**HIV health promotion and men who have sex with men (MSM): a systematic review of research relevant to the development and implementation of effective and appropriate interventions**

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**CRD summary**

This review evaluated the effectiveness of HIV-related health promotion interventions in men who have sex with men. The authors concluded that cognitive-behavioural-based counselling or workshops can reduce incidences of unprotected anal intercourse with partners of unknown or sero-discordant HIV status. The authors’ conclusions are reliably derived, but the primary recommendation might be overstated given the small number of included studies.

**Authors’ objectives**

To evaluate the effectiveness of human immunodeficiency virus (HIV)-related health promotion interventions. The following abstract focuses on this evaluation. In the same report, the authors explored intervention processes, and the views and experiences of men who have sex with men (MSM) on the same topic. The evaluations were subsequently combined in a cross-study synthesis.

**Searching**

Eligible studies written in English were sought from electronic databases: MEDLINE, EMBASE and ERIC from 1992 to February 2003, and CINAHL, the Social Science Citation Index, PsycINFO and the British Education Index from 1992 to March 2003. The search terms were reported. Specialist registers were also searched to 2003. These included Bibliomap, PrevRev, DARE, HealthPromis, the Cochrane Controlled Trials Register, the Cochrane Database of Systematic Reviews, the Cochrane HIV/AIDS Group's trials register, the African Trials Register, the Health Scotland Library Catalogue, National Guidelines Clearinghouse, and the database of the CDC HIV/AIDS Prevention Research Synthesis project. The authors searched SIGLE (1992 to 2002) and consulted Sigma Research (University of Portsmouth, London, UK) specifically to identify unpublished material. The reference lists of retrieved papers and systematic reviews were screened; handsearches were carried out in the Social Aspects of AIDS book series (dates supplied in the report), and various website searches were conducted (details supplied in the report). Reports with publication dates prior to 1996 were excluded. Authors were contacted for additional reports where necessary.

**Study selection**

**Study designs of evaluations included in the review**

Randomised controlled trials (RCTs) or controlled trials (CTs) were eligible for inclusion in the review.

**Specific interventions included in the review**

Studies of HIV-related health promotion interventions (defined as those aiming to reduce or prevent new cases of HIV infection) were eligible for inclusion. Of particular interest were those delivered during or after 1996. The included interventions were generally multicomponent structures delivered by more than one type of provider. All interventions involved direct contact (as defined by the Community HIV and AIDS Prevention Strategy) on an individual or group basis. None of the included studies evaluated organisational, facilitation or equality interventions. Full details of the various interventions were provided in the report.

**Participants included in the review**

Studies of gay or bisexual men, or MSM (who did not identify as being gay or bisexual) were eligible for inclusion. Of particular interest were men who were sero-positive for HIV, younger men (16 to 25), men from black and minority ethnic groups, men with lower educational achievement, and injecting drug users. Some of the included studies described HIV status; only one was directed at HIV-positive men. None of the included studies specifically targeted the other subgroups of interest, although individuals from these groups were represented in many cases. The included studies were conducted in the UK, USA, Canada and Australia.
Outcomes assessed in the review
The primary outcome of interest was sero-discordant or unknown status unprotected anal intercourse (sdUAI). The secondary outcomes of interest were the incidence of casual unprotected anal intercourse (UAI); the incidence of sexually transmitted infection (STI); HIV incidence and test use; outcomes relating to attitudes, awareness, practical and interpersonal skills; and structural outcomes. None of the included studies measured interpersonal skills, structural outcomes, or HIV incidence. Outcomes were largely determined by self-report. Follow-up (baseline and post-intervention) ranged from 6 weeks to 3 years.

How were decisions on the relevance of primary studies made?
Two independent reviewers selected the studies for inclusion in the review. Any disagreements were resolved by consensus.

Assessment of study quality
Two independent reviewers carried out the validity assessment, using an established framework incorporating 4 criteria: the provision of pre-intervention data for all individuals; the provision of post-intervention data for each group; the reporting of results for each outcome measure as defined in the aims of the study; and the use of an equivalent control/comparison group. Those studies satisfying all 4 criteria were considered to be ‘sound’ or (where there was doubt regarding other sources of bias) ‘sound despite discrepancies’. Any disagreements were resolved by consensus.

Data extraction
Two independent reviewers carried out the data extraction. Any disagreements were resolved by consensus. Mean differences and odds ratios (ORs) were calculated where necessary. Intention-to-treat analysis was not carried out. Authors were contacted for additional information where necessary.

