Systematic review of sexual health interventions with young people from black and minority ethnic communities (REO44)

Final Report

Research team

Padam Simkhada[1]
Edwin van Teijlingen[1-2]
Bertha Yakubu[1]
Lakshmi Mandava[1]
Sohinee Bhattacharya[2]
Winifred Eboh[3]
Emma Pitchforth[4]

1. Department of Public Health, University of Aberdeen.
2. Dugald Baird Centre for Research on Women's Health, University of Aberdeen.
3. School of Nursing and Midwifery, The Robert Gordon University, Aberdeen.
4. Department of Health Sciences, University of Leicester.

Address for correspondence

Dr. Padam Simkhada

Research Fellow in International Health
Department of Public Health
University of Aberdeen
Medical School, Polwarth Building
Foresterhill, Aberdeen AB25 2ZD
Scotland, UK
Tel: +44 (0) 1224 552492
Fax: +44 (0) 1224 550925
Email: p.p.simkhada@abdn.ac.uk

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The research team
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Abbreviations

AIDS	Acquired Immunodeficiency Syndrome
ASSIA	Applied Social Science Index and Abstracts
ARIF	Aggressive Research Intelligence Facility
BME	Black and Minority Ethnic
CCTR	Cochrane Controlled Trial Register
CINHAL	Cumulative Index of the Nursing and Allied Literature
CRE	Commission of Racial Equality
FE	Further Education
FGM	Female Genital Mutilation
GUM	Genito-Urinary Medicine
HEBS	Health Education Board for Scotland
HIV	Human Immunodeficiency Virus
HPA	Health Protection Agency
HMIC	Health Management Information Consortium
HSTAT	Health Service/Technology Assessment Text
ImPACT	Informed Parents and Children Together
LGBT	Lesbian, Gay, Bi-sexual & Transsexual
LHA	Lay Health Advisor
ME	Minority Ethnic
MESH	Medical subject Headings and Classification
NICE	National Institute of Clinical Evidence
NHS	National Health Service
NRR	National Research Register
OC	Oral Contraceptives
RAPP	Rochester AIDS Prevention Project
RCT	Randomised Controlled Trial
SDC	Social Development Curriculum
SIGN	Scottish Intercollegiate Guide Network
STI	Sexually Transmitted Infection
STD	Sexually Transmitted Disease
TRIP	Turning Research into Practice
UK	United Kingdom
US	United States
USA	United State of America
UNAIDS	United Nations AIDS
WHO	World Health Organization

Executive Summary

Background

There is little data on sexual well-being of young people from BME in Scotland. The purpose of this systematic review of the literature covering sexual health interventions with young people from BME communities was to collate the 'best evidence of effectiveness' in the field and make recommendations for further practice. To do this, evidence was sought about such interventions in any industrialised country. Limited research has previously been conducted in this area and a broad definition of both sexual health and ethnic minorities was taken in order to maximise the number of studies that could be included in the review.

Methods

We searched a wide range of (electronic) data bases for studies aimed at young people from BME communities which included an sexual health-type intervention, an evaluation, a control of comparison group, clearly defined outcomes and which were published in the English language. In addition we searched for sexual health studies of (a) parents and carers of young people in the BME communities; (b) professionals working with young BME people; and (c) access to sexual health services for young BME people.

Results

Our systematic review found 52 relevant papers (from nearly 5,000) reporting interventions in this area, but only one was based in the UK. The majority of studies were based in the US and involved interventions aimed at African Americans or Hispanics. Interventions were divided into nine categories according to targeted outcomes and/or group: (1) general sexual health and behaviour; (2) pregnancy avoidance; (3) Sexually Transmitted Infections (STIs) and HIV; (4) Sex and Relationship Education for young people from BME communities; (5) BME parents and carers; (6) professionals who work with young BME people; (7) access to sexual health services for BME youths; (8) peer education; and (9) BME communities targeted in order to improve sexual health in BME youths.

The most common method used in included studies was a Randomised Controlled Trial (RCT), employed in just over half of the interventions.

Key messages

This review provides an overview of the interventions and identifies some common characteristics of effective interventions. Interventions with clearly defined aims and outcomes were more likely to demonstrate effectiveness. Skills-based programmes were

more effective than information-based interventions. Having a theoretical basis seemed to contribute to the intervention's effectiveness.

Interventions aimed at improving sexual health in young people from BME communities have not been studied very well in the UK. There is a pressing need for good quality research to aid the development of intervention programmes to address this. Future research concentrating on demonstrating the effectiveness of different interventions will be vital in developing policies.

The studies providing better quality research evidence are all US-based, their findings may or may not be transferable to a Scottish setting. Using the findings from such US-base studies in a Scottish context requires additional research to make the Scottish intervention culturally appropriate.

It is important to note that the absence of evidence does not mean that there is evidence of the intervention is not being successful, often in this field it means that the relevant interventions have not been evaluated in an appropriate way that allows the effectiveness to be assessed.

1. Introduction

This systematic review was commissioned by the NHS Health Scotland's Sexual Health and Wellbeing Learning Network and was conducted by a collaboration based at the University of Aberdeen, the Robert Gordon University and the University of Leicester. The main purpose of this exercise was to review the available evidence regarding interventions to support positive sexual health and wellbeing of young people from Black and Minority Ethnic communities living in Scotland (2004/2005 RE 044).

Background

Sexually transmitted infections (STIs) including HIV are on the increase worldwide with the largest increases among adolescents, especially young women (UNAIDS 2003; 2004). Young people represent about 50% of all HIV infection worldwide, yet a third of young people with HIV are not even aware of this threat to their lives (UNAIDS, 2002). The long incubation period of initial HIV infection and the asymptomatic nature of some STIs means young people are infecting one another without knowing it (Bird & Bogart 2005; Eng & Butler 1997; Rogers et al. 1998), but many also continue their transmission behaviour after learning their serostatus (Jemmott & Jemmott 1998; Rotherum-Borus et al. 2001). Effective Interventions aimed at improving sexual health among young people are therefore vital (Rotherum-Borus et al. 1995). Differences in vulnerability to sexual disease are attributed to variations in socioeconomic status, cultural values and beliefs, lack of social support, normative expectations, life-course pressures, social world around adolescents, peer pressure, family relationship, educational level, culture, parents' status and other dispositional factors (Athey 1991; Bronfenbrenner 1986; Kunkel 1992).

The situation in Scotland

There is scant data on the sexual health of young people from BME communities living in Scotland. This is not surprising as only 1.9% of the total minority ethnic population of the UK live in Scotland (Census, 2001). Moreover, as data on ethnicity is not routinely collected at GUM clinics where most of the STI statistics originate, it is impossible to predict the rate of STIs among BME youths. However, the infection rate in the entire population of Scotland is available and shows the following trends:

- The highest number of HIV cases was reported to Health Protection Scotland in 2004. Of all heterosexuals who underwent voluntary testing in 2003-04, 0.6% was antibody positive.
- The rates of new cases of Chlamydia infection rose from 71.4 per 100,000 population in 2000 to 136.5 per 100,000 population in 2004.

- New cases of Gonorrhoea increased slightly from 13.6 per 100,000 population in 2000 to 14.9 per 100,000 in 2004.
- There was a dramatic increase in the infection rate of Syphilis especially among men who have sex with men in 2004. The infection rate increased from 0.3 per 100,000 population in 2000 to 3.2 per 100,000 in 2004.
- Genital herpes and warts also showed moderate increases.
- Teenage pregnancy rate for ages 13–19 years has shown very little change since 1995/96, currently estimated at 42.4 per 1,000 in 2003/04.

(Scottish Health Statistics 2006).

There are some data available on the current rate of HIV infections in BME populations living in England, Wales and Northern Ireland. In 2000 there were 1,818 cases of diagnosed HIV among BME adults and children. This figure rose by 113% to 3,877 in 2004. Of these, 83% were Black African, 5.7% were Black Caribbean, 2.2% were from the Indian sub-continent and the remainder were from other or mixed ethnicity. Although ethnicity specific data for Scotland are not available, the figures from the rest of UK may be extrapolated to give some indication of prevalence in the Scottish BME population.

The national sexual health strategy for Scotland *Respect and Responsibility: Strategy and Action Plan for Improving Sexual Health in Scotland* (Scottish Executive, 2005) aimed to reduce the rate of STIs, reduce teenage pregnancy, support citizens to acquire and maintain the knowledge, skills, and values necessary for sexual well being and to improve the quality and range of sexual health services which are consistent, accessible, acceptable and integrated.

The situation in the UK

In the UK the rates of STIs have risen steeply since the mid -1990s. In particular, there has been an increase in the rate of acute bacterial STIs such as gonorrhoea, syphilis, Chlamydia, genital warts and herpes. Again, the greatest increases are among young people in the UK and some minority ethnic groups (Brown *et al*. 2002; Chinouya 2002; Ellen 1998; Fenton 2001; HPA 2004; Low *et al*.2001; Medical News Today 2004; Radcliffe 2001; Terrence Higgins Trust 2004). For example, the national screening pilot scheme in England (covering all young people in the age-groups, not just BME) found that 13.8% of under 16 year olds, 10.5% of 16-19 year olds and 7.2% of 20 to 24 year old were infected with Chlamydia (Moens *et al.* 2003). Apart from STIs and HIV infections, the UK also has the highest rates of teenage pregnancy in Europe (Lewis *et al*. 2004; Social Exclusion Unit 1999).

UK research shows most young people get their sexual information from schools, teen magazines, youth groups, parents and peers (BME Health Forum 2002) but some might not be aware of these services because they leave school or do not use community or youth centres (Transcultural Research Group 2002).

Higher rates of STIs are evident among BME populations within the UK. For example, men having sex with men and some minority ethnic groups, especially recent migrants from high prevalence countries, suffer higher rates of HIV infections (Chinouya & Davidson 2003; Weatherburn 2003; Fenton 2001). Several studies suggest that young men and women of African Caribbean origin have higher rates of Gonorrhoea and Syphilis infection than the general population (Low *et al.* 2004; Low 2002; Low *et al.* 2001; Low *et al.* 1997; Lacey *et al.* 1998; Nicoll *et al.* 2002; Singh 2003; Garneet and Anderson 1993; Shahmanesh *et al.* 2000).

There are several possible reasons for the higher rates of STIs observed in some BME populations including multiple sexual partners, unprotected sexual activities, perceptions of low risk, social networks and sexual mixing within a particular population. Members of ethnic minority communities are also more likely to report their symptoms at a later stage and are more likely to have the illness diagnosed in the hospital than in sexual health clinics. The available studies show an insufficient knowledge of sexual health and sexual health services (Weatherburn *et al.* 2003; Chime 2002; Transcultural Research Group 2002). For young people to take care of their sexual health needs, they need to be armed with accurate information and skills to protect themselves against infection and direct themselves to appropriate treatment services, if infected (Brandt 1988).

Black and Minority Ethnic (BME) youths

First we need to define our terms. According to the World Health Organization (WHO) ' young people' and 'adolescents' are defined as the age groups 10-19 and 10- 24 years respectively. The age range which is considered to be part of adolescence varies by culture. In addition to the age group 13-25 specified in the commissioning document, we included the terms 'young people', 'youth', 'adolescents' and 'young adult' depending on what the authors used, in order to include the greatest number of possible studies. We also included studies with older people, as long as the majority of the target population was younger than 25, again in an attempt to be as inclusive as possible.

Ethnic group is a group with which people identify themselves or are as such identified by others in ways that distinguishes them from other groups. This boundary may take any form

e.g. racial, cultural, linguistic, economic, religious, political or geographical (Wikipedia 2001). The 1991 Census classified people based on skin colour and geographical regions. BME groups are not homogenous group with the same the characteristics but diverse groups with different cultures, beliefs, values, language, faiths, attitudes and lifestyles. Ethnicity is a fluid concept. In the context of health it means a group that people belong to because of shared characteristics, including ancestral and geographical origins, cultural traditions, and languages. The commissioners defined BME communities as: "Indian, Pakistani, Chinese, African (not with HIV), Irish, Gypsies and Travellers." Our review has taken a wider definition again in order to include the greatest number of possible studies.

Sexual health and BME youths

Sexual well-being among young BME groups is a particular concern as they account for an increasing proportion of the population. Young people form a greater proportion of BME communities than the they do in the general population. "One in every eleven 15 to 19 year olds in Great Britain is from a minority ethnic group about (311,000) in total" (Low 2001). In Scotland, BME have larger proportions of young people and far fewer older people (apart from the Irish). With the exception of 'White Irish' and 'Caribbean' group, more than 20% of all BME groups is younger than 16. The White Irish population has the highest proportion of people over pensionable age (Scottish Executive Statistics / accessed August 2005).

Epidemiological research shows that STI rates vary among BME young people from different communities and the mainstream population. Rates of Gonorrhoea and Syphilis are higher in some BME communities e.g. African and African Caribbean whilst Sub-Saharan Africans have higher rates of HIV infections (Fenton 2001; Chinouya 2002). There are also differences behaviours among different groups. Asian youths have low use of condoms and the contraceptive pill (Brady and Williams 1999) and some young people from BME communities display more risky sexual behaviours than others. For example, African and African Caribbean men are more likely to have multiple partners and start sexual activities at an earlier age and young marriages are more common among some Asian communities (Low 2001). Data gleaned from national surveys on questions about family structure suggest that teenage motherhood is more common in black Caribbean, Pakistani and Bangladeshi youths than in the white population. These pregnancies occur in areas with social deprivation and 25 -35% of the pregnancies are terminated, (Social Exclusion Unit 1999). There is no reason to believe that these particular BME groups are much different in Scotland.

Overall, there is limited research on sexual health and wellbeing of ethnic minority groups in the UK (Serrant-Green 2005). This may be partly because of the sensitive nature of the

subject and the assumption of researchers that their questions would not be answered for fear that their findings may be misused (de Cock & Low 1997; Bradby & Williams 1999; Rudat 1994). However, the lack of research around the sexual health needs of BME young people is part of a larger gap in research about the health status and experience of young people from ethnic minority communities in Scotland (Weaver 2003). For example, there are no routinely available national data on the rate of abortions in different ethnic groups. Similarly, it is difficult to know exactly how many ethnic minority young women are pregnant every year, how many use family planning services or the teenage conception rate in minority ethnic groups over time (Low 2002b; Social Exclusion Unit 1999). Without standardised collection of interpretable data on ethnicity it difficult to act effectively (de Cock & Low 1997).

