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HIV/AIDS IN HAITI. AN ANALYSIS OF DEMOGRAPHICS, LIFESTYLE, STD AWARENESS, HIV KNOWLEDGE AND PERCEPTION THAT INFLUENCE THE HIV INFECTION AMONG HAITIANS

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HIV/AIDS in Haiti. An Analysis of Demographics, Lifestyle, STD Awareness, HIV Knowledge and Perception that Influence HIV Infection among Haitians

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ABSTRACT

Yves Marie Dominique Georges

HIV/AIDS in Haiti. An analysis of demographics, lifestyle, STD awareness, HIV knowledge and perception that influence HIV infection among Haitians

Introduction

Haiti has the highest prevalence of HIV infection in Latina America and the Caribbean. The country faces the worst AIDS epidemic outside Africa and bears the greatest burden of HIV in the western hemisphere. Studies in the past recent years show that HIV/AIDS is most likely to be seen in developed countries. People with low education level and appropriate knowledge about STD's are more susceptible to get HIV. Lifestyle behaviors represent significant factors in HIV transmission. Understandings these lifestyle factors are therefore critical in reversing the increasing prevalence of HIV/AIDS. The purpose of this investigation is to determine the influence of factors such as demographic, lifestyle, HIV knowledge and misconceptions on HIV transmission.

Statistical analysis

For this study, we use SPSS (PAWS Statistics 18). The prevalence of HIV-AIDS via HIV status was determined across socio-demographic variables, respondents' knowledge and misconception regarding HIV/AIDS, STDs awareness and lifestyle. The distribution of categorical variables across levels of dependent variable was analyzed using chi-square tests. All Analyses were stratified across HIV status. The distribution of categorical variables by levels of HIV/AIDS status was determined using one-way analysis of variance. Chi-square analysis was done to determine the distribution of independents across status of dependent variable. Univariate and multivariate logistic regression analyses were used to determine the association between selected life style factors and HIV/AIDS. Odds ratios from the logistic regression analyses were used to estimate the risks of HIV/AIDS that were associated with life style factors. In all analysis, $P < .05$ was used to determine statistical significance among variables. Stepwise analysis was performed to evaluate the most significant variables that are associated with HIV.

Results

Among demographic variables, only age was reported having negative significant contribution in HIV status. The other variables, including residence, education, marital status, economic status and gender were not significantly associated with increased odds of HIV transmission. Significant association was observed for HIV status and respondents "who have ever been tested for HIV". Odd ratio analysis for people who think "avoiding prostitutes" show significant association with HIV status (7%) compared to those who do not; Variables referring to respondents who think "having only one sex partner" and "Limited number of partners" as a way to protect themselves from getting HIV were negatively associated increased risk of HIV. Those who think HIV/AIDS is by witchcraft ware more likely to have positive HIV status. Stepwise analysis for our significant variables from multivariate logistic regression show that only variables referring to young respondents and those who think they can get AIDS by witchcraft are the most significant for a positive HIV status.

Discussion

Recent epidemiologic data show that the HIV infection in Haiti is mostly concentrated among youth. Young Haitians lack of sexual education and awareness, and misconceptions are the main drivers of HIV risks. To avert the increasing epidemic of HIV/AIDS in Haiti, public health efforts must concentrate in youth education. Such education must emphasize sexual behaviors, lifestyle issues and attitudes. Demystifying the widely held view that HIV is due to witchcraft may also help in reversing the ongoing epidemics of HIV/AIDS in Haiti.

Index words: HIV/AIDS, demographic, lifestyle, knowledge, witchcraft, sexual behavior, Haiti.

AUTHOR'S STATEMENT

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CHAPTER I

Introduction

AIDS is a chronic life threatening condition caused by the human immunodeficiency virus (HIV) (Sepkowitz KA, 2001). There's no cure for HIV/AIDS, but there are medications that can dramatically slow the progression of the disease. These drugs have reduced AIDS deaths in many developed nations. But HIV continues to decimate populations in Africa, Haiti and parts of Asia. Already, more than twenty-five million people around the world have died of AIDS related diseases. According to UNAIDS, AIDS epidemic 2009, in 2008, 2.7 million people were newly infected with HIV, and 2 million men, women and children lost their lives. 33.4 million people around the world are now living with HIV. More than 25 million people have died of AIDS since 1981. Africa has over 14 million AIDS orphans. At the end of 2008, women accounted for 50% of all adults living with HIV worldwide. In developing and transitional countries, 9.5 million people are in immediate need of life-saving AIDS drugs; of these, only 4 million (42%) are receiving the drugs (UNAIDS/WHO, 2007).

According to the Population Reference Bureau & UNAIDS, Haiti is the Caribbean country most affected by HIV/AIDS. Together, the Dominican Republic and Haiti account for nearly three quarters of people living with HIV in this region (Castro A. , 2008; Farmer P., 1999). Poverty and a lack of access to education and information have contributed to the prevalence of the disease in Haiti. Before 1999s, groups at higher risk for HIV infection included trucks drivers, soldiers, sexual partners of trucks drivers and soldiers, people who migrated from rural to urban areas and those who were raped (Castro A., 2008; Farmer P., 1999). Today, the epidemic is generalized and fueled by endemic poverty and high illiteracy rates. Haiti has a population of 800.000 millions of inhabitants. Approximately 120.000 people are living with HIV/AIDS in 2007. Between them 58.000 are women aged 15 years and older, 6.800 are children. The number of AIDS deaths in 2007 was 7.200. Around 200.000 children became orphans because of their parent's death. Poverty and a lack of access to education have contributed to the prevalence of HIV in Haiti (Hempstone H. et al, 2004; Castro A., 2008).

According to the U.S. Department of State (2008), by the end of 2005, the national HIV prevalence among adults aged 15 to 49 was 3.8 percent but has since decreased to 2.2 percent by the

end of 2008 due to effective HIV/AIDS education programs and increased standard of medical treatment. In Haiti, HIV is primarily transmitted through heterosexual contact, followed by mother-to infant transmission. The recent declines in HIV infection rates are most notable in urban areas and have been attributed to significant behavioral changes, including decreased number of partners, decreased sexual debut, and increased condom use. Other explanations for the recent trends include AIDS related mortality and improvements made in blood safety early in the epidemic. Continued political instability, high internal migration rates, high prevalence of sexually transmitted infections, and weakened health and social services persist as factors with potential negative impacts on the epidemic. Antiretroviral coverage in Haiti is minimal for rural populations and certain group as prostitute, men who have sex with men. The cost of this life-saving treatment is a very small fraction of the annual cost to treat an adult with AIDS. Access to health care and information about HIV/AIDS is not supported in Haiti by the kind of public health system enjoyed by most developed countries. In rural areas the prevalence of HIV is as much as twenty times greater than in other parts of the country where these services are available

There are many risk factors that influence the burden of HIV/AIDs in many countries, especially in developed countries like Haiti. Lifestyle, socio-economic status, education and STD knowledge are some factors that influence HIV epidemic. Studies in the past recent years show that HIV/AIDS is most likely to be seen in developed countries. People with low education level and knowledge about STD's are more susceptible to HIV. Research has proved that people who are HIV positive are those who have more sexual risk behavior. According to the article "Sexual Risk Behaviors among HIV Positive Black Men Who Have Sex with Women, with Men, or with Men and Women: Implications for Intervention Development" from the American Journal of Public Health, confirms this statement. The researchers compared demographics and sexual risk behaviors among HIV-positive black men and prove that they are engaged in more sexual risk behaviors than did their heterosexual and homosexual peers. The level of education and knowledge, the socio-economic status are closely related to misperceptions related to HIV/AIDS cause and transmission.

Men and women as well are dying from AIDS. There are important differences between women and men in the underlying mechanisms of infection and in the social and economic

consequences of HIV/AIDS (WHO, 2003). According to the latest (2008) WHO and UNAIDS global estimates, women comprise 50% of people living with HIV. Women seem to be more affected with STDs than men around the world.

Many studies have been done in the past regarding HIV transmission risk factors. In this paper, we aim to know the profile of Haitians HIV status whether or not they have a high socio-economic status, adequate knowledge about STD's. We also want to see if there is an association between Haitians sexual life style or behavior and the risk of getting HIV. Few studies have primarily focused on the relationship between these factors and HIV infection that severely affected populations. In addition to examining the socio-economic status, sexual behavior as a potential risk factor for HIV infection, we investigate how this might be mediated through other potential risk factors for HIV. The objectives of this investigation are:

- To present the recent epidemiology of HIV/AIDS in Haiti.
- To describe different components of demographics, STDs knowledge, perception and lifestyle factors that are associated with HIV/AIDS epidemics in Haiti.
- To determine the correlation of risk factors with HIV/AIDS epidemic in Haiti.

In the next chapter an overview of the disease and epidemiology and factors that influenced the epidemic as well will be presented.

CHAPTER II

1- HIV/AIDS Definition and Transmission

Acquired Immune Deficiency Syndrome or Acquired Immunodeficiency Syndrome (AIDS) is a disease of the human immune system caused by the human immunodeficiency virus (HIV) (Weiss, 1993). This condition progressively reduces the effectiveness of the immune system and leaves individuals susceptible to opportunistic infections and tumors. There are two types of HIV, HIV-1 and HIV-2. In the United States, unless otherwise noted, the term “HIV” primarily refers to HIV-1 (CDC, 2010).

HIV is transmitted through direct contact via blood, semen, vaginal fluid, preseminal fluid, and breast milk. This transmission can involve anal, vaginal or oral sex, blood transfusion, contaminated hypodermic needles, vertical transmission (pregnancy) , childbirth, breastfeeding or other exposure to one of the above bodily fluids(CDC, 2010).

