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Use of Crystal Meth, Viagra and Sexual Behaviour

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Abstract

Purpose of the review—Methamphetamine (meth) use has been shown in the literature to be associated with high-risk sexual behavior for both homosexual (MSM) and heterosexual samples for over a decade. The use of Viagra has also been shown to be associated with high-risk sexual behavior. The purpose of this review is to update the record on Viagra and on the combination of Viagra and meth use.

Recent Findings—There is now strong evidence that the use of Viagra is associated with Human Immunodeficiency Virus (HIV) seroconversion in MSM. The combination of taking both meth and Viagra is strongly associated with much higher sexually transmitted disease and HIV rates. There is some evidence that Viagra is associated with insertive and meth is associated with receptive anal intercourse by men.

Summary—The evidence is strong to support the relationship between Viagra use and HIV seroconversion now that more sophisticated analyses have been done. The meth-Viagra recreational drug combination is very high-risk. More research is needed to generate longitudinal and event-level data that are necessary to answer fine-grained questions about drug combinations and the relationship to sexual behavior.

Keywords

Viagra (sildenafil); methamphetamine; HIV risk behavior; Sexually Transmitted Disease; poppers (nitrates); sexual behavior

Introduction

This review is to update the reader on the relationship between two drugs, one legal and one illicit, and their relationship to each other and to high-risk sexual behavior. The legal drug is Viagra® (sildenafil citrate) [Pfizer Inc., New York, NY, US] and the illicit drug is methamphetamine (meth). In the recent literature, the combination of these drugs with each other and with other drugs has been given increasing amounts of attention insofar as their relationship to high-risk sexual behavior is concerned. As this review will demonstrate, this is for good reason. Even though Viagra is not the only drug of this type on the market, it has by far the largest market share and is the only drug of this type reported to be used recreationally to any large extent so far.

Methamphetamine

One way to think about the literature is whether the sample used in the study included men who have sex with men (MSM) and/or men who have sex with men and women (MSMW)

or whether the sample included heterosexual men (HETERO). One of the clearest investigations of a MSM/MSMW community-based sample in New York demonstrated that meth use was related to both insertive and receptive anal intercourse with HIV positive and unknown status partners. The findings were especially strong for the HIV-positive participants [1*]. This same link between meth use and high-risk sex was also found in other areas of the east coast [2]. A study in San Diego, California found that MSM who used meth and were HIV positive were the least likely to use condoms and had higher depression scores than the reference group [3]. To help describe this relationship between meth use and high-risk sex, a study in Los Angeles, California, found that MSM meth users were more likely to have ten or more sexual partners in the previous 12 months [4]. Another Los Angeles study found that meth users had much higher HIV prevalence and higher risk sexual behaviors than crack cocaine users [5]. A case-control study found that HIV-positive MSM were more likely to use meth than HIV-negative MSM [6]. A Seattle, Washington, study found that meth use during unprotected anal intercourse was associated with recent HIV seroconversion [7]. Across a variety of studies in the US, there is a demonstrated association between meth use and risk for HIV transmission and infection in MSM/MSMW samples.

The literature for heterosexuals is consistent, but has examined the relationship from a slightly different point of view. The heterosexual literature on meth includes study of adolescents. Adolescents who take meth are more likely to have recent sexual intercourse, more sex partners, and are more likely to be pregnant or to get someone else pregnant [8]. Hetero meth users were more likely to engage in unprotected sex, unprotected sex with casual partners, and sex while high [9]. In adults there is a relationship between lower use of meth and higher safer sex intentions and more desire to cease unsafe sex [10]. Treatment of meth-dependent users has been found to be promising for reducing HIV high-risk sexual behaviors [11]. In a sign that the relationship between meth and high-risk sex may be more complex for hetero meth users, negative life events were shown to have a greater effect on sexual risk behavior than meth use [12].

Viagra

Viagra use has been the subject of considerable controversy, including a petition in 2004 to the Food and Drug Administration (FDA) to make it a Schedule III drug [13]. This was successfully opposed by Pfizer [14]. The evidence of increased incidence of sexually transmitted diseases (STDs) in relationship to the use of Viagra that existed at the time of the 2004 petition was judged to be insufficient to support the petition, even though there was an editorial in a major journal on this question [15]. There was some response in the scientific literature that also questioned the wisdom of the argument against Viagra [16]. Since that time, the literature has become stronger on this issue.

There is some evidence that Viagra is used more by MSM than by hetero men, although there is a finding that hetero men who take Viagra are more likely to have insertive anal intercourse with women [17]. This may be associated with heterosexual transmission of HIV from men to women. There are multiple studies that have shown a relationship between the use of Viagra and being HIV positive [17,18*,19,20*]. Some of these studies also show that Viagra users have more sex partners than non-users [17,19]. MSM who use Viagra are more likely to have unprotected anal intercourse [19,21]. Earlier criticisms of the purported link between Viagra use and STDs including HIV infection were mostly based on the fact that other drugs were also taken with the Viagra and that it was the use of the other drugs and not Viagra that was responsible for the association of Viagra use and STD/HIV incidence [16]. There is now more sophisticated statistical analysis that shows that, after controlling for sexual risk behaviors, only use of Viagra is significantly predictive of HIV infection [22*].