Most BME young people are from migrant background, i.e. either they are immigrants themselves or one or both of their parents are immigrants to the UK. Migrant communities suffer disproportionately from health inequalities (Bhopal 2002; Minority Ethnic Issues 2000; Nazroo 1997). Even though many young people from BME communities are born in the UK or lived here for a long time and have been exposed to many of the same cultural and educational influences as their white counterparts, differences in sexual health behaviour still exist between different ethnic groups (Low *et al*. 2001; Slater & Low 2004; Connell *et al.* 2004; Social Exclusion Unit 1999). The reasons underlying these differences are a complex mix of socio-economic factors, poverty, culture, the type of neighbourhood, community support, racism and discrimination, behavioural stereotypes, poor housing, unemployment, underemployment and living in inner cities with minimum facilities (Bhopal 2002; Bradby & Williams 1999; Phoenix 1988). The greatest factors that account for health inequalities are social and economic factors (Nazroo 1997; Ethnic Issues 2000; Low *et al.* 2001; Lacey 1998-93; Zenilman 2001). These factors mean that interventions aimed at improving sexual wellbeing among young people from BME communities should be focused on their specific needs.

Aims

To undertake a systematic review of the evidence of effective interventions that could support the sexual health and wellbeing of young people from Black and Minority Ethnic Communities in Scotland. Hence to collate and review the evidence of "effective public health interventions drawn from the global and UK research literature on:

- Sex and Relationships Education for young people from BME communities;
- Communication, training and support around sexual health issues to:
    - Young people from BME communities;
    - Parents/carers of young BME people;
    - Professionals who work with young BME people.
- Access to Sexual health Services for young BME people." (*Quoted from research brief*).

Objectives

The specific objectives of the review were:

- To apply the systematic approach using agreed criteria to identifying appropriate evidence the key interventions influencing sexual health of young people from BME communities;
- To select and synthesis evidence from all sources;
- To provide a report identifying the strengths and weakness of the identified evidence and to provide a detailed commentary on the gaps in such evidence;
- To provide the detailed discussion of implications of evidence for policy and practice.

2. Methods & Methodology

The methodology used for this review draws from systematic review methods developed by the Cochrane Collaboration as well as the NHS Centre for Reviews and Dissemination. A search was undertaken for existing reviews of evidence before searching for relevant primary research studies.

Identification of relevant reviews

A literature search of all appropriate relevant databases including the Cochrane Database of Systematic Reviews, The Campbell Collaboration, Health Technology Assessment Database, The Health Development Agency Database, TRIP– (www.tripdatabase.com), Health services/technology assessment text (HSTAT)– text.nlm.nih.gov, National Coordinating Centre for Health Technology Assessment– (www.hta.nhsweb.nhs.uk/), ARIF appraisals– (www.bham.ac.uk/arif/enqscomp.htm), NICE appraisals– (www.nice.org.uk) SIGN guidelines– (www.show.scot.nhs.uk/sign/home.htm) was conducted to identify any relevant systematic reviews conducted in the past. Initially, the search was quite broad and was done using the phrase "interventions in sexual health" in all fields in all products of the databases.

No relevant reviews were found for a search for previous reviews carried out other than reviews on HIV behavioural prevention research among different minority groups. A protocol for a systematic review was found lodged with the Cochrane library focusing on HIV prevention. Other reviews were located in the Health Development Agency Database together with reviews on sexual health interventions among young people and other populations not focusing on BME communities. Findings from these reviews have been used in the Discussion.

Given the absence of relevant systematic reviews we have focused on a systematic review of primary studies according to the following protocol.

Primary research studies

A systematic review of published and unpublished literature focussing on sexual health interventions for young people in BME communities was undertaken. Table 2.1 gives the criteria and definitions used for the literature review.

Table 2.1 Criteria and definitions used in literature review

Criteria	Definition
Type of intervention	Any intervention, or combination of interventions focusing on general sexual health, AIDS/HIV, other STIs, teenage pregnancy, sex and relationship education, parents of young people, professionals working with young people, improving access to sexual health services, community development and/or peer education.
Type of study	Evaluation studies must involve evaluation of change in one or more outcomes that may be attributed to an intervention.
Location	Industrialised or developed countries.
Setting	Community, Clinic, School.
Populations	All ethnic minorities- e.g. Black/African American, Hispanic, Latino, Arab, Asian, Chinese, Irish, Traveller Gypsy. Communities of the above BME groups, parents of the above, professionals working with the above.
Outcomes	Difference in knowledge attitudes, education, behaviour, prevention, health promotion and psychosocial.
Age	Young people or adolescents aged on 13 – 25yrs.
Language	English language.

We searched and scanned for studies published in English Language, between 1996-2005 August in the following computer databases: CINAHL; EMBASE; MEDLINE; and the CCTR. All studies meeting our criteria were included in the review. These included journal articles, conference proceedings, dissertations, technical reports, and unpublished reports. Due to the extremely short timescale only English-language publications were included as resources were not available for translations. Further details of the systematic search strategy are given below.

Electronic database searching

Using a combination of key words and MESH terms from relevant articles initial searches were piloted and tested focusing on sexual health and interventions for black and ethnic minorities. First a pilot strategy was developed for MEDLINE and then later adapted for EMBASE and other databases after some modifications. Citation Pearl Growing search method was used (Booth 2004). A list of 20-30 keywords related to sexual health interventions among black and ethnic minorities were generated by scanning a few studies in

each database. Eight strategies were piloted and scanned to identify the proportion of included studies retrieved before arriving at a final modified search strategy. The pilot searches were refined with the aid of an information sciences research assistant and a final systematic search was developed using the relevant key words and MESH terms. The articles were limited to English language and humans, adolescent 13-18yrs adult 19-44 yrs. An-update auto alert was implemented in all the databases to receive any updates of recent publications in the next few weeks during the period of search. Details of search strategies developed for these databases are presented in Appendix 2. Papers identified by the search were scanned in order to identify relevant references.

Search for other databases

The general search was also performed using a broad phrase sexual health interventions for black and ethnic minorities in the following databases:

- Health Management Information Consortium database (HMIC)
- HEBS database
- NHS National Research Register (NRR),
- Department of Health Research Findings Electronic Register (ReFeR),
- Health Protection Agency (HPA),
- Health Promis
- ASSIA
- Web Of Science

Selection of relevant studies

Initially all the studies identified by the searches were scanned by Title and Abstract. Papers were excluded for reasons listed in Table 2.2. Studies not excluded were obtained in full, read and assessed further for selection of inclusion in the review. All the identified papers have been archived in a RefWorks database, which is accessible to all the researchers in the team**.**

Table 2.2 Exclusion Criteria

Study not relevant to the research question
Published before 1996
Published in a language other than English
Study population includes White/BME population studies of older adults only
The study did not involve any evaluation of an intervention
Interventions not supporting sexual health and well-being.
Outcomes not related to sexual health.
Multiple publications of the same study (published more than once in different journals)

Secondary references

By scanning the references of included studies further relevant references were obtained.

Hand searching

Hand searching of relevant published articles in journals and books was not carried out due to time constraints, as it has to be done manually.

Search for grey and unpublished papers

Letters seeking information about sexual health intervention with BME communities were sent to 83 Black Ethnic Minority organisations in Scotland and England (Appendix 4). E-mails were sent out to electronic discussion groups requesting information about on-going or recently completed research projects. We also searched for unpublished reports, conference abstracts, dissertations, organization projects, consultation minutes and reports and literature on the World Wide Web and Organizational websites, especially in the context of UK. However, only literature on interventions with evidence of findings was included in the review.

Data extraction tools

The data extraction form was developed by the team from templates obtained from other similar systematic reviews (Appendix 3). Each study was assigned to one individual and data were extracted independently based on the guidelines of the form. A random selection of the reviewed papers and extraction forms previously done were reviewed and assessed by other individuals for quality control. The review was done by seven individuals with considerable experience in literature reviews. Disagreements between the reviewers were addressed in a meeting between the reviewers of these papers. Studies were categorised according to intervention study design, intervention setting and outcomes.

Quality assessment of studies

We assessed the methodological quality of each paper meeting the inclusion criteria using a rating tool developed as part of the data extraction form. The studies included in the review were assigned a quality score based on assessments made by independent reviewers according to the following criteria:

1. Relevance to the systematic review
2. Validity and appropriateness of methodology
3. Quality of evidence – generalisability of results
4. Quality of reporting
5. Limitations of the study and how it was adjusted for them

Studies were assigned scores from 0 to 3 in each category (0 being worst and 3 being best) and the total score added up for each study.

Relevant comments on the reason for scoring were also recorded. Any variations in ranking these studies were resolved through discussion between the reviewers. Studies scoring 8 or above out of 15 in the quality assessment were considered to be of adequate quality, while, those scoring more than 12 were of excellent quality.

The data extracted from primary studies along with their quality assessment scores were entered into a Microsoft Access database and analyzed using both Microsoft Excel and Access. Meta- analysis of the results from the primary studies was not considered appropriate because of the heterogeneity of both the types of interventions as well as the outcomes targeted.

3. Results

Results from Electronic Database Search

Our search identified 4,989 potentially relevant papers. After scanning the titles, 531 papers were found to be relevant to the subject of review and were considered for inclusion. After further review of abstracts, 416 papers were excluded. Of the excluded studies, 309 studies were not relevant, 59 were duplicates (studies that were found in more than one database) and 48 full articles requested through interlibrary loan, but did not arrive in time for the review. All unavailable articles were in less well known US academic journals.

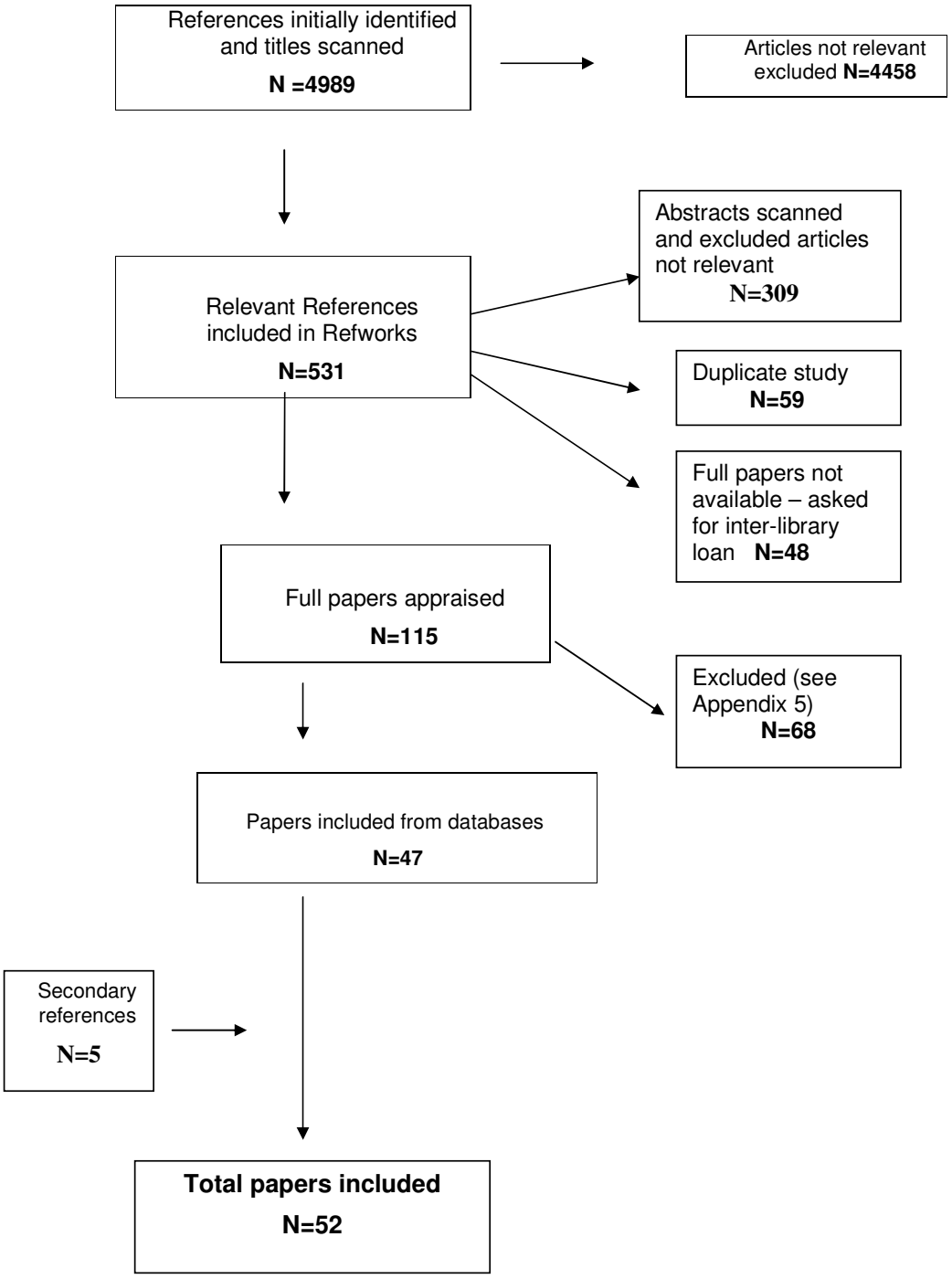
Figure 3.1 shows the flow chart for selection of studies. One hundred and fifteen were considered for the final analysis. A list of studies excluded from the final analysis and the reasons for their exclusion are presented in Appendix 5. In total 47 studies were included from our database, and five studies were identified from a secondary search of references. In total, we were able to obtain 52 relevant studies in full text and these were included in the review. A detailed summary of included studies is given in the Appendix 1 (Table 1).

Grey literature search

In addition to the formal literature search, information about sexual health interventions, recent or ongoing, was sought from BME organisations in the UK (Appendix 4). The initial mailing had a mixed response. A number of organisations were able to provide reports of research they had undertaken and these were assessed for inclusion in our review using the criteria listed above. One side effect of contacting BME organisations was that it generated interest in the outcomes of our systematic review and highlighted the need for evidence concerning the effectiveness of different sexual health interventions.

The search for unpublished literature also included searching conference abstracts, dissertations, organization projects, consultation minutes and reports and as well as the World Wide Web. Thirty-one reports relating to work in the UK were found. However, scanning of these reports for literature on interventions with evidence of findings found that they were inadequate to fulfil our review criteria. A list of these articles is given in Appendix 6. Literature found by our search was also shared with Burtney and Fullerton who were collating case studies of promising practice of working with young people from BME communities in a parallel study funded by NHS Health Scotland.

Figure 3.1: Flow chart of identification and selection of included studies



Description of included studies

Of the 52 studies included, two-thirds were RCTs (35/52), one-fifth were non-randomised controlled studies (10/52), six percent were cohort studies (3/52), six percent were cross–sectional surveys (3/52), and one (2%) was a case-control study.

The majority of the studies were based in the United States (US), clustered around different states on the east and west coasts, with a few located in Texas, thus reflecting the highest concentrations of ethnic minority populations in that country. One study was based in the UK (Low *et al.* 2003), while two other studies were located in the Netherlands (Kocken *et al*. 2001; Martijn *et al*. 2004). The proportion people from BME communities in the Netherlands (10.0%) is reasonably similar to that in the UK (CBS 2006).

