

## **HIV and other STI public prevention campaigns: Vain endeavours to break risky new trends in view of blending sex and drugs**

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**A**- Conception and study design ; **B** - Collection of data; **C** - Data analysis; **D** - Writing the paper;  
**E**- Review article; **F** - Approval of the final version of the article; **G** - Other

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### **ABSTRACT**

Although at the global level the incidence of HIV has declined there are contrary trends gaining momentum. Unimpressed by public prevention campaigns certain groups belonging to the 'at-risk' population are engaging in risky sexual behaviour and concomitant misuse of illicit drugs thereby potentiating the odds of spreading HIV and other sexually transmitted infections (STIs). The blending of drug misuse with substantial risky sexual behaviour increases those risks and creates an almost inseparable complexity. Group-sex settings of this kind are partly organised via national and international social networks. Those people engaged

in this modern trend mostly present with various health impairments thereafter, such as unconsciousness or confusion, often rendering them unable to adhere to combined antiretroviral therapy (cART) if they are HIV-infected. These people staunchly refuse to cooperate with prevention messages. Thereby public prevention efforts to curb the spread of HIV are largely wasted. But it is not just the individual's issue; if developments of this kind are not contained serious challenges with HIV and other STIs might arise for these communities.

**Key words:** HIV, prevention concepts, barriers, psychotropic drugs

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DOI: 10.5604/01.3001.0009.5137

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Received: 06.03.2016

Accepted: 13.05.2016

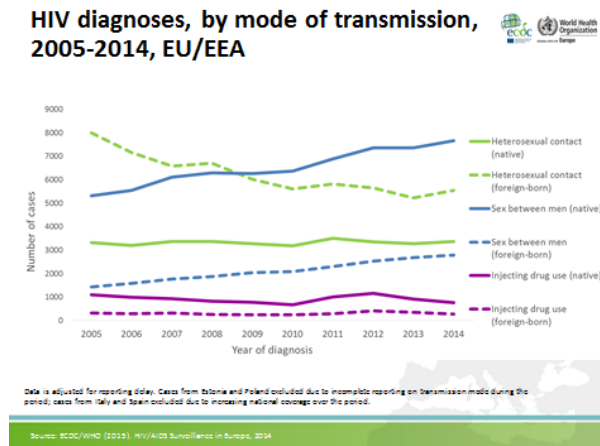
Progress in Health Sciences

Vol. 6(1) 2016 pp 158-164

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## INTRODUCTION

“Many European countries have had specific prevention programmes for men who have sex with men (MSM). But the number of HIV diagnoses among MSM in countries with consistent reporting has continued to increase over the last decade in all but six EU/EEA countries” [1].



**Figure 1.** The development of the incidences of HIV diagnoses by mode of transmission during 2005 and 2014 in the states of the EU/EEA [2].

However, designers of HIV/AIDS prevention services have disregarded certain developments which may partly explain their malfunction. For example, the invention of highly active antiretroviral therapy (HAART) in the 1990s engendered a movement towards a subculture of increasing risky sexual behaviour in the at-risk populations [3, 4]. With the implementation of HAART a perception began to be formed that HIV-infection was no longer associated with an early fatal outcome. This new antiretroviral therapy had a liberating effect on those infected with HIV as they were now able to expect a longer life [5].

## REVIEW

### The diversification of HIV

In the early twentieth century four founder effects occurred when different simian immunodeficiency viruses (SIVs) crossed the species barrier to humans, resulting in the HIV-1 phylogenetic groups M, N, O and P. HIV-1 of the M group currently dominates the HIV pandemic. The M-group is divided into nine subgroups or clades numbered A to K and showing a particular geographic distribution. Different disease progression rates between clades should be considered [6,7]. Similar events occurring in other simians brought forth HIV-2 [8]. Five clades are currently known; HIV-2 is mainly endemic in West Africa and contributes to about 1% (in broad geographic terms) of the global HIV pandemic.

