

Eleventh in a series, this summary fact sheet presents existing evidence from rigorously evaluated interventions to prevent HIV transmission in developing countries. Results are presented here from the systematic review of behavioral counseling studies published in leading scientific journals. In contrast to the many anecdotal reports of best practices, this series provides readers with the strongest evidence available in a user-friendly format. The evidence provides program planners, policy makers, and other stakeholders with information about “what works.”

Behavioral counseling (BC) interventions are one approach to the prevention of HIV transmission at an individual level. A major goal of these programs is to reduce the frequency of high-risk behaviors that ultimately lead to infection, including sexual risk behaviors. Though the specifics of BC approaches vary, they generally involve client-centered interactions that aim to reduce HIV risk behaviors through provision of individualized risk reduction education and behavioral counseling strategies. This systematic review focused on interventions that include an interactive session(s) led by a trained counselor with a client(s) that is “client centered” and specifically focuses on HIV risk behaviors. Client-centered was defined as the following: (a) talking *with* rather than *to* the client; (b) typically face-to-face meetings; (c) sessions that are responsive to needs, as identified by the client; and (d) the counselor maintaining a neutral non-judgmental attitude towards clients.

Effectiveness of Behavioral Counseling Interventions

Results are presented from a systematic review of the effects of behavioral counseling on HIV sexual risk behaviors and biological outcomes in low- and middle-income countries by Zajac et al.¹ This review showed that behavioral counseling interventions in developing countries had the following effects on participants compared to those who were not exposed to the intervention and compared before and after the intervention:

People Living with HIV (PLHIV) (n=7)

- Seven studies examined the effectiveness of BC interventions for PLHIV in reducing HIV transmission to sexual partner(s) by increasing use of condoms or abstinence and/or decreasing the number of sexual partners or frequency of intercourse.

- Evaluations of BC for PLHIV did not show strong support for its efficacy in reducing HIV-related sexual risk behaviors.
- Among studies with the strongest research designs (i.e., randomized controlled trials), three of five studies showed that BC interventions increased condom use or protected sex, with two of these studies finding modest effects^{2,3} and the other providing data from a relatively short-term follow-up (4 weeks).⁴
- A non-randomized study failed to produce changes in sexual behaviors.⁵
- All analyses involving pre-post comparisons found reductions in sexual risk behaviors;^{2,6,7} however, given the limitations of these study designs, it is unknown whether these effects were due to BC.

People Who Use Drugs or Alcohol (n=6)

- Six studies examined interventions for people who use drugs or alcohol to reduce sexual risk behaviors.
- The majority of the randomized control trials (RCTs) for individuals using drugs or alcohol revealed no advantage of BC compared to usual services on measures of HIV risk behavior,⁸ condom use,⁹ number of partners,⁹ or consistent condom use;¹⁰ one study showed decreased HIV risk behaviors¹¹ while another showed increased condom use but no change in the percentage of individuals using condoms consistently.¹⁰
- Pre-post evaluations found increased condom use^{11,12} and decreased sexual partners¹³ and sexual risk behaviors.^{8,11}

Serodiscordant Couples (n=3)

- Three studies examined BC interventions for serodiscordant couples aimed at decreasing unprotected sex between sexual partners.

- Study designs used in these evaluations were weak relative to studies of other groups. Pre-post evaluations showed small to moderate increases in protected sex,^{7,14} though it is impossible to determine whether these rates were lower than they would have been without the intervention.

Individuals at High Risk for HIV (n=10)

- Ten studies examined BC for individuals at high risk for HIV infection (i.e., female sex workers, men working at trucking companies, individuals seeking sexually transmitted infection [STI] treatment, and men who have sex with men [MSM])
- Several rigorously designed studies of BC for this group failed to find effects on condom use or protected sex,^{15,17} HIV or STI incidence,¹⁸ or number of sexual partners.¹⁶ However, there were some positive findings. One study found significant decreases in unprotected vaginal intercourse (though not unprotected anal intercourse);¹⁵ one found a significant decrease in the percentage of unprotected sex acts;¹⁶ one reported decreased incidence of overall STIs (though not any individual STI);¹⁹ one reported decreases in self-reported STIs;¹⁷ and, one found a significant increase in condom use.²⁰
- Significant findings were modest in size. Many pre-post evaluations found some improvements, including decreased extramarital sex,²¹ STI incidence/prevalence,²¹⁻²² and sexual partners,²²⁻²⁴ and increased condom use.²²⁻²⁴ A few did not find pre-post decreases in number of partners.^{23,25}

Individuals with Moderate to Low HIV Risk (n=3)

- Only three studies examined BC interventions designed for individuals at moderate to low risk for HIV (e.g., community samples), and none were rigorously designed. They found decreased numbers of sexual partners²⁶ and increased condom use²⁷ but failed to find an impact on consistent condom use.^{26,28}

How is the Effectiveness of a Behavioral Counseling Intervention Determined?

The findings presented here come from a recent systematic review of 29 studies. Although BC encompass a broad array of interventions, for the purposes of the analysis, the researchers defined BC as an interactive session(s) led by a trained counselor with a client(s) that is “client-centered” and specifically focuses on an HIV risk behaviors. The study included the following outcomes: sexual behavior (not simply intentions)—including condom use and number of partners—and



*A couple visits a health worker in Punjab Province, Pakistan
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prevalence or incidence of HIV or STIs. Of the 29 studies, 19 were conducted in sub-Saharan Africa, 8 in East and Southeast Asia, 1 in Central Asia, and 1 in Latin America.

