

Strategies for effectively communicating the risk of HIV transmission

Questions

- What effective methods exist for communicating the risk of HIV transmission?

Key Take-Home Messages

- Probability information alone may not be an effective way of communicating HIV risk information (1). Information about what causes a health problem, how severe the consequences of that problem will be, and what can be done to treat or prevent the problem can contextualize risk information and allow people to create a mental picture of the problem's personal relevance (2).
- Adding contextual information to probability and statistical information allows it to be more reliably interpreted and more easily called to mind when needed (2).
- Risk scenarios are a tool that can help contextualize risk information. There is a stronger perception of personal risk when an individual reads a greater number of HIV risk scenarios (1).
- The more an individual identifies with a risk scenario, the stronger the effect on their perception of risk. Having someone write their own scenario increases perceived susceptibility to HIV transmission compared to reading a pre-written scenario (3).
- Pairing frequency risk information (e.g., probability rates) with a scenario is an effective way to convey behaviour change messages (4).

HIV Risk – When it comes to communicating about HIV, there are two kinds of risk: the risk of transmitting HIV (for people who are living with HIV) and the risk of contracting HIV. Note that the research studies included in this report primarily focus on the latter – communicating about the risk of contracting HIV to those who may not already carry the virus. The two branches for communicating HIV risk require somewhat different approaches, but many of the findings discussed here can be modified to apply to the risk of transmission as well.



References

1. Mevissen FE, Meertens RM, Ruiters RA, Schaalma HP. Testing implicit assumptions and explicit recommendations: The effects of probability information on risk perception. *Journal of Health Communication*. 2010;15(6):578-89.
2. Rothman AJ, Kiviniemi MT. Treating people with information: An analysis and review of approaches to communicating health risk information. *Journal of the National Cancer Institute Monographs*. 1999(25):44-51.
3. Mevissen FE, Meertens RM, Ruiters RA, Schaalma HP. Bedtime stories: The effects of self-constructed risk scenarios on imaginability and perceived susceptibility to sexually transmitted infections. *Psychology & Health*. 2012;27(9):1036-47.
4. Mevissen FE, Meertens RM, Ruiters RA, Feenstra H, Schaalma HP. HIV/STI risk communication: The effects of scenario-based risk information and frequency-based risk information on perceived susceptibility to chlamydia and HIV. *Journal of Health Psychology*. 2009;14(1):78-87.

The Issue and Why It's Important

Individuals need useable information about their risk of contracting or transmitting HIV to engage in HIV protective behaviours. The way that individuals use HIV knowledge and risk information, however, is influenced by a variety of social, emotional, and situational factors (e.g., age, gender, risk perception, and rejection sensitivity) (5-7). When we fail to recognise the consequences of HIV and the fact that we are susceptible to HIV, it becomes much more difficult to motivate ourselves to take protective measures. Thus, it is important to close the gap between actual and perceived HIV risk, since perceived risk can have an important impact on whether or not people choose to engage in behaviours that decrease their chances of contracting or transmitting HIV. An individual who underestimates their actual HIV risk will have more difficulty making decisions to help protect themselves. As such, perceived susceptibility has long been considered an important component in many theories of health behaviour (e.g., the Health Belief Model) (8) and there is indeed evidence that one's perceived personal risk is linked with motivation to engage in protective health behaviours (9, 10). This means it is important to develop a better understanding of the methods for communicating HIV risk that are most likely to increase perceived risk, so that individuals have an accurate impression of their risk, and thereby influence positive changes in their HIV-related risk behaviours.

What We Found

Presenting risk using numbers and statistics

Cumulative vs single incident risk information

In one study, researchers in the Netherlands presented participants with information about the local epidemiology of HIV (e.g., the percentage of yearly HIV diagnoses) along with information about either the risk of contracting HIV after a single unprotected sexual encounter with an infected partner (single incident risk) or the cumulative risk of HIV infection with multiple instances of unprotected sex and multiple partners (1). Results showed that providing cumulative risk information (the risk that accumulates over time with multiple unprotected sex acts with multiple partners) did not increase participants' perception of their susceptibility to STI/HIV infection more than providing single incident risk information did, nor did it impact their risk behaviour intentions (1). It may be that both types of probability information are difficult to process or that participants reacted with a stronger than anticipated fear of infection, which resulted in a denial of personal risk (1).

