

In the follow-up question, respondents stated the reasons they think there is no chance of them getting infected. The most common reasons were "no sex" (27.3 percent for males, 49.2 percent for females), followed by 'use of condoms all the time' (40.4 percent for males, 20.2 percent for females), and having "sex with spouse only" (23.9 percent for males, 23.7 percent for females).[9] However, it is interesting to note that not all reasons provided would be considered legitimate scientific-based checks of infection. These included "use condom sometimes," "no sex with strangers," "knows partner well," "don't have sex often," and "not around anyone with AIDS."

## Bivariate Analysis

Chi-square tests were performed to determine the significance of relationships between variables of interest. Key variables included: "Knowledge Index," "Chances of getting infected" (as a measure of personal risk perception), and "Myths endorsement." These dependent variables were correlated with socio-demographic factors including age, sex, education level and being employed, as well as health factors such as "Things done to protect self [from HIV infection]," "Ever been tested?" and "Knowledge of ways to protect self." A significance level of 95% was assumed for the analysis where results returning a $p<0.05$ led to rejection of the null hypothesis. For most tests, both age and sex were controlled for.

[9] It could be argued that "sex with spouse only" is not necessarily a legitimate reason for feeling safe from HIV infection as it can only be so under the conditions that the spouse is also faithful and uninfected.

## Results

Results can be divided into three main categories: knowledge of AIDS, myths and misconceptions, and risk perception (tables 6a, b and c). Chi-square tests revealed a significant relationship between a person's level of knowledge (as defined by the Knowledge Index) and their age and, to a lesser degree, their education level (the exception being young females, 15-24 years). No significant difference in levels of knowledge about AIDS was found between males and females, demonstrating that the fact that young women are considered to be at higher risk than males is not explained by levels of knowledge of HIV/AIDS. Nor was employment status significantly associated with knowledge. It had been hypothesized that being employed would be a reflection, albeit a poor one, of a person's socio-economic status so that employed persons would be more knowledgeable.

Next, the Knowledge Index was cross-tabulated with the variable, "Things done to protect self," This latter variable was used as an indication of the actual measures a person employs to prevent HIV infection, and included whether or not he/she used condoms (consistently), had one partner and/or practiced abstinence. An initial significant relationship was found ($\chi^2$=26.540, p=0.033). However, further testing in which age and sex were controlled for showed a weaker relationship such that only older females, 25 to 49 years ($\chi^2$=31.233, p=0.001), can be considered to more likely to endorse safer sexual practices as their knowledge of AIDS increases. A weaker relationship was found for young females ($\chi^2$=15.445, p=0.051).

**Table 6a. Categorical tests on Knowledge of AIDS using 2004 KABP in Jamaica.**

| Variables cross-tabulated | Calculated chi-square value | p-value (Significant at 95% level) |
|---|---|---|
| | | |
| Knowledge Index * Sex | 4.921 | 0.426 (No) |
| Knowledge Index * Age | 14.720 | 0.012 (Yes) |
| Knowledge Index * Education Level (Control: Age and Sex) | Male<br>15-24: 117.163<br>25-49: 146.897<br>Female<br>15-24: 3.277<br>25-49: 475.419 | Yes, except for females 15-24yrs |
| Knowledge Index * Employed | 8.107 | 0.919[a] (No) |
| Knowledge Index * Things done to protect self | 26.540 | 0.033 (Yes) |
| Knowledge Index * Things done to protect self (Control: Sex) | Male: 10.330<br>Female: 36.224 | Male: 0.798 (No)<br>Female: .000 (Yes) |
| Knowledge Index * Things done to protect self (Control: Age) | 15-24: 14.551<br>25-49: 24.654 | 15-24: 0.484 (No)<br>25-49: 0.006 (Yes) |
| Knowledge Index * Things done to protect self (Control: Sex and Age) | Male<br>15-24: 9.835<br>25-49: 6.679<br>Female<br>15-24: 15.445<br>25-49: 31.233 | Male<br>15-24: 0.830 (No)<br>25-49: 0.572 (No)<br>Female<br>15-24: 0.051 (No)<br>25-49: 0.001 (Yes) |

