

The Caribbean's HIV/AIDS Epidemic: Theory, Research and Interventions

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Abstract

The Caribbean is the second leading region worldwide in HIV/AIDS infections behind Sub-Saharan Africa, and AIDS is the leading cause of death among young Caribbean adults. This paper addresses the research findings on the spread of the HIV virus in the adult population of English-speaking Caribbean countries (ESC). There is an examination of the primary drivers of the virus such as risky sexual behaviors, economic deprivation, illiteracy, stigmatization, inadequate HIV/AIDS health care facilities, among other factors. A related discussion is on the feminization of the HIV/AIDS epidemic. Discrimination experienced by Caribbean persons infected and affected by HIV/AIDS is addressed. Theoretical perspectives on HIV/AIDS and research findings on HIV/AIDS care and antiretroviral treatment are discussed. The paper concludes with recommendations for the prevention and control of the epidemic in the Caribbean.

Keywords: Caribbean nations; HIV/AIDS; Feminization; Prevention; Intervention

While many persons in small English-speaking Caribbean countries (ESC) have not been tested for HIV, it is estimated that in excess of 250,000 persons are living with HIV/AIDS. UNAIDS [1] estimated the HIV prevalence among Caribbean adults at about 1% (0.9-1.1%). In the Caribbean, the primary mode of HIV transmission is heterosexual contact (79.3%), followed by men who have sex with other men (MSM) accounting for 12.4%, and the remaining reported cases by hemophilia/coagulation (.1%), perinatal infection (7%), adult intravenous drug users "IDU" (.7%), and (.4%) blood transfusion [2].

The English-speaking Caribbean countries (ESC) are comprised of fifteen (15) relatively small island states and the two continental countries of Belize and Guyana [3]. This review focuses on the HIV/AIDS epidemic in selected ESC countries, including the two largest countries Jamaica and Trinidad and Tobago. There is also emphasis on HIV/AIDS in the Bahamas, Barbados, and Guyana.

The Intersectionality Framework for Addressing HIV/AIDS in the Caribbean Region

There appears to be a paucity of theoretical frameworks in-

forming research investigations on HIV/AIDS in the ESC region. This theoretical gap disallows for a more comprehensive understanding of this public health crisis as well as a holistic approach to treatment and prevention. This review relies on the intersectionality conceptual framework in the effort to elucidate the macro-level drivers of HIV/AIDS in the region, including poverty and income inequality, gender-power imbalances, sociocultural norms, low educational status and governmental policies (Figure 1). The conceptual model, as shown in the figure, also highlights the micro-level drivers, including risky sexual behaviors, internalized and institutionalized stigma, internalized homophobia, and illicit drug use.

Intersectionality theorizing assumes dynamic interplays between and among macro-level and micro-level variables. For instance, about seventy percent (70%) of HIV infections in ESC countries are in the age group 15 to 44 years old [4]. In Jamaica, for example, with a population of approximately 2.7 million, it is estimated that 1.5-1.7 percent of the adult population is HIV-positive. These infections are concentrated among impoverished and socially disenfranchised citizens, particularly among women and girls. The percentage of Caribbean people living below the poverty line ranges from 14-39 percent, and Caribbean societies are defined by economically challenged female-headed households [5].

A corollary observation is that the holistic and intersection-

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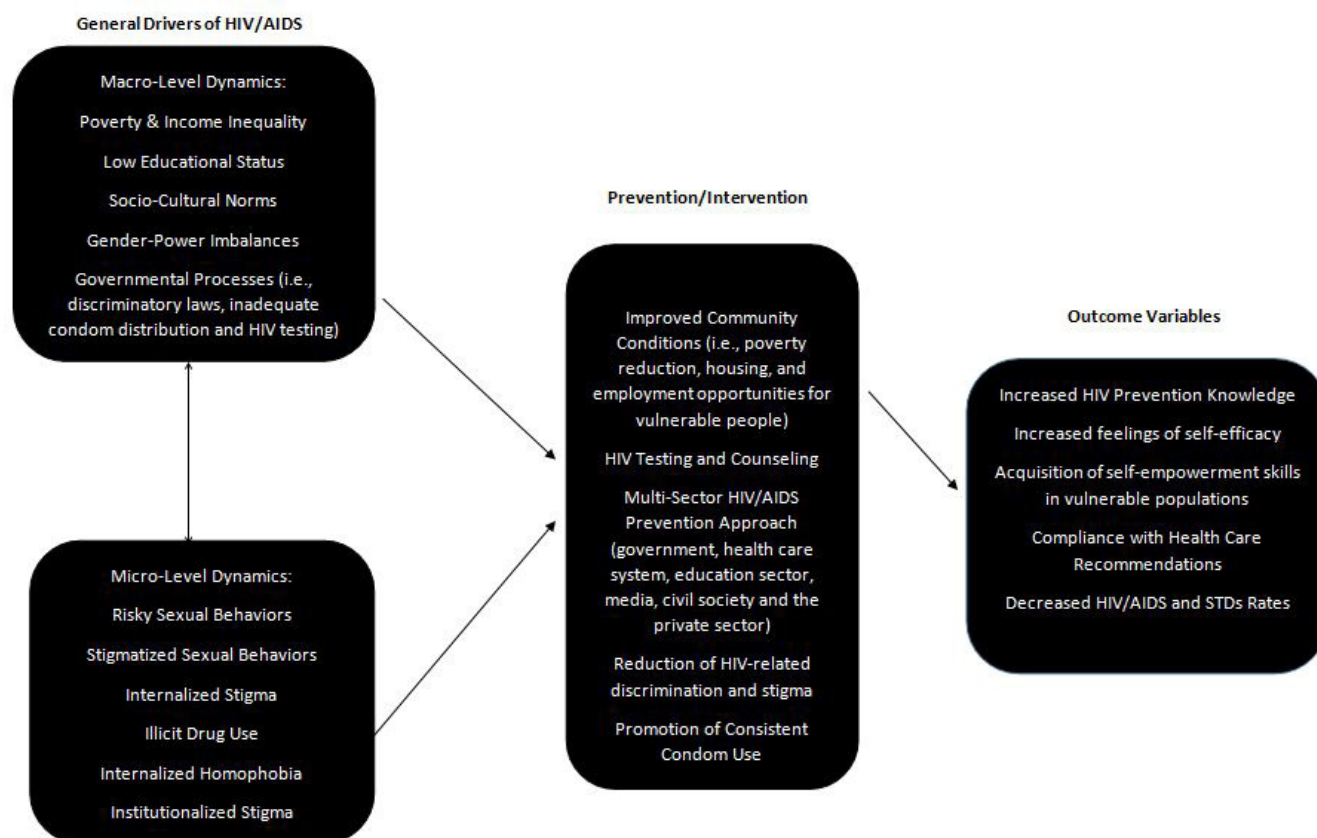