The circulating recombinant forms (CRFs) result from the activity of the reverse transcriptase (RT), an HIV genome encoded enzyme that lacks proof-reading features. If somebody has acquired a double infection or a super infection, for example two HIVs of different clades in the same cells, the RT can produce replicative competent interclade recombinant forms, which may in turn be spread through the population, then being termed CRF [9].

### The state of current strategies for the prevention of HIV transmission

Most public HIV prevention strategies are based on new public health (NPH) concepts [10], relying solely on the mass communication of messages that depend upon people’s cognitive competence and an expectation that they will adhere [11]. Yet, this requires those people being addressed to internalise measures for preventing the transmission of HIV and other STIs. Community-based approaches such as these can only be efficient enough if the majority of the addressed people follow the messages being given and behave responsibly, such as acknowledging the bodily integrity of their partners [12]. Furthermore, those people infected with HIV are asked under cART to adhere to this therapy and to the advice of their health care providers, thereby supporting the goal of suppressing their individual HI viral load (VL) below a threshold to avoid HIV transmission; but there are failures.

This ‘public learning’ strategy works for a large proportion of those concerned – but it has failed to reach certain subpopulations, namely the hard core groups of people within the at-risk population as outlined by WHO [13], who continue to follow their irresistible urge to enjoy risky lifestyles. Even some officials may have perceived the insufficient impact of the current prevention strategies; they now encourage the switch to biomedical approaches as additional measures, namely (i) pre-exposure prophylaxis (PrEP) for HIV naïve individuals and (ii) treatment as prevention (TASP - drug regimens used for PrEP or TASP concepts have to consider possible drug resistance scenarios. In a broader sense this includes situations termed Post Exposure Prophylaxis - PEP) for already HIV-infected ones. However, measures of this kind may help those concerned to relax cravings for enjoying risky practices, e.g., unprotected anal intercourse (UAI) which raises the odds of becoming infected with an STI, or HIV if HIV naïve.

### Cluster driven spread of HIV and other STIs

The main transmission routes of HIV are homo- or heterosexual behaviour and drug injection. Furthermore, MSM, due to possible bridging function of certain members within this risk population, pose a potential spreading HIV and other STIs both across other vulnerable populations and women.

Apart from casual dating through 'sex dating apps' which lead to people having sex upon consultation to reduce risk [14] there are other trends with the potential to increase HIV incidence [15]. There are also group setting phenomenons in certain at-risk population settings involving promiscuity, which may contribute to increased transmission of HIV and other STIs.

Among injection drug users (IDU) settings of this kind have long been associated with an increased spread of HIV, particularly because of needle sharing practices; this may happen in case needles or syringes are contaminated with HIV or other blood-borne infectious agents like Hepatitis B Virus (HBV) or Hepatitis C Virus (HCV), and which may result in eruptions of infected people.

Moreover, settings of this kind have established 'bareback' group sex scenarios, seen as a sociocultural phenomenon [16]. Bareback in this sense refers to intentional UAI among MSM – a risky practice in terms of both transmitting and acquiring STIs. Meanwhile, subpopulations of the at-risk groups organise these meetings via national as well as international networks – without the awareness of the general population [17]. The impact of cluster situations has been pointed out at the Conference on Retroviruses and Opportunistic Infections (CROI), Seattle/USA, 2015:

- Buskin SE, Herbeck JT, Toren KMG; Perry MR, Bennett A, Golden MR. Large Phylogenetically Linked HIV Cluster in King County, Washington, 2008 to 2014, Abstract 238
- Oster, AM, Wertheim J, Campbell E, Hernandez AL, Saduvala N, Switzer WM, Ocfemia MC, Shankar A, Hall HI, Growth and Geographic Spread of HIV Transmission Clusters, United States, 2007–2012, *CROI 2015*, Abstract 241.

