Research Update

Many of the questions that make counselors uncomfortable are scientific in nature. Some of these topics cause confusion because information appears to change over time. For example, a recent study of the HIV risks of oral sex, which attracted significant attention in the media, suggested that these risks may be higher than previously thought. But this conclusion is largely due to an incorrect interpretation of the findings.

Other topics seem to counter what people intuitively think is logical. For example, it seems to make sense that HIV can be transmitted through casual contact because so many other infections are transmitted in this way, but, in fact, HIV does not survive well outside the body. Similarly, it seems logical that a low viral load would lead to decreased risk of HIV transmission. While preliminary research seems to support this hypothesis, too many questions remain unanswered and more research needs to evaluate this phenomenon before it is established as fact. Some people have trouble conceptualizing that the insertive partner during unprotected anal sex can be at risk for HIV, but indeed, this is the case, although the risk is lower than for the receptive partner.

Finally, some topics relate to confusion about how scientific research translates into practical interventions. With all the news about HIV vaccines, many people believe that a vaccine will soon be available and that there is no need to worry about infection. However, it is most likely that an effective vaccine will not be available for many years, and even then, the process of distributing it will be complex. This issue of PERSPECTIVES answers the frequently asked questions related to these topics.

What are the HIV risks of oral sex?

Most research indicates that oral sex with an HIV-positive male insertive partner has the capacity to infect the receptive partner but that it is significantly safer than other forms of penetrative sex. However, there are no definitive studies of oral HIV transmission because it is difficult to find HIV-positive people whose only risk behavior was oral sex. According to a recent report, there have been only 39 case reports of what appears to be oral HIV transmission in major urban centers throughout North America and Europe.¹

Preliminary data from a 2000 San Francisco study of men who have sex with men found that 6.6 percent of 122 HIV-positive participants probably became infected through oral sex.² However, it is incorrect to interpret these results as meaning that 6.6 percent of all HIV infections occur as

Inside PERSPECTIVES
1 Research Update
4 Implications for Counseling
7 Case Study
8 Test Yourself
8 Using PERSPECTIVES
a result of oral sex or that the HIV risk for oral sex is higher than previously thought. Although the study indicates that some risk for oral transmission of HIV exists, it does not attempt to estimate the level of risk because it does not take into account the frequency of oral sex. This is important because as long as some risk exists, even if it is low, and a large number of people frequently engage in oral sex, it is likely that some infections will occur as a result of this behavior. In other words, multiple episodes of engaging in a low-risk behavior add up to a higher total risk in the long run.

Research suggests that in response to perceived HIV risks, the frequency of oral sex has increased, particularly among men who have sex with men, while higher risk activities such as unprotected anal sex have decreased.3

Another San Francisco study of anonymous HIV testing site clients who engaged only in receptive oral sex during the prior six months found no recently acquired HIV infections. Of 243 participants, who were screened from more than 10,000 clients, 98 percent engaged in oral sex without condoms, and 35 percent were exposed to ejaculate in the mouth. Of the 28 percent who performed receptive oral sex on known HIV-positive partners, 81 percent did not use condoms, and 39 percent reported swallowing ejaculate.4

An Australian study of more than 700 men who have sex with men found no risk of HIV infection through unprotected oral sex. Among participants who had casual sex partners, 95 percent engaged in unprotected oral sex, and 26 percent of participants engaged in receptive oral sex with ejaculation. The researchers acknowledged that HIV transmission is possible under certain circumstances, such as recent dental work or sores in the mouth.5

A Canadian study of more than 850 men who have sex with men also found no cases of HIV transmission through oral sex. Of the 725 HIV-negative participants who engaged in receptive oral sex in the prior year, 96 percent did not use condoms.6

The presence of mouth trauma, gum disease, recent oral surgery, or lesions in the mouth may provide a route of entry for HIV, thereby increasing the risk of infection through oral sex for receptive partners. While good oral hygiene may reduce risk, flossing or brushing shortly before or after oral sex may increase risk, especially if gums bleed. Oral sex with an HIV-positive woman is considered to be a higher risk during menstruation because of the presence of blood.1

A risk reduction strategy for oral sex is to avoid ejaculation in the mouth, because an increased volume of infected fluid theoretically results in greater exposure to HIV. Although this practice may reduce risk for HIV, it may not effectively reduce the likelihood of infection with other sexually transmitted diseases (STDs) during unprotected oral sex. STDs such as gonorrhea, chlamydia, hepatitis A and B, syphilis, herpes, and human papilloma virus (HPV), which causes genital warts, can all be transmitted through oral sex. The presence of some STDs other than HIV may also increase the risk for HIV transmission.1

How does the HIV risk of unprotected receptive anal sex compare with the risk of unprotected receptive oral sex?