Figure 1: Intersectionality Conceptual Framework on Drivers of HIV/AIDS, Prevention Strategies, and Outcome Variables in the Caribbean Region

ality approach emphasizes the interrogation of neglected and marginalized social groups [6]. As Cole wrote: “Intersectionality makes plain that gender, race, class, and sexuality simultaneously affect the perceptions, experiences, and opportunities of everyone living in a society stratified along these dimensions...to focus on a single dimension in the service of parsimony is a kind of false economy” (p. 179). Hence, this paper addresses the intersections of the described macro-level and micro-level variables and the encountered difficulties of Caribbean persons impacted by HIV/AIDS. While there is a focus on the feminization of the epidemic, there is also emphasis on the health and psychosocial concerns of socially marginalized populations, including commercial sex workers and lesbian, gay, bisexual, and transgender (LGBT) groups.

In the Caribbean, in 2012, an estimated 11,000 individuals died of AIDS [7]. HIV/AIDS and STDs contributed to the second leading cause of death among Jamaican women and men aged 30-34 [8], while in Guyana, with a population of about 767,000, and with more than 56% of its population in the age group 15-49 years, HIV/AIDS is the leading cause of death for 20-49 year olds [9]. Moreover, in 2012, a significant number of Caribbean residents were estimated to be living with HIV in the Bahamas, Jamaica, and in Trinidad and Tobago. Women are disproportionately represented among those living with the virus [10]. Guided by the intersectional analytic framework, the paper addresses prevention interventions for Caribbean persons living with HIV/AIDS, and for decreasing the current HIV prevalence rates among diverse groups of English-speaking Caribbean persons [11,12].

Women and AIDS

HIV and poverty tend to reinforce each other throughout these small Caribbean countries. Economically marginalized and vulnerable Caribbean women are more likely to be infected with the virus than their male counterparts. An estimated 53% of individuals with HIV were women living in the Caribbean [13]. Caribbean women 15 to 24 years old have an estimated HIV prevalence rate of 1.8 to 3.2 percent, while for males in that age group it is lower at 1.4 to 2.4 percent [14]. In Trinidad and Tobago, with an estimated population of 1.3 million in 2010, and an estimated adult HIV prevalence rate between 1.5-1.7%, the number of HIV-positive women between 15 and 19 years is five times higher than among their male counterparts [15], and, in this country, 69.8% of new cases of HIV are derived from females 15-29 years of age [5].

There is a growing research literature on women’s vulnerability to HIV. Epidemiological studies suggest that during unprotected vaginal sexual intercourse with an infected partner, women are twice as likely as men to be infected with the virus. Women have a longer duration of exposure to infectious fluids than men and women are vulnerable to tissue injury during sexual intercourse [16]. It has been shown that “the likelihood of HIV transmission during a single act of vaginal intercourse increases more than five times when there is a co-occurring genital ulcer disease” [17]. In addition to the many HIV-related diseases and ailments suffered by both sexes, HIV-positive women experience recurrent vaginal yeast infections and severe pelvic inflammatory diseases which increase their risk of cervical

cancer compared to women without the virus [18]. Figueroa [19] wrote that Jamaican women with inflammation of the cervix because of gonorrhea and syphilis were vulnerable to male-to-female HIV transmission. To compound these difficulties, HIV-positive women on highly active antiretroviral treatment may experience stronger side effects [20], and women tend to discontinue antiretroviral treatments at greater rates than men which can contribute to excess morbidity and mortality [21]. Consistent with the intersectionality framework, the theory of gender and power contends that the unequal power which women experience in sexual relationships is a consequence of their unequal status in the labor market, extreme poverty, patriarchal masculinity, and behavioral norms [22]. Social norms including laws and cultural prohibitions governing appropriate sexual behavior for women can also inhibit women's ability to make decisions in their sexual relationships.