This very strong study was done in Australia and there has been a replication of these findings in a US study conducted in Chicago and Los Angeles. In the multivariate analysis of the Chicago and Los Angeles data, Viagra and nitrates were the only drugs that were associated with recent HIV seroconversion [23*]. These two studies isolate the effect to Viagra and nitrates and argue against the earlier criticisms. The argument that Viagra use itself is tied to increased HIV infection is now much stronger than it was when the petition was first submitted to the FDA. Consistent with these findings, a study in New York showed that HIV-positive men who use Viagra are more likely to use Viagra to have unprotected insertive anal intercourse with serodiscordant partners [20*].

Sexual marathons are prolonged sex over hours or days. During the marathon, the participants may have sex with multiple partners in the same time period. Many of these sex acts may be performed without the use of latex barriers. Those who participate may take meth to get energized for the marathon sex acts to follow. Multivariate analysis of data from HIV-positive MSM found that those who engage in sexual marathons were much more likely to use Viagra [24].

Meth and Viagra

The finding that MSM frequently take Viagra with meth has been reported in numerous studies [20,23*,24,25*]. The literature on this combination, of using meth and Viagra, shows consistently that it is associated with high rates of STDs and HIV seroconversion. This drug combination appears to increase the probability that MSM will engage in serodiscordant unprotected anal intercourse [18*,22*,25*]. A study in Long Beach, California, that compared men (both MSM and hetero) who used both meth and Viagra, meth only, and Viagra only to men who used neither showed that men who used both meth and Viagra had higher prevalence of hepatitis B, syphilis, and HIV. The meth was reported to be taken right before or during sex in most cases. Those men who used both, in this study, were more likely to be MSM [26*]. A telephone survey of MSM in San Francisco, California, showed that Viagra used with meth was independently associated with a recent diagnosis of an STD [18*].

Some of the more recent literature is now exploring the combination of meth, Viagra, and poppers (substances sold as amyl, butyl, or isopropyl nitrates). The combination of the three drugs increased the risk for HIV seroconversion from 2.99 (95% CI: 1.02 to 8.76), for those who used only one drug, to 8.45 (95% CI: 2.67 to 26.71) for those who used all three drugs [25*]. Even though there are numerous possible drug combinations, given all of the various club drugs that are available, there are two primary patterns of drug combinations: those for sexual performance and those considered “party drugs.” The sexual performance combination is meth, Viagra, and poppers [27*]. The sexual performance sequence is first taking Viagra or poppers, following that with meth, and then having sex. The Viagra is taken to prevent erection problems with meth. Those men who took this combination had greater numbers of unprotected sex acts [27]. Data from Chicago and Los Angeles showed that those men who took the combination of meth, Viagra, and poppers were more likely to have recently HIV seroconverted [23].

Is meth-sex different from Viagra-sex?

It would seem intuitive that the type of sex that is associated with Viagra is insertive sex. There is evidence to support that for hetero men [17]. For MSM, those who used Viagra and not meth were the lowest on receptive anal intercourse [26]. MSM who used Viagra were more likely to engage in insertive anal sex [20,28]. There is some evidence that meth is associated with receptive anal intercourse [1,26,28]. The conclusions are not as clear when it comes to disentangling the effect of either drug in any of the various possible combinations

of drugs. This is because at different times, a person who uses both meth and Viagra, and possibly other drugs, can be under the influence of: (a) only meth, (b) only Viagra, (c) both meth and Viagra, (d) some drug or drugs that are neither meth nor Viagra, (e) some other combination. The only way to tease out the effect of the drugs as compared to typical behavior of the person, who just coincidentally happens to take a particular drug combination, is to obtain event-level data. This would allow the researcher to answer such questions as: “when this person only takes _____ what kind of sex, if any, is he most likely to have?” “Is this different from the kind of sex this person would most likely have if they had not taken this drug, or had taken a different drug?” Certainly, more research is needed to answer these fine-grained questions.

Conclusion

Meth use has been consistently associated with high-risk sexual behavior and with STD/HIV incidence. Viagra use has also been shown to be associated with high-risk sexual behavior and with STD/HIV incidence. Several studies have now isolated the sex-drugs connection to Viagra and, to a lesser extent, nitrates, when all of the sex and drug data are combined in the more recent sophisticated analyses. There is now the scientific evidence to back up the assertion that it is Viagra, and not other drugs, which is responsible for the STD/HIV incidence. Some data support the intuitive notion that Viagra is associated with insertive, rather than receptive, intercourse in both MSM and hetero samples. New research is now starting to make progress in describing drug combinations and their relationship to sexual behavior.

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* of special interest

** of outstanding interest

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