

Risk behaviors for HIV infection. A review of emerging trends

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Abstract *HIV infection, acquired with the conscious participation of the recipient, is a complex problem of international concern, especially among men who have sex with men. Behaviors emerge such as bareback (intentionally unprotected anal sex between men) and bugchasing (bareback sex when one participant is HIV+ and the other is not). A group of emerging risk behaviors for HIV infection was characterized. A review of the literature in the MEDLINE, Web of Science and regional SciELO databases was performed. HIV-related search terms such as unprotected sex, barebacking/bareback and bug chasing, were used. Bareback and bug chaser behaviors occur, among other factors, through social homonegativity, ART positive coverage, insufficient prevention campaigns, search for new sensations and attempts to strengthen the relationship with the HIV+ member. Unprotected sex is primarily associated with having HIV/AIDS diagnoses, physical violence due to sexual orientation, viewing homosexual sex sites, and having bought or sold sex. It is necessary to work with individual behaviors that draw individuals close to infection.*

Key words *HIV, Behavior, Bareback, Risk, Sex*

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Introduction

The HIV/AIDS epidemic has been viewed from its social, economic and political realm and in its relationship with other Sexually Transmitted Infections (STIs). However, there are still some gaps in the knowledge of the individual's role, such as being vulnerable to acquire the infection, which could be summarized in a dynamic process involving different factors (social, environmental and cultural)¹. So far, no vaccine or therapeutic agent is capable of eliminating HIV. Thus, the response is prevention geared towards working with transmission routes and vulnerable groups.

Epidemiological trends since the mid-1990s suggest an alarming hike of unprotected sexual behaviors among men who have sex with men (MSM), a phenomenon found mainly in large homosexual communities^{2,3}. These data show a gradual increase in HIV infections in this population at the time^{4,5}, especially among young gay and bisexual men^{6,7}.

At present, these behaviors have diversified and become increasingly complex. We observe behaviors such as the so-called *bareback* 9 (performance of intentional unprotected anal sex between men who are not steady partners); *bug chasing* 10 (virus chasers), the act of performing *bareback* sex when one of the participants is HIV+ and the other is not; and *gift giver* 10 (the one giving a gift) (HIV+ individuals who lend themselves to donate their virus to those who wish to receive it). Although media outlets have drawn attention to some trends that are unfavorable to epidemic control efforts, they have not yet been adequately addressed by scientific studies. In all health problems, as is undoubtedly HIV, it is necessary to study how the process of transmission of the disease occurs. Several models have been developed to explain the context and causes of HIV/AIDS, as well as to identify the impacts of the epidemic and its control strategies. The model proposed by Coreil et al.⁸ breaks down the three macro-environments where the determinants that influence the vulnerability of acquiring a transmissible disease develop: the social environment, the biophysical environment and the culture-based environment. Gala et al.¹ adapt this model to the issue of vulnerable behavior, and they identify three types of HIV infection-related behaviors: behaviors that increase exposure to HIV, behaviors that facilitate HIV infection, and behaviors that protect against HIV infection. Therefore, it is presumed that there are risk behaviors that increase the probability of ac-

quiring the infection, and of specific protection that counteract the former and that can be identified to study them as measurement variables of the acquisition process¹. Of those that increase the risk, the participation of the vulnerable individual in the dynamics of virus dissemination acquires a considerable value for the targeting of prevention strategies. This study aims to conduct a literature review to characterize some emerging risk behaviors towards HIV infection.

Methods

A bibliographic review was conducted by searching in the Medline, Web of Science and regional SciELO databases. Some HIV-related search terms used were *unprotected sex*, *barebacking/bareback*, and *bug chasing*. Search was conducted in Spanish and English, with no determination regarding the year the study was published. Only papers with one of the search terms reflecting in their title and which were available in the full-text version were selected. The reference lists of identified items were inspected to complement this process. The primary inclusion criterion was a substantial emphasis on intentional unprotected sex behaviors somehow related to HIV infection. Abstracts of congresses, letters to the editor and book reviews were excluded.

Results

A total of 90 papers were found under the search terms. Of these, 62 belong to the term unprotected sex-HIV, 26 belong to barebacking/bareback terms, and lastly, only two concern bug chaser. The results of the review of these terms will be described separately below.

Bareback

The phenomenon of barebacking has been examined from the perspective of sociology⁹⁻¹², psychology¹³⁻¹⁷, and public health¹⁶⁻²³, among other sciences. Despite the disparate perspectives, most of these reports agree on addressing definitional issues and factors that may explain the popularity of unprotected barebacking sex.