Norman [23] reported that gender-related power dynamics make it difficult for some Caribbean women to request the use of condoms by their sexual partners. Likewise, cultural beliefs that condom use promotes promiscuity in women are associated with women's reports that they do not use condoms [24]. For some women to insist on condom use and to carry condoms themselves is to imply that they are actively looking for sex. Women might be reluctant to request that their partners use a condom because this might be implying that they are skeptical about their partner's HIV status; that their partner is sexually involved outside of the relationship, or had a risky sexual past. There are reports of some inner city Caribbean women being physically and sexually abused when they requested condom use from their partners [25]. In addition, abusive men are more likely to have multiple sexual partners and are unlikely to use condoms consistently [10]. Yet, some women may engage in unprotected sex because they fear sexual violence and the loss of economic support. Norman [23] found in Trinidad that only 19% of individuals had used condoms with their most recent sex partner. Other studies conducted in the Caribbean region on HIV-positive adults found that nearly 40% did not use condoms, and that over 25% did not know their partner's HIV status [26].

There is also the contention that some Caribbean women engage in unprotected sexual intercourse because of their adherence to the cultural requirement that women "have children" to prove their womanhood/fertility. Such women are likely to engage in unprotected sexual intercourse and are susceptible to HIV infections. Also, while it is difficult to ascertain the proportion of women having multiple sexual partners because of cultural sanctions, it is estimated that between 11-15% of Jamaican women between 15-49 years old report having sexual intercourse with more than one partner in the year assessed. Other qualitative studies put the number at 30-40% of women having multiple sexual partners [27].

Women who know that they are HIV infected are oftentimes afraid to tell their husband, boyfriend, and others because of their fear of abandonment, family ostracism, violence, discrimination and stigmatization. Anticipating negative responses in the form of emotional, verbal or physical abuse has been linked to the inability to negotiate the circumstances and

safety of sexual interactions and to increase the risk for HIV infections [21].

Concerning seropositive Caribbean women, lack of quality education, sexual and physical abuse, economic hardships, community violence and neighborhood disorder, inadequate health care services, stigmatization, alcohol and substance abuse, and mental health burdens can be viewed as mutually reinforcing dynamics which could undermine women's adherence to antiretroviral treatments and their ability to adequately cope with the AIDS disease [21]. Moreover, significant levels of depressive symptoms, including negative cognitions and somatic symptoms have been found more among HIV-infected Caribbean women than their male counterparts. One suggestion is that HIV-infected individuals should be routinely screened for depression [28]. However, psychiatric and psychological services remain underdeveloped in the Caribbean.

Several studies have addressed concurrent multiple partnerships, infidelity, and Caribbean men having "outside women" as normative and culturally accepted practices, particularly if women are perceived to derive economic benefits from these arrangements [29]. One-third of men aged 15-39 years indicated that they had multiple sexual partnerships [30]. Some Caribbean women are deeply troubled by their male partner's infidelity. However, these women's fear of physical abuse, feelings of low self-efficacy, and the primacy of security needs might prevent them from negotiating condom use with their partners. Research shows however that some Jamaican adults who were married and had strong Christian religious affiliations were less likely to engage in high-risk sexual behaviors compared to those in casual and visiting intimate relationships and who never or infrequently attended religious services [31]. In general, Caribbean countries are defined by conservative Christian doctrines and values. It has been found in other studies that some Caribbean women with strong Christian religious beliefs might internalize the view that women must remain virgins until marriage and therefore might be reluctant to use condoms. Also, Christian women might not have optimistic attitudes about antiretroviral treatment placing their faith in God instead of complying with the treatment protocol, while other women with similar religious beliefs self-reported that God's divine power would work through the medicine [32]. Other findings suggest that a subset of Christian Caribbean HIV-positive women believed that they would be healed through prayers and their strong religious faith without medications [33]. The heterogeneity of this social group's perceptions of sexuality and intimate sexual relationships should be more explicitly explored within the context of an overarching intersectional framework.

Caribbean women confront religious, interpersonal, physiological, psychological, social, cultural, and socioeconomic challenges that place them at risk for HIV transmission and STDs. Research-based evidence, derived from national epidemiological studies, is required on these purported relationships. More importantly, empirical data is lacking on women who are most susceptible to these drivers and feel disempowered to protect themselves from HIV and STDs.

Concerning Sexually Transmitted Diseases (STDs), research indicates that persons with STDs have a risk of contracting HIV infection that is 3 to 50 times that of uninfected persons, depending on the STD involved [34]. The estimated annual incidence of curable STDs (syphilis, chancroid, gonorrhea, chlamydia, and trichomoniasis) among 15 to 45 year olds is 7-14% in Latin America and in the Caribbean countries. Trend analyses by WHO [35] for the years, 2007-2011, showed an increase in the rates of genital ulcers for males and females in Jamaica and Guyana, and there were increased rates of urethral discharge in Jamaican men during this time period. The data also indicated the high prevalence of syphilis in Jamaica (1.3%), the Bahamas (1.1%), Barbados (0.5%), and St. Lucia (0.7%). However, these might be conservative estimates of the prevalence of STDs due to the incomplete STI surveillance data provided by Caribbean countries to the World Health Organization [35].

Sexually Transmitted Diseases (STDs) are precursors for the possible spread of the HIV virus among individuals [14]. The risk factors for STDs include early onset of sexual activity, unprotected sex, multiple sexual partners, and high-risk sexual partners [36]. It is generally agreed that the early diagnosis and treatment of gonorrhea, syphilis, chancroid, herpes, and other STDs are effective interventions against HIV transmission. Research shows that the targeting of treatable STDs and the consistent use of condoms by male partners can effectively reduce the risk of sexually transmitted diseases and HIV transmission [37].

