

Brief sexuality communication—a behavioural intervention to advance sexually transmitted infection/HIV prevention: a systematic review

B Cooper,^{a,*} I Toskin,^a R Kulier,^b T Allen,^c S Hawkes^d

^a Department of Reproductive Health and Research, World Health Organization, Geneva, ^b Profa-Consultations de santé sexuelle, Lausanne,

^c Department of Knowledge Management and Sharing, World Health Organization, Geneva, Switzerland ^d Institute for Global Health, University College London, London, UK

Correspondence: B Cooper, 1317 F Street, NW Suite 400 Washington, D.C. 20004, USA. Email bcooper@genderhealth.org

Accepted 7 April 2014.

Background Throughout the last decade substantial research has been undertaken to develop evidence-based behaviour change interventions for sexual health promotion. Primary care could provide an opportunistic entry for brief sexual health communication.

Objectives We conducted a systematic review to explore opportunistic sexual and reproductive health services for sexual health communication delivered at primary health care level.

Search strategy We searched for studies on PubMed, ProQuest, CINAHL, Jstor, Scopus/Science Direct, Cochrane database of systematic reviews, EBSCO, CINAHL, PsychoInfo, and Web of Knowledge. Both published and unpublished articles were reviewed.

Selection criteria All randomised controlled trials and controlled clinical trials were included. Participants of all ages, from adolescence onwards were included. Brief (10–60 minutes) interventions including some aspect of communication on sexual health issues were included.

Data collection and analysis Data were extracted by two reviewers independently using a standardised form. Interventions differed from each other, hence meta-analysis was not performed, and results are presented individually.

Main results A total of 247 articles were selected for full-text evaluation, 31 of which were included. Sexually transmitted infections (STIs)/HIV were less often reported in the intervention group compared with the control group. Condom use was higher in most studies in the intervention group. Numbers of sexual partners and unprotected sexual intercourse were lower in the intervention groups.

Conclusions There is evidence that brief counselling interventions have some effect in the reduction and prevention of STIs/HIV. Some questions could not be answered, such as the effect over time and in different settings and population groups.

Keywords behaviour change intervention, population, reproductive health services/utilisation, sex counselling, sexually transmitted diseases/prevention, vulnerable.

Please cite this paper as: Cooper B, Toskin I, Kulier R, Allen T, Hawkes S. Brief sexuality communication—a behavioural intervention to advance sexually transmitted infection/HIV prevention: a systematic review. BJOG 2014; 121 (Suppl. 5): 92–103.

Introduction

Behaviour-change interventions have consistently been seen as an essential part of comprehensive sexually transmitted infection (STI)/HIV prevention. The current understanding of prevention as a combination approach is that it must include structural changes, such as access to commodities and services, within a human rights framework with an emphasis on the importance of promoting relevant behaviour-change interventions. Throughout the last decade, research has been undertaken to develop evidence-based behaviour change interventions that contribute to health

outcomes from an STI/HIV-safer behaviour perspective as well as to sexual health promotion.

Sexual health is fundamental to the physical and emotional health and wellbeing of individuals, couples and families, and to the social and economic development of communities and countries. The ability of men and women to achieve sexual health and wellbeing depends on their access to comprehensive information about sexuality, their vulnerability to the adverse consequences of sexual activity, their access to high-quality sexual health care, and an environment that affirms and promotes sexual health.

Primary care provides an opportunistic entry for communicating about sexual health.¹ Communication can include both biomedical and non-biomedical approaches and can occur in many forms.

The World Health Organization (WHO) defines sexual health as 'a state of physical, emotional, mental and social wellbeing in relation to sexuality; it is not merely the absence of disease, dysfunction or infirmity'.² Wellbeing, a term widely used, lacks a globally agreed upon definition. The WHO defines wellbeing as 'taken to encompass issues of quality of life for individuals, communities and societies. In addition, it includes the creation of enabling environments which promote and protect the fulfilment of personal goals in relation to sexual health while acting responsibly towards others'.²

We conducted a systematic review to explore the impact of opportunistic sexual and reproductive health services delivered at the primary health care level. The research was conducted to facilitate the development of *Brief Sexuality-related Communication (BSC) Guidelines for Health Care Providers*, a WHO technical advice on the improvement of sexual health within primary care.³ The two key research questions were:

- 1 Is brief sexuality counselling provided to adolescents and adults more effective than the usual standard of care in preventing/addressing:
 - 1.1 Sexual difficulties, sexual disease, sexual distress, sexual concerns and sexual misconceptions
 - 1.2 STIs/HIV
 - 1.3 Unintended pregnancy and abortion
 - 1.4 Sexual violence
 - 1.5 Harmful practices
 - 1.6 Knowledge increase
- 2 Is brief sexuality counselling provided to adolescents and adults more effective at encouraging sexual wellbeing than no intervention?

