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Drug and Alcohol Consumption and Trade and HIV in the Caribbean: A Review of the Literature

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Abstract

This consultancy was granted by the Caribbean Health Research Council (CHRC) to assess the state of the literature on possible links between HIV spread and prevalence of drug and alcohol abuse and trade in the region. The methodology was that of a thematic search of existing literature in databases and books or journal publications. Online materials and UN agency reports of relevance were also consulted. Regular meetings were held with CHRC staff to review progress and edit drafts while staff of the university library went beyond the call of duty to support the project. The review of the literature indicates that many of the relevant publications were methodologically and theoretically weak perhaps because they were done by medical researchers who adopted social science methodology rather uncritically. Most of the research findings proved to be controversial, calling for more research in the Caribbean to firmly confirm or refute any hypothesized links between substance abuse or trade and HIV spread. We recommend that intervention experiments be conducted in the region with greater partnership between biomedical researchers and social scientists to test different hypotheses about causal links and therapeutic or preventive possibilities without criminal justice prejudice or stigma in order to help stem the tides of the epidemics in the region.

Executive summary

With nearly a quarter of a million people living with HIV in the Caribbean [1], it is understandable why the Caribbean Health Research Council commissioned this literature review on behalf of another Pan Caribbean Health Organization as part of the efforts to thoroughly study the dimensions of the epidemics and seek solutions. This particular review is focused on some popular drugs and alcoholism that might be gateways to infection as research in other parts of the world has indicated. This review focuses on the evidence in existing publications to estimate the nature and extent of any links between HIV prevalence in the Caribbean and drug abuse prevalence in the region and the extent to which the proximity of the region to drug producing areas and services as a transshipment location contributes to the menace of both drug addiction and spread of HIV.

The literature review found that most of the publications in this area are theoretically weak and methodologically limited to self-reported health and drug status when better awareness of relevant theoretical debates and biomedical testing of available bodily fluid samples could have produced more robust pieces of literature [2]. Similarly, in the area of policy, the recommendation of harm reduction as an alternative to the criminal justice approach needs to be more firmly based on clinical trials of harm reduction experiments in the region rather than simply being based on evidence from other parts of the world.

The methodology adopted for this literature review is that of thematic search of databases and books on the themes of drug abuse, drug trade, alcoholism and HIV in the Caribbean. Staff of CHRC helped with locating relevant items of literature and the staff of the UWI library assisted with more hard copies and electronic versions of scholarly articles. Regular meetings were held with Dr Caroline Allen of CHRC to review drafts of the report and her suggestions were reflected in the final version. The limitation of the methodology of literature review is that it is not backed by an empirical study of its own and so if funding is available, some of the research, theory and policy im-

plications of this review could be tested out empirically in the future.

The major finding is that of theoretical and methodological weaknesses in most of the existing research. Rarely do the researchers articulate a sound theoretical perspective for their research and the methodology is overwhelmingly that of social surveys even by medical science researchers with little or no training in social research methods. For instance, most of the researchers relied on self- report data without any discussion of the validity and reliability threats to such types of instrument. Few of the researchers adopted a historical background to the topics of their research with the result that the reports read like abstract empiricism.

The findings indicate that there is a lot of prejudice against people with HIV especially if such people happen to be also drug addicts or alcoholics and there is indication that such stigma might be contributing to reluctance to seek care or reluctance to go for testing. This theme of stigma is the one area that attracted more theoretical and more qualitative approaches to the problem instead of relying exclusively on self-reported data. Perhaps, a triangulation of methods combining the self-report instruments with field observations and biomedical testing of saliva fluid would produce more robust results.

In the Caribbean, it has been reported that the problem of IDU is not common except in a few islands like Puerto Rico but the problems of alcoholism, tobacco addiction, the use of marijuana and cocaine addiction are estimated to be high enough to be contributing to poor judgment in sexual intercourse and possibly contributing to the spread of HIV. One original contribution to the IDU issue came from Paul Farmer who reported work in Haiti that indicates that injecting drugs is not always for recreational purposes given that many malaria patients rely on 'injectionists' who tend to be quacks that provide such services with reused needles that are not properly sterilized. The extent to which this practice may exist in other islands is yet to be systematically determined as part of the efforts to stem the spread of HIV in the region.

There is controversial evidence that some HIV patients use marijuana to deal with the pain and other side effects associated with HAART while some early research in the 1970s expressed concerns about possible negative effects on the immune system from the use of marijuana following observations of laboratory animals that were given abnormally high quantities of THC. On the other hand, the relationships between tobacco addiction and the tendency to develop HIV appears to be better established in the literature, suggesting that programmes be put in place to link smoking cessation with the fight against HIV. Alcohol appears to be associated with impaired judgment in sexual encounters, commercial sex workers also consume drugs and alcohol and these may make them to relax the demand that their clients use condoms.

The recommendations from this review are for policy changes away from criminal justice approaches to the drugs problem and increasing reliance on harm reduction which appears to be the trend worldwide. Recommended programmes include drug, tobacco and alcohol counseling, the decriminalization of relatively safe substances like marijuana especially if they have some claims of therapeutic value, the provision of condoms to sex workers and the general public, better access to medical services to avoid exposing people to 'injectionists', and the need to treat patients with compassion rather than stigmatize them. The recommendation to researchers is that they should apply theoretical knowledge more rigorously, use more sophisticated measuring instruments instead of relying mainly on self-reports, and replicate important studies in the Caribbean instead of simply reporting findings from developed countries.

All these would require better funding for research, policy evaluation and programmes but the costs would be recouped from the reduced expenditure on terminal care for patients if early interventions could reduce the rate of increase in the epidemics.

Introduction

Nearly three quarters of the 250 000 [190 000–320 000] people living with HIV in the Caribbean are in the two countries of the island of Hispaniola: Dominican Republic and Haiti. But national adult HIV prevalence is high throughout the region: 1%–2% in Barbados, Dominican Republic and Jamaica, and 2%–4% in the Bahamas, Haiti and Trinidad and Tobago. Cuba, with prevalence below 0.1%, is the exception. Overall, an estimated 27 000 [20 000–41 000] people became infected with HIV in 2006 in the Caribbean [1].