Men Who Have Sex with Other Men (MSM)

With respect to LGBT groups, in the Caribbean, the scant research evidence is on men who have sex with other men (MSM). While there are no reliable estimates of the general population of males who have sex with other males (MSM) due to stigmatization and homophobia [38], studies relying on cross-sectional and convenience samples indicate that in the Caribbean, men who have sex with other men represent about ten percent (10%) of the HIV transmission rate [26]. However, in Guyana, in 2007/2008, it was reported that 21.25% of MSM in the capital city were HIV-positive, while in Trinidad and Tobago, it was at 20% [13]. It was also reported that only 47% of the men used a condom the last time they had sex with a male partner [5]. According to the research literature, intolerance of homosexuality, coupled with economic and emotional dependence, fear and anxiety about ostracism and violence, may influence the AIDS epidemic by increasing the likelihood that men who have sex with men will also have female sexual partners to present the appearance of being heterosexual [21]. These secret and double-life sexual practices are said to be also prevalent in the Caribbean because of the cultural valuing of heterosexual relationships with multiple women, and the emphasis on the fathering of children [39]. Research findings from the Caribbean, the USA, and Africa indicate that men who have sex with both men and women, and who do not identify as gay, are less likely to be HIV infected than men who report sex exclusively with other men [40]. Beyrer, Baral, et al. [41] indicated that men engaged in having sex with both men and women might be more willing to use condoms with other men, and they might be less likely to engage in recep-

tive anal intercourse than men who have sex with only men. Research studies however are needed in the ESC countries to replicate these purported empirical relationships.

The transmission of HIV infections among MSM is related to the engagement with both unprotected receptive and insertive anal sexual intercourse. Beyrer, Baral, et al. [41] reported a "1.4% per act probability of HIV transmission for anal sex and a 40.4% per partner probability" (p 371). Landovitz & Currier [42] provided estimated HIV transmission risks of 1 to 30% with receptive anal sex, and 0.1 to 10.0% with insertive anal sex. Within the Caribbean context, MSM risk of HIV infection is related to contextual drivers such as poverty, sex work, drug use, the lack of social support, marginalization from the dominant culture, homophobic discrimination and violence, homelessness, and self-rejection of the stigmatized homosexual gender identity [43,39].

Sexually Transmitted Diseases (STDs) including syphilis, the herpes simplex virus type 2, Human Papilloma Virus (HPV), the Hepatitis C Virus (HCV) and hepatitis B virus (HBV) are co-infections with HIV infections and are related to high morbidity and mortality rates among MSM in developing and resource-limited countries [44]. According to Millett, Jeffries, et al. [40], in the Caribbean, HIV prevention programs reach less than 40% of MSM. It is unclear from the current research evidence if HIV-positive MSM who receive antiretroviral therapy are also being diagnosed and treated for the co-infections of HCV and HBV, as well as for other symptomatic sexually transmitted diseases throughout ESC countries.

Internalized homophobia and feelings of disenfranchisement, and same gender-loving disclosure fears may also contribute to HIV risk-taking behaviors by increasing the likelihood of having multiple partners rather than entering a stable relationship with one partner, and by indifference to HIV/AIDS prevention because of the disease's association with homosexuality [45]. Figueroa [19] indicated that the HIV prevalence rate in Jamaica among MSM was 10% in 1985 and increased to about 32% between 1993-2007. For him, effective methods have not yet been implemented to reduce these rates primarily because of the stigma linked to homosexuality in Jamaica and in other Caribbean countries. This stigma operates to drive the HIV epidemic among the MSM group underground thereby making it problematic to provide this group with prevention and treatment services. Similar to other regions of the world, in the Caribbean, MSM are at risk for HIV infections when they have inadequate access to HIV services such as counseling and testing, accessible condoms and lubricants, antiretroviral therapy, and exposure to prophylaxis against infection, among other HIV prevention services and technologies [46].

Commercial Sex Work

The Caribbean HIV epidemic has spread from commercial sex workers (men and women) to the general population. Many sex workers are transient migrants to and from Caribbean countries. These migrants leave high HIV prevalence areas and return to low prevalence areas to infect their primary partners and other individuals [16]. Surratt found that drug users engaged in sex work in more countries. They had more sexual partners and they were 5.1 times more likely to engage in un-

protected sex. They also reported more violence victimization than users of alcohol and non-substance abusers. Surratt [47] reported that migrant undocumented sex workers have little access to legal, medical and social services.