The majority of the studies targeted African American and Hispanic populations, with two studies in the Netherlands targeting Turkish and Moroccan migrants (Martijn *et al*. 2004; Kocken *et al*. 2001). Some studies had mixed populations but with a high percentage of ethnic minorities (Aten *et al.* 2002; Allen *et al.* 1997; Boekeloo *et al.* 1999; Boyer *et al.* 1997; Chewning *et al.* 1999 Coyle *et al*. 2004; Di Noia *et al.* 2004; Fisher *et al.* 2002; Gold *et al.* 2004; Gottlieb *et al.* 2004; Hovell *et al.* 1998; Kirby *et al.* 1997; Kirby *et al.* 2004; Pearlman *et al.* 2002; Rotheram-borus *et al.* 1998,2003; Siegel *et al.* 2001).

The age group targeted was young people, which we originally defined as aged 13 to 25. However, during the review process it became clear that several studies of interventions had taken a higher cut-off age, or studies reported on interventions aimed at young people and adults. In order to be inclusive (as there were not many relevant studies found in the first place), we have included studies, which targeted both young people and adults from BME communities, as long as the majority within each study was under 25. Also some of the interventions reported included younger teenagers. Therefore, we can only say that (a) lowest age reported in a study was 10; (b) the highest age was not reported (in several studies); and (c) the mean age for each study was 25 or below.

The 52 selected studies (Table B, Appendix 1) were categorized according to their targeted outcomes into studies reporting on interventions:

1. improving general sexual health and behaviour;
2. reducing unintended pregnancies;
3. targeting STIs and HIV/ AIDS.

In addition relevant studies are also presented according to the target group in the intervention as outlined in the commissioning document:

4. Sex and Relationship Education for young people from BME communities;
5. interventions aimed BME parents and carers; three studies were included;
6. interventions (communication, training & support around sexual health issues) to professionals who work with young BME people and its effectiveness;
7. interventions aimed at improving access to sexual health services for BME youths.

Based on the references collected and papers review have added two other target groups:

8. interventions aimed at peers / using peer education;
9. interventions aimed at BME communities attempting to improve sexual health in BME youths.

Descriptions of outcomes

1. Interventions for improvement of general sexual health & behaviour

Over 90% of the studies were conducted in the USA, only one study was conducted in the UK and none in Scotland. Many of the US interventions have little direct relevance to BME communities in Scotland, because of cultural, economic and social differences. However, policy makers, service providers and health promoters, may be able to modify the designs and ways of implementation of the interventions and adapt them for local BME populations and settings.

Table B (Appendix 1) gives the details of 12 studies focusing on interventions for improvement of general sexual health and behaviour among BME youth. Of these 12 such studies, nine included RCTs to evaluate the intervention. All interventions targeted reduction in risky sexual behaviours but the outcomes used to assess varied from one study to another. There were no sexual health interventions related to female genital mutilation (FGM). Neither could we include any studies targeting LGBT (lesbian, gay, bi-sexual and transsexual) BME youths. The main outcomes distilled from the included studies are outlined below.

Condom Use

Although seven studies measured the effectiveness of interventions by means of increase in condom use, the particular outcome variable used to assess the interventions differed from one study to another. Four studies reported an increase in consistent condom use (Stanton *et al.* 1996; Stanton *et al.* 2004; Harvey *et al.* 2004; Wu *et al.* 2005), while others used variables like effective contraceptive use (Kirby *et al.* 2004), number of unprotected vaginal sex acts (Harvey *et al.* 2004; Rotheram-Borus *et al.* 2001; Kirby *et al.* 2004).

Of the seven studies, three were community-based (Harvey *et al*. 2004; Stanton *et al.* 2004; Wu *et al*. 2005), one was in a school (Kirby *et al*. 2004) and one in a clinic (Rotheram-Borus 2001). In majority of studies the sample was either African American, Hispanic or a mix of both groups. In one study there was a mix of several ethnic groups including Whites, African Americans, Hispanics, Asians and others but the majority was from a BME background. The studies generally focussed on youths and were not gender specific. Two of the seven studies (Stanton *et al.* 2004; Wu *et al.* 2004) included parents (See below: **5. Interventions aimed parents and carers of young BME people)**. Only one study involved couples (Harvey 2004) but it did not produce any significant changes in behaviour compared with single-based ones. The school based study by Kirby *et al.* (2004) found a greater effect on females than males.

Knowledge Attitudes, Behaviour and Skills

Four studies showed that interventions improved knowledge skills and behaviour relating to sexual health (Aten *et al.* 2002; Coyle *et al.* 2004; Stanton *et al.* 1996; Rotheram-borus *et al.* 2001; Lindenberg *et al.* 2002). Lindenberg *et al.* (2002) reported that holistic interventions in clinics and community-setting targeting substance misuse, violent and other risky behaviours improved the attitude, knowledge, self-efficacy and resilience scores relating to sexual health. One study reported that boys in the intervention group had greater knowledge, more positive attitudes towards not having sex (Coyle *et al.* 2004). Another study showed that females changed their health habits and increased their coping skills (Rotheram-borus *et al.* 2001). Knowledge of HIV/AIDS was increased among participants in the intervention groups in two studies (Aten *et al.* 2002; Stanton *et al.* 1996).

Abstinence and delayed sexual initiation

Three interventions identified sought to delay sexual initiation in adolescents and advocate abstinence (Aten *et al.* 2002; Coyle *et al.* 2004; Wu *et al.* 2005). One study showed that subjects who were not sexually experienced maintained successful abstinence (Aten *et al.* 2002), while another reported that abstinence was maintained among boys, but not girls (Coyle *et al.* 2004). Two studies showed recent sex and sexual initiation was reduced in the intervention groups (Flay *et al.* 2004; O'Donnell *et al.* 2002).

2. Interventions to reduce unintended pregnancies

Table B (Appendix I) gives the details of the studies, focusing on interventions to reduce unintended pregnancies among BME youth. Out of the 52 studies included in the review we identified ten such studies under this category. The outcomes assessed were as follows:

Reducing pregnancy and conception

Seven studies reported on interventions to reduce unintended and/or unwanted pregnancies, only three used pregnancy rates as the outcome measure (Chewning *et al.* 1999; Allen *et al.* 1997; Dixon *et al.* 2000). Generally, these studies made no attempt to define "unwanted pregnancies", assuming that all pregnancies in this age group were unwanted, and therefore a drop in the overall pregnancy rate was taken as an indication that the intervention was effective. Considering that all seven studies were US-based, it is perhaps not surprising that no information is available on abortions.

Contraceptive use

Although the use of barrier contraception, specifically condom use, would be the outcome of choice if general improvements in sexual health and behaviour were being targeted, the use of any contraceptive method would suffice as a proxy outcome for interventions seeking to reduce pregnancy rates. Five out of seven studies looked at the use of some form of birth control as the effect measure (Gold *et al.* 2004; Chewning *et al.* 1999; Macaluso *et al.* 2000; Aarons *et al.* 2000; Kirby *et al.* 1997) to evaluate interventions to reduce unintended pregnancies, while one study (Macaluso *et al.* 2000) had only increased barrier contraceptive use as the desired outcome. There was an increase across all groups in use of birth control. Results of 3 studies show that women in these studies reported increase in use of some form of contraceptive/birth control-barrier methods (Chewning 1999, Macaluso 2000, Aarons 2000). All seven studies targeted African American women, which limits the generalisation to any of the BME communities in Scotland.

Knowledge, Attitudes and Behaviour

None of the studies evaluating interventions to reduce unwanted pregnancies assessed them only on the basis of knowledge, attitude or behaviour change. They formed part of a broader group of outcomes and included abstinence/virginity (Aarons *et al.* 2000), knowledge about reproductive health services and contraceptives (Chewning *et al.* 1999; Kirby *et al.* 1997; Aarons *et al.* 2000; Ferguson *et al.* 1998) and improved sexual behaviour (Aarons *et al.* 2000; Kirby *et al.* 1997; Dixon *et al.* 2000; Gold *et al.* 2004).

3. Interventions targeting STIs and HIV/AIDS

Appendix 1 provides details of the studies focusing on interventions targeting STIs and HIV/AIDS among young people in BME communities. Of the 52 studies included in the review we identified 30 such studies. Two relevant studies have been performed with young BME communities in the Europe (the Netherlands), targeting Turkish and Moroccan new migrants. The majority of studies (N=24) was conducted in the USA and there is only one UK study that

met all inclusion criteria (Low *et al.* 2003). We will present the latter study in greater detail in the discussion section.

Again, the outcomes measured varied across studies although the interventions targeted prevention of sexually transmitted diseases and HIV/AIDS. Interventions were mainly targeted to change individual behaviour, to change peer or social norms. The following outcomes deserve special attention; STI issues, Knowledge attitudes and behaviour.

Prevalence / rates of STIs

Of the 30 studies reporting interventions designed to reduce STIs including HIV/AIDS, only five used rates of infection as the outcome measure (Paz-Bailey *et al.* 2005; Shain *et al.* 1999; Shain *et al.* 2004; Maher *et al.* 2003). All these studies measured rates of infection with either Chlamydia or Gonorrhoea while one measured the prevalence of all STIs (Maher *et al.* 2003) and one other measured the rate of Herpes Simplex type II infection (Gottlieb *et al.* 2004). None of the studies measured HIV infection rates.

Uptake of STI testing

One UK based study looked at an intervention for uptake of testing for STIs and also promotion of condom use among young people through focus groups. The study presented in Low *et al.* (2003) is a one-off sexual health intervention at Further Education (FE) colleges in London. Under the name 'You can't tell by looking' the authors set out to design an intervention in a non-clinical setting to promote testing for Gonorrhoea and Chlamydia using nucleic acid amplicifation technology and treatment and partner notification among BME young attending FE colleges. In total 181 young people participated in 13 sessions in several FE colleges, 85% were in the age group 16-20 and 43% were Black Caribbean or Black Other, 39% were Black African, 12% were White and 6% Other. The authors report as one of the justifications for using FE colleges that sexual health services are not perceived to be young-people friendly. FE colleges also offer a captured audience of young people from BME communities. The key message of the intervention was that STIs can be asymptomatic (invisible) and that testing is the only was to tell, hence the slogan 'You can't tell by looking'. The authors devised the 'water game' which consisted of pots of clear fluid one of ten contained an odourless and colourless substance. The young people were given the pots and encouraged to share by tipping a little from their bottle in their friends' ones. No one knew which bottle was contaminated (representing asymptomatic STI) and the test afterwards made it clear that through sharing most, if not all, had acquired it. The two message were clear: (1) one cannot tell from the outside who is infected, and; (2) you can only find out through testing.

Participants were then invited to give a urine sample and complete study documentation (a short questionnaire asking about for example, ethnicity, sexual experience and attendance at GUM clinics). The uptake of testing was 73% overall, 85% of whom had had sexual intercourse. Similar proportions in each ethnic group opted for a test. The proportion of positive tests varied between ethnic groups. There was a higher proportion testing positive among Black Other, Black Caribbean and White compared to Black Africans. Students who tested positive were contacted by the health advisor who arranged treatment and partner notification.

The study notes a number of potential weaknesses: There were more Black African and fewer Black Caribbeans in the study than one would expect on population-based statistics. The explanation given was that Black Africans are more likely to stay at school after age 16 than Black Caribbeans. Thus interventions at FE colleges may not to reach those BME groups most at risk. Secondly, some test results were inconclusive (indeterminant) which questions the validity of the testing process or the test itself. Reasons were provided for this, but it discourages young people in coming forward for testing. Thirdly, within the overall sample tested, individual BME subgroups were small. Finally, there is a need to evaluate the intervention in terms of reducing STI infection (i.e. not just the testing part of the intervention) and with a proper comparison group.

The intervention itself was designed after a qualitative study of the survey population (Connell *et al.* 2001). This previously published qualitative paper had been found independently with the search strategy we used, but it was not deemed relevant on its own, as it did not fulfil the inclusion criteria. However, as it is a sister paper to the only UK paper of good enough quality we have summarised the details of Connell *et al.* (2001). The study investigated the large observed disparity in rates of Gonorrhoea and Chlamydia between young people in inner London (Lambeth, Southwark and Lewisham) from Black backgrounds (Black Caribbeans and Africans) compared with their White counterparts. In total, 1761 women and men in the age group between 16-25 years participated in the survey. Forty-two women and men also took part in eight focus group discussions. The findings of the study reveal that there was a disproportional high incidence of Gonorrhoea and Chlamydia among young Black Caribbean men and women compared to their White counterparts. Inappropriate access to healthcare was one of the reasons identified as a barrier as were overcrowded GUM clinics with poor client/professional attitudes.

Knowledge attitudes and behaviour (including increased condom use):

Twenty-three out of the 30 studies in this category reported on improvement in knowledge, attitudes and behaviour relating to STIs as their outcome measure. Notably, very few of these studies used infection rates of STIs as their primary outcome.

Description of the Interventions:

We analysed the studies according to the outcomes targeted, but on the whole all the interventions aimed to reduce risky sexual behaviour or promote positive sexual health. Very few were assessed by means of definite targets like reduction of pregnancy rates or STI rates. Most attempted to improve knowledge, attitude or behaviour assessed by a variety of validated or arbitrary scales.

Content of the intervention

All the interventions attempting to bring about behavioural change were based on social cognitive behavioural theory. Some had been based on findings from qualitative studies conducted with youths. Both these approaches seem to increase the effectiveness of the interventions. Skill-based interventions were more effective than knowledge-based ones (Flay *et al.* 2004). Interventions targeting multiple risk-taking behaviours were more effective than single ones (Lindenberg *et al.* 2002).

4. Sex and Relationship Education for young people from BME communities

Interventions targeting teenagers were mostly school based, while those targeting a slightly older population were community based, and based in STI clinics. School-based programmes worked best when implemented in conjunction with other community based interventions such as parental monitoring and training, community service and school –community linkage (Kirby *et al.* 2004; Flay *et al.* 2004; O'Donnell *et al.* 2002).

Face-to-face sessions in small groups seemed more effective than the intervention sessions in large groups. Practical sessions using role-play, skill building and discussion groups were more effective than didactic information imparting. Some studies suggested an effective use of role models, stories, brochures, posters, video and computer aids.

5. Interventions aimed parents and carers of young BME people

Three studies were found with a specific focus on parents. Stanton *et al*. (2004) reported on a 'parental monitoring intervention (Informed Parents and Children Together [ImPACT]), an intervention run as part of a RCT in Baltimore (USA). The intervention, aimed at young

people and their parents, consisted of the video recording of an interactive role-play between the parent and the young person using a confrontational scenario. The videotape is discussed and the intervention concludes with a condom demonstration. The authors concluded that the parent monitoring intervention "significantly broadened and sustained protection beyond the that conferred through an adolescent risk-reduction intervention." Our review raised two reservations: (1) there is no evidence that ImPACT has any effect as a stand-alone intervention; and (2) one could question the cost effectiveness of piling interventions on top of each other; due to the possibility of diminishing returns.