[a] Results still not significant when age and sex are controlled for

Persons with at least an all-age or secondary high school education[10] are found to be less likely to endorse common myths about HIV transmission ($p=0.028$, $\chi^2=18.661$). It was also found, similar to the findings from the 2000 KABP, that males are more likely than females to endorse myths. Results showed that 17 percent of males endorsed the myth that mosquito bites could cause HIV/AIDS (versus 12 percent of females, $p=0.002$), 20 percent of males endorsed not sharing food with a PLWHA (versus 14 percent

[10] All-age schools include grades one to six; secondary schools include grades seven to eleven.

females, p=0.0002), and 11.4 percent males endorsed not touching a PLWHA (versus 6.5 percent females, p=0.0008). Endorsement of myths was significantly negatively correlated with an individual's knowledge of the ways to protect self (p=0.000; p=0.001 for females 15 to 24 years). This shows that persons are less likely to endorse common myths about HIV transmission as they become more knowledgeable of the ways to prevent transmission.

**Table 6b. Categorical tests on Myths about HIVAIDS using 2004 KABP in Jamaica.**

| Variables cross-tabulated | Calculated chi-square value | p-value (Significant at 95% level) |
|---|---|---|
| | | |
| Myths endorsement * Sex | 16.463 | 0.001 (Yes) |
| Myths endorsement * Education Level | 18.661 | 0.028 (Yes) |
| Myths endorsement* Knowledge of ways to protect self<br>(Control: Sex and Age) | Male<br>15-24: 30.095<br>25-49: 34.176<br>Female<br>15-24: 27.522<br>25-49: 42.341 | 0.000 (Yes)<br>(Females, 15-24 at 0.001) |

Finally, the tests for associations between personal risk perception (as defined by "Chances of getting infected") and other factors showed varied results (table 6c). The correlates included the Knowledge Index, things done to protect self, ever been tested, age of first sex, and having ever paid for or been paid for commercial sex. Significant associations were found such that persons who are more knowledgeable about ways to prevent HIV transmission are more likely to consider themselves at a lower risk (p=0.001, $\chi^2$=58.471). In addition, persons who practice consistent condom use, have one faithful, uninfected partner and/or abstain are more likely to judge themselves as having a

lower risk of catching HIV (p=0.000, $\chi^2$=209.422). Here, an individual's perception is significantly influenced by his/her behavior. Conversely, this significant relationship could be interpreted as perception being a determinant of behavior, such that persons who perceive their risk of infection as low or negligible are more likely to practice high-risk behaviors. Finally, persons who were tested (and assumed to be aware of their status) are also more likely to consider themselves at a lower risk (p=0.000, $\chi^2$=139.933).

**Table 6c. Categorical tests on Risk Perception using 2004 KABP in Jamaica.**

| Variables cross-tabulated | Calculated chi-square value | p-value (Significant at 95% level) |
|---|---|---|
| | | |
| Chances of catching HIV * Age (Control: Sex) | Male: 30.037<br>Female: 23.553 | 0.000 (Yes)<br>0.001 (Yes) |
| Chances of catching HIV * Education Level (Control: Age and Sex) | Male<br>15-24: 31.5<br>25-49: 46.67<br>Female<br>15-24: 73.83<br>25-49: 59.481 | Male<br>15-24: 0.293 (No)<br>25-49: 0.027 (Yes)<br>Female<br>15-24: 0.004 (Yes)<br>25-49: 0.124 (No) |
| Chances of catching HIV * Age of first sex | 156.868 | 0.334 (No) |
| Chances of catching HIV * Knowledge Index | 58.471 | 0.001 (Yes) [b] |
| Chances of catching HIV* Things done to protect self | 209.422 | 0.000 (Yes) [b] |
| Chances of catching HIV * Commercial Sex (both those who have been paid or who have paid others) | 5.050 | 0.410 (No) |
| Chances of catching HIV * Ever been tested | 139.933 | 0.000 (Yes) [b] |