There are high infection levels among female sex workers in Jamaica (9%) and in Guyana (27%), according to UNAIDS [13]. The poorest Caribbean domestic and migrant commercial sex workers are vulnerable to HIV infection and to STDs due to their multiple sex partners and their elevated use of illicit drugs, particularly, crack-cocaine and cocaine. Allen, Edwards, et al., [48], in their study of commercial female sex workers in Georgetown, Guyana, found a relationship between crack cocaine use, cocaine and marijuana use and risky sexual behaviors. They also found that women not knowing the results of their last HIV test were also likely to have large numbers of partners from the streets and hotels/brothels. There was also an association between women's illicit drug use and vaginal ulcerations, which are precursors of HIV infections. These researchers concluded that sex workers in Georgetown also worked in Trinidad and Tobago, Barbados, St. Martin, and French Guyana thereby contributing to the spread of HIV/AIDS. Kempadoo [49] indicated that attempting to map these sexual networks is a problematic task because of the "stigmatization and criminalization of homosexuality, bisexuality, and prostitution, and the persistent ideal of heterosexual monogamy that is reinforced through many civil and state institutions". Male sex workers were identified as one of the high-risk groups for HIV infections. These individuals are less likely to consistently use condoms with regular customers. Many individuals who engage in high risk sexual behaviors such as bisexuals and homosexuals who have sex with locals or commercial sex workers have reported not using condoms and not knowing their HIV/AIDS status [50]. The reluctance and/or delay to experience HIV testing may be related to the fear that others will suspect that they are engaged in unlawful and stigmatized behavior[51]. The high rate of HIV infections and full-blown AIDS among commercial sex workers is also reported to be related to the inadequate regulations of the sex trade industry, to the stigmatization of this industry, and to a lack of attention to the needs of commercial sex workers [2]. Moreover, commercial sex workers living with HIV who perceive stigma from others are less likely to access HIV care and HIV treatment health facilities. They are more likely to receive inadequate HIV care, and they are more likely to miss clinic appointments for this care. The research evidence indicates that people living with HIV/AIDS who engage in stigmatized sexual behaviors, and who had abused or continue to abuse illicit drugs are likely to be perceived by health care providers to have poor HIV treatment adherence thereby potentially influencing treatment recommendations [51].

Commercial sex is illegal in most English-speaking Caribbean countries. These countries are also defined by conservative social values. There is no reliable data on HIV/AIDS prevalence rates among sex workers. Many countries are said to be reluctant to discuss the HIV epidemic for fear of losing tourism revenues. Surratt [47] also indicated that Caribbean tourist-dependent economies and the active commercial sex industries have "become the most HIV impacted countries in the region."

AIDS-Related Stigma and Discrimination

While confidential HIV testing is widely accessible in Jamaica and in other small Caribbean islands from both private and public health institutions[8], Claudette Francis[52] reported that most HIV-infected persons in the Caribbean continue to live in fear of the community "finding out" their diagnosis. There remains the inclination to associate HIV/AIDS with homosexuality, promiscuity, and prostitution (both male and female). The relationship between feelings of lack of social support and feelings of loneliness and isolation has been related to risky sexual behavior. Individuals who feel internalized stigma are more likely to "participate in risky sexual situations as a temporary escape from shame and depression or because they seek self-validation through sexual encounters" [51].

Homosexuality is highly stigmatized in the Caribbean region such that HIV-positive MSM in Jamaica, Trinidad and Tobago, and in other ESC countries have delayed seeking medical health services. There is research evidence on the deep-seated fears in MSM communities that there will be breaches of confidentiality by health care workers. For instance, Jamaican MSM were hesitant to accept free lubricants because of the cultural belief that the primary use of lubricants is for homosexual anal sexual intercourse [39,40].

Several Caribbean nations have anti-sodomy or buggery laws which contribute to anti-gay discrimination and abuse. The Bahamian government in 1991 legalized same-gender sexual activity between consenting adults of eighteen years old. However, homosexuality is wrong and unnatural in the minds of many Caribbean individuals. The 2010 UNAIDS global report includes Jamaica, the Bahamas, and Trinidad and Tobago as countries that criminalize same-sex activities, among other countries with government laws that pose obstacles in reducing the risks for men who have sex with men (MSM), and for Lesbian, Gay, Bisexual, And Transgender (LGBT) persons. The socially conservative Christian church throughout the Caribbean is strongly resistant to the decriminalization of homosexuality. There are also recent reports of adherents of Rastafarianism being against decriminalization on the grounds that the homosexual lifestyle is against Africa's cultural traditions and values. Also, in Caribbean societies, masculinity is purported to be defined in terms of men producing children, and by virility and sexual prowess with women. To be a "soft man" is frowned upon. There is the viewpoint that male homosexuals transmit diseases to the general public because these "homosexual" men are actually heterosexuals who occasionally have sex with other men [29].

It is well established that institutionalized stigma can undermine the survival of impoverished and socially ostracized Caribbean people living with HIV/AIDS. For instance, Mays, Cochran & Barnes [53] reported that individuals who show heightened sensitivity to societal stigma are also more vulnerable to chronic stressors which can have deleterious effects on their physical health (e.g., the brain, immune system, and the autonomic system), and on mental health (e.g., depression, anxiety, hopelessness).

There are legislations and proposed ones to reduce discrimination against people living with HIV/AIDS in several Carib-

bean countries. For example, the Bahamas, Guyana, and the Dominican Republic introduced laws to prohibit pre-employment HIV screening. Most Caribbean countries, however, are reported to lack the appropriate systems in place for aggrieved persons to seek remedies for discrimination [14]. Moreover, in many Caribbean countries, there does not seem to be longitudinal epidemiological studies tracking changes in the unfavorable attitudes and behaviors directed at persons dealing with HIV/AIDS.