During unprotected anal sex, the receptive partner is at a higher risk for HIV infection than the insertive partner, largely because the lining of the rectum is thin and susceptible to tearing, providing access for HIV carried in semen to enter the blood-stream. The insertive partner, however, is still at risk for infection.7

An early study of HIV transmission among men who have sex with men in San Francisco found a significantly higher rate of HIV infection among men who had engaged only in receptive anal sex (45 percent) than among those who had only insertive anal intercourse (27 percent).8

More recently, a 1999 study of men who have sex with men found that the per-contact HIV risk of unprotected receptive anal sex with an HIV-positive partner or a partner of unknown HIV serostatus was 0.27 percent, while the per-contact HIV risk of unprotected insertive anal sex with an HIV-positive partner or a partner of unknown serostatus was 0.06 percent.9 Another 1999 study estimated that the risk for infection is more than twice as high for unprotected receptive anal sex than it is for unprotected insertive anal sex.10

The HIV risk for insertive anal sex may increase in the presence of other factors. STD infection, tearing or bleeding in the rectum, and dilation of blood vessels caused by certain substances, such as poppers, can increase the risk for HIV transmission to the insertive partner. In addition, having sex with multiple partners of unknown serostatus can increase HIV risk for both receptive and insertive anal sex.8

What is the relationship between viral load and the risk of HIV transmission?

There has been limited research on the effects of viral load on the risk of HIV transmission. Viral load
is the concentration of HIV in the blood, expressed as copies per milliliter, and is widely used as an indicator of HIV disease progression.

Two studies conducted in Africa concluded that as viral levels increase, the probability for heterosexual vaginal transmission increases. But little is known, and evidence is inconclusive, regarding other modes of transmission such as anal sex, oral sex, and injection drug use. In addition to viral load, HIV transmission involves a complex interplay between behavioral and biological factors such as age, presence of STDs or genital ulcers, circumcision, level of CD4+ cell counts, and frequency and type of sexual behavior.11

A study of viral load conducted in Zambia among 317 heterosexual “serodiscordant” couples—consisting of one HIV-positive partner and one HIV-negative partner—found that transmission was more likely to occur as viral levels increased. The relationship between viral load and transmission was much stronger for female-to-male transmission than for male-to-female transmission. Women with viral loads of more than 100,000 were also more than seven times more likely to transmit the virus to male partners than women with viral loads of less than 10,000, whereas for men there was a two-fold increase. At viral levels of less than 10,000, 9 percent of women versus 24 percent of men transmitted the virus.12

A Uganda study of 415 couples found no significant difference between female-to-male transmission and male-to-female transmission but supported the general finding that increased viral load translates to increased risk for heterosexual transmission of HIV. The researchers concluded that viral load was a better predictor of whether transmission would occur than other factors such as the presence of STDs or CD4+ cell count and that transmission more than doubled for every 10-fold increase in viral load. At the beginning of the study, 55 percent of male partners and 45 percent of female partners were HIV-positive. Among the 22 percent of participants who became infected during the course of the study, the viral load of their partners was significantly higher than in the couples in which the HIV-negative partner did not become infected. No infections occurred when viral load was less than 1,500.13

These findings are consistent with mother-to-child viral load studies, in which adherence to antiviral medications significantly reduced rates of perinatal HIV transmission. In a study of 552 pregnant women with HIV from eight different locations across the United States, no cases of mother-to-child transmission occurred when viral load was below 1,000.14

With successful treatment, viral load levels may drop below the levels of detection, which means the amount of virus in the blood is too low for a given test to measure. However, “undetectable viral load” does not mean that HIV has been eradicated from the body, and, despite the Uganda data, it is too early to conclude that HIV can no longer be transmitted under these conditions. Also, some studies suggest viral levels in semen may often be higher than the viral load in blood, so a low viral load may not mean reduced infectivity.15

Importantly, the studies above dealt only with heterosexual transmission, which accounts for the majority of the world’s new infections, mostly in developing countries. In addition, the participants in these studies had viral loads that were naturally low, that is, not suppressed or reduced by antiviral medication, which may also affect the amount of HIV in semen and other fluids. More research is necessary to determine the relationship between viral load and infectivity.