[b] Results are still significant when age and sex are controlled for

# CHAPTER 5

# DISCUSSION

There is an almost universal awareness of HIV/AIDS in the Jamaican population, with only three females in the study sample of 1800 having reported that they had never heard of AIDS, one of whom claiming also never to have heard of HIV (KABP 2004). Knowledge has undeniably increased for both males and females, including knowledge of methods of prevention and knowledge of HIV testing sites, while several widely-held myths have been dispelled. Previous studies have demonstrated that HIV/AIDS knowledge in the Caribbean is high (Allen 2000; Hutchison et al. 2007). This may be a product of improving education in schools, the promotion of safe sex methods (in particular condom use), and increased access to HIV/AIDS-related information, both through the media and via the distribution of educational materials (pamphlets and posters) at schools, clinics and other public spaces. Even the national newspaper, the *Jamaican Gleaner*, has been used as a vehicle for education. Additionally, the Jamaican National HIV/STI Control Programme has strengthened its response strategy through collaboration with other ministries, the private sector and even the entertainment sector.

However, the impact of this improved awareness and understanding on behavior is questionable. Youth continue to practice risky sexual behavior, from inconsistent condom use (if at all) to multiple partnerships and engagement in transactional sex.

Statistical analysis revealed that older females, 25-49 years are the most likely to practice behaviors to protect themselves from infection. Of the other cohorts, there

appeared to be no significant relationship between increased knowledge of AIDS and safer behavioral practices, highlighting this disjunction between knowledge and behavior. Previous studies focusing on different groups (minority women, intravenous drug users and homosexual males in San Francisco) are consistent with my finding that knowledge is not necessarily associated with safer behaviors in youth (see Ostrow 1989; Rapkin and Erickson 1990; Schilling et al. 1991; Nyamathi et al. 1993; Ferreira et al. 2008). The question therefore becomes, *why do people not change their behavior despite increased understanding of the disease?*

Donovan and Ross (2000) contend that we live in "collectivistic rather than individualistic societies and thus the emphasis on and opportunity for individual agency is reduced" (1900). Reduced agency indicates that the amount of weight, and in consequence blame and responsibility, put on the individual may be misguided. What Donovan and Ross (2000) call "risk situations," and Rhodes et al. (2005) refer to as the "risk environment," highlight a framework for studying the "social, structural, and affective components of the occasion of risk" (Donovan and Ross 2000, 1900). This shift to a focus on the risk environment represents a shift from a focus on individual behavioral factors to an appreciation of the social situations, structures and places in which risk is produced (Rhodes et al. 2005).

I support this notion of the *risk environment* as being critical to an understanding of the dynamic interplay between individual and environmental risks to HIV. My conceptualization of the risk environment as a *landscape* adds the cultural component of place to previous understandings of the risk environment, based on the premise that the "intersection of the cultural and the politico-economic [is important] in the development

of place-specific landscapes of health care and health promotion" (Kearns and Moon 2002, 610). The risk environment is subject to the interplay of several components, including the unique vulnerabilities of HIV[11], the combination of individual (high-risk) behaviors and (female) youth vulnerabilities, and the structural factors that make up the HIV/AIDS risk environment in Jamaica. It is also important to understand that the risk environment exists in tandem with the dominant paradigm of health promotion, which assumes that "protecting one's own health is the overriding priority of any individual" (Bajos and Marquet 2000, 1534). Therefore, any deviations from protective and health-promoting behaviors are considered irrational and the product of the risk environment, and thus termed risk behaviors.