HIV/AIDS Prevention and Treatment

A priority for many countries is the testing of individuals at greatest risk for HIV to ensure that HIV-positive persons have access to quality treatment and care, and to provide prevention services to both those at risk and to the general population. HIV testing is available in private and public health institutions throughout the Caribbean. Notwithstanding these emphases, Losina, Figueroa, et al., [27] wrote of the limited data on “the etiology of common clinical presentations of HIV disease and the relative frequency of opportunistic diseases in the Caribbean region” (p. 136). These authors also noted the essential problems of incomplete data on microbiologic analyses of CD4 cell counts, T-cell counts, and clinical progression. These are important assessments for informed decisions on the development and implementation of prevention and treatment protocols.

As it relates to the relationship between HIV/AIDS and mental health, about 58.9% of people estimated to need treatment for depression do not have access to mental health workers in Caribbean and Latin American countries [3]. Significant levels of depressive symptoms, including negative cognitions and somatic symptoms have been found more among HIV-positive Caribbean women than their male counterparts. Women also reported higher levels of sadness, pessimism, irritability, guilt, and loss of interest in sex when compared to men, and some women reported the lack of social support [28]. Other studies suggest that HIV-infected women report concentration and sleep difficulties as well as changes in eating habits in response to stress [54]. An increase in mental health workers is essential for HIV-infected individuals to undergo psychosocial assessments and to be routinely screened for depression symptomatology to ensure effective diagnoses and treatment [28].

Abel, Kestel, et al. [3] wrote on the progress in the construction of mental health policies and structures; in the delivery of mental health services in English-speaking Caribbean countries, and in the estimated expenditures in mental health ranging from 1% to 7% of health budgets. However, as they noted, most countries provide mental health treatment in mental and general hospital settings. There are few countries that rely on community-based mental health treatment models. Currently, the number is quite low of psychologists, psychiatrists, mental health nurses, and social workers throughout the Caribbean. Health care providers and religious leaders should be appropriately trained in psychosocial and mental health issues in caring for HIV-infected persons [54]. A balance between community-based, home-based, and hospital-based services is said to provide the most comprehensive model of mental health services for people infected and affected by HIV/AIDS [3].

There is a relationship between poverty and extreme difficulty in accessing antiretroviral medications, nutritional, and other resources to adequately cope with this disease. The out of pocket expenditures for health care services place poor people at risk for not having adequate access to appropriate HIV/AIDS services and incurring debts for health care that push them further into poverty. It is estimated that about 50% of HIV-positive Caribbean individuals are receiving antiretroviral therapy (CARICOM, 2008). Based on HIV/AIDS surveillance data for the period from 1993 to 2005, there were significantly higher mortality rates for over one-third of HIV-positive adult Jamaicans who were identified late with an AIDS diagnosis compared to asymptomatic persons [37]. Similarly, Kumar, Kilaru, et al. [55] examined the records of 431 adults admitted to the main hospital in Barbados for the years 2004-2006. They found that while 60% of adults were known to be HIV-infected prior to their current hospitalization, a diagnosis of HIV was made for the first time during the current hospitalization of 40% of admitted patients at an advanced stage of their disease. The delays in diagnosing HIV infections and AIDS have implications for the transmission of HIV as well as for the morbidity and mortality of those living with HIV/AIDS.

Throughout the English-speaking Caribbean countries there appears to be a lack of national well-functioning surveillance systems for data gathering on the number of HIV/AIDS cases with the result that there might be underreporting of the HIV prevalence rates [2]. Moreover, empirical data is needed on the estimated number of Caribbean people in need of HIV treatment. Infected persons are susceptible to reinfections both with the virus and sexually transmitted infections. Several studies report that knowing one's HIV status is linked to improvements in the person's sense of well-being, particularly when there is social support and other forms of support for the individual. Countries also benefit from HIV testing as this is related to HIV-positive persons reducing or eliminating their transmission behavior [56]. For instance, research findings showed that Jamaican men displayed a significant increase in condom use after being tested for sexually transmitted infections and being provided with safer-sex counseling [57]. Many Caribbean males could benefit from these services and do not receive them.

It is well established that sustained and chronic psychological and emotional stress and depression can undermine the physiological well-being of individuals, which can be especially difficult for those who are HIV-positive and dealing with full-blown AIDS. The success of prevention and treatment services will require the involvement of mental health care providers, health care providers, faith-based organizations, the private sector, community leaders, and community resources to address the whole person instead of his or her disease status [58]. Low cost and high impact sustainable interventions and prevention programs can be delivered by each of these sectors to a broader range of Caribbean individuals who are at risk for HIV/AIDS and STDs. For example, the private sector is quite efficient in permeating the daily lives of Caribbean people with a variety of consumer products. Hence, private enterprise can play a more significant role in promoting the avoidance of risky behaviors and the commitment to a healthy lifestyle [59].

The breaches of confidentiality are of main concern throughout these small Caribbean islands where everybody knows everybody. There is persistent disclosure anxiety even in therapeutic environments [51]. It has been suggested that extensive counseling for HIV-negative individuals and widespread testing of populations could reduce the stigmatization of HIV-positive persons and their families. Douglass [60] recommended that Caribbean governments set up more urban and rural clinics and hospitals to adequately meet the needs of affected citizens. He also suggested the usefulness of technology and distance learning for the training of young professionals and technicians working on HIV/AIDS throughout the Caribbean region.

Throughout Caribbean countries, HIV/AIDS intervention includes focusing on behavior change, bolstering coping resources, and making lifestyle choices that promote healthy living, primarily through the educational sector by offering comprehensive sex education and school-based guidance and counseling, including HIV/AIDS education [61]. As previously noted, this individual-change approach is insufficient in addressing the HIV/AIDS epidemic. For instance, there is still much resistance in Caribbean countries for condoms and contraceptive resources being available to young people in educational settings. The intersection analytic approach suggests that comprehensive sex education should include structural interventions such as broad-based condom distribution in educational and community settings to have a more profound effect on HIV/AIDS prevention.