Absolute vs relative and incremental risk information

Presenting information using absolute risk statistics (e.g., "Consistent

5. Collado A, Loya JM, Yi R. The interaction of HIV knowledge, perceived risk, and sex differences on risky sex. *International Journal of Sexual Health*. 2015;27(4):418-28.
6. Berenson KR, Paprocki C, Thomas Fishman M, Bhushan D, El-Bassel N, Downey G. Rejection sensitivity, perceived power, and HIV risk in the relationships of low-income urban women. *Women & Health*. 2015;55(8):900-20.
7. Haynes CR. The sociocognitive determinates of HIV/AIDS prevention behaviors among baby boomers. *Educational Gerontology*. 2016;42(7):474-82.
8. Rosenstock IM, Strecher VJ, Becker MH. Social learning theory and the Health Belief Model. *Health Education Quarterly*. 1988;15(2):175-83.
9. Floyd DL, Prentice-Dunn S, Rogers RW. A meta-analysis of research on protection motivation theory. *Journal of Applied Social Psychology*. 2000;30(2):407-29.
10. Milne S, Sheeran P, Orbell S. Prediction and intervention in health-related behavior: A meta-analytic review of protection motivation theory. *Journal of Applied Social Psychology*. 2000;30(1):106-43.
11. Fagerlin A, Zikmund-Fisher BJ, Ubel PA. Helping patients decide: Ten steps to better risk communication. *Journal of the National Cancer Institute*. 2011;103(19):1436-43.
12. Mevissen FE, Ruiter RA, Meertens RM, Schaalma HP. The effects of scenario-based risk information on perceptions of susceptibility to Chlamydia and HIV. *Psychology & Health*. 2010;25(10):1161-74.

condom use will decrease your risk of HIV transmission by X% over the next five years”), rather than relative risk statistics (e.g., “Guys who use condoms consistently have Y% risk for HIV transmission, compared of Z% risk in guys who use condoms inconsistently”) can give an individual more realistic and easier-to-understand information about the risks and benefits of certain behaviours (11). Incremental risk information (e.g., discussing how consistent use of pre-exposure prophylaxis or antiretroviral medication, in addition to consistent condom use, affects the risk of HIV transmission/infection compared to baseline risk levels) can also be used to highlight how a change in behaviour or treatment adherence can change risk from pre-existing levels (11). Communicating risk information using statistics can be appealing, but it is difficult to account for the meaning clients may affix to the statistics presented.

Numerical vs contextual information

Although providing numerical probability information gives people a precise description of HIV risk, this information tends to be underutilized by clients unless additional contextualizing information is provided alongside the probability statistics (2). Numerical probability information (e.g., “the risk of HIV exposure during receptive anal sex is 1 in 71, or 1.4%”) is challenging to interpret and understand, and is easy to confuse with the rate of occurrence (e.g., “in 2008, 44% of new HIV infections in Canada occurred in men who have sex with men”). It is more difficult to assign meaning to numerical probability information, and the information is harder to remember. The presentation of numerical probability information can also influence how someone understands their own risk (e.g., people respond differently to ratios out of 10 as opposed to out of 100). Reactions to probabilities are also swayed by how one perceives personal risk compared to the average person’s risk (independent of their absolute level of personal risk) (11). An individual’s understanding of the consequences of their behaviour can depend on whether the format of the risk information leads them to believe that the frequency of their risk taking behaviour is above or below what they think the average (or norm) level might be.

One reason why numeric probability information tends to be insufficient for influencing behaviour is that people are more interested in what causes a health problem, how severe the consequences will be, and what can be done to treat or prevent the health problem (2). This type of information contextualizes the risk and allows people to create a mental picture of its personal relevance (e.g., what might cause them to develop a health problem and what the personal costs of developing this problem would be). By providing information about what causes a health problem (i.e., risk-taking behaviour) and information about the consequences of the health problem, it’s possible to increase perceptions of personal risk (which is important for behaviour change) while bolstering

13. Garcia-Retamero R, Cokely ET. Effective communication of risks to young adults: Using message framing and visual aids to increase condom use and STD screening. *Journal of Experimental Applied Psychology*. 2011;17(3):270-87.

14. Kurz-Milcke E, Gigerenzer G, Martignon L. Transparency in risk communication: Graphical and analog tools. *Annals of the New York Academy of Sciences*. 2008;1128:18-28.

confidence that an individual will be able to cope with an HIV diagnosis. This approach gives people meaningful information that they can easily call to mind when they need to make a decision about engaging in potential risky behaviours. It also gives important context to probability information, which allows it to be more reliably interpreted. One method for providing this type of contextual information is through the use of scenarios.