While I recognize that HIV/AIDS is inherently a behavioral disease, it is still subject to the broader, but place-specific, structural and environmental factors that in turn influence these individual behaviors. Chief epidemiologist at the Ministry of Health in Jamaica, Professor J. Peter Figueroa (2007) cites the following social, cultural and behavioral factors driving the epidemic in Jamaica: early initiation of sexual activity, limited life-skills and sex education, multiple sex partners, insufficient and inconsistent condom use, gender inequity and gender norms, men having sex with men and homophobia, poverty and unemployment, commercial and transactional sex, population movement, and stigma and discrimination. In addition to these, previous studies (Inciardi, Syversten, and Surratt 2005; Mann, Tarantola, and Netter 1992) denote that risk factors

[11] Vulnerability to HIV/AIDS is unique in its nature and effects (Tango International 2003): it kills the most productive and reproductive members of society, the disease is shrouded by complex cultural attitudes towards sexual practices, it has a long incubation period (between infection and illness), it displays rural and urban disparities, it affects both the rich and the poor, the latter disproportionately, and as will be observed, it affects both sexes but is not gender-neutral.

include lack of relevant information and access to HIV/AIDS-related services, widespread myths and misconceptions about AIDS, lack of youth-centered and/or gender-focused services, religious taboos, a patriarchal society and related female subservience. These factors include both aspects of individual risk (e.g., condom use) and aspects of the broader risk landscape (e.g., gender norms and homophobia), which collectively help us to understand the Jamaica's experience with HIV/AIDS.

Certain components of the risk environment are more relevant depending on the individual. As the previous chapter demonstrated, for youth—female and male—specific high-risk behaviors and structural factors combine to make up their risk landscape: the increasing patterns of multiple partnerships, early age of first sex, perceived invulnerability to HIV, inaccurate risk assessments, disjunction between knowledge and behavior further compounded by this lack of life-skills education in schools, and to a lesser extent, engagement in commercial sex. Consistent with the focus of this paper, one additional important factor to which we should pay close attention is the role of gender norms as a critical aspect of the risk environment that helps to explain the higher vulnerability of females compared to males.

When compared to males, fewer Jamaican girls and young women report engagement in risk-taking behaviors, including multiple partnerships, commercial or transactional sex and one-night stands, while reporting higher endorsement levels of protective behaviors, namely getting tested and knowing HIV status, and delay of sexual debut, One possible explanation for this gendered patterns of behaviors may be prevailing gender and social norms in Jamaica. Focus group discussions conducted by Smith et al. (2003) in Hanover, Jamaica, can help us understand these gender norms. Smith et al.

found that the prevailing cultural norms that influenced the sexual attitudes and behavioral practices of adolescents differed by sex. Despite facing comparable expectations and subjected to the same forms of peer pressure, females were constrained by more strict social norms to act prudently and in more risk-averse ways. While both groups acknowledge the exogenous influence of music, media, and their own peers to engage in sexual activity, males were expected to initiate sexual debut at a much younger age (as early as 10 years old) and to have multiple partnerships to prove their masculinity and heterosexuality (Jamaica NHP 2006, Smith et al 2003).

Yet, if it is young males who are practicing more high-risk behaviors, why are young females the ones at a much higher risk (between two and four times) to HIV infection? One possible answer may be that young females are under strong cultural influences to act and appear prudent, and yet at the same time are often also pressured to have sex with their male partner as a way to both maintain his attention and prove their affection. This tension is compounded by females' inherent biological and social vulnerabilities. In light of such findings, the risk environments of males and females can be concluded to differ in significant ways.

I have suggested that it is not just females but particularly *young* females that are particularly at risk. Many studies have examined the unique vulnerabilities of adolescents,[12] which further compound their particularly high risk to HIV infection (Kaiser Family Foundation 2002; UNICEF 2002; UNAIDS 2004; Norman et al. 2007). These factors must also be considered in order to try to explain how the adolescent's risk environment is unique. Factors of particular relevance include: adolescents' young age,

[12] While the focus of this study has been young females, ages 15 to 24 years, many of these factors are still relevant.