Methods of synthesis
How were the studies combined?
Where no significant heterogeneity existed and complete data were available, studies rated ‘sound’ or ‘sound without discrepancies’ were combined by outcome in a meta-analysis, using a random-effects model. Standardised weighted mean differences or pooled ORs and 95% confidence intervals (CIs) were calculated as appropriate. A narrative synthesis was used where statistical pooling was not possible. Publication bias was reported to have been explored using funnel plots.

How were differences between studies investigated?
Statistical heterogeneity was explored using the chi-squared test. Where this was significant, potential (pre-determined) sources of variation were explored, including socio-economic/educational status, age, HIV status, country, differences in intervention intensity, and setting. Sensitivity analysis was planned to explore the influence of study design, quality and publication bias.

Results of the review
Eight of 12 outcome evaluations (5 RCTs and 3 controlled cluster trials, n in excess of 3,978 participants) were included in the synthesis.

The results reported here are for the synthesis of 8 studies that were judged to be ‘sound’ (2 studies) or ‘sound with discrepancies’ (6 studies). The results for publication bias and the planned sensitivity analysis were not reported.

sdUAI.

Two of the 5 studies measuring this outcome compared cognitive-behavioural-based counselling, or workshops using an individual allocation design, with standard HIV counselling (n=591). Pooled results at 6 months showed that cognitive-behavioural techniques were significantly more effective (OR 0.49, 95% CI: 0.29, 0.84) in reducing reported UAI with partners of unknown or sero-discordant HIV status. This trend continued at 12 months, but failed to maintain
statistical significance. The loss to follow-up (18 and 16%, and 34 and 24% in the two studies intervention and control groups, respectively) was not addressed at either time point. Of the 3 remaining studies, a narrative synthesis of 2 cluster trials (n in excess of 2,687) involved peer-delivered community interventions. Neither study showed any evidence of effect, although both were reported as being not delivered as planned.

UAI with casual partners.

Two of the 6 studies measuring this outcome compared counselling or workshops that contextualised sexual risks with ‘usual practice’, defined as a waiting-list group and the provision of an HIV prevention video, respectively (n=525). Pooled results showed no evidence of effect on behaviour. A narrative synthesis of 3 cluster trials (n in excess of 2,753) focusing on peer-delivered information and outreach services compared with usual practice also showed no evidence of effect. This was attributed to differences and possible structural and cultural barriers in the implementation process.

Other outcomes.

There was no evidence of effect in any of the studies measuring HIV testing, or on practical skills. Limited reporting precluded any judgement on the effect of interventions upon knowledge and attitudes. STI incidence was measured in 1 study which concluded that a potentially harmful intervention effect may have been linked to the possible increase of UAI in sero-concordant partners.

Authors' conclusions
Counselling, or workshops based on cognitive-behavioural techniques, can be effective for MSM who are at high risk of engaging in UAI with partners of unknown or sero-discordant HIV status. There is no evidence to suggest that community peer-delivered interventions should be discontinued.

CRD commentary
The review question was clear and supported by a comprehensive list of inclusion criteria. The search strategy was extensive and attempts to retrieve unpublished material should have reduced the potential for publication bias, although results for the latter were not reported. As the authors acknowledged, the restriction to English language papers means that language bias might have been introduced and relevant material might have been missed. A validity assessment was carried out and only the higher quality studies were synthesised. All aspects of the review process were carried out with adequate steps to minimise bias and error. Extensive details were provided on the primary studies, and the chosen methods of synthesis (based on tests for heterogeneity) appeared appropriate. The authors acknowledged the potential limitation of including a small number of studies in the meta-analysis, and the conclusions are reliably derived. However, the primary recommendation may be overstated given the small number of studies and the other potential limitations described.

Implications of the review for practice and research
Practice: The authors stated that policy makers should consider implementing counselling or workshops using cognitive-behavioural techniques for MSM at risk of engaging in UAI with partners of unknown or sero-discordant HIV status. STIs should be addressed in all future interventions.

Research: The authors stated that well-reported, rigorously conducted trials, with clearly defined outcome measures, are needed. Potential areas of focus include different intervention delivery modes involving knowledge building; the development of communication and decision-making skills; a clearer understanding of the complexities associated with attitudes and behaviours in the MSM population; and the provision of practical help and adequate support systems. Further evaluation of community peer-delivered interventions in the post-1996 UK context is recommended, as is the evaluation of sdUAI on STI incidence. Future research should include adequate piloting, and evaluate the implementation and acceptability of interventions in different settings.

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This is a critical abstract of a systematic review that meets the criteria for inclusion on DARE. Each critical abstract contains a brief summary of the review methods, results and conclusions followed by a detailed critical assessment on the reliability of the review and the conclusions drawn.