Methods

There was no published protocol for this investigation.

Criteria for inclusion

Types of studies

Randomised controlled trials and controlled clinical studies were eligible for inclusion. Observational studies without a control group, before and after studies, and study reports not providing outcome measures were excluded.

Types of participants

All ages, from adolescence onwards, were included. Participants could be of any gender, sexually active, not sexually active, and of any sexual orientation. Children in school

and persons outside primary care facilities (such as youth groups, churches) were excluded.

Types of interventions

To be considered for inclusion, interventions needed to be brief (10–60 minutes) and include some aspect of communication or counselling on sexual health issues. Interventions needed to feasibly be administered at the primary health care level. If feasibility of the intervention was unclear, it was discussed between three reviewers. Interventions could be group, individual or combined. Interventions could include multi-media aspects alone or in combination with other interventions. The overall goal of any included intervention should be to decrease negative sexual health outcomes and/or improve positive sexual health outcomes.

Interventions not delivered at a primary health care level, biomedical interventions and school-based interventions were excluded.

Types of outcome measures

Studies were included for the first research question that measured sexual difficulties, disease, distress, concerns, misconceptions, stigma, STIs/HIV, unintended pregnancy, termination of pregnancy, sexual violence, relationship difficulties, relationship abuse, relationship dissatisfaction, harmful practices and knowledge about sexual health.

Studies were included for the second research question that measured self-esteem, self-regulation, autonomy, satisfaction, risk reduction (condom use, contraceptive use, reduced number of sexual partners), use of preventive services (STI testing, HIV testing, contraceptive demand, vaccinations), feeling understood or accepted, and feelings of connectedness (feeling of being accepted by others, e.g. in family, school, peers).

Search methods

Electronic searches

We searched for studies on PubMed, ProQuest, CINAHL, Jstor, Scopus/Science Direct, Cochrane database of systematic reviews, EBSCO, CINAHL, PsychoInfo and Web of Knowledge. The MeSH strategy produced an overwhelming number of results. We reformatted the search from a MeSH-based approach to a keyword search so as to focus on other databases and increase unique citations.⁴ Keyword searches on Summon (limited to ProQuest, CINAHL, Jstor, Scopus/Science Direct, Cochrane Library, EBSCO, CINAHL, Ovid Medline/PubMed, PsycInfo, Web of Knowledge) were performed crossing the following terms: sexual health, primary care, counselling, sexual dysfunction, sexual distress, sexual concerns, sexual misconceptions, sexually transmitted infections, HIV, unintended pregnancy, abortion, sexual violence, harmful practices, knowledge increase, well-

being, autonomy, pleasure and training. No language or date restrictions applied. We searched reference sections of included articles for additional materials. Grey literature was retrieved from New York Academy of Medicine Grey Literature Report. Our search strategy is available upon request.

Other resources

Both published and unpublished articles were solicited from the Guidelines Development Group, a group of international sexual health experts consulting with WHO on the *Brief Sexuality-related Communication (BSC) Guidelines for Health Care Providers*.

Data collection and analysis

Selection of studies

We assessed all abstracts for inclusion, and for those deemed relevant, full texts of relevant papers were obtained and subsequently read by three authors.

Data extraction and management

Data were extracted by two reviewers independently using a standardised form. Data recorded included: setting, population, types of study, randomisation procedure, blinding, intervention, comparator, outcome measures and results. Risk of bias was assessed for each study.⁵

Assessment of risk of bias in inclusion

Data were processed using REVMAN software and bias was analysed using REVMAN risk of bias summary. Selection

bias, performance bias, detection bias, attrition bias and reporting bias were all assessed. One author entered the information into REVMAN while another author checked for accuracy. Attempts were made to obtain additional information from authors if required.

As part of the WHO guidelines development process, we used the GRADE approach to assess included studies.