This literature review is an analysis of existing literature with a focus on the relationships between drug use and drugs trade and alcohol consumption, on the one hand, and HIV prevalence in the Caribbean, on the other. The Caribbean Health Research Council (CHRC) has commissioned this literature review for the purpose of better informing researchers in this field about what is already known, identifying gaps in existing knowledge and formulating research proposals to explore this area of health research more fully as a possible guide to policy makers, researchers and the general public. Accordingly, the literature review will start with an introduction to the topic, cover background literature from other parts of the world and then zero in on the Caribbean literature. Emphasis in the review will be on methodological sophistication, theoretical adequacy, empirical tenability of claims and policy efficacy of recommendations.

There is evidence that Intravenous Drug Use (IVDU) and Non-Intravenous Drug Use (Non-IVDU) can expose people to HIV infection either by sharing needles or by relaxing precautionary measures in sexual interaction [3-5]. A harm reduction approach has been proposed as a preventive measure, including the reduction of the need to share needles through needle exchange programmes, the integration of HIV prevention and drug abuse prevention and care for those living with HIV and those addicted to drugs, tobacco and alcohol but the powerful lobby in the USA is opposed to harm reduction and more interested in fighting the 'lost' war on drugs [6].

While opening Trinidad and Tobago's Alcohol and Drugs

Awareness Week, Dr. Courtenay Bartholomew was reported to have translated the AIDS acronym to stand for "Alcohol, Incest, Drugs, Sex" and warned that if care was not taken, the country could be divided into the 'chaste and the dead' [7]. In the Caribbean, it has been suggested that IVDU is not as common as is the case in many parts of the world but the prevalence of alcoholism, marihuana and crack cocaine use is estimated to be so high that increased HIV infection from unprotected sex that is attributable to intercourse under the influence of drugs and or alcohol might be as high as the rates of HIV infections in regions with high rates of IVDU perhaps due to risky sex behaviours under the influence of drugs and alcohol [3]. However, [8] reported that self-report studies and blood tests for HIV among 4840 out-of-treatment injection drug users in Newark and Jersey City showed that crack cocaine was highly associated with risky sex behaviour and needle use but is paradoxically related to lower HIV infection [9]. support this paradoxical finding by reporting that a study of 6402 and 3382 crack cocaine smokers in 16 US municipalities in 1992 and 1993 showed that 12.7% of the injection drug users and 7.5% of the crack smokers were HIV positive. More recent research by Timpson, *et al.* [10] however report that crack cocaine appears to be associated with a quicker progression of the HIV infection in addition to making large numbers of the addicts less likely to use condoms during intercourse even after knowing that they were HIV positive.

However, de Oliveira, *et al.* [11] found no support for the hypothesized relationship between alcoholism and HIV 'at least for the moment' but still concluded that since there is an established link between other sexually transmitted diseases such as hepatitis B and C with transmission routes similar to those of HIV, 'an increase in the incidence of HIV infection in alcoholics may be just a question of time' in Brazil.

Allen, *et al.* [12] have argued that HIV/AIDS 'has moved from being defined as a health issue to be seen as a development as well as security threat' (2004: 220). They express concern that, as in the past, the security discourse that originated from the US may lead to fortress mentality designed to exclude vulnerable migrants, asylum seekers and even poor citizens in rich countries who might need to access treatment and prevention services more urgently while poor countries in the region promote easily accessible tourism as a foreign exchange earner, thereby exposing them to the dangers of sex tourism and high rates of infection [13]. In the Caribbean, Allen, *et al.*[12] highlighted the fact that intravenous drug use accounted for only a small percentage of the HIV transmission as heterosexual, and to a smaller extent homosexual, intercourse accounted for more than three quarters of all infections in the region. The age groups most vulnerable are those from 25 to 44 and young women are particularly vulnerable perhaps due to the fact that they are more likely to earn a living as commercial sex workers throughout the region.

Methodology

The review will evaluate the research designs, logical adequacy, empirical tenability and policy efficacy of research in this area in the Caribbean compared to other regions of the world. The review will start by looking at research reports on various aspects of the topic: the Caribbean, drug use and trade, alcohol use and HIV infection. Then, the other existing pieces of literature will be reviewed until the exhaustion of the themes covered in the topic. Finally, a discussion of similar evidence from other parts of the world would be presented to put the evidence from and about the Caribbean in a global context with recommendations for further research.

The methodology of a critical literature review is that of systematic analysis of existing literature to see how it treats the subject and identify gaps in research to be filled by future researchers while highlighting the policy and practice implications of ideas in the existing literature.

Selection criteria

Items that were relevant to the variables of drugs trade, drug abuse and alcohol abuse and HIV were selected from the databases and from the library book collections. Then the contents were summarized and tabulated under columns of source, study, findings, relevance and comments. Later, the tables were converted to text and edited to maximize the flow of the review.

Sources consulted

The sources consulted included the databases: PROQUEST, EBSCO-HOST, JSTOR, Endnote Library, Pubmed, Medline and online versions of journals such as *The Lancet* and hard copies of books on shelves. Photocopies generously provided by CHRC were also useful. The search keywords included drug trade, drug abuse, substance abuse, alcohol abuse, HIV and the Caribbean. There was no date limitation on the relevant sources selected for this survey.

Plan of analysis

The analysis proceeded by offering a brief summary of the study that gave rise to a particular literature of interest and the methodology used in the study, the major findings, relevance of the research to the Caribbean and comments of the relevant research issues and policy options. The comments included:

- The strengths and weaknesses of relevant research design and methods
- Whether links between HIV and drug abuse or alcoholism are demonstrated
- Programmatic or policy implications of findings
- Whether any policies or programmes resulted from the research
- Whether there are any evaluations of the programmes

Limitations

This review prioritizes articles in peer review journals and so research published in monographs may not have been reflected in the review but could be taken up in a future more substantive research in this area. The limitations in the pieces of literature reviewed are as follows:

- Over-reliance on self-report studies without adequate discussion of their validity and reliability threats

• The reliance on convenience sampling of patients and possible under-reporting of risk behaviours
• Amazon.com lists up to 30 books on HIV in the Caribbean but there was not enough time to order them for possible inclusion in this review.