Studies suggest that there is reduced risk for illicit drug abuse and sexually risky behavior with appreciable improvements in vulnerable individuals' housing status [62]. Improved community conditions have been found in studies to be related to lower levels of alcohol and illicit drug abuse, to better health, and to more confidence in the health care system. The incorporation of community members in the delivery of culturally sensitive HIV care services to Caribbean people is a possible effective mechanism to reduce the HIV transmission rate [50]. The issue of the working poor and the high unemployment rates in the Caribbean must also be addressed. There should be emphasis on employment opportunities for vulnerable social groups, including poor women. Female unemployment is a significant contribution to the increase in HIV infections. Caribbean males should also be exposed to interventions that influence them to see their significant role in reducing the risk to females and to assist males "to give up the power they now have over sexual choices" [10]. These multifocal interventions could also increase feelings of self-efficacy and the acquisition of skills, and increase compliance with health care recommendations in dealing with HIV/AIDS [21].

Caribbean males also bear the burdens of HIV/AIDS in the Caribbean region. Studies have reported on low-income Caribbean males in Jamaica, Barbados, and Trinidad and Tobago being particularly at risk for HIV infections. Caribbean males tend to be diagnosed later when they seek medical services for illnesses [55]. For instance, African Caribbean males were the majority of HIV patients admitted to medical wards in Barbados [55]. The higher HIV infection rates among these males are attributed primarily to heterosexual males' risky sexual be-

haviors such as multiple sexual partners and commercial sex. Primary prevention among Caribbean males must be a priority in order to scale up early voluntary counseling, HIV-testing and antiretroviral therapies.

For several years the research literature has discussed male circumcision to potentially reduce heterosexual males' HIV susceptibility [63]. There is compelling evidence on the protective effects of male circumcision, the surgical removal of most of or all of the male foreskin (or prepuce), to reduce the risk of HIV infection and STDs in males compared to uncircumcised males, particularly in areas of high HIV and STDs prevalence [64]. The research evidence strongly indicates that male circumcision reduces the risk of ulcerative STDs, chancroid, syphilis, and genital herpes by 50% or more [63]. Male circumcision is said to protect women who may be exposed to fewer HIV-positive males, especially if there is substantial circumcision community coverage and if men discontinue their high risk-taking attitudes and behaviors, including having multiple sexual contacts [36].

The foreskin of the penis is said to have a greater concentration of target cells for HIV infections such as Langerhans cells and macrophages than other penile tissue. The foreskin is also susceptible to tears, scratches, and abrasions during sexual intercourse thereby facilitating portals of entry for the virus [63]. The inner mucosa of the foreskin has less keratinized skin in contrast to the external skin surface which increases the probability of viral survival [36]. While circumcisions are not without absolute medical risks, there is compelling scientific evidence on medically safe male circumcisions from the neonatal period to adulthood performed by qualified medical personnel with the appropriate follow-up to ensure the treatment of infections and wound healing [36]. The research evidence indicates that male circumcision could offer the same level of protection against HIV and STDs regardless at which age it was done, as long as the procedure is done before HIV transmission [63].

Duncan [65] wrote on the very limited medical literature on circumcision in the Caribbean. He suggested that this region is still grappling with questions on when is the optimal time for males to undergo circumcision and the associated financial costs for this medical procedure. Duncan recommended that Caribbean males be sensitized on the protective benefits of circumcision against STDs and HIV "even if this knowledge only allows some to make an individual choice in keeping with lifestyle risks" [65].

Research studies are needed in Caribbean countries to determine the efficacy of male circumcision against heterosexual HIV transmission, the potential disinhibiting effects of male circumcision on sexually risky behaviors, the benefits and risks of this medical procedure, cost effectiveness comparisons with other prevention strategies, as well as the cultural and ethical challenges related to this medical procedure [66]. Assessments are also needed on the HIV/STD transmissions attributed to uncircumcised heterosexual males compared to their circumcised counterparts. Currently, research evidence is lacking on the biological mechanisms of HIV infection among circumcised and uncircumcised males [63].

Other predictors of effective risk reduction strategies for HIV/AIDS include strong cognitive information on HIV/AIDS; teaching participants specific skills in negotiating sex and protecting their health, and setting normative behaviors, coupled with the structural interventions (i.e., governmental actions on condom distribution, HIV testing, and antiretroviral therapy). Interventions work best when they are locally designed (along with people infected and affected by HIV/AIDS), and launched by peers and persons who are closest to those who are at risk for infection [67]. The most successful interventions are grounded in holistic and comprehensive theories, provide skills training, and are culturally sensitive to the needs of infected and affected persons, and are conducted over multiple sessions for longer time periods [68].