Results

The search yielded 5227 articles. A total of 247 articles were selected for full-text evaluation, 31 of which were included. Studies were conducted between 1980 and 2010. The majority of the studies were randomised controlled trials, 11 studies presented a control group but it was unclear how the control group was established so we deemed these observational studies. A flowchart of included studies can be found in Figure 1. Twenty-three studies took place in the USA, one study was located in both the USA and Puerto Rico,⁵ and the remaining studies were located in Australia,⁶ New Zealand,⁷ Madagascar,⁸ Mexico,⁹ South Africa,¹⁰ Taiwan¹¹ and the UK.¹² The smallest sample size was 89,¹³ the largest was 38 635.¹⁴ Follow-up occurred mostly between 6 and 12 months, and ranged from 1 month¹³ to 18 months.^{12,15,16}

The content of the interventions ranged from audio/visual,^{5,7,11,14,17–26} risk assessment,^{8,10,15,17,19,27} didactic,^{6,8,10,11,17–19,28,29} skill building/motivational interview-

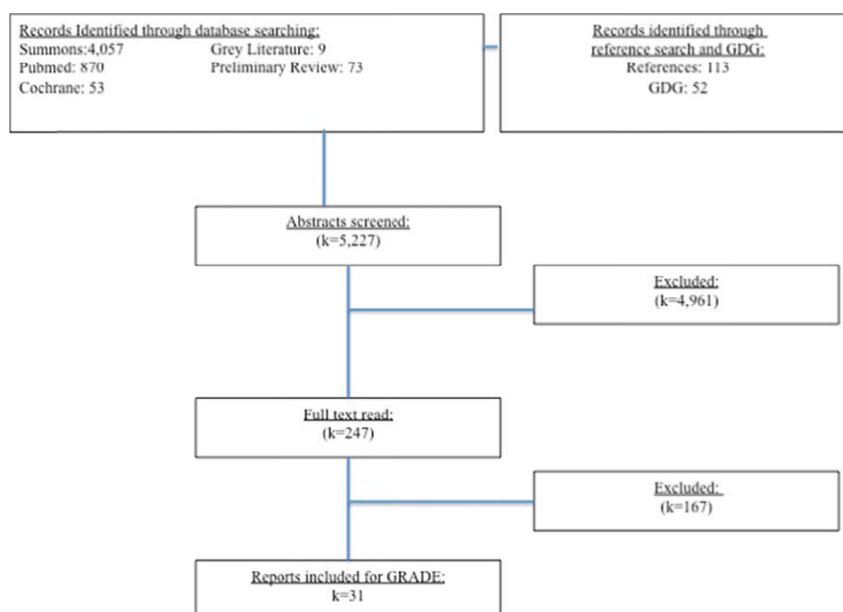


Figure 1. Flowchart of included studies.

ing,^{5,8–10,12,13,15,18,19,23,25–28,30–32} and providing resource lists.^{6,12,16,27,32,33}

Interventions and outcome measures

Interventions differed so a meta-analysis was not performed. The majority of studies measured STI/HIV incidence as an outcome. Other outcome measures include HIV prevention knowledge, STI/HIV knowledge, condom knowledge, birth control sabotage (the manipulation of another person's birth control to render it ineffective), pregnancy coercion (threats or violence against another in order to coerce them into an unintended pregnancy), and finishing the relationship due to feeling unsafe. The most frequent outcome measure for the second research question included condom use and unprotected sex. Other outcome measures included self-efficacy, attitudes to condoms, discussion with provider on masturbation, limiting number of partners, acceptance of sexuality, attitudes towards sexual health, HIV knowledge, behavioural intentions, effective contraceptive use, health worry, awareness of intimate partner violence (IPV) services, use of IPV services, threats of violence, physical violence, discussing safer sex with new partner, discussing number of previous partners with new partner, safer sex behaviour, transition to primary care provider, STI reinfection, number of sexual partners, asking partner about last HIV test. A description of all the studies can be found in Table 1.

Effects of interventions

Seventeen of the 31 studies used STI incidence, prevalence, or both as an outcome measure.

In a randomised controlled trial conducted within an American dedicated women's health research clinic, women with bacterial vaginosis who reported sex with women within the past year were randomised either to motivational interviewing to reduce sharing of vaginal fluids through hands or sex toys, or to the control group. At 1-month follow-up, participants from the intervention group were less likely to report receptive digital intercourse without gloves than those in the control group (relative risk [RR] = 0.34; 95% confidence interval [95% CI] 0.14–0.82).¹⁴

Feldblum et al.⁸ found peer counselling plus clinical assessment for female sex workers to be effective in reducing STI prevalence. In this randomised controlled trial in Madagascar, female sex workers were assigned to either peer counselling plus clinic-based counselling, or condom counselling by peer educators only. At the 6- to 12-month follow-up, women in the peer plus clinic arm had a lower risk for STIs (RR = 0.78; 95% CI 0.66–0.93) and reported fewer instances of unprotected sex (RR = 0.88; 95% CI 0.36–2.14). Patterson et al.⁹ found behavioural counselling to be effective in reducing STIs among female sex workers

in Mexico. Participants were randomly assigned to either a 30-minute group behavioural intervention or a group didactic control. The 30-minute behavioural counselling was effective in reducing STI (RR = 0.57; 95% CI 0.34–0.96) and HIV (RR = 0.12; 95% CI 0.01–2.21) incidence over a 6–12-month period as well as decreasing the number of sex acts for which no condom was used (RR = 0.66; 95% CI 0.48–0.91).