Findings

Drugs and alcohol consumption, risk of HIV and stigma: The major cause of concern in research on the possible links between drug abuse, alcoholism and HIV is that these are all negative signifiers to the extent that people who are affected by one or more of these problems could be suspected of being victims of their own hedonism who deserve to be sanctioned rather than being served with care [14]. The author states that 'In the Caribbean, Latin America, Asia, and the Pacific, discourses of morality and transgression also resound although the particular groups and their designated attributes differ' (p.344). The review essay warns against stereotyping any group of HIV patients (or any group of people for that matter) and the danger of this is perhaps great for those who use or trade in illicit drugs or who are alcoholics. The questions of alcoholics and drug abusers or drug dealers was not raised directly in the review but they could be used to illustrate the prejudices that may help fuel the spread of HIV. Another question is whether the patients first became HIV positive before becoming alcoholics and drug addicts to cope with their illness or whether they exposed themselves to infection due to their drugs-related and alcoholic risks.

Farmer [15] provides a note of caution against stereotyping HIV patients as if they are always to blame for their condition. According to him, '…stigma, rather than poor-quality services, slows HIV screening. In rural Africa as in rural Haiti, stigma is less a barrier to providing AIDS care than it is the reflection of a complete lack of decent health care for the poor.' (p.xiii). With specific reference to Haiti, he observes that 'intramuscular injections may be given by either medical personnel or, in areas without access to medical facilities, by those known to be *pikiris,* "injectionists" (p.135). Nowhere else in the discussion of IDUs in the literature is there a highlight of this fact that this reviewer was familiar with while growing up in malaria infested Africa where injections were often administered by quacks in the absence of medical officials or due to the prohibitive costs of consulting specialists. With reference to Haiti, Farmer writes that, 'Disposable needles and syringes, not readily available in Haiti, are frequently reused without sterilization. Pape and colleagues [16] found that parenteral medications were received by 83% of male and 88% of female AIDS patients' in their own study. It will be interesting to see how widespread the administration of intravenous medication rather than IDU could be said to be contributing to the pandemic in other poor countries in the Caribbean, Latin America, Africa the poor in North America and Europe, and South East Asia without adequate health care.

Castro and Farmer [17] argue that stigma should be understood as a form of structural violence and as part of the negative stereotyping of less privileged groups by the powerful. As they put it:

A general hostility to people living with HIV is suggested by the fact that, until recently, AIDS prevention, not treatment, was the leitmotiv of international AIDS work: treatment was the privilege of those able to pay for it. These are powerful fora, and their position set the agenda for both funding and action [17].

They suggest that those who are not stigmatized include medical officials who were exposed to HIV through their work, patients who received infected blood transfusion or children who received HIV through their mother. However, they also warn that the stigmatization of one group could lead to the stigmatization of others by employers or even at home where women who were exposed to HIV through rape could become victims of domestic violence from men who may not believe their allegations of rape as the cause. Their recommendation of more theoretically aware research in this area is very important given that few researchers make any effort to theorize their findings the way that Castro and Farmer attempted for a better understanding of the issues.

Related to the punitive and negative stereotypical approach to drug abuse control is the concern that increased incarceration could become a risk factor as inmates who entered correctional institutions without HIV infection could become infected in there through exposure to needle sharing, tattooing and sexual assaults that are reported to be common in prison. Thus Kane and Mason [18] call for more ethnographic anthropological research to see if imprisonment could be found to be a risk factor in HIV transmission and by implication whether alternatives to incarceration should be considered more seriously as ways of dealing with more categories of offending behavior. Schneider [19] argued along the same lines by suggesting that it is wrong to stereotype poor urban communities in the US as having themselves to blame for the HIV epidemics affecting them because, according to her, the war on drugs is biased against poor communities of color thereby exposing the poor blacks and Hispanics to greater infection rates whereas harm reduction as a drugs policy could help to reduce the rates of infection.

In 'Role of drug treatment and Rehabilitation on HIV/AIDS prevention and care', UNODC [20] presents an annotated bibliography of research findings from around the world on drug treatment and HIV. One of the authors cited was Lichtenstein [21], 'Women and Crack-cocaine use', in which it was found that there is a link between drug addiction and HIV infection among inmates of an Alabama jail sample, according to survey responses. Bastos, *et al.* [22] in 'Drug use and the spread of HIV in South America and the Caribbean' found little IDU in the Caribbean but observed that the problem was increasing due to the availability of crack-cocaine. On the other hand, Dingle, *et al.* [23], say that there is no link between HIV and alcohol following the review of the literature.

One methodological weakness of these studies is that they were based on self-report surveys when laboratory tests of bodily fluids for drugs and alcohol traces could have more objectively tested the null hypothesis that there is no link between drugs and alcoholism and HIV infection rates. Webb, *et al.* [24] did a

test and retest study of the reliability of the quantity frequency and the diary method of testing alcohol use by self reporting. They found that light drinkers appeared to be reporting stable and therefore reliable quantities in both methods while heavy drinkers tended to reduce the quantities that they reported on the retests. They explained this as being either because the quasi experiment had a positive effect of changing the attitudes of the heavy drinkers or because of the regression to the mean effect. However, it could also mean that heavy drinkers had more difficulty remembering exactly how many drinks they took, indirectly raising validity threats to self-reported alcoholism scores.

In the Caribbean: Examples from the Caribbean include the interesting survey of 2580 randomly sampled Jamaicans by Simeon, *et al.* [25,26] on whether smoking marijuana before sex exposed respondents to STD in Jamaica. The study was designed to replicate studies in the US which were controversial in the sense that some found a link while others did not. The Jamaican study found a link among men who smoked marijuana and their history of STD while the women who smoked marijuana were fewer than the men and there was no statistically significant relationship between smoking marijuana and STD among women. The study also suggested that it might have to do with the fact that the men are more likely to have sex with prostitutes than women and so the link with marijuana remains to be confirmed because 'the study was cross-sectional and thus could not determine whether observed association was causal' but the association with STD among men who smoked marijuana was important due to the high prevalence of marijuana use in Jamaica, the authors concluded.