Flay *et al.* (2004) reported on a parent/school/community-based intervention on top of a Social Development Curriculum (SDC), the control group received a placebo health-enhancing curriculum. The interventions reduced risk behaviour, but only in young men, not in women. The parent component could not be separated from the school and community components in the evaluation; hence, no statements could be made about the effectiveness of the component involving parents.

Anderson *et al.* (1999) reported on family-life education intervention in Los Angeles County, where 251 young teenagers (aged 9-14) and their parents participated in an abstinence-based pregnancy prevention programme. There was improved communication between teenagers and parents immediately following the intervention, but this had disappeared 12 months later, there were no changes between the intervention and control group in self-reported risk-taking behaviour.

6. **Interventions aimed at professionals working with young BME people**

Two Dutch studies (Martijn *et al*. 2004) described the effectiveness of AIDS prevention programme by lay health advisors (LHA). One study assessed whether AIDS education by lay health advisors resulted in an increase in knowledge about AIDS, and a more favourable attitude and social norm towards the use of condoms among Turkish and Moroccan migrants. But the study did not have control group, so no evidence of effectiveness could be provided. The second study compared LHA-based programmes with professional health advisors-based ones. The LHA programme resulted in a stronger intention to discuss AIDS with children. LHAs may be better in improving intention to use condoms, but the numbers of participants was small.

7. Interventions aimed at access to sexual health services for BME youths.

Sexual health services include HIV testing, screening, family planning, condoms, needle exchange, treatment, care and support for sexually transmitted infections. One US-study (vanDevanter *et al.* 2005) aimed to increase access by improving the health-seeking

behaviour among BME adolescents. They suggested that a theory-driven, community-based group intervention significantly increased preventive health care seeking among young females.

8. Interventions using peer education

Although several studies refer to the strengths of peer educators and incorporate elements of peer education or friendship groups within interventions, few studies directly evaluate the impact of peer educators or leaders compared to non-peer leaders. The studies that do suggest that the use of peer educators may not result in long- term benefits and may not be anymore effective than adult educators. Based on the information-motivation-behavioural skills model, Fisher *et al*. (2002) compared peer intervention with classroom and combined interventions. The peer intervention involved popular students engaging in HIV prevention intervention contacts with same-sex friends and acquaintances. Based on reported condom use the peer intervention had a significant positive effect, but at one-year post intervention the effect had dissipated while the effects of the classroom intervention were maintained. Aten *et al.* (2002) compared the implementation of the RAPP (Rochester AIDS Prevention Project) curriculum by trained adult educators, trained peer educators and regular teachers. The authors conclude that the results support the incorporation of peers into future interventions, however, although the results show that the interventions had a positive effect on abstinence rate at one-year follow-up (for males only) the effect was similar for all three groups. A similar result was found when comparing self-efficacy and knowledge (Siegel *et al.* 2001).

9. Interventions aimed at BME communities

In the studies reviewed various interventions were used in RCTs, several studies used LHAs to provide sexual health interventions (See **6. Interventions aimed at professionals working with young BME people** above). Studies referred to LHA (Thomas et al., 2000; Martijn et al., 2004); counsellors from community-based organisations (Maher et al., 2003); trained African women health advisors (DiClemente et al., 2004); volunteers, students, church youth ministry (Marianne et al., 2004) and adult facilitators with a (health) professional background (Jemmott III et al., 1999).

A common factor in the studies was that LHAs received formal training. In most studies gender and ethnicity was matched between advisors and participants. In many cases the sexual health intervention was successful with authors attributing this success partially to the matching of advisors gender and ethnicity to that of the participants (i.e. young people from BME communities). However, Jemmott III et al. (1999) found the opposite, with LHAs being of a higher social class than the participants.

LHA-based programmes might be successful in inducing internally-motivated intentions to safe sex practices, e.g. condom use. The greatest success was reported in interventions where LHAs were: (a) well respected by participants; and/or (b) 'trusted' by young people (often LHAs were not seen as representing the health-care establishment). From a researcher's perspective it is often difficult to validate or ensure that the Hawthorne effect has been truly eliminated or minimised.

Cultural sensitivity

Interventions that were culturally sensitive and promoted a positive cultural identity were more effective in promoting healthy sexual behaviour among BME youths. Health education imparted to immigrants in their own language by peer educators (Kocken *et al.* 2001) or by means of interpreters (Martijn *et al.* 2004) showed significant increase in effectiveness.

4. Discussion

We found that interventions could be effective at reducing the risk of STI/HIV infections and risky sexual behaviour for young people from BME communities, but that effectiveness varied depending on the type of interventions, duration of sessions and target groups. Interventions that were given over more than one session and/or were longer in duration in general had more positive effects than brief interventions.

Prevention programmes can effectively reduce risky behaviour among young people living with HIV. Key messages from the most effective programmes designed specifically for young BME population are given below.

Characteristics of effective interventions for improving general sexual health and behaviour:

Key messages from our findings are:

1. Interventions implemented in small and personal groups were more effective (all references).
2. Interventions based on behavioural change theory were found to be effective (all references).
3. Culturally and linguistically sensitive interventions, incorporating a positive cultural identity had greater effect (Belgrave 2002; Flay *et al.* 2004).
4. Combined school and community-based interventions worked better than school or community-based programmes alone (Stanton *et al.* 2004; O'Donnell *et al.* 2002; Flay *et al.* 2004).
5. Parental monitoring interventions can have sustained effects (Staton *et al.* 2004; Wu *et al.* 2005).
6. Skill-based interventions are more effective than information-based interventions (Flay *et al.* 2004).
7. Holistic interventions targeting substance misuse, violent and other risky behaviour have greater effect in school based/ adolescent programmes (Lindenberg *et al.* 2002).
8. Barrier exists in young people from BME communities accessing sexual health services. Without data, it is difficult to tell which barrier exerts the greatest influence on service uptake.
9. Interventions preventing sexual risk behaviours had a positive impact across groups regardless of gender, ethnicity and sexual experiences (Kirby *et al.* 2004, Allen *et al.* 1997).

10. Peer-led interventions work no better than instructor-led interventions in BME communities (Belgrave 2002).

In addition to the above, the interventions that were effective in reducing unintended pregnancies had the following characteristics:

1. Gender specific intervention to address the needs of both sexes (Aarons *et al.* 2000).
2. Computers provide a viable and effective alternative medium for helping young people to make decisions regarding contraceptive use (Chewning *et al.* 1999).
3. Programmes too modest in length and scope may not have an impact on youth's behaviour (Kirby *et al.* 1997).
4. Provision of advanced emergency contraception does not make young BME women more likely to take risks in sexual practices (Gold *et al.* 2004).

From the list of characteristics of effective interventions above, some common themes emerge. Although not specifically designed to reduce HIV or STI prevalence, or reduce unplanned pregnancies, it is obvious that any intervention to improve general sexual health and behaviour can also have a positive effect on the other two outcomes. In reality all interventions identified sought to increase the practice of safe sex, be it through improved knowledge and attitudes or the development of skills pertaining to safer sex.

Abstinence and delayed sexual initiation appeared to be a popular intervention for US school-based programmes for adolescents, but had limited value in older ages or in high-risk groups. Very few studies reported the religious beliefs of the target population, unless the programme was implemented through a church (Belgrave 2002; Marcus *et al.* 2004).

Most studies agreed that skill-based programmes using role-play and proper and consistent condom application demonstrations were far more effective than imparting didactic knowledge or counselling through health education programmes. It has been widely acknowledged that risky sexual behaviour is strongly associated with other behavioural problems (Rotheram-Borus *et al.* 1998; Lazebnik *et al.* 2001). It, therefore, stands to reason that interventions targeting multiple behavioural problems including violence, substance abuse, school dropout will be more effective that those targeting risky sexual behaviour alone. Following the same line of reasoning, interventions promoting positive behaviour like self esteem, negotiating and coping skills when integrated with sexual health promotion were bound to have a more pronounced positive effect. This was corroborated by our findings.

Comparison with existing studies

Although our extensive literature search could identify no other systematic review targeted towards improving the sexual health of BME youths, several reviews exist that look at sexual health promotion in young populations as a whole. The following section compares the findings of this review with those undertaken previously.

A systematic review of effectiveness of school-based programmes to reduce sexual risk behaviours was published by Kirby *et al*. (1994) and updated five years later (Kirby 1999). Kirby (1999) reviewed 30 studies on curriculum-based programmes (implemented mainly in schools, but also in the wider community) and suggested that effective programmes:

1. focused on reducing one or more sexual behaviours that lead to unintended pregnancy or HIV/STI infection;
2. used theoretical approaches that have been demonstrated to be effective in influencing other health-related risky behaviours;
3. give a clear message by continually reinforcing a clear stance on the topic;
4. provide basic accurate information about risk and risk avoidance;
5. include activities that include activities addressing social pressure;
6. provide modelling and practice in communication, negotiation & refusal skills;
7. employ a variety of teaching methods designed to involved young people and make them personalise the information;
8. incorporate (age, experience & culturally) appropriate behavioural goals, teaching methods;
9. lasted long enough to complete important activities;
10. selected teachers or peers who believed in the intervention and provided them with training.

Our review found some similar characteristics of effective interventions. We found that broad holistic approaches targeting multiple risky behaviours including violence, truancy and substance abuse were more effective than narrow focused approaches targeting only sexual risk-taking behaviours.

Interventions to reduce unwanted pregnancies:

The results of a recent systematic review of 26 RCTs on interventions to reduce unintended pregnancies among adolescents showed that primary prevention strategies do not delay the initiation of sexual intercourse or improve use of birth control in both sexes and a pooled estimate showed no reduction in pregnancies among women (DiCenso *et al.* 2002). We found that culturally sensitive, gender specific targeted primary prevention interventions did reduce

unwanted teenage pregnancies in African American adolescents to some extent, (Allen *et al.* 1997; Chewning *et al.* 1999), but the studies lacked statistical power and therefore their significance is questionable. Moreover, we also found that gender based interventions in this category had a significant effect.

Oakley *et al*. (1994) looked at education programmes for young people aiming to improve HIV/AIDS-related risk, knowledge and behaviour. The authors concluded that the most effective approach to HIV or AIDS risk reduction among young people was one that provides practical information and support in a non-didactic way and is based on an accurate, qualitative assessment of young people's needs. The findings of our review were not dissimilar. The authors also criticized the evaluation designs of these interventions, concluding that RCTs were used less often and outcome measures were restricted to knowledge and behaviour change rather than actual rates of STI. Over a decade later, our review found a similar state of affairs.

We found no interventions aimed at LGBT young people from BME communities. One study (Rotheram-borus *et al.* 2003) included gay youths, but the results did not indicate whether the intervention had a different impact on this sub-group compared to heterosexual BME youths. A recent review has also suggested that this area under researched (Darbes *et al*. 2002).

Strengths and limitations

The search strategy was designed to find articles within the timescale and resources available. Therefore, some potentially relevant studies might have been missed from our review. Several full-text papers were obtained through interlibrary loans, which took considerable time and several (often published in less well-known US academic journals) still have not arrived at the time of writing this report.

Our review is dominated by studies based in the US and interventions targeting African American or Hispanic youths. The generalisabity of results from these studies to Scottish BME youths can be questioned. For example, African American are generally not new arrivals in the USA, but have been there for many generations, whilst BME young people are more likely to be first or second generation immigrants. In additions there are significant differences in the organisation of health care and public health between the USA and Scotland, and, to a lesser extend, in the education systems. Although studies that had targeted mixed populations, e.g. Kirby *et al.* (2004) found that interventions had a positive impact across groups regardless of gender, ethnicity and prior sexual experiences, suggesting a greater generalisability.

Implications for policy and practice

There is a dearth of evidence regarding effective interventions to improve reproductive and sexual health in BME communities in Scotland. The main evidence found come from the United States. Despite this we have a number of recommendations for policy makers and practitioners to improve reproductive and sexual health of young people from BME communities.

Generally effective interventions are not significantly different from those targeting young people in the general (majority) population. This review suggests that interventions based on behavioural change theory, implemented in small and personal groups would be more effective in any setting. Moreover, interventions that are culturally sensitive and promote a positive cultural identity are more likely to be effective in promoting healthy sexual behaviour among BME youths in a Scottish context. Health education imparted to (recent) immigrants in their own language by peer educators or by means of interpreters would increase its effectiveness. Similarly, parental monitoring interventions can have sustained effects whilst interventions should be more skill-based rather than information-based.

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The rapidly changing face of both young people's culture and sexual health problems create the conditions for innovation in the design of interventions. We need good quality evaluation research on interventions aimed at BME youths in Scotland, or at least in the UK. It is very critical for policy makers and practitioners to understand the needs of the various BME communities; the existing gaps; and develop research taking into account the best available evidence at the time and incorporate information from all possible sources.

The findings from our review is limited in informing the policy and practice in the Scottish context, so collaborating with multi-agencies and BME communities and developing research projects by using the available evidence will be a first step. At the same time identifying barriers and facilitators for putting the evidence into practice will also be useful.

Given the above, policy makers should also take into account the best available non-review and/or grey evidence and information from other sources including: qualitative studies, process evaluations, local project reports and local needs assessments.

There is a dearth of evidence regarding effective interventions to improve reproductive and sexual health in BME communities in Scotland. The main evidence found come from the United States. Despite this we have a number of recommendations for policy makers and practitioners to improve reproductive and sexual health of young people from BME communities.

Implications for future research

There is very limited research on sexual health of young people from BME communities in the UK. Grey literature from various organisations, working with BME young people on sexual health, does not demonstrate evidence of effectiveness of their intervention activities. The reason is that their works have not been evaluated to establish their effectiveness. There is the need to evaluate interventions to establish their creditability in delivering sexual interventions to BME young people to ensure that the resources are being use effectively. Where evaluations were published these were often lacking rigour, for example, with no control group, insufficient follow-time or outcomes not relating to improvements in sexual health and well being.

Despite the fact that some ethnic minorities are over represented in some STIs, there are no concerted interventions or research targeting young people from such communities. Therefore current sexual health activities are not necessarily based on needs or proven effectiveness of intervention. This review failed to find any significant difference in the general characteristics of interventions targeting white or ethnic minority youths. We were, therefore, unable to tease out the specific cultural modifications required to make a general intervention more effective in the minority population. It is likely to mean that different BME communities need different considerations regarding their cultural and religious background. This could mean that more RCTs targeting ethnic minority populations are needed per se; where culturally specific interventions are compared with general interventions as controls in the same target groups. This could also be achieved in another way, by comparing the effect of a general intervention, say, RIPPLE study (RIPPLE Study Team, 2002), and Healthy Respect (Tucker *et al*. 2005), in White and BME youths.