### **MSM are the main participants in these scenarios.**

The prevalence of HIV-infected people is already higher in these subpopulations than in the general population, making it a concentrated epidemic, and the relative prevalence is even greater for those actively taking part in group sex events. People engaging in unprotected sexual practices and promiscuity face increased odds of onward transmission of their HIV thereby creating challenges for public health [18,19]. Depending on the relative prevalence of HIV-infected people with infectious potential it may reach a point where self-sustaining chains of infection are created; the "*HIV-1 subtype distribution (...) suggest highly compartmentalized epidemics*" [20].

As a result of unprotected sexual practices the spread of HIV and other STIs, such as HCV is also facilitated [21,22,23].

Cluster derived outbreaks of HIV have long been known to occur in settings such as these [24,25]. These cluster outbreaks also for HCV are indicative of people avoiding preventive measures in

the era of HAART [26]. Such engagements are intentionally planned; they are directly contrary to the messages of HIV prevention campaigns.

Due to internationally operating sexual networks there are infections crossing borders and international clusters of different kinds are being established [27], e.g., including Chinese [19] and Caucasian [21] communities. These trends as a result of engagement in high risk behaviour also indicate another increasing threat to public health: the spread of HCV [28-30].

### **Cluster settings – and readiness for intensifying risky life styles**

That is part of the *Risk Society* that has established in our Modern Societies [27].

A report from 2000 regarding the risks of MSM using drugs while having sex this has the on-going potential to spread HIV [31]. In certain subpopulations of the MSM group these trends have assumed an independent reality [32]. However, while officials might have ignored these lifestyle trends of the most affected at-risk populations in high-income, Western countries, these MSM guided trends have also extended to certain heterosexual scenarios. Therefore, it's inevitable that the issue of these sex-club sessions, both private settings involving a few people and large scale settings involving hundreds of people having risky sex with multiple partners, be addressed. It is important to keep in mind that to a great extent this happens alongside the misuse of various psychotropic drugs. The ultimate settings, named 'chem-sex' [33,34,35] and 'slamming parties' [36] are terms for sex and drugs settings [37,38]. Psychotropic drugs are used for reasons such as enhancing sexual enjoyment and relieving pain resulting from extreme practices. These developments have to be seen in the context of an increase in the misuse of illegal drugs [39]. Chem-sex and slamming settings have become a trend, particularly in certain gay communities participating in parties of this kind [40,41]. The use of psychotropic drugs is a common phenomenon [42,43]. "*A consistent association between substance use and sexual risk, particularly among men who have sex with men*" [44] is a part of reality not taken into account by officials who promote and continue to use the NPH concepts which presume an unimpaired cognitive level of those people targeted by prevention strategies.

### **What could the individual and societal consequences be?**

Depending on the drug and dosage used, psychotropic drugs concomitantly used before and/or during sex can result in a loss of self-control leading to excessive risk-taking behaviour.

Furthermore, certain drugs like amphetamines are used to relieve pain when risky sexual practices such as fisting are performed. But the drugs used may have grave consequences for the

individual's health and can result in a loss of self-governance. Disregarding this reality leads to misunderstandings about who is responsible for paying for the health consequences arising from the practices [45]. In contrast, the increasing phenomenon of large groups enjoying chem-sex parties which may continue for many days requires public health institution awareness. As these scenarios pose serious problems for public health, intervention measures such as lawful frameworks have to be developed. A report on how cocaine interacts with certain stages of the HIV replication cycle deserves to be followed up in this context [46].

Notwithstanding long-lasting health drawbacks due to psychological dependence, people using psychotropic drugs, at the very least, experience impaired cognitive competence making them unable to behave responsibly. For example, for days they may be unable to adhere to cART regimes if they are already HIV-infected; beyond this there remains the potential for interaction between the antiretroviral and the psychotropic drugs. Sequels can be: non-adherence to ART reduces the suppression of HIV replication thereby (i) leading to a rebound in HIV viral load which consequently increases the individual's HIV-infectiousness and (ii) facilitating the emergence of ART resistant HIVs. Furthermore, the individual will not be able to talk reasonably with their partner(s) to notify them about their HIV-positive status and provide details for preventing HIV transmission [47].