A similar cross-sectional survey of self-reports by Figueroa, *et al.* [27] found that men were more likely to admit using marijuana and alcohol, having more sexual partners and a history of STD compared to women in Jamaica. Perhaps if the researchers had tested body fluids for traces of marijuana, alcohol and STD instead of relying on self-reports, their analysis of causal links could have been better confirmed or denied for both men and women. Such biochemical co-testing for drugs and HIV is even more crucial when psychiatric patients are concerned but for some reason self-report was adopted for such patients as well by Hutchinson and Simeon [28] who found from hospital records that patients with a history of substance abuse problems, especially cocaine, were also more likely to be infected with HIV compared to the general population.

Another study was that on Guyana by Persaud, *et al.* [29] who conducted 'A cross-sectional survey among 124 street and brothel-based female commercial sex workers in Georgetown in 1997' in an attempt to find seroprevalence, rates, drugs, alcoholism and condomization rates. They stated that 'No statistically significant association was found between HIV infection and marijuana use (88% use alcohol) nor any sociodemographic variables' although they found an association between cocaine use and HIV. Their recommendation was that 'There is urgent need for a community based behavioural intervention' due to the finding that brothel based CSWs were more likely to report using condoms with their customers compared to street based ones, suggesting that brothels might be safer perhaps because they are easier to regulate. The positive results for HIV were not reported separately for both samples but gave a rate of 46% and relied on self-reports to test for drug use, not laboratory tests at the same time as the HIV test.

In a case study of Trinidad and Tobago for a Masters Thesis at Heidelberg University, Fengwei [4] describes the perspectives of health policy makers, programme managers and health providers on drug prevention and rehabilitation among HIV positive drug users in Trinidad and Tobago. The double stigmatization of people who use drugs and who are also HIV positive means that many such people may not be accessing appropriate HIV prevention, care and support that they need. IDUs in Trinidad and Tobago accounted for a small number of new infections on record (14 new infections) and although there was suspicion that crack cocaine was associated with the spread of infections, there was no data to prove it. Fengwei's methodology consisted of interviews with officials and analysis of existing statistics. While that was useful for identifying current priorities and strategies in prevention efforts, it is not suited to testing any presumed relationship between drugs use, alcoholism and HIV. The perspectives of the health providers might be saying more about their attitudes than about the role of illegal drugs but there is a need for lab evidence from bodily fluid samples to see the correlation strength.

A similar Heidelberg University M.Sc. study was done by Djumalieva [3] who attempted to identify and analyze socio-cultural and economic factors associated with marijuana and cocaine use and HIV risk behaviour of drug rehabilitation clients in Trinidad and Tobago. A finding was that 'Many interviewees report an unsafe sexual behaviour, such as trading sex for money and drugs, never using condoms, or inconsistent use of condoms…Many male interviewees reported sexual contact with female drug users'. IDU is uncommon but the smoking of marihuana and crack cocaine is reported to be increasing in data from National Drug Abuse Unit among 15-24 year olds cited by Djumalieva [3]. Risk of trading sex for drugs is suspected to be also increasing and was attributed to childhood experiences of abuse which also tend to predispose young people towards becoming commercial sex workers, according to the report. The reliance on opinion surveys should be improved upon by empirically co-testing bodily fluid samples for HIV and for drugs and alcohol to determine what is a co-factor and what is not. Drummer [2] reports that oral fluid (saliva) has more concentration of drug residues than plasma (blood) in cases of drugs that pass though the mouth and such samples are less invasive than blood samples.

Dolan, *et al.* [30] 'reviewed imprisonment, HIV prevalence, and the proportion of prisoners who are IDUs in 152 low-income and middle-income countries' (P32). 75 countries had information on HIV in prison. 20 countries had prevalence rate of more than 10% in prisons. 8 countries reported IDU rates of more than 10% in prison. Cuba had an imprisonment rate of about 487 per 100,000 and HIV rate in prison of 25.8%, Jamaica had prison rate of 176 and 6.7% prison HIV rate while Trinidad and Tobago had prison rate of 307 and prison HIV rate 4.9%. A general health survey of prisoners in the Caribbean at intake and release points should help care providers

plan better ways of preventing & treating HIV in prison and in the community. The statistics cited by Dolan did not cross-tabulate between HIV and drugs or alcohol prevalence among prisoners but intake and release screening exercises could help to reveal the trend in the Caribbean.

In the global literature: Reflecting on the hypothesized relationship between marihuana, alcoholism and HIV, Iversen [31] observed that 'Alcohol could be described as the intoxicant for the older generation, marihuana that for the young' although both are often consumed together (p.97). Comparing marihuana and alcohol, the book reports that 'Whereas marijuana tends to make users relaxed and tranquil, alcohol may release aggressive and violent behavior. In terms of the long-term effects of chronic use, alcohol has none of the subtlety of marijuana. Heavy long-term use can lead to organic brain damage and psychosis or dementia' (p. 98). The puzzle for policy makers is why alcohol is legal and marihuana illegal. The book goes on to observe that 'reports in the 1970s seemed at first to provide alarming evidence of a suppression of normal immune system function in chronic marijuana users. However the animal studies required treatment with 50-1000 Times Higher (THC) than those taken by human marijuana users' (p67) and many of the researchers failed to replicate their own findings later. The book adds that 'Patients suffering from HIV infection might be expected to be at particular risk, since their immune systems are already impaired as a result of the viral infection.' (p67) but cites Kaslow, *et al*. [32] who found no such effect when they followed for 18 months, nearly 5000 gay men in America who were HIV patients and who used marihuana weekly or more frequently compared to those who did not use marihuana. The Office of National Drug Control Policy in the office of the US President reported that 'alcohol and tobacco cost society a great deal every year in terms of crime, lost productivity, tragedies, and deaths. Why legalize marijuana and add a third drug to the current list of licit threats?' Perhaps because marijuana is a much safer alternative to alcohol and tobacco [33].

The National Institute on Alcohol Abuse and Alcoholism [34] reported that 'People with alcohol use disorders are more likely than the general population to contract HIV. Similarly, people with HIV are more likely to abuse alcohol'. The report continues; 'Alcohol use is associated with high-risk sexual behaviors and injection drug use, two major modes of HIV transmission. Minority groups are the most heavily affected by HIV associated with drug injection. The proportion of all AIDS cases reported among women has tripled since the mid-1980s, primarily as a result of heterosexual exposure and secondarily through injection drug use'. An empirical survey of HIV test samples in the Caribbean could easily test this US hypothesis by determining correlations of drugs and alcohol in HIV test samples.