How long does HIV survive outside the body?

HIV can survive outside the body only in certain bodily fluids, including blood, semen, vaginal secretions, cerebrospinal fluid (CSF), and breast milk. It can also survive in saliva and tears, but the concentration in these fluids is extremely low, and there are no reported cases of HIV transmission involving them.16 The length of time HIV can survive depends on the concentration of virus in the fluid and environmental conditions such as temperature and humidity.17

In laboratory tests, HIV was no longer detectable after three to five hours at 133 degrees Fahrenheit, after 11 days at 99 degrees Fahrenheit, and was barely detectable after 15 days at room temperature (between 68 degrees and 81 degrees Fahrenheit). HIV solutions allowed to dry at room temperature and dissolve again in distilled water were still infectious for between three to seven days.18 However, these laboratory experiments used HIV concentrations much higher than those found in blood or other bodily fluids. Drying of these artificially high concentrations reduces the amount of infectious virus by 90 percent to 99 percent within several hours. In addition, the existence of a small amount of HIV in a fluid does not mean it can be transmitted in that fluid.16

HIV is very fragile, and many common substances—including hot water, soap, bleach, and alcohol—will kill it.17 Researchers agree that HIV does not survive well outside the body, making the possibility of environmental transmission remote. In fact, there are no documented cases of a person becoming infected with HIV due to contact with an environmental surface, and because HIV is unable to reproduce outside the body, except under laboratory conditions, it does not spread or maintain infectiousness outside the body.16

What is the state of HIV vaccine research and development?

Research suggests that developing an HIV vaccine is possible, but no effective vaccine has been approved for public use. To receive approval, a vaccine candidate must complete three
Implications for Counseling

It is important for HIV test counselors to be familiar with HIV-related medical concepts, but they are not required to have expert scientific knowledge. Counselors who are not licensed medical providers are prohibited by law from dispensing medical advice.

A counselor’s main responsibilities are to provide risk assessment and risk reduction services, and to help clients who test HIV-positive to adjust to their diagnoses and obtain further assistance. Technical information may contribute to these goals, but it is often better to use a counseling session’s limited time to make sure clients understand general concepts of HIV risk, transmission, and prevention than to dwell on statistics and other technical details.

Presenting Information

Available information about HIV is sometimes ambiguous, vague, or inconsistent, and counselors may have difficulty knowing the best way to present such information to their clients. For example, the New York State Department of Health redefined the window period of infection as between one month and three months, but after a recent review, the California Office of AIDS maintains its definition as three months for most clients and six months for a small percentage of clients.

It is important for counselors to present information clearly, completely, and in a neutral way. A counselor might add, “As our knowledge of HIV increases, the information we have may change. Some people would rather wait until new information becomes widely accepted as fact before they accept it themselves. Others feel comfortable integrating new information more quickly, as long as it is backed by good science.”

Another topic with inconsistent information is oral sex. Most research suggests that oral sex is a relatively ineffective route for HIV transmission, but it is difficult for researchers to accurately assess this risk. After presenting this information in a neutral way, help clients examine what they think and feel about their risks related to oral sex. Counselors might also discuss other considerations such as sexually transmitted disease (STD) infection as an HIV risk co-factor. The counselor might say, “Overall, the risk for HIV infection through oral
sex seems very low, but there is a risk. However, other STDs are more easily transmitted through oral sex, and STD infection may increase your risk for HIV through oral sex.

There will be times when counselors do not know the answers to technical questions. When this happens, it is important for counselors to admit this and refer clients to other resources, for example, to the Centers for Disease Control and Prevention (CDC) or Project Inform.

