

Meta-analyses on Behavioral Interventions to Reduce the Risk of Transmission of HIV

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KEYWORDS

- HIV • AIDS • Meta-analysis • HIV transmission
- Behavioral intervention

HIV is usually acquired through exposure to infected body fluids. Unprotected sexual activity and needle sharing in injection drug users (IDUs) are the main modes of transmission. In an attempt to promote safe practices, several behavioral interventions have been implemented at the individual, group, and community levels. In this review article we summarize several meta-analyses that have been published since 1999. Searches were conducted using Medline and the Cochrane reviews database. Combinations of search terms such as HIV, AIDS, and meta-analyses were used to locate relevant literature. We identified meta-analyses on behavioral interventions used to reduce the risk of HIV transmission. We structured the review using data on the following populations: heterosexuals (including adolescents), minority populations (ie, African Americans and Latin/Hispanics), men who have sex with men (MSM), IDUs, and people living with HIV.

INTERVENTIONS IN HETEROSEXUALS

In a meta-analytic review of 10 studies, involving 10,008 adults, a significant effect in reducing sex-related risks was shown (OR 0.81, 95% CI 0.69–0.95).¹ The results of the studies were published between 1988 and 1996. The average age of the participants

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was 26. Interventions were more effective when delivered to small groups rather than on an individual basis. The studies also showed a decrease in sexually transmitted infections (STIs) (six studies; OR 0.74, 95% CI, 0.62–0.89). The authors commented that the intervention characteristics responsible for the effect are difficult to determine. In a meta-analysis of studies targeting high-risk heterosexual women, behavioral interventions had a small but significant effect.² Some of the studies were conducted in STI clinics and drug treatment programs. The authors suggested that combining treatment for STIs and substance abuse with behavioral interventions may be beneficial in reducing the risk of transmission.

Behavioral interventions in sexually experienced adolescents, both in and out of the classroom, showed a decrease in the risk of unprotected sex (OR 0.66, 95% CI, 0.55–0.79), but no difference in the number of partners or incident STIs.³ Interestingly, interventions with single ethnic groups out of class were more efficacious than in-class interventions with mixed ethnic groups. Another meta-analysis of controlled trials performed in adolescents showed an overall decrease in sexual risk.⁴ Nevertheless, the effect was small in the two most critical outcomes, namely condom use (mean effect size 0.07, 95% CI, 0.03–0.11) and sexual frequency (mean effect size 0.05, 95% CI, 0.02–0.09). Interventions were more successful when condoms were provided or when active condom instruction and training was included.

INTERVENTIONS IN MINORITY POPULATIONS

In the single meta-analysis published on behavioral interventions targeting heterosexual African Americans only, it was again shown that the risk of unprotected sex is reduced (OR 0.75, 95% CI 0.67–0.84).⁵ The analysis was based on 35 randomized controlled trials (RCTs) including 14,682 individuals, and the average follow-up was 3 months after the intervention. The results are comparable to findings of meta-analyses including other heterosexual population groups. Greater efficacy was found for interventions that included peer education. The risk of STI transmission was marginally decreased in an analysis of 10 trials (OR 0.88, 95% CI 0.72–1.07); however the effect was significant when the study with the lowest methodological quality was removed from the analysis.

Another meta-analysis showed that intervention groups with a higher percentage of Latinos/Latin Americans increased condom use to a lesser extent than groups with a lower percentage of Latinos.⁶ Interventions in groups with higher percent of Latinos were more effective when conducted by lay community members and when including threat-inducing arguments. In a meta-analysis including Latinos only it was shown that interventions targeting either males or females were more successful in reducing sexual risk behavior as compared with interventions targeting both sexes.⁷ This can be explained by the fact that Latino men and women often hesitate to discuss sexual matters in each other's presence.

In black and Hispanic males attending STI clinics, behavioral interventions were proven to be efficacious in a meta-analytic review of 14 studies (reduction in unprotected sex OR 0.77, 95% CI 0.68–0.87).⁸ Moreover these interventions decreased the risk of incident STIs (OR 0.85, 95% CI 0.73–0.99). The authors concluded that culturally tailored interventions from ethnically matched deliverers were successful.

INTERVENTIONS IN MEN WHO HAVE SEX WITH MEN

In a Cochrane review, 58 interventions among MSM were summarized.⁹ These were included in 44 studies of 18,585 participants. In each of these studies MSM constituted at least one third of the participants. In the meta-analysis, outcomes measured

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