Cohen et al.³⁰ found that group discussions with a health educator in men (RR = 0.5; 95% CI 0.29–0.85) and women (RR = 0.94; 95% CI 0.4–2.22), or condom promotion (RR = 0.79; 95% CI 0.53–1.16), to be more effective in reducing STIs than no intervention. Participants were assigned to one of four interventions: skills-based approach on the correct use of condoms; a social influence approach on the erotic aspects of condom use; distribution of condoms by local businesses; or no intervention. In a review of medical charts at 12 months, male participants had fewer documented STIs compared with the control group, but female participants did not show any marked difference between groups. Among women in the social influence group, there was a trend towards increased STIs.³⁰

Warner et al.¹⁴ reported that a theory-based video intervention decreased STIs in men at 6–12 months follow-up (RR = 0.81; 95% CI 0.74–0.9), including among African-American and Hispanic men (RR = 0.83; 95% CI 0.74–0.93), men who have sex with other men (RR = 0.84; 95% CI 0.74–0.95), and heterosexual men (RR = 0.79; 95% CI 0.67–0.93). Participants were randomly assigned to either a 23-minute video played in the waiting room and concerning condoms, STIs, and HIV, or a standard waiting room environment. Patients assigned to the intervention had significantly fewer STIs after 6–12 months of follow-up.¹⁴

In Kamb et al.'s 1998 study,²² two brief counselling sessions were noted to decrease STIs over 6–12 months in HIV-negative people (RR = 0.72; 95% CI 0.56–0.91) when compared with didactic messaging. Enhanced sessions did not decrease STIs compared with brief sessions. Participants were randomised to either two brief interactive risk-reduction sessions, two brief didactic message sessions, or four enhanced counselling sessions. At 6 months, self-reported condom use for 100% of the time was higher in both enhanced and risk-reduction sessions compared with the didactic sessions. Moreover, 30% fewer participants had new STIs in both enhanced and brief counselling groups compared with the didactic counselling group.

Metcalf et al.²³ found little difference between rapid HIV testing with immediate counselling and HIV testing with two counselling sessions. Participants were assigned to either the intervention, a rapid HIV testing and counselling within one visit, or the comparator—standard HIV testing and counselling over two visits. Both groups had similar

Table 1. Study characteristics

Study	Design/population/sample size	Intervention	Comparator	Risk of bias
Boekeloo 1999 ¹⁷	RCT; USA; primary care; adolescents age 12–15 years; <i>n</i> = 219	Individual; 14-minute audiotape; risk assessment followed by physician assessment	Standard care	RS: unclear AC: unclear BP: unclear BO: low IO: low SR: high OR: unclear
Bryan 1996 ¹⁸	Observational; USA; Unmarried university age women attending a southwestern university; <i>n</i> = 198	45-minute group session led by educator/counsellor using videotapes, lectures, skill building exercises, targeting perceptions about sexuality, beliefs, self efficacy	Group: 45-minute stress management interventions: stress management techniques, self-perceived stress level assessment, not related to STI	RS: unclear AC: unclear BP: low BO: low IO: low SR: low OR: high
Carey 2010 ¹⁹	RCT; USA. Publicly funded STD walk-in clinic; 18 years old and older with sexual risk behaviour in the past 3 months, willing to take HIV test; <i>n</i> = 1483	Six intervention arms—brief intervention including information, motivational counselling, and behavioural skills training	Control, no workshop	RS: low AC: unclear BP: unclear BO: unclear IO: low SR: unclear OR: unclear
Cohen 1991 ²⁸	Observational; USA; STD clinic patients; <i>n</i> = 192	Group intervention led by health educator; 10–15-minute didactic intervention on correct condom use	Control, no intervention	RS: high AC: high BP: unclear BO: unclear IO: low SR: low OR: unclear
Cohen 1992 ³⁰	RCT; USA; STD clinic, <i>n</i> = 908	Three interventions led by health educator/trained counsellor. 1) Group: Skills approach: about correct use of condom 2) Group: Social influence approach: about social and erotic aspect of condom use 3) Distribution: 23 businesses were supplied with condoms to hand out to participants when presenting a card	Control, no intervention	RS: low AC: high BP: low BO: unclear IO: unclear SR: low OR: high
Danielson 1990 ²⁰	RCT; USA; 15–18-year-old males adolescents; primary care; <i>n</i> = 1195	Individual: 1-hour medical appointment with 30 slides on STDs, HIV, contraception, communication, access to health services. Consultation post slide	Control, no intervention. Intervention given to control group a year later	RS: high AC: unclear BP: low BO: unclear IO: unclear SR: low OR: low
DeLamater 2010 ²¹	Observational; USA; STD clinic; 15–19-year-old African American and Hispanic adolescent males; <i>n</i> = 562	Individual video tape, 14-minutes; or face-to-face talk with health educator, 14 minutes	No intervention	RS: low AC: unclear BP: unclear BO: unclear IO: low