Providing information is an important aspect of risk reduction counseling. In fact, clients in the pre-contemplation stage of behavior change often require education about HIV and other STD transmission before they will change their behaviors. This information helps them understand their personal vulnerability to infection. Although these clients may not be motivated to reduce their risks after leaving a session, the counseling interchange may cause them to think about their risks, which signifies a progression from the pre-contemplation stage of the behavior change continuum to the contemplation stage.

Applying Information

To assess a client’s knowledge of HIV, start with an open-ended question or statement such as, “Tell me what you know about how HIV is transmitted.” Based on the response, fill in gaps and correct misinformation, keeping the discussion conversational so the client is less likely to feel that he or she is being lectured. Then help the client apply the information about transmission to his or her own circumstances by following up with another open-ended question, such as, “How does this information apply to your HIV risk?”

This is the point at which clients may express denial about their own risk. For many people, denial is a natural process when faced with behavior change. People often value the behaviors that place them at risk for HIV, and the prospect of changing these behaviors presents too many internal conflicts for them to readily accept new information that can intensify these conflicts. As a result, clients may continue engaging in risky behaviors while they struggle with the information that these behaviors may lead to a life-threatening disease. Reinforcing the prevention message, however, eventually leads many clients to accept the message. Once they acknowledge their vulnerability to infection, clients move on to the next stage of behavior change.

Information empowers some people to feel a sense of control over their HIV risks by giving them choices and helping them understand how changing their behaviors can reduce their risks to acceptable levels. For example, knowing that oral sex is an ineffective route for HIV transmission, sexually active clients may decide to engage in oral sex more frequently instead of higher risk activities such as unprotected anal sex. Similarly, gay men who know that insertive anal sex is less risky than receptive anal sex may adjust their behavior accordingly to reduce their risks.

A Counselor’s Perspective

Sometimes I have trouble understanding complicated concepts. It is a relief to know that I don’t need to know the specifics about every topic and that a general understanding is acceptable.

A Counselor’s Perspective

“I like being able to refer clients to resources that can provide answers to their questions about medical or technical aspects of HIV. This allows me to spend more time focusing on assessing and reducing my clients’ risks.”

avoiding receptive anal sex, by having more oral sex instead, and by having unprotected insertive anal sex only under certain circumstances. That is quite an accomplishment, especially given what you told me about the intimacy and meaning anal sex holds for you. While you are here, I want to make sure you understand that although you’ve greatly reduced your risk, some risk still remains. What is your understanding of your risk with unprotected anal sex?”

When discussing the risk of unprotected insertive anal sex, clients may ask for specific information about their actual chances for HIV infection. A counselor may acknowledge that this is a reasonable request but that he or she does not know the statistics. The statistics, in fact, are less important than the broader concept that although the risk for HIV infection through unprotected insertive anal sex is lower than for unprotected receptive anal sex, it is still significant. It is also useful to discuss information about other STDs and the increased likelihood of HIV infection in the presence of STD infection. As part of this discussion, provide clients with referrals for STD screening. Explore with clients the circumstances under which they would feel safer engaging in unprotected insertive anal sex, for instance, with a steady sex partner who tests seronegative for HIV and other STDs.
Client Anxiety

Facing the possibility of HIV infection provokes great anxiety for many clients, and the process of testing for HIV antibodies often magnifies the client’s perception of risk. In an attempt to manage anxiety, a client may fixate on information that is often technical in nature and ask an inordinate number of questions about it, rather than focus on relevant HIV risks. Whether or not counselors know the answers to the questions, these discussions often do little to help satisfy the anxious client because they do not and often cannot address the underlying anxiety.

Adding to the counselor’s challenge may be the knowledge that the anxious client’s risk is minimal and out of proportion to his or her level of worry. For example, a client might seem to be overly concerned about an incident in which a male partner placed the tip of his penis against the client’s anus. Even though the act may be without penetration or ejaculation, the client may seem obsessed about theoretical possibilities for infection. “Is there HIV in pre-cum? If HIV stayed on the outside of my anus but didn’t get inside of me, what is my risk? What is my risk if I had a hemorrhoid? If the virus is on the outside of my anus how long before it dies in the air? Can I be infected if the pre-cum somehow got pushed inside me?”