Interventions: Wood, *et al*. [5] in a Lancet editorial reviewed the evidence which suggests that over-reliance on criminal justice approach to drugs policy impedes harm reduction globally. According to him, HIV has moved from being mainly sexually transmitted to being mainly transmitted through IDU but harm reduction programs are not common around the world while the preference is for criminal justice approaches to the drugs problem. Wadak [6] also presents evidence to show that the criminal justice approaches complicate the problem and he suggests that harm reduction is the way to go. The Caribbean countries adopt the same criminal justice approaches that appear to be failing in developed nations. There is a need to compare and contrast countries and regions with harm-reduction approaches to those with law and order to see which has the more prevalent rates of HIV and drugs or alcohol problems. For instance, are the HIV and drug abuse or alcoholism rates higher or lower in The Netherlands compared to the US or UK and what are the policy implications for the Caribbean?

Davis, *et al*. [35], found that 39% of 1127 reported AIDS cases were attributed to IDU in Philadelphia. Utilization of needle exchange service was measured 9 months before and after intensive police street level intervention, showing declines in utilization. 'Use fell across all categories and time periods studied, with significant declines in use among total participants, male participants, and Black participants. Declines in use were more dramatic among male and Black participants' (p233). Since IDU is not common in the Caribbean, it could be that syringe exchange is not a relevant topic. But it is relevant if police intervention in illicit drugs use reduces participation in HIV harm reduction. What forms of harm reduction are appropriate for the drugs and alcohol use and trade that are prevalent in the Caribbean? Is the over-reliance on criminal justice approaches also indirectly co-causing HIV spread in the region?

The Lancet, editorialized on an M. Edgar intervention study in Nicaraguan motels in which educational materials did not prove more effective than discrete provision of condoms for use rate in motels. Prevalence in the Caribbean and South America is one of the worst epidemics outside Africa with a seroprevalence rate of almost 2% in 1999 but with Cuba having one of the lowest in the world 0.02%. High prevalence of violence, early initiation of sex and poverty in the Caribbean combine with inadequate spending on antiretroviral & other drugs to fuel rate. The editorial recommends that 'to direct scarce resources efficiently, improved surveillance data to identify the most vulnerable groups and more controlled intervention trials' are needed and I could not agree more.

Allen, *et al*.[36] did a study in Georgetown, Guyana, in which a cross-sectional survey of 299 female commercial sex workers examined patterns of the use of HIV and STI services among the sex workers. They found that 30.6% of the women were found to be HIV positive. The association between HIV and vaginal ulcers and between vaginal ulcers and cocaine use was found to be significant. They recommended that treating sex workers with ulcers might help to prevent HIV infection and spread and providing drug abuse prevention programmes for the sex workers might also help to reduce the spread of HIV and STI. As in most of the literature reviewed, the reliance on the survey data might need to be augmented with the testing of bodily fluids for traces of both HIV and alcoholism or illicit drugs.

Reid [37] did a study of the homeless to see if they exhibit the reported links between substance abuse, risky sexual behav-

iours and HIV infections found in other parts of the world. It was reported that 51 of the 88 respondents admitted that they used at least one substance regularly. A larger proportion of the women (37%) compared to men (27%) reported using cocaine regularly. The study suggests the need for specific educational approaches to address drug abuse and HIV prevention among the homeless because they tend to be hidden when intervention focuses on sex workers and men having sex with men or IDUs. Again, at the risk of sounding too repetitive, reliance on self-reports should be complemented with co-testing for drugs and alcohol traces in HIV test samples.

Douglas [38] offers a description of the geo political and cultural hurdles relevant to the development of a regional drug abuse epidemiological perspectives in the Caribbean. He did not mention alcohol or HIV specifically but gave a good idea of current interventions with regards to illicit drugs trade and drug abuse in the Caribbean. Lack of resources frustrated earlier attempts like the Caribbean Community Epidemiological Task Force. The Plan for Action for Drug Control Coordination and Cooperation in the Caribbean was adopted in 1996. The Santa Domingo Declaration against Drugs of 1997 reinforced the Barbados Plan of Action by calling for an epidemiological surveillance on drug abuse and yet the problem of illicit drugs persisted. CARICOM allocated funds towards the surveillance programme that promises a mainly criminal justice approach to drug abuse and trade but little interest in harm reduction. How successful is this war on drugs in the Caribbean?

Clapp, *et al.* [39] analyzed data from a National Drug Abuse Treatment System Survey to see how ideologies of harm reduction versus abstinence affect the effectiveness of treatment in the prevention of HIV spread or rates. Harm reduction among IDUs is more effective in HIV prevention efforts but this is contradicted by current drug abuse treatment approaches that stress law enforcement repression of drugs as 'the primary desired treatment outcome' (P. 69). 'The notion that ideology has both theoretical and practical significance to HSOs has widespread appeal. Too little empirical research has yet been conducted, however, to determine adequately how much and in what way ideology impinges' (p.75). The authors conclude that 'It is important that future research continue to examine the nature and extent of involvement by substance abuse treatment settings in HIV/AIDS prevention.' P. 75

Drug trade and HIV risk

In the global literature

Sharman [40] reported that the spread of HIV in Central Asia, Russia and Western Europe is linked to the problem of drug trafficking which is often associated with increasing drug addiction in areas that serve as transit routes. The problem is particularly serious in Central Asia where IDU is becoming more common and also serving as the main route for new HIV infections in the region. Reporting for the UNDP on the links between drugs trafficking and HIV spread, Deany [41] stated that a feature of the growth in drug trafficking has been the close relationship between the spread of HIV infection among injecting drug users and the routes of drug trafficking. These trafficking routes have become more unstable over time as intense efforts by law enforcement to control drug supplies have resulted in the movement of these routes to new areas where there are temporarily lower risks. Unfortunately this instability of drug trafficking routes exposes additional large populations to the risk of HIV infection among injecting drug users.

UNAIDS and WHO make reference to China as a cause for concern and a possible example to the Caribbean by extension given the proximity of drug producing areas to the Caribbean. IDUs might not be common in the region at the moment but something should be done to address the danger before it manifests.