2- History

Scientists identified a type of chimpanzee in West Africa as the source of HIV infection in humans. They believe that the chimpanzee version of HIV (simian immunodeficiency virus or SIV) most likely was transmitted to humans and mutated into HIV when humans hunted these chimpanzees for meat and came into contact with their infected blood; Over decades, the virus slowly spread across Africa and later into other parts of the world (CDC, 2010).

In July 1981, the New York Times reported a rare form of cancer among gay men in New York and California called "gay cancer". In medicine it was known as Kaposi Sarcoma (Cichocki, 2010). At the same period, hospitals in New York began to see young men with fevers and a pneumonia called Pneumocystis. About a year later, the Centers for Disease Control (CDC) link the illness to blood and coins the term AIDS (Acquired Immune Deficiency Syndrome). In that first year over 1600 cases are diagnosed with close to 700 deaths (Cichocki, 2010).

In 1984, Institut Pasteur of France discovered the HIV virus. Later, a US scientist, Dr. Robert Gallo confirmed that HIV was the cause of AIDS (Cichocki, 2010).

Following this discovery, the first test for HIV was approved in 1985. Later, some drugs were developed in order to reduce the transmission. By the end of 1987, there were 71.000 confirmed cases of AIDS, resulting in over 40,000 deaths (Cichocki, 2010).

Now days, because of medical care, AIDS related deaths in industrialized countries like the US are declining. People who are infected live better and longer. But, in other parts of the world, like Africa, the epidemic remains one of the biggest health issues. Some estimate that 40 percent of persons in the sub-Sahara region of Africa are HIV infected (Cichocki, 2010). Many of these people are unaware of their serology status, this cause the disease to continue spreading.

3- The Global HIV and AIDS Epidemic

More than twenty five million people around the world have died of AIDS related diseases. In 2008, 2.7 million people were newly infected with HIV, and 2 million of them died. Currently, around 33.4 million people around the world are now living with HIV (UNAIDS/WHO, 2009). HIV infection has caused approximately 20 million deaths; an estimated 36 million persons are infected (Piot, Bartos, Ghys, Walker, Schwartlander, 2001).

In Latin America and the Caribbean, the leading modes of transmission include sex between men, sex between men and women, and injection drug use. By December 2000, an estimated 1.4 million adults and children were infected with HIV/AIDS in the region compared with 1.3 million in 1999. Barbados, Belize, Dominican Republic, Guyana, Haiti, and Suriname have an HIV prevalence of approximately 1%. The Caribbean, with an adult prevalence of 2.1%, is the second most affected world region. In Brazil, reported HIV related deaths have declined from approximately 25 per 100.000 in 1995 to approximately 15 per 100.000 in 1999, in large part because of the government policy of providing universal, free access to antiretroviral therapies (Boletim epidemiologico AIDS Brazil, 2000).

4- HIV Epidemiology in Haiti

The Republic of Haiti shares the island of Haiti is the Caribbean Sea with the Dominican Republic. It covers the western part of the island, with a surface area of 27,500 square kilometers. In

2003, Haiti counted 7 929 048 inhabitants, with young people of under 17 accounting for 46% of this population, according to the results of the last census carried out by the Haitian institute of statistics and information technology (IHSI). In 2005, total population was estimated at 8 196 686.
On the health front, STIs and HIV/AIDS are major public health problems and Haiti is one of the countries where the AIDS epidemic is generalized (IHE, 2006).

In 2005, the number of people living with HIV was estimated at 271 582, including 11 634 children (IHE, 2006). An estimated 32 511 people die every year because of the disease. The main transmission route for HIV remains sexual, particularly by heterosexual transmission, followed by mother-child transmission; The epidemic has become increasing feminine, with the male/female ratio moving from 6:1 in 1988 to 1:1 since 2002 (IHE,2006). Multisectorial interventions undertaken as a result of public/private partnerships have led to a certain stabilization of the epidemic. Indeed, HIV prevalence in pregnant women dropped from 5.96% in 1996 to 3.44% in 2004 (IHE, 2006).

Haiti is the most affected countries with HIV in the Caribbean. This table below shows the number of people infected for 2007.

Country	**All people**	**Adult (15-49) rate %**	**Deaths due to AIDS during 2007**
Bahamas	6,200	3.0	<200
Barbados	2,200	1.2	<100
Cuba	6,200	0.1	<100
Dominican Republic	62,000	1.1	3,900
Haiti	120,000	2.2	7,500
Jamaica	27,000	1.6	1,400
Trinidad and Tobago	14,000	1.5	<1,000

Source: UNAID/WHO 2008 Report on the Global AIDS epidemic.

5- HIV/AIDS Consequences

As a sexually transmitted disease, HIV/AIDS particularly affects adolescents and young adults. Deaths of young adults have negative impact on families, communities, social systems, national growth and development. Also, the number of orphans have been increased, there are around 15 million living children who have lost a parent to AIDS (UNAIDS, 2008). Young adults who

contribute substantially to countries' gross domestic product are most commonly affected. In families, loss of one or both parents to HIV can lead to loss of income, cessation of children's education, increased child labor, and disruption of family and social support systems.

HIV/AIDS represents one of the greatest challenges to global public health. As a bloodborne and sexually transmitted infection, HIV has variable patterns of transmission and has disproportionately affected disadvantaged or marginalized persons such as commercial sex workers, injection drug users, men who have sex with men (MSM), and persons living in poverty (CDC, 2001).

HIV/AIDS is the leading cause of death in Africa and the fourth leading cause of death worldwide. In some African countries, life expectancies have fallen below 40 years, whereas they would have been above 60 without AIDS (UNAIDS, 2008). In Haiti, because of AIDS, life expectancy has also been reduced.

6- HIV/AIDS Risk Factors

HIV/AIDS risk general factors include migration, economic instability, drug use, STDs, low levels of literacy and poverty (Gayle HD, Hill GL, 2001).

Sexual promiscuity, polygamy associated with a lack of sexual education play a significant role on HIV transmission, especially in developed countries (EMMUS III). The same source indicates that unfaithfulness to a partner reported by 66% of women, non-use of condoms and multiple partners reported by 42.4% and 42.5% of men respectively are the main reasons proposed by those interviewed who think there is a moderate or high risk of contracting HIV.

Discrimination and stigmatization against people who are infected by HIV usually allow them to keep secret their infection. Effectively, 50.4% of women are not prepared to look after a HIV infected relative in their homes and 67.9% state that such a person should not continue to work with other people; these percentages are 45.2 and 62.5 in men (EMMUS II).

Another factor that contributes to HIV transmission is violence against girls and women either by partners, friends, strangers or members of the family. Women and girls in many societies are vulnerable. Violence is another one of the major issues that makes women vulnerable. Data from South Africa indicate that 33% of women are afraid of saying no to sex, 29% have been forced to

have sex, and 55% have had sex because their boyfriend insisted (APA, 2010). Also women lack of financial independence for women especially in non industrialized countries put them under the power of men decisions regarding sexual activities. Male chauvinism coupled with women's limited power of decision in sexual matters contribute to increase STD's rate especially HIV.

High prevalence of STIs and Low condom use represent major health issues in HIV transmission. Only 5.6% and 14% of women and men respectively have used a condom during their last sexual relations, regardless of the partner (EMMUS II).

Age

Young people in the United States are at persistent risk for HIV infection. This risk is especially notable for youth of minority races and ethnicities. Continual HIV prevention outreach and education efforts, including programs on abstinence and on delaying the initiation of sex, are required as new generations replace the generations that benefited from earlier prevention strategies. Unless otherwise noted, this fact sheet defines youth, or young people, as persons who are 13–24 years of age (CDC, 2010).

In many developing countries, the majority HIV infections occur among individuals' aged 15-24 (Weiss E, 1996). Having an STD put someone a trick for contracting HIV. Because youth are usually sexually active and unmarried, they are at high risk. These risks include psychological and behavioral reasons. Biological and social reasons are also explaining these risks. Psychological factors allow many adolescents and young adults at increased risk for STIs because of their general sense of invulnerability, the desire to try new experiences, to impress their friends or relatives and the willingness to take risks, including changing sexual partners often or having a partner who has multiple partners. Also, many young people have a lack of knowledge regarding STIs. This contributes to risk taking behaviors. It is difficult for them to use condoms consistently and correctly; furthermore, the lack of communication and negotiation skills among young couples make condom use difficult.

About half of all new HIV infections worldwide, or approximately 6,000 per day, occur among young people aged 15–24, the majority of them young women (UNFPA, 2003). In the United

States, for men who have sex with men, younger age is strongly correlated with increased high risk sexual behaviors (e.g. unprotected anal sex) (Kalichman, 1998). Despite high levels of sexual activity, young people often do not know the basic HIV/AIDS statistics and facts, which put them at risk (Feinstein and Prentice, 2001).

Residence

HIV disease morbidity and mortality vary greatly within and between nations. In the United States, for example, the annual number of deaths by HIV is highest in the South. US regional differences continue to increase over time (CDC, 2010). Limited access to healthcare, poverty, and discrimination contribute to these regional disparities. Persons who live in geographic areas in which HIV is more prevalent and who engage in risky sex or drug use behaviors are more likely to do so with persons who have HIV.

Education

In Haiti, the level of literacy among the population is a major issue. But, In terms of education, an improvement in the level of instruction has been noted; the level of literacy increased from 36% in 1982 (census) to 63% in 2000. However, the gender gap is obvious: the level of literacy is higher in men than in women (66.6% Vs 56.7%) (IHE, 2006). Currently HIV is spread among all the population, whether the level of education of individuals. Anyone can get AIDS is safe sex behavior is not applied.