Selection Criteria and Rigor Criteria of Studies Included in the Systematic Review

A study had to meet four criteria to be included in the analysis:

1. Evaluate a behavioral counseling intervention as defined above.
2. Present behavioral, psychological, or biological outcomes related to HIV prevention in low- or middle-income countries
3. Use either a pre/post design or a multi-arm design
4. Appear in a peer-reviewed journal between January 1990 and May 9, 2011.

Studies that did not meet these criteria were excluded.

What Do the Data Tell Us about Implementing Behavioral Counseling as Part of a Prevention Program?

The results call into question the effectiveness of BC alone for HIV risk reduction when evaluated with rigorously designed studies. This was the case for BC interventions for PLHIV, people who use drugs or alcohol, and individuals at high risk for HIV. Although results of pre-post designs often showed positive effects of BC for these three groups, the RCTs largely showed a lack of, or very modest, positive findings on behavioral outcomes most closely associated with risk for HIV infection. Thus, based on the studies reviewed, the reliance on BC strategies alone for these groups is insufficient for reducing the risk of HIV through sexual transmission. However, BC may still be a valuable component of a combination HIV prevention program.

The lack of effectiveness of BC for PLHIV is consistent with past studies showing that a comprehensive approach covering a range of intervention modalities is necessary for prevention in this group.²⁹ Though this review indicates that BC alone is not effective for PLHIV, a positive health, dignity, and prevention approach is recommended and should include both biomedical and behavioral interventions, one of which may be BC. Similarly, there is little evidence that BC alone is effective for reducing behavioral risk for individuals at high risk for HIV infection. It is likely that these groups require a more comprehensive approach to prevention. Specific to studies on BC for people who use drugs or alcohol, it should be noted that some of the BC interventions also aimed to reduce risk behaviors specifically related to substance abuse (e.g., sharing needles, engaging in sex while intoxicated). These outcomes are beyond the scope of this review but it is possible that BC is more effective in reducing substance use-related behaviors than sexual risk behaviors.

The quality of studies varied across target groups, precluding strong conclusions about the efficacy of BC for some groups. Specifically, the studies of BC for both serodiscordant couples and individuals with moderate to low risk for HIV were few in number and were not rigorously designed. Thus, it is not possible to making definitive conclusions about the use of BC for these groups. Additional research with these groups is warranted. Serodiscordant couples, however, may represent a unique population, as they tend to increase their use of condoms substantially upon learning their serostatus.³⁰⁻³¹ Thus, testing itself is a powerful intervention for this group, and the addition of BC may not have incremental value. In the case of individuals with moderate to low risk of HIV, the potentially high cost of intervening with this population rather than targeting PLHIV or high-risk groups is likely to detract from the viability of these types of programs. This is similar to conclusions drawn about the utility of BC for low-risk groups in the US.³²

One important qualification to these findings is that the control conditions utilized in the large majority of the RCTs were “active” conditions of similar length and intensity as the BC interventions. Further, some of the control groups contained other HIV risk reduction strategies, such as HIV testing and counseling, condom distribution, and HIV education, that were also offered in the BC interventions. This may have diminished the differences found between groups and, thus, the perceived effectiveness of BC. Another important

Terminology & Acronyms

BC

Behavioral counseling. For the purposes of this review, included interventions involve client-centered interactions that aim to eliminate HIV risk behaviors through provision of individualized risk reduction education and behavioral strategies.

MSM

Men who have sex with men

PLHIV

People living with HIV

RCT

Randomized controlled trial

STI

Sexually transmitted infection

qualification is that, although sexual risk behavior and biological indicators were the focus of this review, many of the studies focused on additional outcomes, including HIV knowledge and other HIV transmission risk behaviors (e.g., substance use, breastfeeding) and protective factors (e.g., partner HIV testing, medication adherence) beyond the scope of this review. Further, BC may improve other important outcomes that are often overlooked in program evaluations, including mental health and well-being. Conclusions about the usefulness of BC for these outcomes cannot be made based on this review.

What More Do We Need to Know about Behavioral Counseling Effectiveness?

The available evidence does not support the use of BC as a sole HIV prevention strategy in low- to middle-income countries. These findings provide support for the idea that there is no single standalone intervention that will be effective at reducing population risk for HIV infection. As a whole, the field is moving towards combination HIV prevention, defined by UNAIDS as an approach that “relies on the evidence-informed, strategic, simultaneous use of complementary behavioral, biomedical and structural prevention strategies.”³³ Effective prevention will need to target risk factors at individual, dyadic, community, and societal level and will need to be tailored to meet the needs of specific groups and contexts. Countries and settings need to identify risk factors for HIV in their population and strategically choose multimodal and multilevel prevention interventions to address these specific needs. Though

the conclusions from this review do not support the efficacy of BC as a standalone intervention, it could be an effective approach when used to target specific HIV risk factors in the context of larger combination HIV prevention programs. Research on the combinations of such interventions to meet the epidemiological needs of specific populations is still in its infancy,³⁴ but future studies may consider BC as one potential individual-level intervention within a larger multi-level program that includes relational, community, and structural level interventions.

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