immature stage of biological and emotional development, economic dependence, social vulnerabilities, and their inaccurate perception of invulnerability to HIV infection, alongside lack of knowledge of status. Adolescence is often described as a phase in life marked by sexual exploration. In many cases, a high prevalence of episodic and risky sexual encounters (multiple partners and inconsistent condom use) is further aggravated by experimentation with alcohol and other drugs (Malow et al. 2007). The result has been an increased co-morbidity of STIs and unintended youth pregnancies (Malow et al. 2007). Moreover, the relationship dynamics among adolescents tend to be serial but short-lived monogamy (Malow et al. 2007), which ultimately increases the number of sexual partners over time and limits the time available to properly assess the partners' sexual history and risk. This is made worse by adolescents' inability to accurately assess their own risk and that of their partner. Malow et al. (2007), report that lack of adequate knowledge could also be an important factor; although results from the 2004 KABP indicate otherwise as even adolescents typically exhibited high knowledge levels about HIV/AIDS.

Jamaican young females face an even more dangerous form of vulnerability. A recent study, titled *The Influence of Early Sexual Debut and Sexual Violence on Adolescent Pregnancy: A Matched Case-Control Study in Jamaica*, suggests that nearly half (49 percent) of girls aged 15 to 17 years in Kingston have reportedly experienced some form of domestic, sexual assault, coercion or violence (Baumgartner et al. 2009). Furthermore, one-third of those interviewed stated that they had been persuaded or forced to participate in their first sexual experience. These statistics reflect the widespread prevalence of gender-based violence in Jamaica (*The Gleaner* 2009). The study also

revealed that 94 per cent of the pregnant teens interviewed reported that their pregnancies were unintended (Baumgartner et al. 2009). Evidence such as this again clearly indicates gender-specific differences in the risk environment surrounding sexual activity in Jamaica.

The second objective of the study was to examine if knowledge and sexual behavior related to HIV/AIDS are also correlated with personal risk perception. Although further statistical analysis is needed to determine the direction, the findings indicate significant association, such that: (1) persons who are knowledgeable of HIV and its modes of transmission and prevention are more likely to judge themselves at lower risk; and (2) persons who considered themselves as having no chance of getting infected were more likely to practice risky behaviors. Findings are, therefore, consistent with those of previous studies and health models on HIV risk perception, which suggest that perceptions of being at low risk are significantly associated with high-risk behaviors such as inconsistent condom use, multiple partnerships, alcohol and other drug use, commercial sex and having one-night stands (see Ajzen and Fishbein 1980; Bandura 1994; Catania et al. 1990; Janz and Becker 1984).

The research undertaken demonstrates that low risk perception is common among youth, both males and females. This probable underestimation of personal risks is consistent with discussions of *perceived invulnerability* among youth to HIV infection (see Macintyre et al. 2004; Moore and Rosenthal 1991). For instance, Kegeles, Adler, and Irwin (1988) conducted a survey of adolescents (10 to 17 years) in San Francisco, for which their findings indicate that "adolescents engaging in high risk sexual behavior (sexual intercourse with someone they did not know well, and or unprotected intercourse)

did not perceive themselves as being at greater risk for HIV exposure than adolescents not engaging in risk-taking behaviors" (Ostrow 1989, 88). Malow et al. (2007) note a lack of appropriate life skills and immature cognitive development typifying the adolescent, which could help to explain their inability to accurately assess risk. A further incentive for individuals to underestimate their risk relates to the stigma of HIV/AIDS. Within Jamaican culture, HIV/AIDS is highly stigmatized, and Anderson et al. (2007) argue that "acknowledging one's own risk admits the possibility of being part of a stigmatized group." This fear of subjectification results in youth "downplay[ing]" their actual levels of personal risk and may be one factor influencing young people's willingness to engage in more high-risk behaviors (Anderson et al. 2007).