Marital status

Marriage does not always protect young women against HIV infection. Since a much higher percentage of young men than young women become sexually active early, young women are likely to marry an already sexually experienced man. In Pune, India, a study in an STI clinic found that 25% of the 4000 women attending the clinic were infected with an STI and 14 % were HIV positive. Among the 93 per cent who were married, 91% had only one partner, their husbands. A study in Kisumu, Kenya, found that as many as half of the married women whose husbands were 10 or more

years older were infected with HIV, compared to none of the women whose husbands were only up to three years older (UNAIDS/WHO, 2008).

Gender

Gender is one of the factors that also influence HIV/AIDS epidemiology. For example, men are less likely to acquire HIV from heterosexual sex than women are because of the anatomy of the penis. However, cultural norms in many parts of the world encourage men to demonstrate their masculinity by having multiple sex partners and coercing women into having sex, which increase HIV risk. Men are also much more likely than women to abuse alcohol and drugs, which increases the likelihood that they will engage in unprotected sex. Men are also more likely than women to inject drugs, exposing them to the risk of HIV from infected needles and syringes (Denny, 1995; UNAIDS, 2000).

Women, in contrast, are at greater risk of HIV infection from heterosexual sex than men are because of the anatomy of the vagina. In addition, although cultural norms in many parts of the world dictate that women should remain virgins until married (a factor that can reduce HIV risk), the denial of access to HIV education and the belief that women should be sexually passive decrease the likelihood that women will take steps to protect themselves from HIV in sexual relationships. Limited access to education and employment make women dependent on male partners, or forces them to exchange sex for food or money, thus limiting their control of sex. Women are also far more likely than men to experience gender based violence, including physical and sexual abuse, in which they do not have control over the safety of sexual intercourse (Clements-Nolle, Marx, Guzman, & Katz, 2001; Türmen, 2003; UNAIDS, 1999, 2005).

Risk behavior

Behavioral data include data on vulnerability, knowledge and awareness, and risk behavior over time. Women have biologic, cultural, economic, and social vulnerabilities that increase their likelihood of acquiring an infectious disease. They also face hostile justice systems, are exposed to sexual violence and lack access to health reproductive services.

Because women have less access to education they are vulnerable and mostly depend on men decision, they are facing to major issues: capacity to decide for themselves, to choose to use condoms... Marriage at a very young age can actually increase vulnerability, initiating a young woman into sexual activity earlier than if she were not married. Women with low socio-economic status are less likely to get a STD, especially HIV.

Data on the knowledge of how a person becomes infected and how we can protect ourselves are often better disaggregated by gender than many of the other data streams because knowledge assessment surveys are often performed in a same-sex venue. In many ways, women understand prevention data better than boys. Men have more access to prevention information than women in many developing countries.

Other sexual risk factors as prostitution, having more than one union, using condoms or abstinence are factors that influence HIV transmission. In a country as Haiti, where socioeconomic status has a negative impact on individual sexual behavior, the factors cited above may influence the epidemic.

Socio-economic status

Domestically and internationally, HIV is a disease that is embedded in social and economic inequity (Perry, 1998), as it affects those of lower socioeconomic status (SES) at a disproportionately high rate. Research on SES and HIV/AIDS suggests that a person's socioeconomic standing may affect his or her likelihood of contracting HIV and developing AIDS. Furthermore, SES is a key factor in determining the quality of life for individuals after they are affected by the virus (APA, 2010). Socio-economic status indicates people's standing in society and is usually measured by their income, occupation, or educational attainment. Socioeconomic status is one of the most powerful predictors of sickness and health. People with lower SES are more likely to contract and transmit HIV/AIDS, perhaps because they have less knowledge about HIV/AIDS, are surrounded by people who are more likely to have HIV/AIDS, and are more likely to use drugs and practice unsafe sex to escape from stress (Feldman, 1990; UNFPA, 2003). HIV positive people with lower SES also die

sooner than HIV-positive people with higher SES because of their lack of access to medical care, the high cost of antiretroviral drugs, and their lowered immunity from other illnesses.

STD Knowledge and misconception in Haiti

The EMMUS III revealed that a large proportion (66%) of surveyed women had not heard of STIs other than HIV/AIDS (Cayemittes et al., 2001). Among people of both sexes, adolescents (15-19), residents of rural areas, and those lacking formal schooling were the least likely to have heard of STIs. For the same study, among female who had heard of STIs, 89% were able to name a sign of such an infection in women (Cayemittes et al., 2001). Eighty-eight percent were able to name a sign of STI in men. Of those who had heard of STIs, 96% were able to name at least one sign of STI in men (Cayemittes et al., 2001). However only 87% were able to name such a sign in women.

HIV transmission

Haitians may understand that HIV is sexually transmitted but simultaneously have misperceptions about HIV transmission (Louis C. et al., 2007). It is important to mention that Haitians may believe that supernatural or unnatural illnesses cannot be transmitted to other persons (Hempstone H. 2004; British Broadcasting Corporation, 2003).

Some Haitians believe that HIV can be transmitted by sorcery, direct contact with skin, stepping on the saliva of a person who has HIV, sharing chairs, household items or food (Louis et al. 2007). It is important to note that these beliefs regarding the cause and transmission of HIV are more common among persons living in rural areas of Haiti (Breux, 2008).

While some Haitians do not believe that HIV/AIDS can be prevented, others believe that preventive measures may be used to protect a person from both forms of SIDA (Cichocki, 2010; Singer, 2006).

Some Haitians recognize that condoms may be used to protect a person against “AIDS, the infectious disease”; however, they may also believe that condoms are useless against “AIDS caused by magic”.

“Gad’ and “aret” are certain charms are believed to offer some protection against “AIDs caused by magic”. Some Haitians mothers may be aware that breastfeeding is a mode of transmission

of HIV/AIDS to their child. Those who have breastfed without complications deny that breastfeeding is a mode of transmission and report this to other breastfeeding mothers (regardless of HIV status) (Cichocki, 2010).

HIV/AIDS etiology and cause

The acronym for AIDS in Haiti is SIDA (Farmer, 1990). In the past young Haitians would joke the acronym SIDA stands for "Imaginary Syndrome to Discourage Lovers".11 SIDA is thought to occur both"naturally" through "malady Bondye" (God's illness) and "unnaturally" through supernatural forces, magic , or by an enemy who is trying to do them evil (Hempstone et al., 2004; British Broadcasting Corporartion, 2003; Rundle et al.,1999).

Haitians may believe the "SIDA caused by magic" or the "sent" version of the disease is less virulent and that magical interventions are available to patients, while "SIDA the infectious disease" or the natural form of the disease is universally fatal (Farmer, 1990).

Diagnostic procedure

May Haitians especially male may avoid HIV testing because they think it is better not to know their serology status (Coreil et al., 2004).

Other factors that influence the epidemic

On a social/political level, the situation remains worrying despite interventions to stop violence; sexual violence against women is increasing and gang rape is a new problem. This increases the risk of exposure to STIs and HIV/AIDS for women. The number of rape cases reported rose from 362 in 2004 to 722 in 2005, and 33% of cases reported are gang rapes, according to the report published by three institutions that look after violence victims2. According to an independent human rights expert from the United Nations, 85% of human rights violations concern women, of which 47% are sexual assaults on minors (EMMUS IV). Rape cases are increasing especially after the earthquake of January 2010.

The social stigma associated with HIV infection combined with treatment difficulties or services for infected persons are major barriers to HIV testing. Persons who may benefit from

knowing their serology status often reject counseling and testing because of consequences of their HIV status might resulted. Other disincentives are the lack of resources for care and treatment.

Globally, the HIV epidemic has intersected with other diseases, especially tuberculosis (TB). TB remains the principal cause of death in persons with HIV infection worldwide. National TB rates have escalated over the past decade in many countries especially Sub Saharan Africa. Since the mid-1980s, in many African countries with well organized programs, annual TB notification rates have increased fourfold, reaching peaks of more than 400 cases per 100,000 individuals (CDC, 2001). In some countries, up to 70% of patients with sputum smear positive pulmonary TB is HIV infected.

Conclusion

Haiti bears the largest burden of HIV in the Caribbean; Together, the Dominican Republic and Haiti account for nearly three quarters of people living with HIV in this region(UNAIDS/WHO, 2008).

Poverty, lack of access to education or information has contributed to the prevalence of HIV in Haiti. Factors as demographic, socio-economic status, knowledge, misconception and lifestyle influence the epidemic among Haitians. Recent surveillance studies show a decline in HIV prevalence among pregnant women general population (age 25 and older) and in some urban areas (Gaillard et al.2006). This progress is the result of the combination of factors including:

- Decreasing infection levels in Port-au-Prince and other cities.
- AIDS related mortality due to initial rapid progression.
- Efforts to secure safety of blood supply.
- Adoption of safer sex practices and protective health behaviors.

CHAPTER III

METHODOLOGY

The purpose of this study is to determine the impact of demographics, STDs knowledge, life style, behavior on HIV transmission. These four groups of data set were selected from the Demographic Health survey (DHS). A brief introduction of data source is presented, followed by data variables description and implication in HIV/AIDS transmission. At the end of the chapter a summary of data analysis is provided.

Demographic and Health Survey

Data available for HIV/AIDS are found in the "HIV/AIDS Survey Indicators Database". The HIV/AIDS Survey Indicators Database provides an easily access to information on HIV/AIDS indicators derived from sample surveys. The database allows researcher to create tables for specific countries by select background characteristics and country reports. The indicators included are primarily derived from the UNAIDS National AIDS Programs: Guide to Monitoring and Evaluation. The guide provides standardized indicators for measuring the success of HIV/AIDS programs. Included are a number of indicators identified to monitor the goals set at the UN General Assembly Special Session on HIV/AIDS, the Millennium Development Goals, and strategic goals of the President's Emergency Plan for AIDS Relief.