The term bareback is an equestrian expression that means riding without a saddle. It was first introduced outside the equestrian terms by O'Hara²⁴ in 1997. It was later defined by Godroad et al.²⁵ as the performance of intention-

ally unprotected anal sex between men who are not a steady couple. The term bareback, quoting Bazaldúa²⁶, is also known as “bareback sex” or “natural sex” and can be differentiated from other risky sexual practices because of: 1) the intentionality and premeditation of performing the sexual act without adopting a barrier method such as condom in its multiple presentations; 2) the focus on anal sex practices among men; 3) the temporal and cultural reference after the emergence and spread of HIV/AIDS.

Bareback studies have been mainly written in the USA^{9,12-15,18,21} although some approaches are found in Europe¹⁷ and Latin countries such as Mexico^{19,26} and Brazil^{10,11,23}. Barebackers are a group with disruptive practices within the gay world and are a change in the values and meanings associated with what is considered politically correct in the field of HIV prevention, such as the appropriate and systematic use of condoms¹⁹.

In general terms, researchers and scholars have concluded two critical elements that had to be included in the definition of barebacking: the intentionality of unprotected sex and the acceptance of the risk of contracting STI/HIV^{15,27}. Due to the hidden nature of the MSM population, bareback prevalence rates cannot be retrieved accurately. However, some investigations approach the problem from measures of self-reported behavior. For example, a cross-sectional study conducted in New York^{28,29} indicates a prevalence of 34.9-45.5%, another in San Francisco 10%¹⁵, in Central Arizona 65%³⁰, 12.3% in London¹⁷ and between 39.2% and 83.9% of MSM who report online to practice bareback throughout the United States^{28,31}.

Factors associated with barebacking

Several authors have tried to explain barebacking from different methodological designs, population, and theoretical approaches. In a review study on this practice, Berg¹⁶ proposes a conceptual model that reflects the dynamics of the relationships that serve as the basis for understanding barebacking. This author proposes four levels in which this behavior develops.

Macro level

One of the essential factors that influence these behaviors is the ideology of heterosexuals, which is restrictive and alienating for homosexuals. This series of arrogant heterosexual concepts and beliefs have in some way caused the emer-

gence of the so-called “homonegativism”, contributing to the social rejection of homosexuals as minorities. Some social researchers^{32,33} frame barebacking in an oppressive society where some homosexual men, in protest, affirm transgressive behaviors such as bareback. Another critical issue is associated with the effects and positive coverage of Antiretroviral Therapy, which has undoubtedly allowed a slowing of the progression of the disease and significantly reduced AIDS-related deaths. This progress has caused the homosexual community to perceive HIV as another chronic disease, which is easily managed by doctors extending survival years, which, therefore, contributes to the maintenance of bareback behaviors since concern about seroconversion is reduced.

The Internet has become a social structure that provides dating services through endless opportunities, among which are chat rooms, personal ads, email lists, and so forth. This platform facilitates and serves as a means for barebackers to find pairs. The homosexual community also considers it the most common medium²⁸. The results of studies on Internet use^{31,34,35} show how 63% of homosexuals use the Internet to search for partners, and barebackers use this network the most.

Meso-level

Among the factors related to the emergence of barebacking, in a 2001 study, Carballo-Diéguez³⁶ mention the lack of social activism in campaigns in favor of the homosexual community's rights, as well as a feeling that the cultural climate in which homosexuals developed had changed, and an increased lack of responsibility was noted. Also, another study shows that barebackers report a lower perception of sexual protection norms compared to the population that does not practice bareback³¹.

Interpersonal level

Other factors that promote bareback are related to shared sexual behaviors, such as unprotected anal sex, which are interpersonal processes in which meaning is created and emotions are expressed with the sexual partner³⁴. Other studies show that the serological status of the sexual partner seems irrelevant. In a recent study, a quarter of HIV negative or unknown barebackers reported that their sexual partners were HIV+ or unaware of their seropositivity³⁷.

Internet sex dating sites include discussion of sexual preference and serological status. Also, one can fill this information in user profiles. However, in the specific sites of barebacking users, any discussion about serological status and condom use is waived since entering these sites assumes that this rule is unconditionally accepted.

Intrapersonal level

There are three main approaches at this level. The first is related to the sociodemographic characteristics of barebackers. Barebacking has been studied in white, black and Latino men, and whites were the most prevalent. Barebackers are associated with variables such as lower educational level, young age and HIV^{29,38,39}. Another important and central aspect of this whole plot is related to the reasons why barebacking is performed.

One of the most described reasons is the desire for pleasure and seeking new sensations. Others are related to the affirmation of masculinity, a display of virility and greater masculine sexuality. The romantic obsession is another category very much related to sexual adventure, sexual compulsivity and search of sexual sensations. These results are based on the thesis that barebackers are possibly the seekers of sexual sensations that show a higher intensity and willingness to accept or even seek sexual risk encounters⁴⁰. Finally, the consumption of alcohol and psychoactive substances has been associated with barebacking in various studies.