In the Caribbean

Not much has been written about any possible links between HIV and the drugs trade in the Caribbean. Kelley and Bain [42] state that 'much of the Caribbean borders on major drug producing areas, and the region is of considerable importance in the transshipment of cocaine to Europe and North America' (p.38) They add that, 'Surprisingly…the transmission of HIV by injecting drug use is reported to be small, accounting for no more than two per cent of AIDS cases'. Doctors report seeing few people with needle marks and Caribbeans are said to be scared of needles and needle-sticks (p. 38) as one popular calypso song about the frightening size of the doctor's needle puts it with a sexual double entendre. They report that 'the highest urban HIV prevalence in the US occurs in San Juan, the capital of Puerto Rico. Unlike other severely affected parts of the Caribbean, HIV transmission in Puerto Rico is strongly associated with injecting drug use'(p.41). There might be a need to empirically test these assumptions against the findings of Farmer [15] that drug injections are common in poor areas without doctors in Haiti and possibly other poor areas in Caribbean with malaria such as Guyana.

Allen *et al* [12] observe that 'the Caribbean is not a minor producer but a major transshipment route for the drug trade as it enters North America'. Given that the major cause of infection in the region is heterosexual intercourse rather than IDU, the authors suggest that the link might be indirect as the drugs trade helps to fuel commercial sex work and the trading of sex for drugs. According to them, 'HIV among sex workers has been found to be associated with the use of illegal drugs

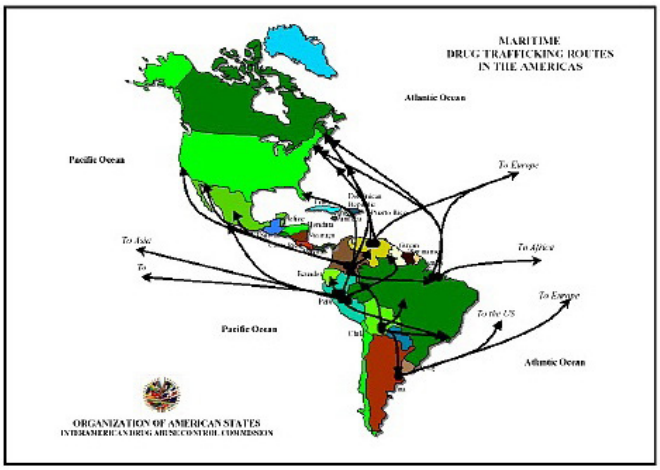

Figure 1: Maritime Drug Trafficking Routes: Organization of American States (1998) [63]

(particularly cocaine) and high consumption of alcohol'. The following map (Figure 1) shows the drug trade routes in the Caribbean.

Interventions

In the Caribbean, Munroe [43] has documented the many efforts by the governments of the region to stem the supply of narcotics and also to reduce demands for drugs but these do not seem to be having the desired effects. Although he did not mention HIV nor include alcohol and tobacco among menacing drugs in his discourse of the drug menace, he suggested that inadequate funding is hampering law enforcement responses while the lack of alternative development policies makes the drug trade comparatively advantageous to many of the poor in the region.

But even in countries with seemingly unlimited resources for law-enforcement interventions and the industrial base for alternative development, none of the wars against drugs, alcohol or HIV has ever ended in a victory for the warriors. Thus the defeats of war-making policies have been referred to as pyrrhic defeat due to the huge costs in life and resources involved. As Reiman stated without mentioning HIV specifically, the anti-drug policies around the world fail to reduce drug abuse and drug trade but contribute to increases in crime resulting in what he called 'pyrrhic defeat'. According to Reiman[44], the heroin and crack addicts are forced to steal to feed their addictions, then the drug-dealers are motivated with huge profits to keep supplying to willing consumers, leading to high rates of murder and violence in inner city locations as the drug dealers compete over turf for the lucrative trade. Then hard-working law enforcement agents who risk their lives in the line of duty are corrupted with apparently irresistible sums of money offered by drug dealers with implied threats if they should refuse the bribe. Reiman goes on to conclude that 'otherwise law-abiding citizens' are criminalized for using cocaine which is less harmful than lawful tobacco, or criminalized for using marijuana which is less harmful than legal alcohol and less deadly than over the counter aspirin. 'All this occurring at a time when there is increasing evidence that what does work to reduce substance abuse is public education' [44].

The legalization of marijuana in Uruguay in 2013 following the vote by citizens in the states of Colorado and Washington to legalize it in the US in 2012 long after about 18 states allowed medical marijuana to be prescribed by doctors in the US and long after The Netherlands and Portugal chose to reduce harm by regulating drugs all go to show that the evidence-based advocacy of people like Reiman is succeeding. The administration of President Barack Obama decided in 2010 to reduce the 100:1 disparity in the sentencing of crack cocaine compared to powder cocaine to 10:1 and has stated that his administration will not go after states that have medical marijuana laws to enforce the federal criminal law against marijuana. Perhaps he should go all the way and legalize marijuana to provide leadership to the apparently timid countries of the Caribbean and Africa and help reduce the violence and health risks associated with the criminalization of these substances in those regions and the consequent war on the poor and racial minorities in the guise of the war on drugs [45].

There is information that tobacco addiction and alcoholism are more widespread in the Caribbean island of St. Maarten than drug abuse, according to a self-reported survey of 1,078 students aged 14-18 by Mcbride, *et al.* [46]. They found that students who described their relationships with their parents as 'great' were significantly less likely to engage in risky behaviours such as tobacco use, drug abuse and sexual activity. Their data show that 45.8% never smoked tobacco, 20.6% never drank alcohol, 78.0% never used drugs and 49.6% never had sex. These findings might be useful in harm reduction by targeting tobacco addiction in programmes that focus on drug abuse and alcoholism given that tobacco addiction and alcoholism appear more widespread and may be more closely linked to risky sexual behaviour than illicit drug addiction because they are relatively less stigmatized by the general public. Webb, *et al.* [47] support this with the finding that tobacco smoking was correlated with more HIV-related symptoms, greater tendency to use alcohol and marijuana and less likelihood of having social support. They found that light smoking was associated with racial and ethnic minorities who were poor while moderate smoking was related to people who had less education and heavy smoking was associated with those who had less education and those of a younger age. However, they concluded that 'viral load, CD4 count, and depression were not associated with smoking status but called for 'biopsychosocial factors' to be taken into account in the policies relevant to tobacco smoking and behavior [47].