Table 1. (Continued)

Study	Design/population/sample size	Intervention	Comparator	Risk of bias
Feldblum 2005 ⁸	RCT; Madagascar; health clinic; female sex workers; <i>n</i> = 1000	Individual; peer counselling plus clinic-based counselling; approximately 15 minutes each; delivered three times	Condom counselling by peer educators	SR: unclear OR: low RS: low AC: unclear BP: high BO: low IO: low SR: unclear OR: high RS: high AC: high BP: high BO: unclear IO: low SR: high OR: high RS: low AC: unclear BP: unclear BO: unclear IO: low SR: low OR: unclear RS: unclear AC: unclear BP: low BO: low IO: low SR: low OR: unclear
Fisher 2006 ¹⁵	Observational; HIV positive clients already enrolled in care USA; HIV clinic; <i>n</i> = 497	Individual: clinician-delivered intervention delivered through routine care; 5–10 minutes	Standard care	
James 1998 ¹¹	RCT; UK; STI Clinic; genitourinary medicine clinic attenders; <i>n</i> = 492	(1) Individual counselling with health educator/trained counsellor and skills based intervention with written materials (2) Written materials only	Standard care	
Jemmot 2007 ²⁷	Observational; USA; African American women 18–45; primary care; <i>n</i> = 564	Individual and Group; Led by health educator/trained counsellor: (1) 20-minute individual skills building HIV/STI intervention (2) 20-minute group STI/HIV information intervention (3) 200-minute group HIV/STI skills building (4) 200-minute group HIV/STI information	Control	
Kalichman 2011 ¹⁰	RCT; South Africa; STI clinic; patients receiving STI services; <i>n</i> = 617	60-minute risk reduction counselling session led by health educator	20-minute HIV/STI	RS: low AC: unclear BP: low BO: low IO: unclear SR: unclear OR: high
Kamb 1998 ²²	RCT; USA; STD clinics; Heterosexual, HIV-negative STD clinic patients; <i>n</i> = 5758	Individual intervention led by nurse/physician; two brief interactive risk-reduction sessions; two brief didactic messages	Enhanced counselling (four sessions)	RS: low AC: low BP: low BO: low IO: low SR: low OR: low
Langston 2010 ²⁹	RCT; USA; Family planning clinic; women seeking first trimester abortions <i>n</i> = 186	Individual; led by health educator/trained counsellor: Structured counselling on contraception	Standard care	RS: low AC: low BP: low BO: unclear IO: low

Table 1. (Continued)