A counselor’s best efforts for a rational discussion may end up with the client asking more questions about risk as each answer generates greater anxiety. For the counselor, the session may feel tedious or exasperating, especially if there are other clients waiting to be seen.

When working with such overly anxious clients, it is important for counselors to validate client anxiety about testing and to try to address the underlying anxiety that generates the questions. Sometimes this anxiety is not about HIV but about

References


Case Study

Tom is a 22-year-old man who has never before tested for HIV antibodies and is visibly anxious. He recently had oral sex with a man for the first time, and it occurred in an “anonymous” situation. The morning after, he developed a sore throat and discovered a small pink blotch on his penis as well as a few red marks on his body, all of which caused him great anxiety. Tom says he has no gay friends and no viable support system. Prior to this, he had never had sex with a man and has had limited sexual experience with women. Tom asks many technical questions, including what his statistical risk for HIV infection is with oral sex. He also asks to show the red spots on his body to the counselor for a diagnosis.

Counseling Intervention

Praise Tom for testing and acknowledge his anxiety by framing it as a normal reaction for first time testers. Assess his knowledge of HIV transmission and prevention, and correct any misinformation.

Explain that the risks for HIV transmission during oral sex are very low. If Tom continues to ask for statistics, the counselor should not hesitate to say that he or she does not have that information, then provide him with a referral that might answer his question, such as to the Centers for Disease Control and Prevention (CDC) or to a reputable web site such as HIV InSite (http://hivinsite.ucsf.edu).

Use open-ended questions to assess how Tom feels about his risks. If he persists in asking more technical questions, acknowledge his anxiety, but also praise him for keeping his risks low, for example, by saying, “I know this is hard for you because you seem scared, but I want to tell you that you’re taking good care of your-
Test Yourself

Review Questions
1. What is the risk of becoming infected with HIV when engaging in unprotected oral sex? a) 1 percent; b) 6.6 percent; c) 20 percent; d) research has found that oral sex poses a low risk for HIV infection, but it has not established the numerical risk.
2. True or False: The presence of STD infection can increase the risk for HIV transmission.
3. True or False: There is no risk for HIV infection for the insertive partner during unprotected anal sex.
4. There have been case reports of HIV transmission involving which of the following fluids? a) breast milk; b) saliva; c) tears; d) water.
5. Which of the following common substances can kill HIV? a) hot water; b) bleach; c) alcohol; d) all of the above.
6. True or False: Undetectable viral load means that HIV has been eradicated from an HIV-positive person’s body and that he or she can no longer transmit the virus.
7. True or False: An HIV vaccine will soon be available, and the AIDS epidemic will be over.
8. True or False: Although unprotected oral sex poses a low risk for HIV infection, frequently engaging in this behavior increases a person’s cumulative risk over the long term.

Discussion Questions
1. What are some ways counselors can familiarize themselves with current HIV-related information and concepts?
2. How might counselors help clients use scientific or other technical information about HIV to empower themselves and lower their risks?
3. How can counselors effectively work with anxious clients who persist in asking detailed questions that distract from performing an adequate risk assessment?
4. What are some ways counselors can convey information that is inconsistent or vague without confusing clients?
5. How can counselors help clients if they do not know the answers to their clients’ technical questions?
6. What are some good referrals counselors can provide to clients who ask difficult questions?
7. How can counselors who struggle with scientific concepts gain a basic understanding of information necessary for effectively working with clients?

Answers
1. d.
2. True.
3. False. During unprotected anal sex, there is a risk for HIV infection for insertive partners, but the risk is lower than for receptive partners.
4. a.
5. d.
6. False. Undetectable viral load means that the concentration of HIV in a person’s blood is too low to be detected by a given test. Limited research suggests that infectivity decreases as viral load decreases, but because this research examined only heterosexual transmission, very little is known about other modes of transmission. Also, the concentration of virus in semen may be higher than in blood.
7. False. It will be at least several years before an effective HIV vaccine will become available to the public, and even if it does, it is unlikely to immediately end the epidemic because it will probably not be 100 percent effective. A number of psychosocial and other issues may also impede this outcome.
8. True.
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