Information that is vital in planning and developing sexual health interventions for young men in particular from BME communities is lacking. This research information is vital for the planning and delivery of effective sexual health programs for young people from BME communities. Not only is there lack of evidence-based interventions with young people from BME communities there is also limited information on sexual attitudes, knowledge and behaviours of young LGBT BME and Irish young people, Travellers and Gypsies

backgrounds. The role of religion in the dissemination of this kind of sexual health promotion is controversial and needs further evaluation. The information we got on young people from BME communities in the UK is mostly from England and in the big cities and hardly any in Scotland.

To fully understand the sexual health needs of young people from BME requires more research and information gathering in various sections of BME communities in order to assess their specific health needs (Roshan 2002; Rogers 1998; Netto *et.al*. 2001). The lack of data on their sexual health needs speak volumes of the light of inequalities.

5. Conclusions

Sexual health and wellbeing of young BME groups is a growing public health concern in Scotland. Our systematic review looked for existing evidence as to the effectiveness of interventions aimed at improving the sexual health of young people from BME communities.
We have reviewed around 52 interventions aimed at improving the sexual health of young people from BME communities.

An important finding from the review was that there is a lack of evidence as to the effectiveness of sexual health interventions for young people in BME communities, particularly within the UK and Scotland. Where evaluations were published these were often lacking in rigour. Most of the literature and reviews found show that a wide variety of interventions and approaches used are mainly limited to the BME groups in USA.

Looking at Scottish dimension we suggest that for any intervention to start, more information need to be gathered from various communities. These data will help shaped the intervention activities. Service providers and researchers have to engage with the communities and the target groups and plan intervention activities together. Alternative formats need to be identified for delivering sexual health interventions for HIV-infected young people

Two recent systematic reviews also suggest that effective interventions should be theoretically based, culturally appropriate with strong methodological design and acceptable to communities. Interventions that teach skills rather than knowledge acquisition are more effective. Interventions should be given in multiple sessions rather than one long session and in small groups and need to be tailored for both genders, using peers to maintain the effectiveness of interventions.(Darbes *et al.* 2002, Fenton 2001).

Research in this area is very much needed and of great priority in particular aimed at BME groups in Scotland as a lack of interventions in this field will not bring any positive impact in the sexual health of young BME people. Researchers and communities should collaborate together to develop interventions appropriate to local needs and BME group. Culturally appropriate interventions should be taken into consideration to improve sexual health. Researchers and policy makers should look at BME groups as separate groups rather than a single group and design interventions that are more relevant to their local needs.

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Appendix 1

Table A -Included studies

Citation	Location and setting	Population ethnicity	Intervention	Outcomes	Findings
Aarons SJ et al (2000)	USA School based	African American 84%, Hispanic 13%	1) Intervention group: 3 health professionals implemented reproductive health education in 3 schools. This included 5 sessions of postponing sexual involvement curriculum taught by peer leaders in 10th and 11th grades. Health risk assessment by using questionnaire and individual interviews. Booster educational sessions on abstinence, self-care, STDs. 2) Control group -conventional programme.	Virginity. Self-efficacy to refuse sex. Sexual intent for the next 6 months. Use of birth control at last intercourse. Knowledge of reproductive health services. Attitudes towards abstinence.	Intervention females were more likely to report virginity, self-efficacy to refuse sex and intention to avoid sex in the next 6 months (1st Follow-up). Intervention group females reported more virginity, use of birth control at last intercourse, and knowledge of reproductive services and health at the end of 2nd follow-up. By the end of the 3 follow-up surveys the males in the intervention group scored higher than control group. There was no change in attitudes towards abstinence in males or females in the intervention group. There were gender differences in sexual activity rates in baseline so the study concludes that a gender specific intervention would adequately address the needs of both sexes.
Allen JP et al (1997)	USA School and community based.	African American 67% White 19% Hispanic 11%	1) Teen Outreach Programme-supervised community volunteer service 20h/yr, classroom based discussions about future life options, 1h/wk and activities related to key social	Rates of pregnancy, school failure and academic suspension	Rates of pregnancy, school failure and academic suspension by the end of the programme were lower in the Teen Outreach programme after accounting for entry differences between groups.

			developmental tasks of adolescence and sex led by trained facilitators. 2) Control group: - general regular curriculum was offered.		The findings suggest that interventions that seek to prevent problem behaviours should be addressed in broad rather than focusing on individual problems.
Anderson et al (1999)	USA Community based	African American, Hispanic, asian , other. 9-14 yrs age group.	Abstinence based adolescent pregnancy prevention program.	Parent child communication Sexual risk taking behavior	Improvements in communication between parents and children after intervention. But did not last longer. Decreased sexual risk taking behaviour.
Aten MJ et al (2002)	USA School based	African American 50%, Hispanic 16%, White20% Others 14%	Intervention for Abstinence maintenance by different providers: AIDS prevention project Curriculum by different instructors. 3 Arms. 1) Male and female adult professional educators. 2) Male and female trained school peer educators. 3) School district health teachers. Control group: regular school health curriculum and teacher.	Abstinence- increase abstinence with younger boys. Knowledge of HIV	Only only those subjects who were not already sexually experienced maintained successful abstinence. Abstinence intervention has to occur earlier. Before it can be successful. Intervention was effective when provided by peers and teachers.
Belgrave, FZ et al (2002)	School based	African American	1. Project Naja: overnight retreats, small group interactions, discussion of gender specific topics presentations by women role models. Also included cultural enrichment activities (Africentric worldview approach)	Peer intimacy and Africentric values increased after 2.5 years. No difference in attitudes towards risky sexual behaviour.	No evidence to support peer led interventions work better than instructor led interventions in BME communities
	School based		2. Cultural Enhancement Project: Tutoring, Tutoring plus life skills training component, tutoring plus cultural enhancement component and tutoring plus life skills plus cultural enhancement.	Analysis of effect on risky sexual and drug behaviour is ongoing.	

Boekeloo BO et al (1999)	USA 5 staff model managed care sites	Physicians: White 4 African American 1 Asian 1 Other 1 Minority Adolescents: (African American, Hispanic) 81%	Intervention Group: Audio taped STD risk assessment and education program about staying safe. The education program was targeted to Physicians and Adolescents. Control Group: study educational tools were not provided.	Adolescent-reported sexual intercourse and condom use.	There is no statistically significant difference between control and intervention group adolescents on reported sexual intercourse. However, a trend suggested that the rate of vaginal intercourse in the last 3 months was higher in the intervention group at 3 months . No statistically significant differences on condom use.
Boyer CB et al (1997)	USA School based Physical education classes	Chinese 30% Latino 20% African American 16% 0ther 12% Asian 6% Caucasian 10% Filipino 6%	Intervention Group: 3 sessions of both didactic knowledge and skill building strategies. Information on STD/HIV Skill training for prevention of risky sexual and drug use behaviour. Control Group: One session of didactic education.	STD- and HIV/AIDS related knowledge Sexual risk and substance use prevention skills Behavioural risk factors	No significant findings on knowledge or risk behaviour. Very small impact on knowledge, sexual risk and prevention skills. This might be due to high baseline knowledge.
Chewning B et al. (1999)	USA Family Planning Clinics	Chicago sample African American 96% Madison sample White 94%	Aid for Contraceptive decision making (ACD program)	Knowledge about oral contraceptives. Confidence in efficacy of OC to prevent pregnancy. Use of Oral Contraceptives. Fewer pregnancies.	ACD assist young women in their decision making use of oral contraceptives. This was demonstrated using outcome measures like increase in knowledge of OC, confidence in efficacy of OC to prevent pregnancy, increase in use of OC, and have fewer pregnancies. In the era of computers this could be the best media for young people family planning intervention.

Coyle KK et al (2004)	USA School based	Latino 59.3% African American 5.2% Asian 15.9% White 16.5% Others 3.1%	1.Intervention Group: 20-session curriculum based intervention on social cognitive theory to reduce sexual risk behaviours among adolescents. Also to assist in developing knowledge on HIV, sexual limits, refusal skills and interpersonal skills. 2 Control Group: regular classroom activities regarding HIV, other STD and pregnancy prevention.	Knowledge, Attitudes, Self-efficacy, Abstinence and delayed sexual acts	The intervention delayed sexual initiation among boys, but not girls. Boys also had greater knowledge, more positive attitudes towards not having sex and had stronger sexual limit.

DiClemente RJ et al (2004)	USA Community health agencies.	African American 100%	Participants were randomised to either HIV prevention intervention or general health promotion. (Control) The HIV intervention consisted of 4-hour interactive group sessions- each with an average of 10-12 participants and implemented by a trained African American female health educator and 2 African American female peer educators. The intervention was developed in collaboration with African American adolescent girls in the community. Participants randomised to the general health promotion received 4-hour interactive group sessions, 2 sessions emphasising nutrition and 2 sessions emphasising exercise. Both the interventions were field tested with adolescents from the study population.	Primary outcome- Self reported consistent use. Other outcomes- Self reported sexual behaviours including – 1) Condom use at last vaginal intercourse; 2) % Of condom protected vaginal intercourse acts in 30 days preceding assessment; 3) % Of condom protected vaginal intercourse acts in 6 months preceding assessment; 4) Number of unprotected vaginal intercourse acts in 30days preceding assessment; 5) Number of unprotected vaginal intercourse acts in the 6 months preceding assessment; 6) Whether participants had new vaginal sex partner in 30 days preceding assessment; 7) Self reported pregnancy. STD status defined as positive lab test for new chlamydia, gonorrhoea and trichomonas infection. Psychosocial mediators of sexual behaviour.	No difference in attrition rates between groups. Participants in HIV intervention were more likely to report using condoms consistently adjusted OR for entire 12 months 2.01 (1.28,3.17) Also more likely to report using condoms during the 6 months prior to both the 6-month and 12 month assessment. At 12 months the OR was 2.30 (1.51-3.50). Also more significantly likely to report using a condom at last sexual intercourse, less likely to self report a pregnancy and having a new sexual partner. STDS- the analysis over the 12-month period suggests a treatment advantage in reducing chlamydia infections but not trichomonas or gonorrhoea (small number of infections). There were significant differences in psychosocial mediators of HIV prevention. Generally participants in HIV intervention reported fewer perceived partner related barriers to condom use, more favourable attitudes towards using condoms, more frequent discussions with male sex partners about HIV prevention, higher condom use self efficacy. Also demonstrated greater proficiency in using condoms at 6 and 12-month follow-ups.

Di Noia J et al (2004)	USA Community based	Black 43% Hispanic 46% White (11%)	Computer mediated intervention: Experimental arm-interacted with computer software for a single 30-minute session. Non-intervention group was offered regular program at their respective centres.	1) Knowledge of HIV/AIDS 2) Attitudes and risk reduction 3) Self-efficacy.	Use of computers to deliver adolescent health intervention against HIV/AIDS prevention and reduction of risk taking was shown to be significant with great improvement effects among experimental arm youth.

Dixon AC et al (2000)	USA Community based	African American 100% .	Intervention: A journey toward womanhood- pregnancy prevention program designed for teenage girls. Small groups meet for 4 hours once a week. 4 components 1) Reaching for success (weeks1-4-explores self definition and importance of seeing oneself as a unique individual. Participants examine aspects of different countries, critique current media images, share self-descriptions, view historical documentaries and explore diversity. 2) Developing inner health for outer beauty (weeks 5-7). Explores diet and nutrition, exercise and fitness, holistic well being, sexual health and health relationships. 3) Progressing with finesse, dignity and pride (week 8) develop skills in public speaking, job interviewing. 4) Filed trip (week 9)- develop social skills and planning skills. 5) Knowing the tools for survival (week 10-13). Self-sufficency. Ends in a graduation ceremony continue to meet monthly through Sisters in Action support group.	% Experienced intercourse.	The proportions having experienced sex in each group significantly different but not clear what baseline was for non-intervention group. So not looking to see if the proportion increased less in the intervention group over time. It is stated that the program had a positive impact and pregnancies were more than three times more frequent among non-participants than among participants. Delayed sexual initiation of sexual intercourse and increase in contraceptive use. Percentages are given and but numbers must be very small. Not statistically significant.

Ehrhardt AA et al (2002)	USA Family planning clinic based	African American 72%	Intervention: Based on AIDS RISK REDUCTION MODEL (ARRM) 3 arms 1) Interview only N=120; 2) 2) 4 session intervention n=128; 3) 8 session intervention n=112; 2 hours small group sessions covering various topics	1) Total number of sex occasions (anal, oral, vaginal). 2) By partner type (main/or other partners). 3) Male/female condom used.	Targeting men and women separately to provide safer sexual health intervention produces better short and long term risk behaviour. e.g. fewer unprotected sexual acts. This result was the case after 8 weeks follow-up and not conclusive for 4 weeks follow-up, suggesting the need to have a reasonable long period of follow-up such as 8-12 weeks minimum.
Ferguson SL et al (1998)	USA Community based. Local subsidised housing developments and neighbourhoods.	African American females – 63,12-16 year old, mean age 13,	Intervention group: Peer counselling in a 8 week culturally specific adolescent pregnancy prevention programme, led by trained peer counsellors on sex education, reproduction, birth control methods, family relations, life management skills, and career options. Control group: the same kind of programme led by usual staff.	Intercourse Use of birth control methods at last intercourse. Pregnancy.	None of the participants who received peer counselling became pregnant with in last 3 months of the intervention. An increase in knowledge in reproduction and other self related topics in the intervention group. Most participants did not have sexual intercourse and the average age of sexual onset was 12 years in the intervention group and 11 in the control group. so introducing prevention programs at age 11 or before seems to be appropriate.

Fisher JD et al. (2002)	USA School based	African American 68%; Hispanic 28%; Caucasian/Other 11%	HIV preventive intervention consisting of 3 groups. 1) Classroom intervention-preventive information, motivation, behavioural skill and behaviour (IBM model); 2) Peer intervention (IBM model) 3) Combined Classroom and Peer intervention. Control Group: Standard care.	Prevention Information Motivation Behaviour skills Behaviour.	Classroom based intervention resulted in sustained changes in HIV prevention behaviour.
Flay BR et al (2004)	USA School based	African American	1. Social Development Curriculum (SDC): 16 – 21 lessons /year focusing on social competence skills in high-risk situations. 2. School/Community Interventions (SCI): SDC plus in service teacher training, local school task force, parent-training workshops. 3. Control (Health Enhancement Curriculum): nutrition, physical activity and general health care.	1. Recent sexual intercourse: reduction by 44% (SDC) and 65% (SCI) 2. Increased condom use by 95% (SDC) and 165% (SCI) (No effect on girls)	1) For boys, SDC and SCI reduced the rate of recent sexual intercourse (44% and 65%). 2) Also for boys, SDC and SCI increased the rate of condom use (95% and 165%) in comparison with control. 3) SCI was significantly more effective than SDC for a combined behavioural measure. 4) There were no significant effects for girls.
Gold MA et al (2004)	USA Adolescent Clinic Hospital based	African American 57% Caucasian 30% Others 13%	Advanced emergency contraception compared with instruction how to get (EC)	Self reported unprotected sexual intercourse. Use of condom or pill.	Provision of advanced emergency contraception did not make young women more likely to take risk in sexual practices. e.g. unprotected intercourse or less consistent contraceptive use.

