



## Effective Public Health Practice Project Summary Statement



December 2005

This is a summary statement written to condense the work of the authors of a systematic review. The reference for the full review is below. The intent of this summary is to provide an overview of the findings and implications of the full review. For more information on individual studies included in the review, please see the review itself.

**Reference for Review in APA:** Neumann, Mary S., Johnson Wayne D., Semaan Salaam, Flores Stephen A., Peersman Greet, Hedges Larry V., Sogolow Ellen. (2002). **Review and Meta-analysis of HIV Prevention Intervention Research for Heterosexual Adult Population in the United States.** *Journal of Acquired Immune Deficiency Syndromes (JAIDS)*, Vol.30, Suppl. 1. S106-S117.

**Issue:** With an increasing number of people becoming infected with HIV in Ontario, the question arises whether behavioural and social interventions for heterosexual adults are effective in changing sexual behaviours related to the risk of acquiring HIV infection and in reducing the incidence of sexually transmitted diseases (STDs). Approximately 23,523 HIV infections have been diagnosed in Ontario up to 2002. The proportion of women with HIV diagnoses increased from less than 5% following the introduction of HIV testing to 20% in the late 1990s and in 2002, to 27%. The proportion of HIV diagnoses comprised by men having sex with men slightly increased to 46% in 2002 from 42% in 2001. The HIV prevalence among other persons infected by heterosexual contact increased 68% over five years (1998-2002), for an average annual increase of 11% (Remis et al., 2003)

In the United States increasing numbers of adults are also becoming infected with HIV through unprotected sexual behaviour. The increase is particularly notable among women, among whom 38% of AIDS cases in 2000 resulted from heterosexual exposure. In the absence of a vaccine against HIV, infection through heterosexual exposure can be prevented only by using strategies such as correct and consistent use of latex condoms to reduce or counteract the effects of HIV-related risk factors. However, determining overall effectiveness of such strategies has been difficult. (Neumann et al, 2002)

**Review Content Summary:** A systematic review using meta-analysis techniques was conducted to examine whether behavioural and social interventions, which included information on HIV and risk factors along with technical, personal or interpersonal skills, for heterosexual adults (older than 21 years) in the US were effective in changing sexual behaviours related to the risk of acquiring HIV infection and in reducing the incidence of STDs. Most interventions were delivered to groups of participants in a health care setting. Two sets of data were considered for meta-analysis: ten studies with behavioural outcomes (unprotected sex, condom use, number of sex partners) and six with biological outcomes (STD incidence). The overall meta-analytic results show statistically significant effects of behavioural and social interventions in reducing sex-related risks for HIV.

**Comments on this review's methodology:** The HIV/AIDS Prevention Research System Synthesis (PRS) database, which includes published and unpublished comparative studies of

City of Hamilton  
Public Health Services

Kingston, Frontenac and Lennox  
& Addington Public Health

Middlesex-London Health Unit

Sudbury District Health Unit

Ottawa People Services

Public Health Branch  
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interventions directly related to HIV transmission, was the source of the studies used in this meta-analysis. Seventeen behavioural or social intervention studies for heterosexual adults met the pre-established criteria for inclusion in the review. Ten of these studies provided sufficient data on sex-related outcomes for use in the behavioural meta-analysis and 6 provided sufficient data on STD incidence for use in the biological meta-analysis. Study selection criteria, data extraction and analytic techniques were described in detail. Randomised and quasi-randomised studies reported in English between 1988 and 1996 were included in the review; the majority used random allocation. No significant heterogeneity was found among studies for the main outcome events.

**Evidence points ARE NOT weighted or ranked according to strength**

| <b>What's the evidence?</b>   | <b>Implications for practice and policy:</b>  |
|---|---|
| <p>&gt; Behavioural meta-analysis: HIV risk-reduction interventions with heterosexual adults were associated with significant and modest reductions in unsafe sexual behaviours. The overall weighted average effect size for the 10 studies (4354 participants) included corresponds to an odds ratio of 0.81 (95% CI, 0.69-0.95).</p>   | <p>&gt; HIV risk-reduction interventions involving heterosexual adults are effective in reducing unsafe sexual behaviours.</p>  |
| <p>&gt; Biological meta-analysis: HIV risk reduction interventions with heterosexual adults were associated with modest, yet significant reductions in STD incidence among study participants. The overall weighted average effect size for the 6 studies (5010 participants) included indicates a significant and favourable effect size corresponding to an odds ratio of 0.74 (95% CI, 0.62-0.89).</p>   | <p>&gt; Increased levels of HIV awareness among heterosexual adults also lead to a decrease in STD incidence among heterosexual adults.</p>                                     |
| <p>&gt; Post hoc subgroup analysis found that interventions delivered to small groups of heterosexual participants showed more favourable effects than interventions delivered to individuals. Study results suggest that group dynamics or some other characteristics of group-level interventions produce more consistent effects. However, the responsible characteristics cannot be determined from the information available.</p>  | <p>&gt; Individual-level counselling is less likely to be a good primary prevention strategy when compared with group-level interventions that involve heterosexual adults.</p> |
| <p><b>General Implications:</b></p> <ul style="list-style-type: none"> <li>• Additional behavioural or social intervention studies need to be conducted among heterosexual adults with a goal to determine the effectiveness of strategies that could reduce the effects of HIV/STD-related risk factors.</li> <li>• Research could be enhanced by clearly defining behavioural outcomes and their measurement, use of intent-to-treat analyses, periodicity and duration of follow-up, length of recall periods for behaviours and by reporting outcome measures separately for treatment groups and comparison groups.</li> </ul> |   |

**Cost Benefit or Cost-Effectiveness Information:** Not included in review.

**References Used to Outline Issue:**

Remis, R.S., Swantee, S., Rottensten, K., Schiedel, L. & Merid, M.K. (2003). *Report on HIV/AIDS in Ontario - 2002*. [On-line]. Available:  
[http://www.phs.utoronto.ca/ohemu/doc/technical%20reports/Phero2002v4\\_lorraine.pdf](http://www.phs.utoronto.ca/ohemu/doc/technical%20reports/Phero2002v4_lorraine.pdf)

**Other References on this Topic:**

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