Currently, the main sources of HIV/AIDS indicators in the database are the Demographic and Health Surveys (DHS), the Multiple Indicator Cluster Surveys (MICS), the Reproductive Health Surveys (RHS), the Sexual Behavior Surveys (SBS), and Behavioral Surveillance Surveys (BSS). In this study we used the demographic Health survey. There are a total of 227 surveys available in the database. For DHS, we count 153 surveys.

The HIV/AIDS Survey Indicators Database is supported primarily by USAID, through the Presidents Emergency Plan for AIDS Relief initiative, with additional support provided by UNICEF and UNAIDS, and implemented by Macro International Inc. through the MEASURE DHS project. Data from the HIV/AIDS Survey Indicators Database is regularly fed into the UNAIDS Country Response Information System (CRIS) and the WHO Global Health Atlas. The database is overseen by

a technical advisory committee that includes representatives from USAID, UNICEF, CDC, UNAIDS, WHO, US Census Bureau, Family Health International, MEASURE Evaluation, US Census Bureau International Programs Center, and MEASURE DHS.

For this study we used secondary data for Haiti (2005-2006), from Demographic Health Surveys (DHS). MEASURE DHS is a USAID-funded research organization working in developing countries to provide quality data on health, population, nutrition and HIV/AIDS. MEASURE DHS publishes country reports based on population-based surveys, as well as analytical reports, trend reports, qualitative research reports and comparative reports.

Demographic and Health Surveys are a group of household surveys that provide relevant data for indicators regarding population, health, and nutrition for diverse countries. There are two main types of DHS Surveys. The standard DHS surveys have large sample sizes of households and are conducted every 5 years, comparisons can be made by researchers over time. The Interim DHS Surveys focus on main performance monitoring indicators but are limited in term of evaluation measures. These surveys have smaller sample sizes of households than the standard DHS surveys. DHS gives access to a range of data collection options that have specific monitoring and evaluation needs of different countries. “MEASURE DHS” designs different surveys, secondary data analysis, and specialized studies as tuberculosis, HIV/AIDS, malaria... For this study we were able to access to heath indicators in the field of HIV/AIDS for Haiti via AIDS Indicator Surveys (AIS). AIS provide indicators for the effective monitoring of national HIV/AIDS programs.

Data collection

For Haiti, HIV/AIDS Survey Indicator Database using DHS questionnaire (2005-2006), reports data on adult support education on condoms’ use for prevention, condoms knowledge, accepting attitudes towards HIV, HIV/AIDS prevention methods knowledge, pregnancy and HIV, HIV treatment, orphans due to HIV/AIDS parents death, orphans school attendance, health care injection and HIV, early sex, basic material needs and HIV prevalence. For this questionnaire data were collected in two years. The Haïti Enquête Mortalité, Morbidité et Utilisation des Services 2005-2006,

as part of the Demographic and Health Surveys (DHS) project, was implemented by the Institut Haïtien de l'Enfance between October 2005 and June 2006.

Sample design

The sample included 9998 households, 10757 women age 15-49 and 4958 men age 15-59. Survey results are representative at the national level, for four residency areas: metropolitan, other cities, urban and rural, and for ten departments. For the purpose of this study we retained data on demographics (age, residence, education, gender, wealth index and marital status), lifestyle (sex partner, paid for sex), HIV/AIDS knowledge (protection methods, heard about HIV or other STDs), STD status (HIV, other STD) and behavior towards HIV/AIDS (keep HIV infection secret).

Definition of Variables

In this study we wanted to find out the association between HIV status and demographics, socio-economic factors, lifestyle, knowledge and sexual behavior. In order to assess this association, we selected DHS questionnaires that specifically address questions regarding HIV status, demographics and lifestyle and STDs perception. All men and women who reported "don't know" or "no answer" for lifestyle or behavior questions, was excluded from the study. All missing values were not retained for our final analysis.

For a better understanding of the measures used in this study regarding HIV status and eventual factors associated, the following independent variables were grouped in five categories for analysis:

Demographics Characteristics

Demographic characteristics as age, residence, education, marital status, wealth and gender are six independent variables that have been considered as possible factors that might influence the transmission of HIV.

a) Age

This variable refers to individuals' number of living years. For our study, the independent variable age, was categorized in five age groups: 15-19, 20-24, 25-29, 30-34, 35-39, 40-44 and 45-49.

About half of all new HIV infections worldwide, or approximately 6000 per day, occur among young people aged 15–24, the majority of them young women (UNFPA, 2003). Despite high levels of sexual activity, young people often do not know the basic HIV/AIDS statistics and facts, which put them at risk (Feinstein et al., 2001).

b) Education

People said to be educated refer to those who have completed primary, secondary or higher education level. For the convenience of the study, this variable was recoded in two categories: non educated and educated. Non educated individuals refer to people who don't have any level of education mentioned below; educated regroup people who ever had primary, secondary or higher education level.

Education is a key factor for effective response to HIV/AIDS. Studies show that educated women are more likely to know how to prevent HIV infection, to delay sexual activity and to take measures to protect themselves (USAID, 2010).

c) Marital status

This variable examines people HIV status among married and unmarried individuals. In this study we classified people whether they are married or unmarried (common law marriage, fiancé, single and widowed).

Studies that have been conducted in many countries reveal the role of individuals' marital status in influencing their serology status. Marital status is an important factor for knowledge, attitude and practices related to HIV/AIDS in rural areas (Kamdi et al., 2009).

d) Economic status

This variable is an appropriate indicator of the individual household income. It is classified in the study in 3 categories after recoding: working class, middle class and upper class. The poor account absolutely for the largest numbers of those infected with HIV (Cohen, 1997). But the relationship with poverty is by no means simple and many of the poor, even the poorest of the poor, remain uninfected in many countries.

e) Gender:

Gender refers to an individual sex, whether a subject is male or female. We find important to mention gender as one of our independent variables that probably can make a difference among people infected with HIV. One-third of Haiti's HIV cases are among women (Bracken, 2006). Evaluation of the CDC's data reveals a changing gender trend in America's HIV cases. While numbers of cases in males continue and demand concern, the percentage of women with HIV is growing rather rapidly in comparison. The CDC has estimated 120,000 to 160,000 females are living with HIV and AIDS in the U.S. Data collected between 1995-1996 shows HIV diagnoses in males decreased by 3%, but increased by 3% in women (CDC, 2001).

f) Residence:

Residence indicates the place where an individual or household is living. It is noted as "urban" and "rural". Some 75% of the population lived in rural areas, while only 25% remained in urban areas; this was one of the lowest urban-to-rural population ratios in Latin America and the Caribbean. It is estimated that 6.1% of the adult population in Haiti is HIV positive, with rates as high as 14% in some urban areas (CDC, 2010).

HIV Knowledge and Misconception

Knowledge and risk perception toward STD, especially HIV/AIDS are factors that can have a negative effect on an individual behavior; which can put him at risk for getting infected from HIV. The fact of being aware or not of ways to avoid HIV/AIDS is essential in HIV prevention. Haiti is a developing country where voodoo has a significant impact on people life. We chose to mention one variable referring to misconceptions that refers to getting HIV via witchcraft or supernatural means. For this variables group, we have selected twelve variables. These variables examine Haitians knowledge related to ways they know that can ovoid them getting infected from HIV. In a behavioral survey respondents are asked about their knowledge of AIDS, and whether it can be prevented. The indicator is derived from correct answers given for prevention methods.

a) Abstain from sex

This variable was defined as the percent of respondents who, in response to a prompted question, say that people can protect themselves from contracting HIV by abstaining from having penetrative sex (DHS). Many AIDS programs promote sexual abstinence, particularly among never-married young people, as a primary means of avoiding HIV infection. This indicator measures the extent to which those messages have reached the general population or the specific sub-population surveyed. The indicator is derived from correct answers given to a prompted question about methods of HIV prevention. All respondents surveyed are included in the denominator, regardless of whether they have ever heard of AIDS or not (DHS).

b) Use condom during sex

This variable refers to the percent of respondents who, in response to a prompted question, say that people can protect themselves from contracting HIV by using condoms. The indicator is derived from correct answers given for condom usage as a primary sexual prevention method for sexually active adults, following a prompted question in a survey. All respondents surveyed are included in the denominator, regardless of whether they have ever heard of AIDS or not. Most AIDS programs targeting the general population promote mutual monogamy and condom use as one of the primary ways to avoid HIV infection among sexually active men and women, who make up the majority of all adults in virtually every population. This indicator measures the extent to which those messages have reached the general population or the specific sub-population surveyed.

c) Only one sex partner

This variable is defined as the percent of respondents who said that people can protect themselves from contracting HIV by having sex only with one faithful, uninfected partner (DHS). Most AIDS programs targeting the general population promote mutual monogamy a primary means of avoiding HIV infection among the sexually active men and women who make up the majority of all adults in virtually every population. This indicator measures the extent to which those messages have reached the general population or the specific sub-population surveyed (DHS).

d) Limited number of sex partners :

This variable refers to the percent of individuals who said that people can protect themselves from contracting HIV by limiting the number of sexual partners or having only one sexual partner. Most AIDS programs promote mutual monogamy, a primary means of avoiding HIV infection among the sexually active men and women. This indicator measures the extent to which this preventive message has reached the general population or the specific sub-population surveyed (DHS).

e) Avoid prostitutes

This variable indicates the percent of respondents who respond that people can protect themselves from contracting HIV by not having prostitutes as sexual partners. Researchers infer that people who meet prostitutes have much higher rates of exposure to HIV and AIDS than the vast majority of heterosexuals. Indeed, many AIDS researchers initially assumed that female prostitutes would be the vectors (or means of transmission) of HIV and AIDS to the heterosexual community (DHS). In the context of the HIV/AIDS epidemic, sex workers are of interest because they have a high turnover of partners and are therefore at high risk of being exposed to infection, becoming infected and passing on the infection to others. In many cultures, this is true for only a fraction of those who have “received money or gifts in exchange for sex”. If there is no locally specific term for prostitution, this indicator is unlikely to be relevant to the program and should not be used (DHS).