Gottlieb SL et al (2004)	USA STD clinics based	Varied (black white Hispanic others). 52% black.	HIV/STD Risk reduction counselling (RRC) a theory based intervention. 3 arms. 1) Arm 1 received enhanced RRC-4 sessions. 2) Arm 2 received brief RRC-2sessions. 3) Arm 3 Control Group received brief informational messages.	Incidence of HSV-2 infection	Risk reduction counselling can reduce the occurrence of herpes simplex virus type 2 when intervention is tailored to this type of STD.
Harvey SM et al (2004)	USA Community based couple centred.	Hispanic 100%	1. Couple- based sessions involving information sessions 2. Teaching condom application skills 3. Helping to choose a safe sex strategy (counselling) 4. Partner communication and avoidance of risk skills development 5. Control: Information session only	1. Number of unprotected vaginal sex: decreased for both groups 2. Consistency of condom use increased for both groups over time. 3. Effective contraceptive use: same in both groups	Couple based intervention did not produce significant sexual behaviour practices amongst couples compared with single based ones. Expense of increased sessions not justified.
Hovell M et al (1998)	USA Community based	Latino 165 Anglo 142	Intervention: SST-role play-demonstration of new skills; DT-lectures and discussions of AIDS risk practices; NT- control group-no intervention- just measurement.	Knowledge Skill measures	The use of role-play in teaching young people social skills can assist them in choosing less risky sexual behaviours when under pressure from their peers. Knowledge improvement is not enough. Although such interventions may increase anxiety levels in some youths, better coping strategies may also need to be taught. Confounding variable should also be identified.
Jemmott JB et al	USA	African American	Abstinence and safer sex HIV risk reduction interventions	Self reported sexual intercourse	Adolescents in the abstinence group reported less sexual intercourse at 3 months

(1998)	School based	100%	8 one-hour sessions on 2 consecutive Saturdays. 1) Abstinence intervention-delaying sexual intercourse or reducing its frequencies. 2) Safer sex intervention-condom use. 3) Control intervention-health issues unrelated to sexual behaviour.	Condom use Unprotected sexual intercourse.	but not at 6 and 12 months. Adolescents in the safer sex group reported a higher mean frequency of condom use than the control group at 3,6 and 12 months. Adolescents who were sexually experienced at baseline, those in the safer sex group had lower rates of sexual intercourse at 3,6 and 12 months.
Jemmott III JB et al (1999)	USA School based	African American 100%	HIV risk reduction intervention-education /Intervention group; General health promotion intervention/control group;	Behavioural beliefs about condoms Greater self-efficacy Condom use intentions HIV associated sexual behaviour Self reported sexual behaviour.	There was strong evidence for the generality of intervention effects. Adolescents who received the intervention expressed more favourable behavioural beliefs about condoms, self-efficacy than the control group.
Jemmott JB et al (2005)	USA Adolescent Medicine Clinic based	African American 463 Latino 219	Participants randomly allocated to one of three interventions based on cognitive behavioural theories and formative research. 1). An information based HIV/STD intervention providing information to reduce sexual risk but no practice or direct experience with condoms or role-playing. 2). A skill based HIV intervention provided information and thought skills necessary to practice and negotiate condom use. 3) A health control promotion control intervention dealing with	Primary out come – Number of days reported having unprotected sexual intercourse in previous three months. Secondary outcomes – Sexual risk behaviours in previous three months STD rates No of days having sexual intercourse (Protected or Unprotected while high on drugs or alcohol). Also theoretical and conceptual variables such as belief that condoms do not interfere with sexual pleasure.	At 12 months participants receiving skills based intervention reported less frequent unprotected sex than other two groups. No effect at 3 or 6 months. Also reported fewer sexual partners less likely to report having multiple partners. All results seen at 12 months but not at 3 or 6 months follow up. Skills based interventions caused a significantly lower self-reported frequency of sexual intercourse while intoxicated compared to information based at 3 months and health promotion control at 6 months but no difference at 12 months. There was no difference of STD rates between groups at 6-month follow up. At 12 months those who received the skill based intervention were significantly less likely to have an STD (10.5%) than those in health

			health issues unrelated to sexual behaviour. All these involved one single session of 250 min.		promotion control group (19.2%)(p=0.05). There was no statistical difference between information-based group and skills based group or health promotion control group. When asked to rate the interventions those on information-based intervention gave higher liking ratings than health promotion or skills based groups. Also looked at whether efficacy was different with African Americans than Latinos. No difference in rates of STDs. The skills based intervention was more effective with Latinos than African American in condom negotiation skills and technical skills belief. Results suggest that skills training may be helpful in reducing unprotected intercourse and STD rate among adolescent girls - effects not really seen until 12 month follow up. Not clear whether it was the effect of being asked again or if effect of intervention however they did try to control for social desirability bias. Also it may be easier to introduce safer sex practice into new than existing relationships.
Kennedy MG et al (2000)	USA- 5 cities.	Black , Hispanic, White and Others. Mean age 14-16 yrs in five sites.	HIV risk reduction interventions were taken as part of the Prevention marketing intervention. The workshop version was be proud be responsible and lasted for 5-9hrs. Revisions were made at each site for the curriculum according to their local needs and delivered by facilitators.	Behavioural determinants: Intentions Attitudes Self efficacy Skills Knowledge Abstinence belief Talking to friends/parents/sex partners	PMI- prevention marketing initiative workshops reduced the likelihood of unprotected sex among participants. Intervention was effective as it was tailored to meet the local needs.

				Behavioural outcome measures: Sex in past 30 days Frequency of sex in past 30 days Condom use at last sexual act Frequency of unprotected sex in the past 30 days Condom carrying	
Kirby D et al (1997)	USA School and community based	White 38%, Hispanic 31%, African American 9%.	1) Postponing sexual involvement (PSI): consists of 5 sessions, 45-60 min, classroom delivered or in small groups focussing on risks of early sexual involvement, resistance to social pressures, peer pressures, assertive responses, and non sexual ways to express their feelings. 2) Control group: - standard curriculum. 4 RCTs reported.1) random assignment by classroom to youth led intervention, 2) by classroom to adult led intervention, 3) by schools to adult led intervention or control condition, 4) by individuals to adult led intervention or control condition.	Frequency of intercourse, Number of sexual partners, Use of contraceptives/birth control. Pregnancy rates Rates of reported STDs.	There were no significant changes at either of the follow-up periods with regard to sexual behaviour among youth. Youth in the intervention and control group were equally likely to have become sexually active, and also were not less likely to report pregnancy or STI when compared to control group. The evaluation suggests that PSI may be too modest in length and scope to have an impact on youth's behaviour.
Kirby D et al (1997)	USA School based study 6 schools in California	Students in 7th grade ,6 middle schools.mean age 12.3yrs,46% male,54% female, Latino 64%,13% Asian, 9% Af Am, low	Project SNAPP: intervention –8 sessions /2 weeks led by trained peer educators on risks on teen sex, communication, social influences, birth control methods, barriers to remain abstinence, susceptibility to pregnancy, community resources. Control group: standard	Delay on set of Intercourse Increase in use of birth control methods Pregnancy	The intervention curriculum increases knowledge significantly, but did not bring much change in attitudes and beliefs and also bring change in sexual or contraceptive behaviours. Well implemented theory based programs with interactive activities and led by well trained peer educators do not always change sexual attitudes and behaviours and middle

		income.	curriculum.		school youth.
Kirby DB et al (2004)	USA School based	30% white, 27% Hispanic, 18% Asian, 17%African American.	School based HIV, STD and pregnancy prevention intervention on sexual risk taking behaviours of different subgroups of students. The Safer Choices intervention included 5 primary components. 1) School organisation; 2) Curriculum and staff development; 3) Peer resources and school environment; 4) Parent education; 5) School community linkage	5 important sexual behaviours. 1) Initiation of sex; 2) Unprotected sex; 3) Number of partners; 4) Condom use during the last act of intercourse; 5) Use of effective contraceptives	1) Interventions had positive impact across a variety of groups, regardless of their gender, ethnicity or sexual experiences before interventions. 2) Interventions appeared to have a greater impact among males than females. 3) Interventions appeared to have a greater number of positive behavioural effects on Hispanic group than on any other ethnic group. 4) Interventions appeared to have a greater impact on condom related measures among higher risk youth who engaged in unprotected sex.
Kocken.P et al (2001)	Netherlands- Community based	Turkish and Moroccan	Peer educators were trained to provide education about AIDS and condom use to Turkish and Moroccan Immigrants in their own language. The peer educators gave a session lasting about 75 min, which included information about the incidence of AIDS transmission routes, with respect to prevention, the use of condoms was emphasised. The peer educators visited cafes, coffee houses and mosques where the target group members met.	Understanding of HIV transmission, Risk of AIDS infection, Perceived barrier of diminished satisfaction with sex using a condom, Barriers to buying condoms, Self efficacy (These were all scales devised from single questions using factor analysis)	Some differences in beliefs about condom use - intervention group more likely to get questions about protective effect correct. Turks and Moroccans differed significantly with respect to beliefs about the protective effect of condom use and self-efficacy towards condom use. However, the belief that condom use is beneficial in AIDS prevention was already widespread and educational effect was only seen in oldest age group. The majority of participants felt it was important to have education in their own language.
Lazebnik R et al	USA	Hispanic 100%	The participants were given four 1 hour blocks of activity oriented	Knowledge, Beliefs and perceived risks	Improved knowledge, and few beliefs in the risk of HIV/ AIDS related risky behaviour.

(2001)	School based		instruction over a 4 week period by a group of recent college graduates in a teacher training programme. The programme provided basic information about HIV/ AIDS and the risks of becoming sexually active; increase awareness of how alcohol and drug use can impair judgement; promoting abstinence; using active learning methods.	regarding sexual activity, Alcohol/drug use, Casual contact and HIV/ AIDS exposure and disease course were assessed pre and post intervention by means of a self-administered questionnaire.	It only improved perceived risk regarding casual contact with HIV infected person.
Lindenberg CS et al (2002)	USA Clinic and community based	Mexican American 100%	1. Risk and resilience workshop for skill building and motivational learning. 2. Control: Health education individual learning correspondence course (knowledge /information based)	1. Attitude, knowledge, intention and behaviours relating to sexual health all improved in both groups.	Both interventions, risk and resilience workshop and health information correspondence course had consistently similar effects. Neither significantly decreased use of alcohol or cigarettes. Both interventions significantly improved attitude, sexual self-efficacy and resilience scores.
Low N et al (2003)	UK Community based	Black Caribbean or Black other ethnic groups 43% Black Africans 39% White 12% Other 6%	1) Intervention was informed through focus groups with young people. 2) It was designed to deliver in one session last approximately one hour. 3) The key message was that Chlamydia and gonorrhoea can often be asymptomatic and that the only way to find out is to have a test. 4) Condom use was also promoted. 5) It involved an interactive game	1) Uptake of testing. 2) Factors associated with uptake.	Uptake of testing was 73% overall and 85% amongst those who had ever had sex. Similar proportions in each ethnic group opted for a test. The proportion of positive tests differed by ethnic groups. -Higher among Black other Black Caribbean or White than Black African.

			using water to convey message that infections can spread without anyone knowing.		
Macaluso M et al. (2000)	USA Women attending STD clinics.	African American 89%	Intervention described as nurse delivered intensive behavioural intervention promoting consistent and correct use of barrier method strategies, including joint use of a condom and vaginal spermicide product as the most recommended option and by condoms alone if joint use is not possible. The intervention was trying to high light the difference between contraceptive efficacy of a given method and its efficacy in preventing STD.	Patterns of male condom/spermidice use during the 6-month follow-up. Consistency of condom use, Consistency of spermidice use. Consistency of condom/spermidice use.	During follow up consistency of condom use increased across all groups although women who used barrier methods for birth control maintained the highest level of use overtime. Women who used some form of birth control at baseline were significantly more likely to be consistent condom users during follow-up than women who used no method at baseline. Women who used barrier methods for birth control at baseline showed the strongest tendency to be consistent barrier users during follow-up. There are lot of results from looking at predictors of consistency of barrier use but these were not really looking at whether the intervention worked. There was no comparison group. The paper concludes that women who chose barrier contraception to prevent pregnancy are more likely to be consistent barrier users over time and women who use no birth control method are receptive to messages that promote barrier contraception for STD prevention and can increase barrier use if provided with right motivation and skills.
Maher JE et al	USA	African American	1) Intervention Group: Intensive counselling	1) Baseline prevalence of STDs	38% did not attend any intervention sessions and only 38% attended all three.