The findings also revealed that persons who perceived themselves at high risk to HIV infection were more likely to have been tested for HIV (see Norman 2006 for a previous study that focused on the role of HIV testing as protective measure in Jamaica[13]). Risk perception can therefore be considered key to motivating this form of protective behavior. A closer examination of the persons who reported no chance of getting infected revealed that some engaged in behaviors associated with a high risk of contracting the disease, or cited inaccurate reasons for their low risk. The findings are consistent with previous studies examining risk perception among adolescents (Akwara et al. 2003; Kershaw et al. 2003; Prata et al. 2006; Anderson et al. 2007; Kibombo et al. 2007). Kershaw et al. (2003), in particular, found that approximately half of their respondents from a study of 411 urban female adolescents underestimated their HIV risk based on sexual behaviors. Inaccurate risk perception is, therefore, a barrier to

[13] Norman (2006, 239) argues that high-risk perception results in persons being more likely to get tested, as supported by the Health Belief Model, which theorizes that "perceived susceptibility is directly related to behavior" (see Becker 1974).

undertaking protective forms of behaviors than can help to reduce one's risk. Indeed, Donovan and Ross (2000) argue that inaccurate risk perception is actually the most immediate barrier to safer sex. Weinstein (1985) describes a "downhill phenomenon" in which "people always compare their own risk with someone who is at much greater risk than themselves" (Donovan and Ross 2000, 1900). This leads individuals to perceive their risk to a particular hazard as being lower than it really is. Donovan and Ross (2000) note that altering risk perceptions alone is not enough; "cultural and normative structures around safer sex" should also be modified (1900). This is consistent with the findings of this paper, which suggest that educating the individual is insufficient to change behaviors (see Carelse 1994). Instead, education needs to be targeted towards changing the risk environment itself if progress is to be made. The creation of a supportive physical, social and political environment in this way could reinforce individual-level behavior changes, as suggested by Rhodes (2002), Singer and Clair (2003) and Rhodes et al. (2005).

## Study Limitations

My analysis is based on cross-sectional data from the 2004 KABP survey in Jamaica. With only preliminary findings from the 2008 KABP, personally recorded at the press release in June 2008, and lack of access to prior survey data sets, the 2004 KABP survey only provides a snapshot of the country's knowledge and behavior status for the year in question. Though it could be argued that behaviors may not change drastically in the short interim periods between surveys, the use of cross-sectional data makes it difficult to identify any causal relationships between HIV knowledge, risky sexual behaviors and/or perceptions of risk to HIV. Additionally, it does not allow us to know

the direction of the relationships, inhibiting any causal inferences about the pathways of risk formations.

Furthermore, this research was limited by the kinds of information available through the questions posed to respondents. The KABP contains both prompted and unprompted questions, usually the latter asked first to obtain answers that more accurately capture the respondents' state of mind. For example, respondents were asked "what do you do to protect yourself from contracting HIV?" (KABP 2004). A subsequent, though not consecutive, question was posed as "people can protect themselves from HIV/AIDS by…" for which respondents were to answer positively or negatively to predetermined categories of responses. On the other hand, the use of pre-categorized and close-ended questions, for example to measure personal risk perception, fail to take into account individual (and community) health and disease (including sexuality) belief systems (Lupton 1993).

Additionally, the study at hand was largely defined by formalized and institutionalized risk factors, consistent with both organizations like the World Health Organization and with the Jamaican Ministry of Health. The WHO's classification of risk factors for HIV include: men who have sex with men (MSM), multiple sexual partners, inconsistent use of condoms, commercial or transactional sex, and the use of unsterilized needles. Such a classification provides a brief description of the main modes of HIV transmission, but fails to locate these modes within a specific social context and relate them to processes that may mean that a specific act may be high risk in one environment but not necessarily in another. Jamaica's epidemic is largely defined by heterosexual

transmission, consequently downplaying the effect of such factors as intravenous drug use and MSM.

I caution against the use of such risk factors as they divert attention from the complexities inherent to the dynamic interplay between risk behavior and the risk environment; from the way in which both endogenous and exogenous forces transform the landscape into what it is today; and of how within the particular social context, the question is not necessarily of certain sexual behaviors being risky, but of all sexual behavior being risky because the environment itself may be one of high risk (Barnett and Blaikie 1992, 69).