f) Avoid partner with multiples partners

This variable is defined as the percent of respondents who said people can protect themselves from contracting HIV by avoiding partners who have multiples partners. Individuals who have multiples partners are at risk for getting HIV. An increasing number of studies have shown that the practice of men and women having multiple or concurrent sexual partners is the "most powerful force propelling" the spread of HIV (Washington Post Reports). This new understanding of the effects of multiple sexual partners might help explain why HIV/AIDS has devastated many countries, especially Southern Africa.

g) Avoid sex with homosexuals

This variable is defined as the percent of respondents who said people can protect themselves from contracting HIV by avoiding having sexual intercourse with homosexuals. HIV can be

transmitted through any form of homosexual intercourses including oral, anal, and vaginal intercourse (CDC 20101). The rate of HIV among men who have sex with men (MSM) is more than 44 times that of heterosexual men and more than 40 times that of women (CDC, 2010). Not having sexual relationship with homosexual can be considered as a safe sexual behavior.

h) Avoid sex with intravenous users

This variable is defined as the percent of respondents who testify that people can protect themselves from contracting HIV by avoiding sexual intercourse with intravenous drug users. Studies of people who inject drugs show that the rate of HIV among them is around 60%. Sharing needles among groups of people drug users is frequent and increase the risk of getting HIV (CDC, 2010). Sharing of injecting equipment is both the biggest risk factor for HIV transmission among drug injectors, and the most common focus of interventions. This indicator measures progress in program efforts to reduce the most risky practice the sharing of injecting equipment among people who continue to inject drugs (DHS). It is especially valuable for tracking trends over time for programs that support needle-exchange initiatives, or that work to improve easy access to safe injecting equipment (DHS). In HIV epidemics where there is a concentration of HIV infection or risk behaviors among injecting drug users, some programs actively promote HIV prevention in this population.

i) Avoid blood transfusion

This variable refers to the percent of individuals who respond that people can protect themselves from contracting HIV by avoiding blood transfusion. Transmission of HIV and other blood-borne viruses can occur during transfusion of blood components (i.e., whole blood, packed red cells, fresh-frozen plasma, cryoprecipitate, and platelets) derived from the blood of an infected individual(CDC, 2010). The risk of HIV transfusion through infected blood products exceeds that of any other risk exposure. 90% of recipients transfused with HIV antibody-positive blood are found to be HIV infected at follow up (Donegan, 2003). A high proportion of all blood transfusions in many countries are unnecessary, and this is also true in the African countries with high HIV prevalence. It follows that a substantial proportion of blood transfusions that result in HIV infection are in fact unnecessary. Recognizing this fact, many countries have introduced or strengthened measures designed to reduce

the number of unnecessary transfusions. This indicator provides a crude measure of success towards that goal (DHS).

j) Avoid injection

In a behavioral survey in a community of drug injectors, respondents are asked about their knowledge of AIDS regarding injections, and whether it can be prevented. They are then prompted for various correct and incorrect means of prevention, including switching to non-injection. The indicator is derived from a correct answer given to these prevention methods. In HIV epidemics where there is a concentration of HIV infection or risk behaviors among injecting drug users, some programs actively promote HIV prevention in this population. Most efforts to reduce transmission between drug injectors try to encourage safer drug-taking, including using non-injecting drugs and not sharing injecting equipment. This indicator measures the extent to which drug injectors are aware of these methods of preventing HIV transmission (DHS).

k) No ways to avoid HIV

This variable refers to the percent of respondents who respond that there is no way that a person can avoid getting HIV or AIDS. This indicator helps assess the effectiveness of behavior change interventions. Most AIDS behavior change interventions promote effective means for avoiding HIV infection. This indicator helps assess the effectiveness of behavior change interventions. The numerator is comprised of the number of respondents to a prompted or unprompted question who say that they don't know ways a person can avoid HIV infection. All respondents to the question are included in the denominator.

l) Can get AIDS by witchcraft or supernatural means

This variable represents the percent of respondents who believe the misconception that HIV/AIDS can be transmitted by supernatural means. If people believe that AIDS can be transmitted by supernatural means, they may not be persuaded that valid means of AIDS prevention such as condom use or having sex only with one uninfected partner are in fact effective. In a prompted question, respondents are asked if AIDS can be transmitted by supernatural means. It reflects the extent to which national IEC programs and other efforts have succeeded in promoting the knowledge of

prevention methods against HIV and have managed to reduce misconceptions relating to the disease (DHS).

STD Knowledge

For this study we also evaluated if people are aware about STDs in general. We wanted to see, how their HIV status might be influenced, whether or not they have heard about any STDs, especially HIV/AIDS.

a) Heard about STD.

Respondents in a population-based survey are asked if they have heard of any Sexual transmitted diseases. These indicators measure the presence of some (undefined) familiarity with STD (DHS). It reflects programs efforts from Haiti health department and international partners regarding sexual education to increase HIV awareness (DHS).

b) Heard about HIV

Respondents in a population-based survey are asked if they have heard about a disease called AIDS or HIV virus. These indicators measure the presence of some knowledge about HIV/AIDS (DHS). It reflects programs efforts from Haiti health department and international partners regarding sexual education to increase HIV awareness. More people are aware about the disease more they are willing to protect themselves and practice safer sex.

HIV test

a) People ever been tested for HIV.

This variable is a core indicator for generalized epidemics and it's an additional indicator in sub-populations with high-risk behavior in concentrated epidemics. Having a HIV test is recommended in areas where VCT is being actively promoted. People who never get tested for HIV/AIDS are not aware of their serology status. They put themselves and other people at risk. This might influence negatively their sexual behavior. HIV testing should be done in all high HIV-prevalence clinical settings, to those at risk for HIV in low HIV-prevalence clinical settings, and recommends routine testing of all pregnant women and of any infant whose mother was not screened (CDC, 2003). Testing is mandatory in certain cases as blood and organ donation for example. This

indicator aims to give an idea of the reach of HIV testing services in the general population and of the percentage of people who now know their HIV status. It can also be constructed for specific sub-populations with high-risk behavior among whom counseling and testing services are being promoted (DHS).

b) HIV status

This variable is our dependant variable used to analyze all of the independents variables. It refers to the HIV prevalence among general population studied. Community-based surveys are used for HIV prevalence among young people in the general population. People are classified whether they are HIV positive (have the diseases) or negative (do not have the diseases); People who were said to have an "undetermined test" were exclude form analysis.

Lifestyle

In the purpose of our study, we evaluated the respondents' sexual behavior as a risk factor for getting HIV/AIDS. We look at whether they have paid for sex, have more than one union, abstained from sex and always using condoms during sex.

a) Paid for sex

This indicator measures the prevalence of commercial sex in the preceding year which, although not a good estimate of the lifetime prevalence of this behavior, is more able to detect changes in such behavior over time (DHS). In places where sexual sex workers are important sources of new HIV infections, it is a priority to reduce the number of young people having sex with them (DHS). In the context of the HIV/AIDS epidemic, sex workers are of interest because they have a high turnover of partners and are therefore at high risk of being exposed to infection, becoming infected and passing on the infection to others. (DHS).

b) More than one union

This indicator measures the proportion of young people that have been exposed to more than one partner in the last year. This indicator does not distinguish between marital and non-marital partners. It tracks all multiple partnerships, regardless of their relative levels of risk. This indicator gives a picture of levels of higher-risk sex. Prevention messages for young people tend to begin with

abstinence and often focus also on mutual monogamy. But because sexual relationships among young people are frequently unstable, relationships that were intended to be mutually monogamous may break up and be replaced by other relationships in which similar intentions prevail (DHS).

c) Abstain from sex

This indicator provides information on important aspects of sexual behavior. It describes the proportion of young people surveyed who never had sex, thus the prevalence of virginity among young people. This indicator describes the extent to which abstinence is practiced among youth (DHS). Not having sex remain one of the best methods to avoid HIV (EMMUS IV).

d) Always using condoms during sex

The indicator provides a general indication of the prevalence of condom usage in the last 12 months. For each partner listed in the last 12 months, respondents are asked whether they used a condom the last time they had sex. The percent of respondents who say they used a condom the last time they had sex are those who have had sex in the last 12 months. Using condoms remain one of the best prevention methods among people who are having sexual intercourse (CDC, 2010). This indicator is a useful tool for evaluating sexual education program effectiveness (DHS).

Terms definition

- Independent variable: this variable represents the value being manipulated or changed. In this study it refers to all the variables (except HIV status).
- Dependent variable: the observed result of the independent variable being manipulated. In this study it refers to HIV status.
- AIDS: Acquired immune deficiency syndrome or acquired immunodeficiency syndrome (AIDS) is a disease of the human immune system caused by the human immunodeficiency virus (HIV).
- HIV: Human Immunodeficiency Virus.
- HIV status: The state of being tested HIV negative (the virus is not present in the blood) or HIV positive (the virus present in the blood).
- HIV positive: HIV virus is present in the blood. The subject is infected.

- HIV negative: HIV virus is not present in the blood. The subject is not infected.
- Homosexual: same sex individuals having sexual activities.
- Prostitute: Individual (men or woman) who's having sexual intercourse for money or advantages.
- Sexual relationship: Individuals engaged in sexual intercourses.

Statistical analysis

For this study, we use SPSS (PAWS Statistics 18). SPSS is a computer program used for statistical analysis. The prevalence of HIV/AIDS via HIV status is determined across socio-demographic variables, respondents' knowledge and misconception regarding HIV/AIDS, STDs awareness and lifestyle. The distribution of categorical variables across levels of dependent variable is analyzed using chi-square tests.