Bug Chaser

The "Bug Chasers" group is a homosexual subculture that voluntarily shows a willingness to acquire HIV⁴¹. The first approaches to the subject were mainly press reports⁴²⁻⁴⁵. However, a group of written papers where the subject is addressed more clearly^{41,46-49} is already found in the literature. Faced with this risky behavior, a logical question arises: What differences lie between Barebackers and Bug Chasers?

Some authors have addressed the issue of Barebackers and Bug Chasers as if these behaviors were the same^{42,50}. Although they share commonalities, such as homosexual sexual orientation and the performance of unprotected anal sex, it is essential to clarify that the primary intention of the Bug Chaser is seeking HIV infection. In the case of the Barebackers, one of the previously commented reasons as to why these practices

were produced is the desire for pleasure and seeking new sensations. Bug Chasers may also share these unique sensations to which the fact of the possibility of becoming infected as a relevant extra element is added. Bugchasing is also deemed intensely erotic and the act of being infected is for them the ultimate taboo, the extreme sexual act there is. It is also known that someone that is HIV-negative and in a relationship with someone who is HIV+ looks for the infection as a way to strengthen the relationship, especially when the HIV+ partner could end the relationship to avoid transmission of the virus to his seronegative partner. In a study conducted in the USA with a user population of barebacking sites⁴¹, it was first established that the issue of the existence of Bug Chasers was not a legend, and then that the use of drugs was more likely in Barebackers than in Bug Chasers, which clears all doubts concerning the performance of these acts unconsciously.

Unprotected sex

In the field of sexual risk, a sexual risk behavior would be the exposure of the individual to a situation that may cause harm to his health or the health of another person, primarily through the possibility of infection by sexually transmitted diseases such as HIV⁵¹. HIV continues to spread worldwide mainly through sexual transmission and mainly among MSM. A group of studies in different regions and countries around the world has addressed the issue of the factors associated with these risk practices in the MSM group. In Europe, data collected from the European Men-Who-Have-Sex-With-Men Internet Survey⁵² show that unprotected sex in this population is mainly associated with being diagnosed with HIV/AIDS, having suffered violence physical due to sexual orientation in the last 12 months, having viewed Gay sex sites in the last 4 weeks, having bought or sold sex, knowledge that antiretroviral treatment reduces the risk of infection, drug use, feelings of loneliness and experience of sexual abuse and intimidation. Another study conducted in Lebanon⁵³ shows some determinants of unprotected anal sex behaviors, such as having a younger age, university education, being in a committed relationship, little communication about HIV/AIDS with a partner, discrimination due to sexual orientation and low self-efficacy in the use of condoms. In Asia, specifically in China⁵⁴, a study was conducted to determine the prevalence and factors associated with unprotected anal intercourse among MSM.

A prevalence of 52.4% of unprotected sexual intercourse in the previous three months was reported, and the multivariate analysis showed that trust and intimacy within the relationship with the steady partner and the presence of clinical symptoms of depression were positively associated with unprotected anal sex.

Effectively within the topic related to risk behaviors, the relationship of depression with unprotected sex among MSM is being studied⁵⁵⁻⁵⁷. The first line of thinking supports the idea that depression decreases men's libido by making them less sexually active^{58,59}. Consequently, during periods of active depression, men's participation in risk behaviors will be lower than at other times when they are not depressed or when they are experiencing less depressive symptoms.

On the other hand, the second line of thought alleges that men who are depressed incur substance abuse and risky sexual behaviors as a means of escape to cope with their negative emotional state^{56,60}.

Finally, an interesting topic to address that has been hardly written about is undoubtedly the issue of unprotected sex in females. According to some studies, unprotected sex is perceived by women as a promoter of intimacy between the couple, romance, trust and as a support for stability in the couple⁶¹⁻⁶³. A focus group study involving a total of 43 women from different cities in the U.S. mainly aimed to gain an understanding of the reasons why young adult women from urban areas with high HIV prevalence had unprotected sex with men whom they perceived with some mistrust⁶⁴. The discourse of women at first was nuanced by the idea of sex as a means to ensure a partner in a society where most women seek to satisfy the men's desires regardless of the risk because, otherwise, men look out elsewhere for many others who are willing to do so. They also argue that if men treat them well, provide them with financial security and fulfill their responsibilities, the risky behaviors they may resort to as long as the man feels satisfied do not matter. These women argued that having unprotected sex was a strategy, since women know what they want in relationships in the long run and that developing strategies from the statement "Sex to secure him, sex to compensate" is an example of unprotected sexual intercourse as a strategy to maintain long-term commitment. After having unprotected sex with high-risk partners, these women felt worried and wanted to be tested for HIV. The interesting thing about all of this is that they continued to have unprotected sex despite these alerts.