Conclusion

It is generally agreed that many Caribbean countries have a limited number of trained human resources, several weaknesses in the health care infrastructure, and inadequate social support systems which significantly constrain the implementation and delivery of a comprehensive response to the HIV/AIDS epidemic [26]. Moreover, the ESC countries have a disproportionate number of citizens living in extreme poverty. Poverty and income inequality are primary drivers of the HIV/AIDS epidemic in the region. Hence, poverty reduction is essential for reducing the HIV transmission rate. For instance, educated and economically independent women feel empowered in their relationship in negotiating condom use with their partners. These women also show their willingness to extricate themselves from nefarious situations that could place them at risk for STDs and HIV infections [8]. In the Caribbean region, there should be special attention to the social and structural forces such as unemployment and educational status which might constrain even those persons who are high in self-efficacy to consistently engage in HIV/AIDS prevention behaviors. Strategies are needed for empowering more women through income-earning opportunities, the removal of biased attitudes in the workplace which unfairly exclude women from job opportunities in some areas, and social support for mothers and female caregivers so that they can earn an income to educate and take care of children and orphans as well as HIV/AIDS affected family members [5].

It is problematic that reliable research findings are lacking on the resilient individual, familial, and community factors that could stem the growth of the HIV/AIDS epidemic among Caribbean women living in economically disadvantaged neighborhoods. Research studies are needed to explore these women's levels of social and emotional support, individual and behavioral resilient characteristics, and their institutional and community supports.

Evidence is currently lacking on the pervasiveness of perceived threat and fear and mental distress experienced particularly by economically challenged Caribbean persons living with HIV/AIDS. Future research is needed on the resources and mechanisms at the structural and individual levels that can reduce discriminatory attitudes and behaviors directed at individuals living with HIV/AIDS. A corollary concern is the paucity of data from Caribbean nations on sustained viral suppression in

low-income people living with HIV/AIDS. Research evidence is needed on this group gaining access to HIV care, on their retention in care, and on their sustained adherence to antiretroviral treatment. As Grossman CI, Purcell DW, et al.[69] concluded: "Capacity building efforts are needed that enhance, in an integrated way, the community, public health, and medical expertise needed to successfully deliver combination prevention to the public" (p. 243).

There is the need for research designs to address the complexities underpinning gender identity in the Caribbean, including men having sex with other men (MSM), lesbians, and transgender individuals. Consistent with intersectionality theory, the individual, relational, community and institutional forces influencing attitudes and behaviors which place Caribbean persons at risk for HIV/AIDS and STDs must be adequately assessed in future research studies. For more active and comprehensive STDs and HIV/AIDS intervention and prevention research investigations in the Caribbean region, as Gordon, Forsyth, et al. [70] advised, it is useful to rely on "more complex social-ecological models that identify multiple determinants of health including the interactions among individuals, dyad/family, social/community (e.g., networks, media), organizational (e.g., institutional policies), structural (e.g., public policy, laws, built environment), and societal/cultural factors (e.g., macroeconomics, stigma)" (, p.15). The crux of the matter is to derive from these assessments more holistic and comprehensive frameworks, which are culturally informed, to guide research investigations on the significant relationships between core determinants and attitudinal and behavioral outcomes in individuals infected and affected by HIV/AIDS and STDs.

The cultural relevance for the Caribbean of Western psychological theories on condom use and HIV/AIDS prevention/interventions should be persistently evaluated. It is essential that Caribbean scholars examine cultural dynamics distinctive of Caribbean societies that are relevant to reducing the HIV transmission rate; for tackling societal stigma, and for promoting meaningful and sustainable community and individual changes for positive health [71].

Another priority is for greater collaborative work with foreign scientists who are assessing "vaginal microbicides," the gels for blocking or killing the HIV virus during intercourse; the vaginal ring which has the antiretroviral compound called TMC120 which is purported to kill HIV, cervical diaphragms, and female condoms. More broad-based training of Caribbean females on how to appropriately negotiate condom use and how to empower themselves in their relationships is an important objective. These resources can afford women greater control in protecting themselves from being infected with the HIV virus.

There are new biomedical developments such as the pre-exposure prophylaxis, or PrEP, which when combined with existing prevention measures can significantly reduce the risk of HIV infection to seronegative sexual partners by 96% in heterosexuals and in the LGBT population [11]. These new biomedical HIV prevention drugs are very expensive. Caribbean populations have not been included in the initial trials in the

development of these drugs. Hence, the effectiveness of these drugs in this population must be assessed in future studies. The research literature is also addressing the possibility that these new products and procedures could make individuals more optimistic about these protections and thereby engage in various forms of sexually risky behaviors, including less condom use and increasing the number of sex partners [72].

Caribbean countries are heavily dependent on external funding from the U.S. and European countries in addressing the HIV/AIDS epidemic, particularly in the delivery in antiretroviral therapies. The Caribbean must become financially independent to sustain the development and delivery of antiretroviral therapies. Brazil represents a useful model to Caribbean governments on how to respond to the HIV/AIDS epidemic. Brazil has been producing generic versions of antiretroviral drugs for several years now, and the Brazilian government also negotiated drug discounts thereby lowering the cost for antiretroviral therapy. This country is well-known for its pioneering policy decision in 1996 to offer free combination antiretroviral therapy to all Brazilians with AIDS, and to promote condom use. Access to free AIDS treatment influenced Brazilians to undergo HIV-testing. The Brazilian government between 1997 and 2005 spent \$3.5 billion of its national budget for drug treatment [73]. Hence, Caribbean governments must integrate HIV prevention and treatment into existing social and national development programs [26].

A multi-sector coordinated approach between the government, the health and education sectors, the media, civil society, and the private sector is required for a comprehensive and sustainable response to control the HIV/AIDS epidemic. Without this response, many more Caribbean people will die of AIDS or be severely affected by its consequences.

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