All Analysis is stratified across HIV status. Differences in continuous variables values by levels of HIV/AIDS status are determined using one-way analysis of variance. Chi-square analyses are performed in order to evaluate the association between selected independent and dependent variables.

Univariate and multivariate logistic regression analysis are used to determine the association between selected life style factors and HIV/AIDS. Odds ratio from the logistic regression analyses is used to estimate the risks of HIV/AIDS that are associated with life style factors. In all analysis, $P < .05$ is used to determine statistical significance among variables. Analysis with $p < .01$ is said to be highly significant. Stepwise logistic regression method is used to determinate the variables mostly associated with HIV status.

CHAPTER IV

RESULTS

Descriptive Results

Demographic Characteristics

Table 1 shows the frequency distribution in percent of demographic variables of eligible Haitian men and women stratified by HIV status (HIV+ vs HIV-).

Table1. Basic Demographics Characteristics of Eligible HIV+ and HIV- Subjects.

Variables	HIV negative (%)	HIV positive (%)	P value	Chi square
Age				
15-19	1.4	3.4		
20-24	6.7	7.8		
25-29	12.7	10.3		
30-34	16.1	19	.004*	19.271
35-39	20.4	17.7		
40-44	21.3	14.2		
45-49	21.3	27.6		
Residence				
Urban	31.6	28.4	.303	1.060
Rural	68.4	71.6		
Education				
Non educated	52	56	.218	1.515
Educated	48	44		
Marital Status				
Non married	30.9	29.3	.606	.266
Married	69.1	70.7		
Economic status				
Poor	53.1	58.2		
Working class	19.8	16.4	.265	2.656
Upper class	27.1	25.4		
Gender				
Male	58.1	56.5	.611	.259
Female	41.9	43.5		

*Source: Demographic Health Survey, 2006. Comparison of demographics and HIV status among Haitians by Chi-square test. *: high significant association at p < .01.*

As shown, age was the only variable for which high statistical significance between HIV+ and HVI- subjects is observed. This difference is highly notable with P value = 0.004 (< 0.01). For the first two age groups, 15-19 and 20-24 years, among individuals tested, a higher percentage is observed for patients tested HIV+. For the other age groups between 25 and 49 years, the percentage of negative serology for HIV is greater than the percent that is tested HIV+.

There was no difference for these individuals being infected with HIV, whether their place of residence, education level, marital status, economic status or gender.

We observe that the percentage of HIV negative serology is higher than the percentage of positive serology for individual living in urban areas. More HIV positive serology cases are seen for those who live in rural areas. However, this is no significant difference according to our statistical analysis between the two groups.

More non educated individuals are having positive serology for HIV. Considering the percent of those who are HIV-, there is a slightly difference: 52% are HIV negative and 56% are HIV positive. Again, no statistical difference is noted.

People who are married seem to show a higher percentage of HIV positive tests than those who are not married. Eligible individuals noted as “poor” have the higher percentage of positive test than the other categories. Women, comparing to men, present a high percentage of HIV+ cases than HIV- cases. Again, this observation is not statistically different: the P value for this analysis is 0.611, which is superior to 0.05.

HIV knowledge and perception

Table 2 shows 12 variables referring to methods that the respondents said to be ways that they can protect themselves from getting HIV. In this table, Chi- square statistic was significant for individuals who mention avoiding prostitutes to not getting HIV. This difference is highly significant with P value equal to 0.003 (< 0.01). However, respondents who think avoiding prostitutes as safe sex method represent 7% percent of HIV+ and 3.3% of HIV negative. Chi square statistic is equal to 8.590.

Table 2. Frequency distribution of HIV status by selected variables and Chi-square analysis.

Methods to avoid HIV/AIDS	HIV negative %	HIV positive (%)	P value	Chi square
Abstain from sex	25.5	25.6	.990	.000
Use condom during sex	41.8	40.5	.699	.150
Only one sex partner	44.3	41.9	.470	.521
Limited number of sex partner	10.7	12.1	.530	.394
Avoid prostitutes	3.3	7	**.003***	8.590
Avoid partner with multiples partners	4.5	4.7	.934	.007
Avoid sex with homosexuals	.5	.5	.998	.000
Avoid sex with intravenous users	.7	.0	.226	1.467
Avoid blood transfusion	15.9	17.2	.600	.275
Avoid injection	9	7.4	.417	.659
No ways to avoid HIV	5.7	7.3	.286	1.140
Can get AIDS by witchcraft or supernatural means	15.7	24.1	**.032**[1]	4.595

*Source: Demographic Health Survey, 2006. Knowledge of HIV prevention methods and perception across HIV status by Chi-square analysis. *: high significant association at p < .01. X^1: significant association at p<.05.*

Respondents who testify that they can get AIDS by witchcraft show a p=.032 (<.05). This value confirms a significant difference between this variable and HIV status.

For the other variables reflecting HIV knowledge, there were no significant P value results. There was no difference for these individuals being infected with HIV, whether the safe method they

have mentioned. However, we were able to observe, for those who think about “using condom” and “have only one sex partner”, a lower percentage of HIV+ cases among them.

STD Knowledge

Table 3 presents 3 independents variables that refer to people you heard about STDs, those who ever heard about AIDS and those who ever been tested for HIV.

Statistical analysis for the first two variables ("heard about sexual transmitted diseases" and "ever heard of AIDS") is not significant. Whether the respondents ever heard about STD and AIDS doesn't make any difference in their HIV serology. The variable "ever been tested for HIV" was significant, showing a difference with HIV status. This variable with p=.019 (<.05) is significant and does show a difference for HIV status.

Table3. Frequency distribution of STD Knowledge and HIV testing across HIV status variable and Chi-square analysis.

Knowledge / HIV test	HIV negative %	HIV positive (%)	P value	Chi square
Heard sexual transmit. disease	99.8	100	.811	.057
Ever heard of AIDS	99.8	100	.811	.057
Ever been tested for HIV	18.2	12.2	**.019***	5.473

Source: Demographic Health Survey,2006. Statistical analysis for STD knowledge and HIV test across HIV status. Significant association at p<.05.*

Lifestyle

This table contains four variables that indicate sexual behavior of the respondents. People who abstain from having sexual intercourse are less at risk for HIV than those are having sexual intercourse. But this percentage difference is not statistically significant: P value for this variable is not < .01. For all other variable, no difference was observed while performed statistical analysis, whether they are HIV- or HIV+.

Table 4. Frequency distribution of HIV status across lifestyle variables and chi-square analysis.

Variables	HIV negative %	HIV positive (%)	P value	Chi square
Paid for sex last 12 months	2.6	3	.831	.046
More than 1 union	37	38.4	.125	.724
Not having sex at all	90.8	83.3	.164	1.937
Always using condoms during sex	94.5	96.6	.625	.239

Source: Demographic Health Survey, 2006. Statistical analysis for lifestyle indicators across HIV status.

Univariate Logistic Regression Analysis Results

Demography

For this study, univariate analysis was computed between independent variables and the dependent variable, HIV status. In this section, we're reporting univariate logistic regression analysis results.

Table 5. Association between HIV status and selected demographic variables.

VARIABLE	HIV STATUS		
Age	OR	P value	95% CI
15-19	1.00	Reference	
20-24	**.334[1]**	**.009***	.147- .757
25-29	.480	.063	.222- 1.041
30-34	**.355[1]**	**.009***	.163- .771
35-39	**.273[1]**	**.001***	.124- .601
40-49	.529	.098	.249- 1.124
Residence			
Urban	1.00	Reference	
Rural	1.163	.304	.872- 1.552
Education			
Non educated	1.00	Reference	
Educated	.848	.219	.653- 1.103
Marital status			
Not married	1.00	Reference	
Married	1.079	.606	.808- 1.443
Economic status			
Poor	1.00	Reference	
Working class	.756	.132	.526-1.088
Upper class	.856	.326	.629- 1.167
Gender			
Male	1.00	Reference	
Female	1.070	.611	.823- 1.392

*Data source: Demographic Health Survey, 2006. Odds ratio (OR) and confidence interval (95% CI) computed from univariate logistic regression analysis. * Significant association at p <.05. X^1: OR<1=negative association.*

Table 5 shows the results for all of demographics variables across HIV status that was computed in terms of odds ratio. Only three of our six categories for the independent variable age were significant. Group age 20-24, 30-34 and 35-39 years were associated with HIV status compared to our reference age category: 15-19 years. For these three groups P value were < at .05, our reference significance level. However, this association was negative while considering OR < 1 for these groups.

HIV knowledge and misconception

Among twelve variables considered for HIV knowledge and perception indicators in this study, only two of them were significant after computing odd ratio. For respondents who mentioned avoiding prostitutes as a way to protect themselves from getting HIV, P= .004 (<.05) and OR= 2.187. These variables were positively associated with HIV status compared to those who refer to "avoid prostitutes" as a safe sex method.

The group testifying "can get HIV by witchcraft" is positively associated with HIV status, referring to those who do not think so. Effectively, this variable has an odd ratio of 1.713 (>1) and a p value of .034 (<.05).

Table 6. Association between HIV status across HIV knowledge and misconception variables.