(2003)	Community based organization and STD clinics	100%	The intensive counselling consisted of three one to one sessions by a counsellor from the community-based organisation. Designed to be culturally sensitive. Session one focused on teaching condom knowledge and correct use, male anatomy and personalising risk for STD and HIV. Session two involved identifying barriers to condom use and strategies for overcoming these. Session three focussed on determining future educational and job plans. All sessions were with the same person. 2) Control Group: Routine Counselling.	2) One year cumulative prevalence	The one-year cumulative incidence for those who returned with a new definitive STD did not differ significantly between the intervention group and the control group. Men in the study were at high risk for infection but intensive counselling did not lead to reduction. There were major problems with design implementation and interpretation of the trail. Overall this study suggests that counselling did not work but high lighted problems of doing such a trail. e.g.- Low participation, no follow up.
Marcus MT et al (2004)	USA Community based. Partnership with university based	African American 100%	Faith based substance abuse and HIV/AIDS prevention program. Project Bridge. Intervention Group: 1. Life skills training (cognitive behavioural substance abuse prevention programme) 2. Spreading the word (Afro	Alcohol drinking, Cigarette smoking, Glue sniffing, Drug use, HIV/ AIDS knowledge and attitudes	Adolescents who participated in the project reported significantly less use of marijuana and other drugs. There was no statistically significant difference in the knowledge regarding HIV/ AIDS between the two groups but project participants reported more fear of AIDS than the control group.

	investigators and church members.		centric prevention alternatives based on arts, media, communication, music and physical activity strategies. 3. Choosing the best (Abstinence focused curriculum using real life case studies and small group discussions) 4. Faith component (Scripture based lessons designed to reinforce corresponding LST curriculum). Comparison group: No intervention.		
Martijn C et al (2004)	Netherlands Community based Study 1: New immigrants in Rotterdam. Study 2: Migrants in refugee camps	Study 1: Turkish 51 Moroccan 13 Other Arabic (Iraqi, Sudanese, Tunisian) 11 Study 2: 36 Iraqi men	Intervention: New Comer Integration Project. Study 1: Education sessions from Lay Health Advisors lasting about 2 hrs. Aim was for LHAs to pass on knowledge about AIDS and HIV and to stimulate AIDS preventive behaviour. Study 2: Education sessions from Lay Health Advisors and Public health Advisors working with interpreter lasting about 2 hrs. Aim was to pass on knowledge about AIDS and HIV and to stimulate AIDS preventive	Study 1&2 Knowledge Attitudes Perceived behavioural control intention to use condoms.	Study 1 - Knowledge about AIDS increased significantly. There was an interaction with educational level, intention to use condoms and perceived behavioural controls were also significantly higher at posttest. No control groups but suggest favourable outcomes from LHA intervention. Study 2 - Similar increase in knowledge as study one but no evidence that LHA were more effective than PHA or vice versa. Some suggestion that equally successful that providing knowledge but LHA may be better in improving intention to use condom but numbers seem very small.

			behaviour.		
Miller LC et al (2004)	USA Community based	African American 52% Mexican American 48%	Prevention messages. Hierarchical and single messages on prevention options. 1) Use male condom only. 2) Use male condom only, Use female condom or spermicide.	Male condom use Female condom use Use of spermicide	Women who use male condoms were not interested in using any other alternatives such as female condom or spermicide. The hierarchical message had no effect. For women not currently using the male condom result in less willingness to use male condom. For women not using any contraceptive there was willingness to adopt one of the interventions.
O'Donnell L et al (2002)	USA School and community based.	Non Hispanic African Americans71% Latino 26%	The Reach for Health Community Youth Service Intervention: Combined community field placements with classroom health instructions. Controls received only health instruction.	1. Sexual initiation reduced by 32 – 49% in intervention group 2. Recent sex reduced by 39 – 48% in intervention group	A services learning intervention that combines community involvement with health instruction can have a long-term benefit by reducing sexual risk taking among urban adolescents. Participants who received both class room curriculum and community services were significantly less likely to report sexual initiation than control groups who received only class room instruction. Behavioural interventions delivered with a sufficient dosage can have sustainable effects in reduction of sexual initiation.
Paz-Bailey G et al. (2005)	USA Adolescent health clinic based	African American 95%	Correct and consistent condom use.	Prevalence of Chamydia and trachomatis and Neisseria gonorrhoeae infection by urine nucleic acid amplification tests	Correct and consistent condom use was slightly protective for Chlamydia infection and highly protective for gonorrhoea.
Pearlman DN et al	USA	Hispanic 40.6%	A short peer leadership preventing AIDS course for youth	Knowledge of HIV/AIDS, Knowledge of planning and	Newly enrolled peer leaders had significantly higher mean scores for

(2002)	Community based HIV/AIDS peer leadership	Black 12.5% White 25.0% Others 21.9%	who wanted to be a peer leader and ongoing group work with an adult advisor to learn about HIV transmission to model and practice communicating and negotiation skills around sexual risk taking behaviour.	presenting skills, Self efficacy, Perception of self as a change agent and Sexual risk taking behaviours.	HIV/AIDS knowledge and perception of one's self as a change agent in the community than comparison youth. Repeat peer leaders reported higher score than newly enrolled peer leaders. HIV/AIDS knowledge continued to increase significantly more among repeat peer leaders compared with those newly enrolled in the programme. Overall peer education programme was found to have benefits to adolescents peer leaders.
Ross MW et al (2004)	USA Community based	African American 85%	1) Small media campaign intervention involving community leaders, gatekeepers and focus groups. 2) Role models, stories, brochures, posters, coasters, matchbook, T-shirts, video and billboards were developed with a "Get tested, Get treated, Use condoms" caption. 3) Community based organization served as partner to provide outreach and testing.	Information on sexual health, Safe sex, and number of partners. Knowledge of testing Dispel misconception of STDs and prevention of Syphilis, Increase in condom use.	Small media were largely responsible for the change. Support from business leaders for the campaign served as a cue to action. Culturally appropriate small media distribution in conjunction with community based condom distribution can increase knowledge on testing, prevention and increase in condom use. Small media (messages, role model stories) have positive impact on Syphilis risk behaviour. Involvement of community business as partners in health provides community support and avenue in message dissemination.
Rotheram-Borus et al (1998)	USA Commun	African American 53% Hispanic 39% Other 8%	Intervention Group: 7 sessions of 1.5 hrs each 3 sessions of 3.5 hrs each Lead by 2 facilitators/group	1) Sexual risk acts and substance use, 2) Knowledge of HIV, 3) Social cognitive factors- 1) Number of sexual partners,	Youth exposed to less intervention reported more risk acts than those in 7 sessions. Reduction in sexual risks, sexual partners,

	ity based-		leaders. The intervention included content like Social cognitive factors, Goal setting, Condom use, negotiation in small group and sessions. Knowledge of HIV Control Group: no intervention.	2) Use of condom, 3) Condom competency, 4) Ability to negotiate.	unprotected sex in small group session. No reduction in substance use. Hispanic youth reported more risk acts than African American youth. Youth who received 7 session of intervention improved more than those who receive only 3 sessions. Changes in sexual acts were the most important outcome measures.
Rotheram-Borus MJ et al (2001)	USA Clinic based	African American 27% Latino 37%	1. 15 months of preventive Intervention. 2. (2 modules with 23 sessions). 3. Stay- Healthy on building skills, coping skills and negotiating skills. 4. Act Safe to reduce substance use, unprotected sexual acts and self-efficacy.	Reduce risk acts, decrease in unprotected sex, fewer sexual partners, and fewer negative sexual partners. Also building skills, coping skills,	1) Act Safe resulted in a 50% reduction in HIV negative partners.82% reduction in the number of unprotected sex acts.31% reduction in a weighted index of drug use. It costed $ 513 per youth. 2) Stay Healthy module costed $ 467 and focussed on changing health behaviour. There were fewer benefits demonstrated like females changed their health habit and increased their coping skills.
Rotheram-Borus MJ et al (2003)	USA Community based-Youth in sheltered accommodation	African American 59% Hispanic 26% White/Others 15%	Intervention: Street Smart an intensive HIV program. General and personal knowledge of HIV using video workshops etc; Development of social skills, counselling to deal with barriers to safer sex. Control: no intervention.	Number of partners Number of unprotected sexual acts No of drugs used	This study looks specifically at runaway adolescents and their risk of contracting HIV, which has been traditionally shown to be high. The link between sexual and substance use behaviours has been shown to be linked and particularly high amongst runaways. This study has shown that a planned intervention specifically designed for this group can bring about less risky behaviour (sexual/substance abuse) over a longer period of time (2 years).
Shain RN et al (1999)	USA STI	African American 30.2%	1) Intervention Group: Behavioural Intervention- 3 small group sessions.	1) Subsequent infections with Chlamydia trachomatis or Neisseria gonorrhoea, assessed by testing of	A culturally and sex specific behavioural intervention reduced subsequent chlamydial infection and gonorrhoea in high-risk

	Public health clinics based	Mexican American 69.8%	1) Personal susceptibility of 3-4 hours. 2) Changing behaviour. 3) Acquiring necessary skills. The groups received physical examination, microbiologic test and counselling.	endocervical samples with DNA probes.	African American and Mexican American women. Strength here is the time/resources spent doing qualitative research to decide the best most culturally transfer in turn from far the RCT. (18 months work of qualitative data collection).
Shain RN et al (2004)	USA Research and STD clinics.	Mexican American 74.7% African American 25.3%	1) Intervention Group: Enhanced Behavioural intervention- attended support groups/discussion. 2) Control Group: Standard intervention	1). Subsequent infection with Chlamydia and/or Gonorrhoea. 2). Risky sexual behaviour	Risk reduction intervention significantly decreased both single and multiple infective episodes with chlamydia and/or Gonorrhoea and risk behaviours. There was greater reduction of infections on women who attended additional sessions by the support group.
Siegel DM et al (2001)	USA School based	African American 50%; Hispanic 16%; White 20%; Others 14%	4-study conditions. 1) Control-usual health education curriculum taught by a classroom teacher. 2) RAPP adult health educator-intervention curriculum implemented by highly trained health educators. 3) RAPP peer educator intervention implemented by extensively trained HS students. 4) A comparison of the RAPP intervention curriculum taught by regular health teacher implemented with MS student only.	1) Knowledge 2) Sex self-efficacy 3) Safe behaviour intention 4) Sexual intercourse history 5) Sexual risk behaviour.	Long term knowledge and sexual self-efficacy scores were higher among the intervention groups. Intention to remain safe regarding sexual behaviour was greater among intervention groups in middle school but not in high school. An intervention effect was more significant among middle school females.
Staton,	USA	African	Theoretically and culturally based	1) Knowledge about AIDS	Community- based AIDS risk reduction

BF et al (1996)	Community based intervention	American 100%	AIDS risk reduction intervention: Based on social cognitive model and protection motivation theory. Factual movie about AIDS and AIDS risk behaviour, AIDS prevention through naturally formed friendship (peer) groups.	2) Past experience regarding risky sexual behaviour 3) Sexual behaviours like effective contraceptive practices. (Condom use and another prescription or non-prescription method of birth control).	intervention founded in social cognitive theory and delivered through naturally formed friendship groups resulted in increased self reported condom use. Knowledge of AIDS was related to contraceptive use. However, these results were not sustained at 12 months.
Stanton B et al (2004)	USA Community based intervention involving parents and youths	African American 100%	1. Control: Focus on Kids – 8-session theory based small group, face-to-face risk reduction intervention. 2. Intervention: FOK plus IMPACT – Informed parents and children together – consisting of 1 session of videotape and discussion. 3. IMPACT plus booster session of FOK	Risk taking and protective behaviour and perceptions. Consistent use of condom was 77.9% in the intervention groups in comparison to 64.9% in the control group. There was an increase in consistent condom use in the group receiving booster session (85.2%)	Parental monitoring can broaden and sustain protection beyond that conferred through adolescent risk reduction intervention. Intervention did not produce any significant adverse effects on behaviours or perceptions (no negative effect).
Thomas JC et al (2000)	USA Community based	African American 100%	LHA intervention: LHAs were seen as a means of disseminating information, helping change attitudes and developing skills related to STD prevention through trusting relationships within a social network. LHAs were trained to address three behaviours- seeking care for STD symptoms within 3 days of noticing the symptoms, Seeking testing for asymptomatic STD after suspecting exposure, Consistent condom use with main sexual partners.	Care seeking behaviours and attitudes, condom use and behaviour attitudes	A 60 % in those seeking care within 3 days of symptoms was reported but the numbers were very small and the increase was from 20 - 25 women. There was an increase in women reporting that they were very likely to seek care within 3 days of symptoms in experienced in et 12 months. Little difference in condom use and those reporting ever condom use with main partner decreased. Only 18% of respondents in follow up could identify an LHA from photo page. The majority of LHA encounters were with

					friends and relatives so it's not clear how much impact is there in the wider community.
Workman GM et al (1996)	USA School based HIV/AIDS prevention intervention	60 high school African American and Hispanic adolescent females from a low-income community.	HIV/AIDS prevention intervention: 12 , 30 min/week sessions were conducted in small groups by trained group leaders. The curriculum included social sexual values, decision-making, reproduction, stds, communication skills and AIDS facts. Woman hood development intervention: This is a control condition of 12, 30 min group seminars on gender roles, career, marriage, parenting, rungs, divorce and personal goals.	AIDS knowledge AIDS preventive behaviours Sexual decision making and sexual assertiveness Comfort discussing AIDS related behaviours.	African American adolescents reported high levels of sexual assertiveness and comfort discussing AIDS preventive behaviours when compared to Hispanic adolescents. Both of them increased their knowledge of AIDS when compared to the control group. Culture is an important element in the design of prevention interventions for ethnic minority youth.
Wu. et al. 2005	USA community based involving youth and their parents.	African American 100%	HIV risk reduction intervention targeting multiple risk behaviours. 1) A basic youth centred intervention face to face eight sessions on safe sex, tobacco, alcohol, drugs etc. 2) A parenting intervention- 20-minute video delivered at home by interventionist on parenting and role-play. 3) Booster session: Six months later review of previous activities.	1) Sexual behaviour: safe sex, frequency of sexual intercourse, consistent condom use etc. 2) Other problem behaviours: violence, substance use, selling and delivering drugs. 3) Family interaction: Parental monitoring, communication.	3 groups compared: 1) no sexual risk/ abstinence; 2) low sexual risk; 3) High sexual risk. 1) Abstinent group remained the lowest, while high-risk group remained the highest. 2) High-risk group exhibited significant increase in condom use both at 6 and 12 months post intervention. 3) Abstinent group showed an increase in substance use and multiple risk involvement through the year. 4) Low sexual risk group (protected sex) showed decrease in condom use and in multiple risk involvement over time.

Appendix 1

Table B-Interventions to reduce risky sexual behaviour among BME young people

1. Aten, M.J., *et al*. 2002, "Keeping middle school students abstinent: outcomes of a primary prevention intervention", *Journal of Adolescent Health,* vol. 31, no. 1, pp. 70-8. (32 ref).
2. Belgrave, F.Z. 2002, "Relational theory and cultural enhancement interventions for African American adolescent girls", *Public health reports,* vol. 117, no. Suppl 1, pp. S76-81.
3. Coyle, K.K., *et al.* 2004, "Draw the line/respect the line: a randomized trial of a middle school intervention to reduce sexual risk behaviors", *American Journal of Public Health,* vol. 94, no. 5, pp. 843-851.
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7. Lindenberg, C.S., *et al*. 2002, "Reducing substance use and risky sexual behavior among young, low-income, Mexican-American women: comparison of two interventions", *Applied Nursing Research : ANR,* vol. 15, no. 3, pp. 137-148.
8. O'Donnell, L., *et al.*. 2002, "Long-term reductions in sexual initiation and sexual activity among urban middle schoolers in the Reach for Health Service Learning Program", *Journal of Adolescent Health,* vol. 31, no. 1, pp. 93-100. (32 ref).
9. Rotheram-Borus, M.J., *et al.* 2001, "Efficacy of a preventive intervention for youths living with HIV", *American Journal of Public Health,* vol. 91, no. 3, pp. 400-405.
10. Stanton, B.F., *et al*. 1996, "Sexually transmitted diseases, human immunodeficiency virus, and pregnancy prevention. Combined contraceptive practices among urban African-American early adolescents", *Archives of Pediatrics & Adolescent Medicine,* vol. 150, no. 1, pp. 17-24.
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12. Wu, Y., *et al*. 2005, "Influence of prior sexual risk experience on response to intervention targeting multiple risk behaviors among adolescents", *Journal of Adolescent Health,* vol. 36, no. 1, pp. 56-63.