Any rational self-control may be lost for days depending on the drugs taken and the dosage. Owing to the long-term effects of the drugs, self-monitoring is restricted as it does not allow behaving adherent with prevention messages and the advice of their physicians. Long-term side effects, irreversible defects from drug use may include such neurocognitive disorders.

Those responsible for public health issues should be reminded that this human behaviour supporting the spread of HIV and its evolution may also pose an immediate threat to the increasing incidence and prevalence of other STIs. Official representatives continue to disregard these already existing barriers, thereby not moving closer to curb the spread of HIV.

At the political level it has to be acknowledged that too many people of the at-risk categories are misusing the liberal organisations of our societies; this has become a well-entrenched trend within the risk society. Tolerating this misuse supports the spread of HIV and its diversification.

## **CONCLUSIONS**

1. In the context of potential HIV/STI transmission networks the establishment of clusters has assumed a reality; internationally connected via the internet they have achieved the status of powerful parallel societies.

2. Furthermore, for years there have been trends emerging that have led to the bareback scenarios of the present time. These new trends by combining sex with the use of addictive and mostly illegal psychoactive drugs potentiate infection transmission risks.
3. The participants block out the serious health consequences which could result from drug use and the health implications of STIs. They follow an alternate set of own norms which are incompatible with the tenets associated with responsive and ethical standards of civilisation.
4. Large group settings of this kind have the potential to gain self-supporting momentum at the expense of the societies they exist within as they are being protected by an incorrect interpretation of liberal society and tolerated by policy decision makers.
5. Further challenges include: (i) Participants insist on selfish enjoyment but their wilful, though mutual consensual behaviour is characterised by a lifestyle of risky practices prone to cause self-impairment through the acquisition of HIV and other STI respectively, and putting in jeopardy their partner's health; (ii) With HIV-naïve as well as HIV-infected attendants both local and from abroad and ART-naïve as well as ART-experienced participants, the odds of transmitting and blending HIVs with different ART resistance patterns and of different clades resulting in CRFs with higher virulence are enhanced. By means of behaviour of such kind, the evolution of HIV is already in progress.
6. The impacts resulting from drug misuse are diverse. Long-term physical and mental health detriments pose grievous challenges for health care systems. Current prevention strategies are ineffective in dealing with complex behaviours of this kind. Alternative strategies such as intensifying biomedical approaches may promote complacency contributing to a worsening of the trends outlined.
7. Political decision makers are urgently requested to make these trends a thematic priority, that is, to intervene in these trends which have the potential to be destructive to individuals and societies and which are nonresponsive to public prevention campaigns. The on-going misuse of liberal tenets in our societies requires tangible restrictions. Substantial measures have to be put in place to limit behaviour which is eroding solidarity. The behaviour of these people is against the ideals of societies and policies, namely to protect the health of other people, and is directly against the cultural norms and interests of the societies they ask for help.
8. If decision makers do not prioritise these issues they must explain why they are tolerating behaviours of this kind at the expense of the health of the wider society.

**Conflict of interest:** None declared.

**Financial disclosure/Funding:** No fundings.

**Abbreviations** - cART, combined Antiretroviral Therapy; CDC, Center of Disease and Prevention Control, Atlanta/USA; ECDC, European Center of Disease Prevention and Control, Stockholm/S; EU, European Union; EEA, European Economic Area; HAART, High Active Antiretroviral Therapy; HIV, Human Immunodeficiency Virus; IDU, Injecting Drug User; MSM, Men Sex with Men, including both homo- and partly bisexual orientation; NGO, Non-Government Organization; NPH, New Public Health; PLWHA, People Living with HIV/AIDS; PWID, People Who Inject Drugs (IDU); PEP, Post Exposure Prophylaxis; PrEP, Pre Exposure Prophylaxis; SIV, Simian Immuno-deficiency Virus; STI, Sexually Transmitted Infections; WHO, World Health Organisation; UAI, Unprotected Anal Intercourse.

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