Study	Design/population/sample size	Intervention	Comparator	Risk of bias
Lee 2007 ¹¹	RCT; Taiwan; women who have recently given birth at a medical centre; <i>n</i> = 166	Individual, led by nurse/physician; interactive pamphlet and education; 10–15 minutes	Standard care	SR: high OR: unclear RS: low AC: high BP: unclear BO: unclear IO: high SR: high OR: high
Marrazzo 2011 ¹³	RCT; USA; women 16–30 with bacterial vaginosis who reported sex with a woman in the past year; <i>n</i> = 89	Individual; led by health educator: motivational interviewing to reduce sharing of vaginal fluids through hands or sex toys; 10 minutes	Control	RS: unclear AC: low BP: unclear BO: unclear IO: low SR: low OR: unclear
McFarlane 2000 ¹⁶	RCT; USA; pregnant women; prenatal health clinic; <i>n</i> = 329	Individual, led by nurse/physician: (1) Women provided with resources list (2) unlimited access to counselling (3) Unlimited counselling and access to trained 'outreach mother'	Standard care	RS: unclear AC: high BP: unclear BO: unclear IO: low SR: low OR: low
Metcalfe 2005 ²³	RCT; USA; 15–39 year olds; STD clinic; <i>n</i> = 3297	Individual intervention led by health educator/trained counsellor: rapid HIV testing and counselling in one visit	Standard HIV testing and counselling in two visits	RS: unclear AC: unclear BP: high BO: low IO: low SR: low OR: low
Miller 2011 ³⁴	RCT; USA; family planning clinics; women 16–29 years old; <i>n</i> = 906	Individual; led by health educator/trained counsellor: enhanced IPV screening, with reproductive coercion education	Standard care	RS: low AC: high BP: low BO: low IO: low SR: low OR: low
Neumann 2011 ⁵	Observational; USA/Puerto Rico; STD clinic; STD clinic patients; <i>n</i> = 3365	VOICES/VOCES, a 45-minute small group video based intervention using both group discussion and posters	Control	RS: high AC: high BP: low BO: unclear IO: unclear SR: low OR: low
O'Donnell 1998 ²⁴	RCT; USA; STI clinic; African American and Hispanic adult men; <i>n</i> = 2004	Culturally tailored video based intervention; or culturally tailored video-based intervention with group discussion	Standard care	RS: low AC: low BP: low BO: low IO: unclear SR: low OR: unclear
Orr 1996 ³¹				

Table 1. (Continued)

Study	Design/population/sample size	Intervention	Comparator	Risk of bias
	RCT; USA; family planning and STI clinic; female adolescent age 15–19 years old with positive <i>Chlamydia trachomatis</i> test results; <i>n</i> = 209	Individual; led by health educator/trained counsellor; behaviour change intervention to increase feeling of vulnerability to STDs and promote positive attitudes towards condoms; 10–20 minutes	Individual conversation with nurse using standard care; 10–20 minutes	RS: high AC: high BP: low BO: unclear IO: low SR: low OR: unclear
Patterson 2008 ⁹	RCT; Mexico; clinic and outreach offices; female sex workers; <i>n</i> = 924	Group behavioural intervention (30 minutes) led by health educator/ trained counsellor	Group didactic control	RS: low AC: low BP: unclear BO: unclear IO: unclear SR: unclear OR: low
Proude 2004 ⁶	RCT; Australia; Australia; family practice; 18–25 year old; <i>n</i> = 156	Family physician asks brief sexual health questions; brief behavioural advice; distributes condoms, lubes, and pamphlets on safe sex and STIs	Standard care	RS: low AC: low BP: low BO: unclear IO: unclear SR: unclear OR: unclear
Richardson 2004 ³³	USA; Observational; HIV clinic; HIV positive patients 18 years or older; <i>n</i> = 585	Prevention counselling from medical providers with written materials (1) gained-frame approach (2) loss-frame approach	Attention-control clinics	RS: high AC: high BP: low BO: unclear IO: low SR: unclear OR: unclear
Rosser 1990 ⁷	RCT; New Zealand; homosexually active men; <i>n</i> = 159	Individual and Group: (1) Watching a 15-minute video on AIDs (2) 30-minute individual counselling (3) 2–2.5-hour group programme with guidelines on safer sex (4) group programme with the intent to eroticise safer sex	Control	RS: unclear AC: unclear BP: unclear BO: unclear IO: unclear SR: unclear OR: unclear
Shlay 2003 ³²	USA; RCT; nonpregnant women attending STD clinic; <i>n</i> = 877	Led by nurse/physician; condoms with spermicide; referral list of primary care providers; enhanced contraceptive counselling; contraception; facilitated referral to a primary care provider (30 minutes)	Condoms with spermicide; referral list of primary care providers	RS: unclear AC: unclear BP: low BO: unclear IO: low SR: unclear OR: unclear
Smith 1997 ²⁶	Observational; USA; female adolescents (13–20 years old) diagnosed with a STD; Teen Health Clinic; <i>n</i> = 205	Treatment for STD, given condoms, and 37-minute small group (four or more participants) condom motivation class given by the clinic STD educator	Treatment for STD and given condoms only	RS: high AC: high BP: unclear BO: unclear IO: unclear

Table 1. (Continued)