Drugs and alcohol consumption among people living with HIV/ aids

In the global literature

Samet, *et al.*[48] reported a seven-year study of 595 people infected with HIV who had alcohol problems between 1997 and 2003. They found that those subjects who were not on ART medication, heavy alcoholic consumption was related to lower CD4 cell count but not with higher log10 HIV RNA compared to those who abstained from alcohol. Those on ART medication did not show a lower CD4 cell count nor with a higher log10 HIV RNA. Observing that alcohol use is heavy among HIV patients, they conclude that heavy alcohol use is especially problematic for those patients who were not receiving ART medications. The study conducted CD4 cell counts but relied on survey responses for alcohol consumption levels. Perhaps, Samet, *et al.* [48] should have tested for alcohol concentration in the blood samples instead of relying on a social survey alone for this variable but the traces of alcohol might not be found after a long interval between use and testing but other drugs traces could still be found in blood samples and even higher concentrations have been reported in saliva samples that are less invasive to obtain and such drug testing are becoming routine in work places with safety concerns [2].

In the Caribbean

HIV awareness education in the Caribbean focuses mainly on sex education without adequately addressing the potential or actual influences of drugs and alcohol on the practice of unsafe sex. For instance, Browne, Winkler and Bodenstein [49] focused almost entirely on sex education and only mentioned

alcohol abuse in the family as a rape and HIV risk factor for young people in the Caribbean. This focus on sex education is justified by the fact that AIDS-related diseases claimed 19,000 lives in the Caribbean in 2006 as one of the leading causes of death among those aged 15-44 in the region [1]. The report also indicated that 'harsh gender inequalities' and a 'thriving sex industry' servicing both locals and tourists combined to make the mainly heterosexual HIV-AIDS epidemic in the region severe. The report concluded that:
'Sex between men, a hidden phenomenon in the generally homophobic social environments found in this region, is a smaller but important factor, and unsafe sex between men is believed to account for about one tenth of reported HIV cases in the region' [1].

On the other hand, researchers who focus on the drugs problem do not always make a direct link to the problem of HIV in the region. For instance *Caribbean Drugs* - From *Criminalisation* to *Harm Reduction*, by Axel Klein, Marcus Day and Anthony Harriott [50] present arguments from around the world in favour of harm reduction and less reliance on criminalization in line with the recommendations of the Jamaican Ganja Commission but the actual or potential links with HIV were not explored in the book. More recently, Figueira [51] touched on this link in passing when he raised the question of the movement of persons living with HIV/AIDS forced to live the life of an undocumented immigrant: low wages, poor housing, poor diet and sexual activity as a means of personal survival. The illicit traffickers are then intensifying the threat of HIV/AIDS to the viability of Caribbean states [51].

Conclusions

The epidemics of drug abuse, alcoholism and HIV are genuinely of concern to policy makers and of interest to researchers in the Caribbean. Many researchers are beginning to take up this challenge mainly through self-report studies.

A major conclusion here as is often the case with literature reviews is that there is need for more research with different methodologies as part of the efforts to find the evidence to back policy formulations that could help to stem the rise of drug abuse, alcoholism and HIV infections in the Caribbean. Particularly important is the need to rely less on self-report studies when researching any hypothesized links between alcoholism, tobacco addiction and drug abuse and HIV prevalence when it is possible to test bodily fluid samples simultaneously for HIV, alcohol, tobacco and drugs [2]. In such research, we should avoid any prejudices against marginalized groups or the dichotomy between legal and illicit substances and objectively study the evidence as a guide to policy interventions.

Recommendations

For policy

Policy makers should reconsider the war on marijuana given that subsidies are provided to tobacco manufacturers. In my freshman undergraduate essay at the University of Calabar in Nigeria, I was shocked to discover that medical experts had for a long time known that 'alcohol is 1000 times more lethal than

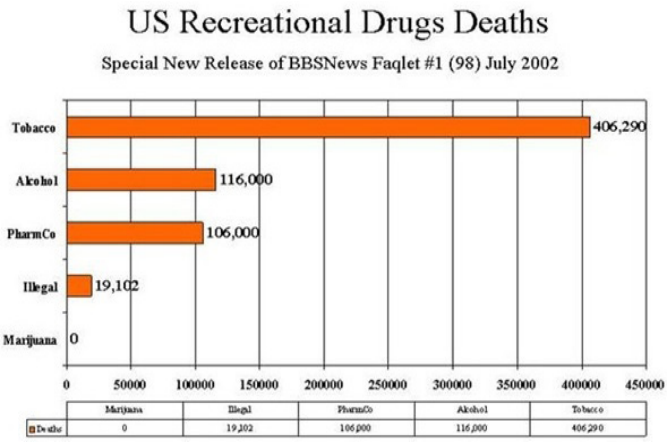

Figure 2: Relative Safety of Marijuana Compared to Deaths from other Recreational and Prescription Drugs in the US [64]

marijuana' and tobacco is 500 times more lethal than marijuana [52]. No one has ever died from marijuana while an estimated six million people die annually from tobacco-related illnesses and hundreds of thousands die from alcohol poisoning. Gabe [33] supports these conclusions with a summary of his own research on drug toxicity to show that six times the quantity of for heroin; ten times the quantity of alcohol; fifteen times the quantity of cocaine; twenty times the quantity of codeine and 1000 times the quantity of marijuana that gives a person a 'buzz' could kill the person, indicating that marijuana is much less lethal than the rest. The evidence stated that marijuana was the safest drug known to humanity because it was not addictive in the sense that it had neither dependency nor withdrawal syndromes and that medical doctors say that it could be a good prescription for lots of chronic conditions.

Figure 2 compares the deadly effects of recreational and prescription drugs unfavorably to the records of no death from marijuana in the US

My doctoral research at the University of Edinburgh on *Black Women and the Criminal Justice System* further revealed that the predominant reason for the incarceration of black women in UK prisons was for drugs trafficking. In other words, if there was no arbitrary and selective war on drugs, hardly any black woman would be in UK prisons [53]. Instead, those women would be gainfully employed growing their own marijuana and selling them to tourists and to supermarkets to earn fair incomes for their families. The trade would be taxable to earn revenue for the governments around the world. The old and the sick who need it for chronic pain will not risk going to drug dealers to buy and the youth who use it recreationally would not be paranoid about law enforcement agents.