VARIABLES	HIV STATUS		
	OR	P value	95% CI
Abstain from sex			
No	1.00	Reference	
Yes	1.002	.990	.735- 1.366
Use condom			
No	1.00	Reference	
Yes	.947	.699	.719- 1.247
Only one sex partner			
No (r)	1.00	Reference	
Yes	.904	.470	.687- 1.189
Limited number of partner			
No (r)	1.00	Reference	
Yes	1.142	.530	.754- 1.730
Avoid prostitutes			
No	1.00	Reference	
Yes	**2.187**[1]	**.004 ***	1.279- 3.741
Avoid partners with multiples partners			
No	1.00	Reference	
Yes	1.027	.934	.541- 1.952
Avoid sex with homosexuals			
No	1.00	Reference	
Yes	.998	.998	.137- 7.278
Avoid sex with intravenous users			
No	1.00	Reference	
Yes	.000	.997	.000- .
Avoid blood transfusion			
No	1.00	Reference	
Yes	1.101	.600	.769- 1.575
Avoid injection			
No	1.00	Reference	
Yes	.809	.418	.484- 1.352
Don't know ways to avoid HIV			
No	1.00	Reference	
Yes	1.313	.287	.795- 2.166
Can get HIV by witchcraft			
No	1.00	Reference	
Yes	**1.713**[1]	**.034 ***	1.041- 2.817

*Data source: Demographic Health Survey, 2006. Odds ratio (OR) and confidence interval (95% CI) computed from univariate logistic regression analysis. * Significant association at p <.05. X^1: OR>1=positive association.*

STD awareness and HIV test

In table 7, we present odd ratio values that were computed for HIV status and HIV test. Only eligible respondent for this study who ever been tested for HIV were negatively associated with HIV status compared to those who haven't been tested previously. Effectively p value for this independent variable is equal to .020, which is inferior to .020. The odd ratio value for this category is .624 (< 1) which determines a negative association with HIV status.

Table 7. Association between HIV status and STD awareness variables.

VARIABLES	HIV STATUS		
	OR	P value	95% CI
Heard about STDs			
No	1.00	Reference	
Yes	3.07	.999	.000- .
Heard about HIV			
No	1.00	Reference	
Yes	3.071	.999	.000- .
Ever been tested for HIV			
No	1.00	Reference	
Yes	**.624**[1]	**.020 ***	.419- .930

*Data source: Demographic Health Survey, 2006. Odds ratio (OR) and confidence interval (95% CI) computed from univariate logistic regression analysis. * Significant association at p <.05. X^1: OR<1=negative association.*

Lifestyle

Table 8 shows logistic regression analysis for lifestyle variables across HIV status. None of the variables was associated with HIV status compared to the reference group.

Table 8. Univariate logistic regression analysis for HIV status and lifestyle variables.

VARIABLES	HIV STATUS		
	OR	P value	95% CI
Paid for sex using condom			
No	1.00	Reference	
Yes	1.168	.831	.282- 4.838
More than one union			
No	1.00	Reference	
Yes	.724	1.062	.762- 1.479
Not having sex at all			
No	1.00	Reference	
Yes	.507	.172	.191- 1.344
Always using condoms			
No	1.00	Reference	
Yes	1.641	.628	.221- 12.209

Data source: Demographic Health Survey, 2006. Odds ratio (OR) and confidence interval (95% CI) computed from univariate logistic regression analysis.

Multivariate Logistic Regressions Analysis Results

For this study, we determine multivariate analysis between independent variables and the dependent variable, HIV status. The variable represented the respondents who have paid for intercourse using condom was excluded from our analysis. Due to more than 2 missing values reported for this variable, multiple logistic regressions were not able to analyze.

Variables referring to people who "heard about STDs", who "Heard from AIDS" and those who "don't know ways to protect themselves against HIV" were excluded from this analysis. They are constant for the selected cases. Since the constant terms were specified, these variables are excluded from the analysis.

Table 9 (following page) shows results for all of independents variables (we excluded those mentioned above). These variables were computed in terms of odd ratio across HIV status. Only three of these variables were significant.

Regarding methods that can protect the respondents from getting HIV, all the variables and increasing respondents who mentioned "having one sex partner" is positively associated with odd ratio of HIV. Effectively, for this category, P value was < at .05 (.029), and OR was > 1 (3.886).

Referring to demographic, lifestyle and knowledge indicators, respondents who infer "having a limited number of partners" as a way they can be protected against HIV, is highly significant. HIV status among the other variables is associated with a decrease of those who think "having a limited number of partners" as a safe sex method. For this category, P value was equal to zero and OR less than 1 (.997).

Furthermore, as another way to avoid HIV, some of the participants mentioned avoiding sex with prostitutes as a safe method. For this variable, analysis was highly significant with P = 0. Demographic, lifestyle and knowledge indicators and the decrease of number of those who mentioned "avoid sex with prostitute" is highly associated with HIV status.

Table 9. Association between HIV status and selected independent variables.

VARIABLE	HIV STATUS		
Age	OR	P value	95% CI
15-19	1.00	Reference	
20-24	1.996	.998	.000- .
25-29	8860828.177	.998	.000-.
30-34	9917241.684	.998	.000-.
35-39	5263296.190	.998	.000-.
40-49	1.299	.998	.000-.
Residence			
Urban	1.00	Reference	
Rural	.605	.508	.137- 2.673
Education			
Non educated	1.00	Reference	
Educated	.366	.142	.096- 1.397
Marital status			
Not married	1.00	Reference	
Married	.648	.460	.205-2.047
Economic status			
Poor	1.00	Reference	
Working class	.526	.520	.074-3.736
Upper class	1.969	.430	.366- 10.590
Gender			
Male	1.00	Reference	
Female	1.610	.458	.457-5.669
Ever been tested for HIV			
No	1.00	Reference	
Yes	.569	.487	.116- 2.790
Abstain from sex			
No	1.00	Reference	
Yes	.536	.448	.107- 2.790
Use condom			
No	1.00	Reference	
Yes	.507	.294	.143- 1.803
Only one sex partner			
No (r)	1.00	Reference	
Yes	3.886[2]	**.029***	1.151- 13.127
Limited number of partner			
No (r)	1.00	Reference	
Yes	.997[1]	**.000***	.000- .
Avoid prostitutes			
No	1.00	Reference	
Yes	.998[1]	**.000***	.000- .
Avoid p.with multiples partners			
No	1.00	Reference	
Yes	3.577	.274	.365- 35.030
Avoid sex with homosexuals			
No	1.00	Reference	
Yes	.000	1.000	.000- .
Avoid sex with intravenous users			
No	1.00	Reference	
Yes	.157	1.000	.000- .
Avoid blood transfusion			
No	1.00	Reference	
Yes	1.149	.858	.250- 5.276
Avoid injection			
No	1.00	Reference	
Yes	3.343	.110	.761- 14.680
Can get HIV by witchcraft			
No	1.00	Reference	
Yes	2.142	.242	.599- 7.661
More than one union			
No	1.00	Reference	
Yes	1.469	.498	.083-4.469
Not having sex at all			
No	1.00	Reference	
Yes	.379	.217	.081- 1.765
Always using condoms			
No	1.00	Reference	
Yes	1.064	.959	.100- 11.335

*Data source: Demographic Health Survey, 2006. Odds ratio (OR) and confidence interval (95% CI) computed from multivariate logistic regression analysis. * Significant association at p <.05. X^1: OR<1=negative association. X^2: OR>1=positive association.*

From our previous univariate analysis, 4 variables (“age”, “avoid prostitutes”, “ever been tested for HIV” and “can get AIDS by witchcraft”) were significant. Table 10 shows multivariate analysis for these four variables. Between these variables, only “age” and “can get AIDS by witchcraft” are seen to be the most that influenced HIV status.

Table 10. Multivariate Analysis of Significant Variables from Univariate Analysis.

VARIABLE	HIV STATUS		
Age	OR	P value	95% CI
15-19	1.00	Reference	
20-24	.150[1]	**.001***	.047- .475
25-29	.243[1]	**.008***	.085- .696
30-34	.207[1]	**.004***	.072- .597
35-39	.203[1]	**.003***	.072- .575
40-49	.278[1]	**.014***	.100- .775
Avoid prostitutes			
No	1.00	Reference	
Yes	1.326	.638	.409- 4.304
Ever been tested for HIV			
No	1.00	Reference	
Yes	.503	.053	.250- 1.010
Can get AIDS by witchcraft			
No	1.00	Reference	
Yes	1.919[2]	**.011***	1.159- 3.180

*Data source: Demographic Health Survey, 2006. Odds ratio (OR) and confidence interval (95% CI) computed from multivariate logistic regression analysis. * Significant association at p <.05 OR[1]:<1=negative association. OR[2]:>1=positive association.*

Table 11 shows Step Wise analysis that has been done for the 4 significant variables from univariate analysis. Among them 2 variables, “age” and “can get AIDS by witchcraft” were showed to be the most significant variables that affect HIV status.

Table 11. Step Wise Analysis of Significant Variables from Univariate Analysis

VARIABLE	HIV STATUS		
Age	OR	P value	95% CI
15-19	1.00	Reference	
20-24	.154[1]	**.001***	.049- .488
25-29	.245[1]	**.008***	.086- .698
30-34	.208[1]	**.004***	.072- .599
35-39	.206[1]	**.003***	.073- .581
40-49	.279[1]	**.014***	.101- .775
Can get AIDS by witchcraft			
No	1.00	Reference	
Yes	1.884[2]	**.014***	1.138- 3.118

*Data source: Demographic Health Survey, 2006. Odds ratio (OR) and confidence interval (95% CI) computed from Step Wise logistic regression analysis. * Significant association at p <.05. OR[1]:<1=negative association. OR[2]:>1=positive association.*

CHAPTER V

DISCUSSION AND RECOMMENDATIONS

Demographic variables

The results show HIV status varies depending on age. Effectively, with P =.004, young people are more at risk for contracting HIV. We understand that because youth represents the group which is more likely to be involved in sexual activity and being sexually active. Also, youth is more likely have sexual adventure and more vulnerable for STD. The lake of maturity, sexual education and awareness represent big issues for youth. In Haiti, socio-economic problems and inequality to health care access are other factors that contribute to the infection among young individuals.