Study	Design/population/sample size	Intervention	Comparator	Risk of bias
Warner 2008 ¹⁴	RCT; USA; STD clinic; patients attending STD clinic; <i>n</i> = 38 635	23-minute video in clinic waiting room aimed to increase knowledge and attitudes on condoms, STIs and HIV	Standard waiting room environment	SR: low OR: unclear RS: high AC: high BP: unclear BO: unclear IO: low SR: low OR: unclear
Wenger 1991 ³⁵	Observational; USA; STI clinic; heterosexual adults; <i>n</i> = 186	AIDS education, testing, and results	AIDS education alone	RS: low AC: unclear BP: unclear BO: unclear IO: low SR: unclear OR: unclear
Wenger 1992 ²⁵	Observational; USA; University health clinic; students 18 years old and older. Homosexual and bisexual men excluded; <i>n</i> = 435	1-hour multimedia group presentation led by a physician using videotape lecture, role-play, discussion and distribution of written materials	No intervention; a list of nearby resources for testing was given	RS: low AC: unclear BP: unclear BO: unclear IO: unclear SR: low OR: unclear

AC, allocation concealment (selection bias); BO, blinding of outcome assessment (detection bias); BP, blinding of participants (performance bias); IO, incomplete outcome data (attrition bias); OR, other bias; RCT, random controlled trial; RS, random sequence generation (selection bias); SR, selective reporting bias (reporting bias).

STI incidence at 12 months. However, disaggregation showed that STI incidence was higher for the rapid test group compared with standard testing in men in general (RR = 1.32; 95% CI 1.04–1.67), including men who have sex with men (RR = 1.86; 95% CI 0.92–3.76).

A video-based intervention (VOICES/VOCES) resulted in a decrease of STIs over 6–12 months when compared with standard care⁵ in STI clinics in both the USA and Puerto Rico. Participants were assigned to either, a 45-minute small group video-based intervention using both group discussions and posters, or were assigned to regular clinic care. At 17 months, participants in the intervention group were significantly less likely to have a reported STI (RR = 0.75; 95% CI 0.63–0.91). The intervention group also scored higher on scales of STI knowledge, condom knowledge, condom attitude, and condom efficacy and also redeemed condoms more than the control group.⁵

Jemmot et al.'s 2007 study²⁷ among African-American women reported that an intervention based on providing individual information showed a decrease in unprotected sexual intercourse (MD = 3.22 lower; 3.64 to 2.8 lower) when compared with delivering the information through groups. Participants were assigned to either a 20-minute individual behavioural skill building HIV/STI intervention,

a 20-minute STI/HIV information group intervention, or to the control, 200-minute group behavioural skill building HIV/STI intervention, 200-minute group STI/HIV information intervention, or 200-minute health information control. At the 12-month follow-up point, participants in both the 20-minute and 200-minute skills building intervention reported fewer episodes of unprotected sexual intercourse, a greater proportion of protected intercourse, and were less likely to test positive for an STI.

Richardson et al.³³ found that a patient–provider team approach emphasising the potential negative consequences of sex in HIV-positive patients was more effective than promoting adherence to anti-retroviral treatment in decreasing the number of sex partners after 7 months (RR = 0.44; 95% CI 0.23–0.85). Participants were assigned to either a gain-framed or loss-framed approach prevention counselling from medical providers with written materials, or to a control group. Unprotected vaginal or anal intercourse was significantly less frequent in the loss-framed approach arm at 7-month follow-up.

Enhanced IPV screening versus two standard questions during usual care decreased pregnancy coercion at 3 months in women who had been exposed to IPV (RR = 0.46; 95% CI 0.21–0.99).³⁴ The RCT was conducted

in an American family planning clinic where women were assigned to an enhanced IPV screening with reproductive coercion education, or standard care. At 3 months, women in the intervention arm were more likely to report ending a relationship because of it being 'unhealthy' or them feeling unsafe (OR = 1.55; 95% CI 0.98–2.43).³⁴

Boekeloo et al.¹⁷ found that audiotaped risk assessment and education were more effective than usual care in reducing pregnancy occurrence in adolescents (RR 0.17; 95% CI 0.02–0.17) while also increasing discussions with providers on sexual topics such as STIs (RR 1.41; 95% CI 1.21–1.66), sex (RR 1.36; 95% CI 1.17–1.58), pregnancy protection (RR 1.4; 95% CI 1.15–1.7), limiting number of partners (RR 2.52; 95% CI 1.52–4.18), and masturbation (RR 2.26; 95% CI 1.06–4.8). Participants were randomly assigned to a 14-minute audiotape risk assessment followed by a consultation with a physician, or to standard care. At 3 months, sexually active adolescents from the intervention group reported more condom use than the control group (RR 1.01; 95% CI 0.73–1.4) and at 9 months more signs of STIs were reported in the control group.