If it was white women who were being arrested in Africa and in the Caribbean and jailed in large numbers for smuggling relatively safe substances and if it was rich white youth who were being over-incarcerated in Europe and North America for drugs-related offenses, the law would have been changed long ago to end the war on drugs. Instead, scarce resources were being wasted in order to ruin the lives of otherwise law-abiding people in what Jeffrey Reiman called the pyrrhic defeat of the war on drugs in his text, *The Rich Get Richer And The Poor Get Prison*.

I was probably the only Professor in Africana Studies who endorsed the successful campaign for voters to support Amendment 64 that legalized marijuana in Colorado during the 2012 election in the US. I have also drafted resolutions for the Association of Black Sociologists and the African Criminology and Justice Association to support legalization so that we may use education to get the youth to say no to drugs. Liberation sociologists should initiate similar referenda around the world to get voters to change the oppressive drugs laws if the rulers of the earth are reluctant to follow the lead of The Netherland, Portugal, Uruguay, the 18 states in the US that have authorized medical marijuana, and the two states in the US that voted to legalize, tax and regulate marijuana just like the much more dangerous gate-way drugs: alcohol and tobacco.

Caribbean countries should consider a regional policy of decriminalizing marijuana on a regional basis as an experiment in money-saving (the bulk of the funds spent prosecuting the war on drugs would be saved), money-raising (through the legitimate taxes to be paid by sellers), employment generating and income generating, tourist-attracting, prescribed by doctors for certain ailments (including AIDS), less dangerous than tobacco and alcohol by miles, to be left to the free choice of responsible adults and only with medical intervention if and when necessary as in the cases of alcohol and tobacco and yet not everyone is addicted to either alcohol or tobacco. Ritter [54] reviewed relevant literature and came to the conclusion that there is evidence to support harm-reduction interventions rather than prohibition and criminalization for hard drugs with effective syringe exchange programs. Although there is evidence of effective trauma-reduction interventions for alcohol, alcohol and tobacco appear to lack the same overarching harm-reduction approac h that is evident towards illicit drugs. Ritter did not find evidence of harm-reduction for non-injecting routes of administration of drugs and called for more research to provide evidence that would persuade policy-makers to try more harm reduction and less criminalization [54].

For programmes

Alcoholism and drug rehabilitation programmes, tobacco cessation, and drug abuse prevention programmes should be considered as part of HIV prevention programmes in the Caribbean. If the expected links between being under the influence of drugs and the tendency to engage in unsafe sex is proven, then drug and alcohol abuse prevention programmes could be seen as saving lives along with the HIV prevention programmes. With specific reference to tobacco, Aids Weekly [55] reports findings that tobacco smoke may increase the vulnerability of smokers by changing the structure of the lungs and altering a number of immune system responses such as the reduction of the production of antibodies and curbing the activities of protective white cells. Besides, the report indicates that there are more than 40 million people living with HIV/AIDS in the world while the global death toll from tobacco-related diseases is estimated to re ach 8.4 million in 2020. This report was echoed in another report that found that five out of six research studies reviewed indicated 60% and up to a triple increase in the vulnerability of tobacco smokers to HIV infection although nine out of ten studies did not see a significant increase in the progression to AIDS among HIV-infected tobacco smokers.

Furber, *et al.*[56] found that tobacco use is linked with HIV infection but not significantly linked with progression to AIDS. Alternatively, where a drug like marihuana has been linked in the literature with helping HIV patients cope with the infection [57], this should be studied carefully in the Caribbean through quasi experiments to see if such a drug could be approved for HIV patients in the region. UNAIDS [1] highlighted the increasing threat of injecting drug use in parts of the Caribbean region especially among those who share needles in prison.

In contrast to the rest of the region, injecting drug use is the most important risk factor for HIV transmission in Bermuda and Puerto Rico's relatively small epidemics. Very high HIV infection levels are being found among injecting drug users in Puerto Rico. HIV incidence was 3.4% among drug users in Bayamon, 20%–25% of whom were infected with HIV [58]. Injecting drug use in places of incarceration appears to be commonplace: 53% of injecting drug users who had been incarcerated said they had injected in prison [59]. There is a pressing need for effective harm reduction programmes in Puerto Rico, including places of incarceration [1]

An undated United Nations Office of Drugs and Crime report on Grenada indicates that focus group discussions with students aged 14-24 indicated that the use of marijuana and alcohol was prevalent among them and that they were also sexually active without always using condoms, making them more vulnerable to HIV infections. The report recommended that, in addition to programs to reduce poverty which could reduce the temptation of the sex trade and the drug trade, greater awareness programs should be implemented to further sensitize the youth about risky behaviors.

For research

Carol de Launey [60] discovered that HIV positive gay men in Australia tended to use marihuana more than non-HIV positive gay men and interviews disclosed that this was because marihuana helped them to relax and increased their appetite, thereby helping them to manage the infection. The author summarizes evidence from research that indicates that Grinspoon and Bakalar [61] are right when they titled their book, *Marihuana, the Forbidden Medicine*, listing a number of scientifically supported medicinal uses for marihuana that include: To alleviate the severe nausea and life-threatening loss of appetite associated with cancer chemotherapy; For glaucoma; Epilepsy; Multiple sclerosis; Paraplegia and quadriplegia, (paralysed patients preferred cannabis to prescription spasm medication, and male patients said it helped achieve and maintain an erection) (p 83); For AIDS; Chronic pain; Migraine; Pruritus; Menstrual cramps; Labour pain; Depression and other mood disorders; Insomnia; For antibacterial and anti-tumour properties [60].

Recent Research by Woolridge, *et al.* [62] present evidence of the effectiveness of marijuana in managing the pain and side effects associated with HAART and thereby improve adherence to the prescriptions. Abrams, *et al.* [57] support this with the finding that smoking marijuana 'effectively relieved

chronic pain from HIV-associated sensory neuropathy'. Surely, researchers in the Caribbean should be interested in testing any such claims with respect to HIV by simply comparing the health and the care of HIV patients who used marihuana, tobacco, alcohol and other drugs regularly with those who did not to see if there are any health benefits that accrue or dangers that arise from the use of such substances by HIV patients.

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