Discussion

This paper collects a review of a group of behaviors that put health at risk, mainly of the population of men who have sex with other men around the world. Within the HIV epidemic, significant changes have taken place at the level of health policies, such as scientific and technical advances, in order to provide a comprehensive response to address the multiple consequences of HIV/AIDS infection to health and systems.

The very fact that there are human behaviors that promote, cause and, in some cases, intentionally seek out a disease, undoubtedly shows a different perspective for the organization of preventive plans. According to Cuadra-Hernández⁶⁵, we are witnessing the "so-called 'prevention fatigue', in which fatigue is implicit in the traditional message of condom use, and is a clear example that current strategies do not consider the meanings of the main groups affected regarding their sexuality." The truth is that the perceived risk of acquiring HIV/AIDS decreases by the day. This disease has gone from being a disease associated with an idea of immediate death to the idea of a drug-controlled chronic disease.

This review shows some realities which science must take into account to plan preventive systems. At a social level, we find the ongoing rejection of homosexuals. Unfortunately, the problem is recurrent despite the "development" achieved in the promotion of social rights, equality and non-discrimination towards this community. This process has resulted in the so-called homonegativism, which is defined as a group of prejudiced beliefs, emotional reactions, and behaviors of stigmatization towards homosexuals⁶⁶. Some social researchers^{32,33} frame barebacking in an oppressive society where some homosexual men, in protest, claim transgressive behaviors such as bareback. Undoubtedly, these reactions of the MSM community that lead to risky behaviors endanger health, showing once again that social pressure towards minority groups affects not only the affected person's emotional realm, but also behaviors that can lead to death.

Continuing with the issue of risk we find a facilitating entity which is undoubtedly the Internet. The network of networks provides an essential platform for all kinds of sexual behaviors to be managed among MSM. The social networks that comprise it serve as a facilitator to find a partner and to discuss sexual standards and expectations. According to studies by Carballo-Diéguez^{36,67}, most of the MSM-related sites

display sex images without a condom and a web-design with information of highly sex-oriented profiles that include previously determined fields to obtain detailed information on the expected sexual activity. The above highlights that many of the high-risk behaviors are anticipated by fantasy, which in turn translates into settings created by men in articulation with the possibilities and situations they would like the website to develop with the practices that they wish to access, which usually includes identifiable elements of risk.

At the individual level, another important factor that has contributed to the decreased perception of the risk of acquiring HIV and increased risk behaviors is undoubtedly related to antiretroviral therapy (ART). According to Ostrow *et al.*⁶⁸, the triple therapy, as it is also known, has modified the natural history of HIV infection, causing a considerable reduction in mortality, intercurrent complications, and hospitalizations. So much change has undoubtedly led the infection to be perceived no longer as associated with death, but rather as a long-term chronic disease and with several medical alternatives⁶⁹. These authors found in this study that more than 50% of a sample of MSM had had unprotected sex, indicating that the arrival of ART had reduced their concern for protection.

The consumption of alcohol and psychoactive substances are behaviors that serve as gateways to behaviors at risk of HIV acquisition.

Studies conducted in Africa show an association that is replicated in the rest of the world: people who drink, consume and inject psychoactive substances more are more engaged in risk behaviors and are more likely to acquire an HIV infection⁶⁹⁻⁷³. One of the most accurate theories to explain this relationship is proposed by Steele & Josephs⁷⁴, and they called it the "Theory of Myopia". This theory argues that drugs reduce the ability of individual cognitive processing and block the response to conflict with some inhibition. Unprotected sexual intercourse is in itself a conflict for many individuals and this dissonance is suppressed with the ingestion of these drugs. Many people believe that drugs and sex go hand in hand. Some users exchange sex for drugs, or for money to buy drugs. Some people associate the use of drugs with unprotected sex.

Without a doubt, we are witnessing an era of changes and these transformations are not always accompanied by advances in health indicators and improvement of the systems responsible for planning strategies and preventing diseases. One of the most critical challenges has to do with the behaviors that place the individual closer to the disease. This group of behaviors is perfectly preventable through an adequate promotion and prevention, but to do this, we must gain an in-depth knowledge of the dynamics of the processes that participate and cause the illness of a human being.

Collaborations

YM Santiesteban Díaz was responsible for the drafting, general review, methodological design and final approval of the paper. A Orlando-Narváez contributed to the review and drafting of the Bareback theme and the general review of the epidemiological topics. RB Arnal contributed to the review and drafting of the Bug Chaser theme and supported the drafting of the topics related to the behaviors and psychosocial elements of the text.

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