Presenting risk using scenarios

Presenting health risk information in a scenario format (i.e., reading a story about another person's experience or imagining yourself as the main character in a story) has shown promise as an effective method for communicating about STI/HIV risks (12). However, it seems that two or more scenarios might be needed. Mevissen et al. (1) found that reading two scenarios about STI/HIV risk was more effective for increasing perceptions of risk than reading only one. Additionally, Mevissen et al. found that, the more participants were able to imagine themselves in the scenarios, the stronger the effect. This suggests that tailoring scenarios to particular audiences may be most effective, since it may increase an individual's ability to identify with the scenarios presented.

Mevisen et al. (3) also investigated whether writing one's own scenario is more effective for increasing perceived susceptibility to STIs, rather than simply reading a pre-written risk scenario. The authors found that participants were better able to imagine themselves in scenarios they had written themselves. Additionally, writing these stories led to a greater sense of susceptibility to STI transmission. This is likely because individuals are able to readily imagine themselves in their own scenarios. It may also be that the cognitive effort needed to write a personal risk scenario similarly influences a person's sense of susceptibility, by making the information feel more relevant and important, and the risk more likely (3).

Mevisen et al. (4) looked at the effectiveness of presenting risk information using frequency data compared to the use of scenarios, with conflicting results. Although frequency information seemed to be more effective than a scenario for conveying risk, participants who read the scenario perceived

the consequences of having an STI as more severe. In fact, the most effective strategy (particularly among participants who were not in a relationship) seemed to be a combination of strategies: providing both the frequency information and the scenario. This method may have been the most effective because frequency information is not always easy to remember (2), and pairing it with a scenario gives the information relevant context. As in Mevisen et al. (4), Garcia-Retamero and Cokely (13) also found that presenting numerical risk information accompanied by textual information was most effective for conveying health behaviour change messages. Natural frequencies (e.g., x number of people out of 100, 1000, or 10,000) also make it easier for individuals to estimate their personal risk (14).

Other considerations for presenting risk information

Framing

The framing of a risk communication message is important for achieving behaviour change. Choosing what type of message to use depends on the effect you hope to generate (13). Gain-framed messages (highlighting the benefits that can be achieved through behaviour change) tend to be more effective at promoting prevention behaviours, such as decreased risk-taking. This is because these messages are more appealing to people who think that engaging in the promoted behaviour will increase their chances of having a positive outcome. For example, promoting consistent condom use has been shown to be more effective at improving actual condom use when the health benefits of condom use are emphasized. This would be more effective than emphasizing the costs of failing to use condoms – i.e., a loss-framed message.

In contrast, loss-framed messages (highlighting the costs associated with failing to implement a health behaviour) tend to be more effective for promoting illness-detecting (screening) behaviours (13). This is because a message that emphasizes the costs of not engaging in a promoted behaviour helps ease concerns about this behaviour. It's easier to engage in a screening health behaviour if we are given information that

highlights how we may be harming ourselves or missing out on benefits by not engaging in this behaviour. For example, being screened for an STI can be seen as somewhat risky to some people (e.g., if they are frightened about obtaining an undesirable result), but emphasizing the costs of not completing the screening (e.g., the probability of worse outcomes with later detection) was found to be more effective than a gain-framed message at encouraging people to get screened.

Factors That May Impact Local Applicability

All reviewed studies have been conducted in high income countries (Netherlands, Germany, or Spain), but cultural differences may limit the application of findings in the local, Canadian context. In addition, almost all study participants were either white or their ethnicity was not disclosed. This may further limit the generalizability to people of other races and ethnicities.

What We Did

We searched Medline using a combination of [Risk Communication AND [HIV infection, or Acquired Immunodeficiency Syndrome, or Acquired Immune Deficiency Syndrome, or HIV (MeSH terms)]. This search was conducted on June 9, 2016. Results were limited to English articles published from 1996 to present in high income countries. The search yielded 32 references from which nine papers were included. Sample sizes of primary studies ranged from 140 to 744.

Rapid Response: Evidence into Action

The OHTN Rapid Response Service offers quick access to research evidence to help inform decision making, service delivery and advocacy. In response to a question from the field, the Rapid Response Team reviews the scientific and grey literature, consults with experts, and prepares a brief fact sheet summarizing the current evidence and its implications for policy and practice.

Suggested Citation

Rapid Response Service. Strategies for effectively communicating the risk of HIV transmission. Toronto, ON: Ontario HIV Treatment Network; September, 2017.

Prepared by
Shayna Sparling

Program Leads / Editors
Katherine Murray
David Gogolishvili

Contact
rapidresponse@ohntn.on.ca

For more information visit
www.ohntn.on.ca/rapid-response-service



THE ONTARIO HIV
TREATMENT NETWORK

The Ontario HIV Treatment Network
1300 Yonge Street, Suite 600
Toronto ON M4T 1X3

www.ohntn.on.ca