While the findings from the KABP only offer the *what* and *how*, for the most part excluding the *why* or the reasoning behind people's answers, this analysis is still important as one of the few studies to determine whether a significant relationship exists between the three variables of interest: knowledge, behavior and perception.

# CHAPTER 6

# CONCLUSION

This study points to the fact that behavior, in and of itself, is complex and cannot be explained by socio-demographic factors and one-dimensional, apolitical health indicators like condom use and number of partners. It attests to the fact that *knowing* and *doing* are very different things. Therefore, the observed trend of increasing risky sexual practices in youth may not be an indication of ineffective education campaigns. Instead, the increased awareness of HIV-related information suggests that education is working in terms of raising awareness; however, behavior is revealed to be complex and resistant to change. Furthermore, inaccurate risk perceptions (specifically characteristics of perceived invulnerability) feed into the risk environment for young females (and males) in Jamaica. What emerges is the need to address the broader cultural and social factors driving risky behavior, including gender inequities and power differentials.

My intent was not to explain the complexities behind (sexual) behavior, but rather to investigate whether a significant causal relationship exists between knowledge and behavior in the context of Jamaica. My findings suggest clearly that the answer to this question is no—knowledge does not inevitably change behavior; instead, knowledge and behavior exhibit a far more complex relationship. Vulnerability to AIDS appears to be a product of both individual behaviors and practices and, to a larger extent, the underlying socio-cultural and political factors that are driving the epidemic in Jamaica. These preliminary findings have enormous implications for the national HIV/AIDS response policy in Jamaica, regarding how to measure the success of education and prevention

strategies, since expected changes in behavior may not always follow. Furthermore, if the main problem in addressing HIV transmission is not lack of knowledge, it indicates that we must turn more seriously to tackling the societal issues and risk environment within which youth operate in order to unravel the root causes of this persistent epidemic. This would require a significant change of focus in how education and prevention campaigns operate.

In particular, effective HIV prevention strategies should recognize the role of the social environment in creating risk situations for young people, which increase their likelihood of contracting HIV. Prevention campaigns should not only promote and foster changes in individual behaviors, therefore, but also address structural factors that encourage high-risk behaviors. One of the first steps should be the integration of health education into schools so that the issue of HIV/AIDS can be tackled in a more holistic way along with broader education related to behavior and social norms. This measure will require an overturning of postcolonial abstinence-only and faith-based messages, and would clearly require support from the Jamaican Ministry of Education. Schools are one of the primary means of interface for educating youth and, instead of being a source of conflicting attitudes and/or censored information, they should become a supportive environment for youth to engage in conversations about HIV/AIDS.

My results suggest that these sorts of broader conversations about the structural framework in which AIDS manifests itself are likely to be more effective than more targeted messages about the relative risk of different behaviors or social groups. Fortunately, there has been a recent boost of about USD 7 million (JAD 576 million) in HIV/AIDS funding from the Global Fund for the Ministry of Health in Jamaica. One of

the areas being funded is the training of 671 teachers in Health and Family Life Education (HFLE), a program implemented in 477 schools (*The Gleaner* [Jamaica] 13 April 2009). The notion of integrating HIV/AIDS information into broader conversations about health and family life is clearly advocated by the findings of this research.

While this study contributes to a neglected area of research within geography in its attempts to disentangle why Jamaican young females are at a higher risk to HIV infection than males in the same cohorts, it still represents what could be considered the first step of analysis. The next step in my analysis will be the construction of a logistic regression model that will allow for causal inferences to be established between the significant associations found. A logistic model could then be used to determine the predictors of risky behavior in Jamaican youth, which could be integrated into public health and family planning policy.

Further research will involve a more in-depth examination of youth vulnerabilities, possibly including the use of focus groups to develop a fuller understanding of the attitudes, beliefs and other exogenous factors behind the persistence of high-risk behaviors in Jamaican youth. Understanding the nuanced differences between males and females in terms of their behaviors around HIV/AIDS could shed further light on possible reasons why this gender risk disparity exists.

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