There is no significant difference between people living in urban and rural areas regarding their risk of being infected with HIV. Previous studies show that before 1990s, people in urban areas or those who migrated from rural areas to port-au-Prince, the capital, were more susceptible to contact HIV (Castro, 2008; Farmer, 1999). Rural areas are not socioeconomically advanced. The lack of agriculture contributes to resident's migration to urban areas. These individuals, especially women, are usually abused, exploited or rape, because of their lack of education and productivity.

Being educated or not doesn't make a difference for HIV infection. Educated individuals for this study was considered as people who have completed primary, high school or a higher level of education. The percentage of HIV infection for both groups is almost the same. Our thoughts are being educated doesn't mean having appropriate knowledge about HIV/AIDS transmission. However, previous studies showed that HIV was mostly concentrated among vulnerable groups as people who do not have access to a certain level of socioeconomic advantages.

Being married or not, according to our analysis, was not significant for the study. The percentage of HIV positive test is almost the same for the two groups. It is important to mention that many couples in Haiti are living together under common law marriage, like people who were married. Married individuals may also have extra conjugal relationship, considered as "placage" or common law marriage. The status as being married or common law marriage is almost the same.

Socio-economic status has been considered as a big issue in HIV/AIDS epidemiology. Today the infection is seen among the general population regardless economic status. Socio-economic status

is an important predictor of sickness and health in Haiti. Researchers prove that in the 1980s, poverty contributed largely to HIV infection among Haitians. Today HIV is spread among the general population (Gaillard et al., 2006). Our results show the percentage of HIV infection among the poor, working or upper class is not statistically significant. This can be understood by a lack of general knowledge and awareness of HIV transmission and safer sex practice.

The same observation is reported for gender variable: no difference among male and female regarding HIV infection. Around 1980s, Haitians men were the group most affected with HIV than women according to many previous studies. Nowdays, men and women are equally infected. This can be explained by the poor situation of women in Haiti. Their limited access to education and employment make women dependent on male partners, or force them to accept situations that put them at risk for contracting sexual infectious diseases especially HIV/AIDS. Their lack of capacity to take decision and discuss about safer sex with their partners are also factors that contribute to the transmission of the disease among them.

For all demographic variables, only age is seen as being significant for HIV infection. For the other variables, there were no significant P value results. There was no difference for these individuals being infected with HIV, whether their place of residence, education level, marital status, economic status or gender. These findings are similar with previous studies that have been done in the past. While safer sex practice and health behavior is reported, studies indicate that gaps exist between HIV knowledge and practices regardless of gender, place of residence, education level and socioeconomic status (Cichochi, 2010; WHO,2003; UNAIDS/WHO,2008; Gaillard et al., 2006).

HIV knowledge and misconception

For multivariate analysis, for people who testify avoiding prostitutes as a way to not contracting HIV, we observed a negative association with HIV status. These individuals are less likely to have a positive test result for HIV. Those who think having a “limited number of partners” are negatively significant. Effectively less individuals are having limited partners, more they are at risk for STD especially HIV. Research conducted in Haiti had demonstrated our findings. Those who think having a “limited number of partners” are negatively significant. Effectively less individuals are

having limited partners, they are more at risk for STD especially HIV. Research conducted in Haiti had demonstrated our findings. Knowledge variable referring to “having one sex partner”, shows a positive association with the disease.

For Odd ratio analysis, “avoid prostitutes” was observed as being positively associated with HIV status, which means people who think avoid prostitutes is a safe sexual behavior are at greater risk for contracting HIV. These results contradict our expectation. We are considering individuals who think that having sexual intercourse with prostitutes shouldn’t be at risk for HIV. But, we understand that if is a statement that is not necessary implicated a chosen behavior. A portion of Haitian population believes AIDS can be prevented, but are unable to describe methods to prevent the infection (Chicochi, 2010).

Many of those who know how to protect themselves are not really practicing these methods. The reason might be all the misconceptions related to the disease cause and transmission. These misconceptions about HIV are more common among people living in rural areas of Haiti. Also, prostitution in Haiti has diverse forms. Many relationships between men and women are made under a contract or a life style that is previously chosen and accepted by the couple. One partner may have other partners, especially women, as a way to survive and respond to economic issues that they are facing.

Our results were also significant for respondents who testify that they can get AIDS by witchcraft. Many Haitians, especially those living in rural areas believe that HIV can be transmitted by sorcery. Therefore they will not take appropriate measures to protect themselves from the diseases, as safer sex behavior and getting tested. Many misconceptions about HIV/AIDS contribute largely to increase the risk of transmission of HIV.

For the other variables reflecting HIV knowledge and perception, there were no significant results regarding HIV status. There was no difference among the respondents being infected with HIV, whether the other safe intercourse method they have mentioned.

STD awareness and HIV test

Statistical analysis for the variables “heard about sexual transmitted diseases” and “ever heard of AIDS” is not significant. Whether the respondents ever heard about STD and AIDS doesn’t make

any difference in their HIV serology. HIV knowledge among Haitians not really influences their sexual behavior.

Only eligible respondents who "ever been tested for HIV" were negatively associated with HIV status compared to those who haven't been tested previously. The risk for people tested for HIV is less than the risk than those who are not tested. Haitians who have been tested and know their status will be more willing to take decisions. Especially if the test is negative, they will be more sensitive to safer sex practices in order to keep their negative HIV status.

Lifestyle

Variables examined under lifestyle were not significant for HIV status. However, we were able to observe a slightly difference: People who paid for sex and have than more than one union have a greater percentage of HIV positive test results. Previous studies, effectively these behaviors are factors that put an individual at risk for contracting HIV. However, for our study, these results were not significant.

People who abstain from having sexual intercourse present a higher percentage of non HIV cases than HIV positive cases. But this percentage difference is not statistically significant.
The variables referring to people who are "not having sexual intercourse" and "always using condoms" are not significant for HIV status. These findings make us thinking about other ways that HIV might be transmitted as oral sex. It is important to mention that many Haitians don't have appropriate sexual knowledge. "Having sex" may be referring only to vaginal intercourse. Anal intercourse among virgin girls is common in many areas in Haiti, and it is not considering as "sex".

Among the significant variables "age", "avoid prostitutes", "ever been tested for HIV" and "can get AIDS by witchcraft", our analysis show only the variables "age" and "can get AIDS by witchcraft" are the two that mostly influenced HIV status.

Studies conducted in Haiti shows Haitian youth ages 15-24 are at the greatest risk of contracting HIV/AIDS (EMMUS-IV, 2005-2006). Half of all teens age 15-19 still report they have never used condoms with their regular partners. It has been suggested that the spread of HIV in Haiti is related, at some point, to local conceptions of illness and health. More than half of female EMMUS

III respondents and 43% of male respondents stated either that HIV/AIDS could be transmitted by sorcery or that they did not know if this kind of transmission was possible. (Cayemittes et al., 2001). More than half (56%) of female EMMUS III respondents who had heard of HIV/AIDS said that they had not changed their sexual behavior since learning of the virus existence. (Cayemittes et al., 2001).

This proportion was particularly high among young women who considered themselves at moderate or high risk of contracting HIV, women in rural areas, and women resident in the Arbonite, the Southeast, the North, and the South. Of female respondents who reported having changed their behavior since learning of HIV/AIDS, only 3% of the women surveyed reported using condoms after learning of HIV/AIDS. (Cayemittes et al., 2001).

One-third of young male respondents who had heard of HIV/AIDS reported that they had not changed their behavior after learning of the virus. (Cayemittes et al., 2001). A study conducted in northern Haiti in 1998 found that self-efficacy to communicate about HIV/AIDS, refuse unsafe situations, or use a condom were strong predictors of preventive sexual behavior among teenagers. Young people with lower perceptions of traditional gender norms were likely to have fewer lifetime partners than those with higher perceptions. The authors suggest that HIV-prevention programs should focus upon communication efficacy, address gender roles, and target young people early, before sexual habits are formed (Holschneider, 2003).

Many people in Haiti still believe that AIDS is a punishment from God or the result of witchcraft. These beliefs keep many people from adopting safe behaviors against HIV.

Conclusion

HIV/AIDS is one of the health issues that have impacted Haiti more severely than any other country in Latin America or the Caribbean. It is estimated that 85% of HIV infected adults in the Caribbean live in Haiti or the Dominican Republic (Putnam et al., 2002). Primary factors in the development of the HIV epidemic in Haiti include: socio-political instability, poverty, limited access to healthcare, health information access, stigmatization of people living with AIDS and their families, social norms promoting multiple sexual partnerships, poorly control and treatment of STIs, HIV beliefs and lack of knowledge. The fact that "Haiti has been isolated from international participation in AIDS forum and dialogue" for a certain period, has decreased efforts to combat the epidemic (Putnam et al., 2001).

Efforts need to be improved in HIV/AIDS prevention from the government and Haitian society. More information regarding HIV/AIDS epidemic and issues need to be available to the communities. Surveillance systems should be improved. The epidemic of HIV in Haiti has a significant socio-cultural component which should be addressed as soon as possible. Many public health care centers have a lack of available HIV/AIDS programming information, especially in rural areas. For purposes of evaluation and expansion, documenting the work of the centers may improve the response to HIV/AIDS in many areas.

Today HIV is spread among the general population. Young Haitians are the most affected by the epidemic. Worst is the situation when this group lack of knowledge and education regarding the disease. Our study shows that misconceptions about HIV/AIDS are the major factors that put individuals at risk for the disease. Despite education and preventive programs about HIV, many Haitians still view HIV as an unnatural disease. Those who don't think so and who know about how to be protected do not take the initiative to adopt safer sex behavior. This lack of awareness should be address by the health authorities in Haiti and by our international partners. Such efforts can be apprehend the problem caused by Haitians misconceptions and demystify the disease, in order to allow individuals to adopt effective behavior against HIV transmission. Further research and

investigations in Haiti is recommended in order to identify ways to decrease HIV transmission among youth.

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