Discussion

Main findings

Our findings demonstrate that brief sexuality communication can have a significant impact on health behaviour and outcomes. These interventions can be singular and can occur within a primary care visit. Interventions are effective among a variety of groups, including high-risk populations. They are effective in reducing STIs and reducing high-risk sexual behaviour, as well as improving knowledge, attitudes and behaviours.

Strengths and limitations

The review is not without limitations. The studies were published in English, and the majority were limited to the northern hemisphere. Although almost all studies presented as randomised control trials, we downgraded one-third of the studies to observational. There was also a variation in follow-up time. The follow-up time for the majority of the studies occurred between 6 and 12 months; ten studies had follow-up at 6 months, six studies at 12 months. However, in one study follow-up occurred as early as 1 month, and in three studies as late as 18 months. There was also a variation in sample size, ranging from as low as 89 to a high of 38 635.

While all interventions lasted less than 1 hour, they were not uniform in delivery or content. Interventions occurred both one-on-one and within a group. Doctors, nurses and health educators delivered interventions. Interventions occurred in a face-to-face format, multimedia and a combination of both media. They were as brief as 10 minutes and as long as 60 minutes. Generally, inter-

ventions included a sexual health assessment while providing information and support. While some interventions, such as Boekeloo et al.,¹⁷ successfully integrated the intervention into an already established primary care routine, most interventions were included because they could feasibly occur at the primary care level.

While our review was designed to answer two questions (the effectiveness of brief sexuality communication in preventing negative health outcomes and the effectiveness in promoting sexual wellbeing), we found that the majority of papers were designed to address the first question—with a particular focus on measuring the prevention of STIs and HIV. Interventions were effective at changing intermediary behaviours—increasing condom use, decreasing episodes of unprotected sex, decreasing numbers of sexual partners—and 13 out of 17 had an overall impact on STI/HIV incidence or prevalence.

Interpretation

We found only one paper designed to address the question of whether brief sexuality communication can improve sexual wellbeing. One study among adolescents found brief sexuality communication to be helpful in increasing conversations around self-esteem and self-regulation, but the long-term sexual health outcomes of these conversations have not been documented.¹⁷ The lack of a strong evidence base to answer questions about brief sexuality communication and its impact on improving sexual wellbeing may reflect the lack of conceptual and methodological clarity in defining and measuring wellbeing. Further work in this area is needed.

Conclusion

This review set out to answer questions about the effectiveness of interventions to improve sexual health and wellbeing. The majority of studies included in our review were designed to address the effectiveness of interventions to prevent STI and HIV transmission. We found only three studies investigating other negative aspects of sexual health (such as unintended pregnancy or sexual violence), and only one study that assessed effectiveness to improve sexual wellbeing.

There is evidence that brief sexuality communication is effective for the prevention of STIs/HIV in different populations. However, we need a better understanding of its effect over time. Furthermore, the intervention must be validated in different populations, including in low-income and middle-income countries. We assume that brief sexuality communication can be used in conjunction with already established interventions such as sex education, community-based behavioural change interventions, and social marketing of condoms as well as complementary biomedical

approaches such as multipurpose prevention technologies, vaccines, circumcision and brief sexuality communication.

While it seems likely that sexuality communication may also improve other aspects of sexual health and wellbeing, our review has not found evidence to support this hypothesis. Therefore, more studies are needed in this area—including studies that will help to define and measure concepts of sexual wellbeing in different populations as well as systematic reviews on the types of techniques and skills needed by practitioners to deliver such interventions.

Disclosure of interests

The authors declare that there are no conflicts of interests.

Contribution to authorship

BC and IT are principal investigators. BC is principal author. IT and SH contributed to the writing of article. TA and RK contributed to the development of search strategy and data collection. RK and SH contributed to the data analysis and synthesis of results.

Details of ethics approval

No approval was required.

Funding

Funding was received from the World Health Organization.

Acknowledgements

WHO Steering Committee: Moazzam Ali, Venkatraman Chandra-Mouli, Claudia García-Moreno, Mary Eluned Gaffield, Metin Gulmezoglu, Igor Toskin, Beverly Jane Ferguson, Vladimir Poznyak, Tomas John Allen, Antonio Carlos Gerbase Guidelines Development Committee: Tamara Adrián-Hernandez, Elham Ahmed Abdulla Atalla, George Ayala, Bergen Hope Cooper, John Munroe Douglas, Emily Maria Godfrey, Sharful Islam Khan, Barbara Klugman, Regina Kulier, Charlotta Löfgren-Mårtensson, Geetanjali Misra, Patanjali Dev Nayar, Rafael Mazin Reynoso, Thierry Troussier, Marlene Freida Wasserman, Christine Winkelmann ■

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