



## Review Article

# Brief interventions to prevent sexually transmitted infections suitable for in-service use: A systematic review



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## ABSTRACT

**Background.** Sexually transmitted infections (STIs) are more common in young people and men who have sex with men (MSM) and effective in-service interventions are needed.

**Methods.** A systematic review of randomized controlled trials (RCTs) of waiting-room-delivered, self-delivered and brief healthcare-provider-delivered interventions designed to reduce STIs, increase use of home-based STI testing, or reduce STI-risk behavior was conducted. Six databases were searched between January 2000 and October 2014.

**Results.** 17,916 articles were screened. 23 RCTs of interventions for young people met our inclusion criteria. Significant STI reductions were found in four RCTs of interventions using brief one-to-one counselling (2 RCTs), video (1 RCT) and a STI home-testing kit (1 RCT). Increase in STI test uptake was found in five studies using video (1 RCT), one-to-one counselling (1 RCT), home test kit (2 RCTs) and a web-based intervention (1 RCT). Reduction in STI-risk behavior was found in seven RCTs of interventions using digital online (web-based) and offline (computer software) (3 RCTs), printed materials (1 RCT) and video (3 RCTs). Ten RCTs of interventions for MSM met our inclusion criteria. Three tested for STI reductions but none found significant differences between intervention and control groups. Increased STI test uptake was found in two studies using brief one-to-one counselling (1 RCT) and an online web-based intervention (1 RCT). Reduction in STI-risk behavior was found in six studies using digital online (web-based) interventions (4 RCTs) and brief one-to-one counselling (2 RCTs).

**Conclusion.** A small number of interventions which could be used, or adapted for use, in sexual health clinics were found to be effective in reducing STIs among young people and in promoting self-reported STI-risk behavior change in MSM.

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Abbreviations: STI, sexually transmitted infection; MSM, men who have sex with men.

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**1. Introduction**

Reducing sexually transmitted infections (STIs) is a public health priority, worldwide. The World Health Organization report that 498 million people aged 15 to 49 are infected each year with chlamydia, gonorrhoea, syphilis, or trichomonas (Research and WHO, 2008). Men who have sex with men (MSM) and young people account for the majority of new STI diagnosis (Carpenter et al., 2010; Booth et al., 2014). For example, in England, in 2014, there were approximately 440,000 STI diagnoses and, despite operation of a national chlamydia screening program and expansion of open access sexual health services across the UK, STIs have risen year on year (Public Health England (PHE) (Health Protection Report, 2014). A lack of information, motivation, confidence and skills in relation to precautions such as consistent condom use or sexual negotiation may contribute to infection rates (Fisher and Fisher, 1992). Population-tailored interventions targeting these potential determinants could reduce infection rates (Bartholomew et al., 2011; Herbst et al., 2007).

Sexual health services in contact with those at risk of STIs offer a practical site for risk-reduction interventions and evidence suggests that the effectiveness of such services can be enhanced by integration of preventive behavioral interventions for clinic attendees. Interventions ranging in intensity from 30 min or less (low intensity) to 3 h of contact time (high intensity) have been found to be effective in preventing STIs (O’Conner et al., 2014).

*1.1. Review objective and research question*

We conducted a systematic review to identify practical, effective interventions for young people and MSM for use in health service settings. The search focused on interventions that could be implemented, or adapted for use, in sexual health clinics. Consequently, we included interventions involving no more than 3 h of contact time that aimed to reduce STI rates and/or increase STI test uptake and/or change STI-risk behavior patterns and had been evaluated using a randomized controlled trial (RCT). We noted the mode of delivery used and the change techniques incorporated in each intervention (Davidson et al., 2003; Abraham et al., 2008).

This systematic review aimed to summarize evidence of clinical effectiveness of low-intensity interventions that could be implemented, or adapted for use, in sexual health clinics. Interventions meeting specified inclusion criteria, evaluated among young people (14–25 yrs old) or MSM using RCTs were included. The research question addressed was:

Are waiting-room-delivered, self-delivered and brief healthcare-provider-delivered interventions (1) suitable for use in sexual health clinics and (2) effective in reducing the incidence of STIs, increasing STI-test uptake or reducing STI-risk behavior patterns in young people and MSM.

**2. Methods**

The review was undertaken following the principles published by the UK National Health Service Centre for Reviews and Dissemination and a protocol published ((PROSPERO registration number: CRD42014014375) (Centre for Reviews and Dissemination, 2009) Supplementary document A).

*2.1. Literature search*

We searched for papers published in the English language between January 2000 and October 2014. The search strategy (Fig. 1) was agreed by the research team and independently checked by an information specialist. The following databases were searched: MEDLINE (OVID); PsycINFO (OVID); EMBASE (OVID); CINAHL (EBSCO); CENTRAL; DARE (via Cochrane); HTA (via Cochrane). We searched for grey literature by website searching and talking to experts. For included papers, backward citation chasing was undertaken, that is, we accessed potentially relevant empirical reports and reviews, assessed their relevance, and reviewed the references in the studies found. This led to ten additional inclusions (see Fig. 2).

We considered RCTs of individual participants and cluster randomized trials. Relevant studies were identified in two stages using pre-defined eligibility criteria which were chosen on the basis of consultations with clinic-based practitioners across a range of UK clinics. Titles and abstracts were examined independently by two researchers and screened for duplicates and inclusion. Full texts were retained and papers then examined independently by two reviewers to ascertain eligibility for inclusion. At both stages, disagreements were resolved by discussion and a third reviewer was involved to discuss borderline decisions. Gwet’s AC1 statistic was calculated to assess reliability of inclusion decisions (Gwet, 2012).

*2.2. Inclusion and exclusion criteria*

We searched for interventions designed to reduce sexual health risks that could be implemented in sexual health clinics for young people (14–25 yrs inclusive) and MSM. Our inclusion criteria were selected to ensure feasibility and sustainability within clinic settings following consultations with clinical staff. For lower risk attendees, a one-session face-to-face intervention to prevent further risk behavior was thought to be feasible. For repeat attendees, multiple meetings could be considered, especially if there was good evidence of effectiveness. Discussions suggested that very short meetings could fail to establish the trust necessary for such interventions and that one-hour-plus meetings would be difficult to sustain amidst other demands. Consequently, interventions were categorized as “brief” if they involved one 30-minute session or less contact time and as “intensive” if they involved two to six sessions of up to 30 min each. We excluded face-to-face interventions requiring greater staff contact time. To ensure high-quality evidence of effectiveness we only included interventions evaluated using RCTs.

A range of delivery formats were considered including waiting room tasks, self-delivered interventions and healthcare provider-delivered interventions. The comparator(s) included usual care and alternative interventions. No restrictions were placed on intervention setting. Interventions included online materials presented on social networking sites as well as interventions delivered in primary care, in emergency care settings, in community treatment settings e.g. sexual health clinics and in educational settings (including schools and colleges). We focused on interventions used in high-income countries with similar healthcare systems including North America, Europe and Australia. Unpublished literature was identified by contacting authors of relevant meeting abstracts or conference proceedings, and included if sufficient data and methodological details were provided.

The following were excluded: studies with follow-up of <60 days, uncontrolled studies; animal model studies; narrative reviews, editorials, opinions; non-English language papers and reports.

The methodological quality of each study was assessed using the Cochrane ‘risk of bias’ tool (Higgins and Altman, 2006). The tool includes six key criteria against which potential risk of bias is judged: adequacy of allocation sequence generation; adequacy of allocation concealment; blinding of participants, personnel or outcome assessors; completeness of outcome data; selectivity of

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