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1. Aarons, S.J., *et al*. 2000, "Postponing sexual intercourse among urban junior high school students-a randomized controlled evaluation", *Journal of Adolescent Health,* vol. 27, no. 4, pp. 236-247.
2. Allen, J.P., *et al*. 1997, "Preventing Teen Pregnancy and Academic Failure: Experiemental Evaluation of a Developmentally Based Approach", *Child Development,* vol. 64, no. 4, pp. 729-742.
3. Chewning, B., *et al*. 1999, "Evaluation of a computerized contraceptive decision aid for adolescent patients", *Patient Education & Counseling,* vol. 38, no. 3, pp. 227-239.
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5. Gold M.A, DO , *et al*. 2004, "The effects of Advance Provision of Emergency Contraception on Adolescent Women's Sexual and Contraceptive Behaviours.", *Journal of Pediatrics and Adolescent Gynecology,* vol. 17, pp. 17-96.
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7. Kirby, D., *et al*. 1997, "The impact of the Postponing Sexual Involvement curriculum among youths in California", *Family planning perspectives,* vol. 29, no. 3, pp. 100-108.
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1. Boekeloo, B.O. *et al*. 1999, "A STD/HIV prevention trial among adolescents in managed care", *Pediatrics,* vol. 103, no. 1, pp. 107-115.
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14. Lazebnik, R., *et al*. 2001, "Integrating substance abuse content into an HIV risk-reduction intervention: A pilot study with middle school-aged hispanic students", *Substance Abuse,* vol. 22, no. 2, pp. 105-117
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17. Marcus, M.T., *et al*. 2004, "Community-based participatory research to prevent substance abuse and HIV/AIDS in African-American adolescents", *Journal of Interprofessional Care,* vol. 18, no. 4, pp. 347-359.
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Sex and Relationship Education for young people from BME communities

1. Aarons, S.J., *et al*. 2000, "Postponing sexual intercourse among urban junior high school students-a randomized controlled evaluation", *Journal of Adolescent Health,* vol. 27, no. 4, pp. 236-247.
2. Allen, J.P., *et al*. 1997, "Preventing Teen Pregnancy and Academic Failure: Experiemental Evaluation of a Developmentally Based Approach", *Child Development,* vol. 64, no. 4, pp. 729-742.
3. Aten, M.J., *et al*. 2002, "Keeping middle school students abstinent: outcomes of a primary prevention intervention", *Journal of Adolescent Health,* vol. 31, no. 1, pp. 70-8. (32 ref).
4. Belgrave, F.Z. 2002, "Relational theory and cultural enhancement interventions for African American adolescent girls", *Public health reports,* vol. 117, no. Suppl 1, pp. S76-81.
5. Boyer, C.B., *et al*. 1997, "Evaluation of a knowledge- and cognitive-behavioral skills-building intervention to prevent STDs and HIV infection in high school students", *Adolescence,* vol. 32, no. 125, pp. 25-42.
6. Coyle, K.K., *et al.* 2004, "Draw the line/respect the line: a randomized trial of a middle school intervention to reduce sexual risk behaviors", *American Journal of Public Health,* vol. 94, no. 5, pp. 843-851.

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9. Jemmott, J.B.,3rd, *et al.* 1998, "Abstinence and safer sex HIV risk-reduction interventions for African American adolescents: a randomized controlled trial.[see comment]", *JAMA,* vol. 279, no. 19, pp. 1529-1536.
10. Jemmott III, J.B., *et al.* 1999, "Reducing HIV risk- associated sexual behaviour among African American adoelscents: testing the generality of intervention effects.", *American Journal of Community Psychology (Speical Issue: Adoelscent Risk Behaviour),* vol. 27, no. 2, pp. 161(2).
11. Kirby, D., *et al.* 1997, "The impact of the Postponing Sexual Involvement curriculum among youths in California", *Family planning perspectives,* vol. 29, no. 3, pp. 100-108.
12. Kirby, D., *et al.* 1997, "An impact evaluation of Project SNAPP: an AIDS and pregnancy prevention middle school program", AIDS Education and Prevention, Vol.9, Suppl A, 44-61.
13. Kirby, D.B., *et al.* 2004, "The 'Safer Choices' intervention: Its impact on the sexual behaviors of different subgroups of high school students", *Journal of Adolescent Health,* vol. 35, no. 6, pp. 442-452.
14. Lazebnik, R., *et al.* 2001, "Integrating substance abuse content into an HIV risk-reduction intervention: A pilot study with middle school-aged hispanic students", *Substance Abuse,* vol. 22, no. 2, pp. 105-117
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17. Workman, G.M., *et al.* 1996, "A school based approach to HIV prevention for inner-city African- American adolescent females", Journal of prevention and intervention in the community, vol.14, no.1/2, pp.41-60.

Interventions aimed at parents and carers of young BME people

1. Anderson, N.L.R., *et al.* 1999, "Evaluating the outcomes of Parent-Child family life education", School inquiry for nursing practice: an international journal, Vol.13, No.3, pp.211-233.
2. Flay, B.R., *et al.* 2004, "Effects of 2 prevention programs on high-risk behaviors among African American youth: a randomized trial", *Archives of Pediatrics & Adolescent Medicine,* vol. 158, no. 4, pp. 377-384.
3. Stanton, B., *et al.* 2004, "Randomized trial of a parent intervention: parents can make a difference in long-term adolescent risk behaviors, perceptions, and knowledge", *Archives of Pediatrics & Adolescent Medicine,* vol. 158, no. 10, pp. 947-955.

Interventions aimed at professionals working with young BME people

1. Martijn, C., *et al*. 2004, "The effects of AIDS prevention programs by lay health advisors for migrants in The Netherlands", *Patient Education & Counseling,* vol. 53, no. 2, pp. 157-165.

Interventions aimed at access to sexual health services for BME young people.

1. VanDevanter, N.L. *et al.* 2005 "A community-based intervention designed to increase preventive health care seeking among adolescents: the Gonorrhea Community Action Project".American Journal of Public Health, Vol.95, no.2, pp.331-7.

Interventions using peer education

1. Aten, M.J., *et al*. 2002, "Keeping middle school students abstinent: outcomes of a primary prevention intervention", *Journal of Adolescent Health,* vol. 31, no. 1, pp. 70-8. (32 ref).
2. Fisher, J.D., *et al*. 2002, "Information-motivation-behavioral skills model - Based HIV risk behavior change intervention for inner-city high school youth", *Health Psychology,* vol. 21, no. 2, pp. 177-186.
3. Siegel, D.M., *et al*. 2001, "Long-term effects of a middle school- and high school-based human immunodeficiency virus sexual risk prevention intervention", *Archives of Pediatrics & Adolescent Medicine,* vol. 155, no. 10, pp. 1117-1126
4. Ferguson, S.L. 1998, "Peer counseling in a culturally specific adolescent pregnancy prevention program", *Journal of Health Care for the Poor & Underserved,* vol. 9, no. 3, pp. 322-340.

Interventions aimed at BME communities

1. DiClemente, R.J., *et al*. 2004, "Efficacy of an HIV prevention intervention for African American adolescent girls: a randomized controlled trial", *JAMA: Journal of the American Medical Association,* vol. 292, no. 2, pp. 171-9. (69 ref).
2. Jemmott III, J.B., *et al*. 1999, "Reducing HIV risk- associated sexual behaviour among African American adoelscents: testing the generality of intervention effects.", *American Journal of Community Psychology (Speical Issue: Adoelscent Risk Behaviour),* vol. 27, no. 2, pp. 161(2).
3. Maher, J.E., *et al*. 2003, "Evaluation of a community-based organization's intervention to reduce the incidence of sexually transmitted diseases: a randomized, controlled trial", *Southern medical journal,* vol. 96, no. 3, pp. 248-253.
4. Marcus, M.T., *et al*. 2004, "Community-based participatory research to prevent substance abuse and HIV/AIDS in African-American adolescents", *Journal of Interprofessional Care,* vol. 18, no. 4, pp. 347-359.
5. Thomas, J.C., *et al*. 2000, "Evaluation and lessons learned from a lay health advisor programme to prevent sexually transmitted diseases", *International Journal of STD & AIDS,* vol. 11, no. 12, pp. 812-818.

APPENDIX 2:

Search Strategy-MEDLINE

1	sexual health.mp.	1100
2	exp Sexually Transmitted Diseases/pc, ec, px, ep, eh, tm [Prevention & Control, Economics, Psychology, Epidemiology, Ethnology, Transmission]	32809
3	exp Pregnancy in Adolescence/pc, px, eh, sn [Prevention & Control, Psychology, Ethnology, Statistics & Numerical Data]	1176
4	exp HIV Infections/pc, px, ec, rh, ep, eh, th, tm [Prevention & Control, Psychology, Economics, Rehabilitation, Epidemiology, Ethnology, Therapy, Transmission]	32247
5	exp Sexual Partners/px [Psychology]	559
6	exp Health Education/mt, ec, og, st, sn, td, ut [Methods, Economics, Organization & Administration, Standards, Statistics & Numerical Data, Trends, Utilization]	11780
7	exp Sex Education/mt, ec, og, st, sn, td [Methods, Economics, Organization & Administration, Standards, Statistics & Numerical Data, Trends]	615
8	exp Sexual Behavior/px, eh, sn [Psychology, Ethnology, Statistics & Numerical Data]	5416
9	exp Health Knowledge, Attitudes, Practice/	19960
10	exp Adolescent/ or exp Adolescent Behavior/	342153
11	exp Contraception Behavior/eh, sn, td, px [Ethnology, Statistics & Numerical Data, Trends, Psychology]	506
12	exp Health Behavior/eh [Ethnology]	914
13	exp Sex Counseling/ec, og, ed, st, sn, td, ut, mt [Economics, Organization & Administration, Education, Standards, Statistics & Numerical Data, Trends, Utilization, Methods]	49
14	exp Health Promotion/og, ec, st, sn, sd, td, ut, mt [Organization & Administration, Economics, Standards, Statistics & Numerical Data, Supply & Distribution, Trends, Utilization, Methods]	6388
15	exp Program Evaluation/ec, sn, mt, td, st [Economics, Statistics & Numerical Data, Methods, Trends, Standards]	2018
16	exp Preventive Health Services/og, ec, st, sn, sd, td, ut, mt [Organization & Administration, Economics, Standards, Statistics & Numerical Data, Supply & Distribution, Trends, Utilization, Methods]	43504
17	*Family Planning Services/mt, ec, og, ed, st, sn, sd, td, ut [Methods, Economics, Organization & Administration, Education, Standards, Statistics & Numerical Data, Supply & Distribution, Trends, Utilization]	751
18	exp Minority Groups/ed, px, sn [Education, Psychology, Statistics & Numerical Data]	1115
19	exp Ethnic Groups/ed, eh, px, sn [Education, Ethnology, Psychology, Statistics & Numerical Data]	11248
20	exp AFRICAN CONTINENTAL ANCESTRY GROUP/ or exp AFRICAN AMERICANS/	16124
21	exp Asian Continental Ancestry Group/ed, px, eh, sn [Education, Psychology, Ethnology, Statistics & Numerical Data]	1200
22	exp Asian Americans/ed, eh, px, sn [Education, Ethnology, Psychology, Statistics & Numerical Data]	921
23	exp Hispanic Americans/ed, eh, px, sn [Education, Ethnology, Psychology, Statistics & Numerical Data]	2903
24	exp Mexican Americans/ed, eh, px, sn [Education, Ethnology, Psychology, Statistics & Numerical Data]	598

25	exp ARABS/ed, px, eh, sn [Education, Psychology, Ethnology, Statistics & Numerical Data]	355
26	asylum.mp.	516
27	exp REFUGEES/ed, px, sn [Education, Psychology, Statistics & Numerical Data]	758
28	*"Transients and Migrants"/ed, px, sn [Education, Psychology, Statistics & Numerical Data]	209
29	*GYPSIES/eh, px, sn [Ethnology, Psychology, Statistics & Numerical Data]	22
30	exp *Communication/	43175
31	or/1-5	39704
32	or/6-17	397035
33	32 or 30	434792
34	or/18-29	23736
35	31 and 33	12857
36	35 and 34	901
37	limit 36 to (humans and english language and english and ("adolescent (13 to 18 years)" or "adult (19 to 44 years)") and yr=1996-2005)	807

EMBASE search

	sexual health.mp.	979
	exp Sexually Transmitted Disease/pc, dm, rh, ep, th [Prevention, Disease Management, Rehabilitation, Epidemiology, Therapy]	5126
	exp Adolescent Pregnancy/	1271
	exp Human Immunodeficiency Virus Infection/pc, dm, rh, ep, th [Prevention, Disease Management, Rehabilitation, Epidemiology, Therapy]	17161
	exp SEXUALITY/	29440
	(sexual health and well being).mp. [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]	125
	exp Health Education/	38023
	exp Sexual Education/	929
	exp HEALTH PERSONNEL ATTITUDE/ or exp PATIENT ATTITUDE/ or exp ATTITUDE/	66296
	exp Sexual Behavior/	22654
	Adolescent/	203488
	exp CONTRACEPTION/	27273
	exp Health Behavior/	26414
	exp Patient Education/	15564
	exp Counseling/	22874

exp Health Promotion/	13417
exp Interpersonal Communication/	61775
exp PROGRAM DEVELOPMENT/ or exp HEALTH PROGRAM/ or exp EDUCATION PROGRAM/	38612
exp Health Care Quality/	442729
exp Preventive Health Service/	2489
exp Minority Group/	1755
exp ETHNIC DIFFERENCE/ or exp "ETHNIC OR RACIAL ASPECTS"/ or exp "ETHNIC AND RACIAL GROUPS"/ or exp ETHNIC GROUP/	55901
exp African American/	2641
exp NEGRO/	9468
exp ASIAN AMERICAN/ or exp ASIAN/ or exp BRITISH ASIAN/	10591
exp HISPANIC/	1527
exp CHINESE/	6137
exp ARAB/	771
exp Migration/ or exp MIGRANT WORKER/ or exp Immigrant/	6899
REFUGEE/	1261
asylum.mp.	348
exp Gipsy/	117
or/1-6	45455
or/7-20	762253
or/21-32	62772
33 and 34	32093
35 and 36	2727
33 and 34 and 35	2727
[limit 38 to updaterange=emef(20050519154627-20050519154627]]	0
sexual health.mp.	979

exp Sexually Transmitted Disease/pc, dm, rh, ep, th [Prevention, Disease Management, Rehabilitation, Epidemiology, Therapy]	5126
exp Adolescent Pregnancy/	1271
exp Human Immunodeficiency Virus Infection/pc, dm, rh, ep, th [Prevention, Disease Management, Rehabilitation, Epidemiology, Therapy]	17161
exp SEXUALITY/	29440
(sexual health and well being).mp. [mp=title, abstract, subject headings, heading word, drug trade name, original title, device manufacturer, drug manufacturer name]	125
exp Health Education/	38023
exp Sexual Education/	929
exp HEALTH PERSONNEL ATTITUDE/ or exp PATIENT ATTITUDE/ or exp ATTITUDE/	66296
exp Sexual Behavior/	22654
Adolescent/	203488
exp CONTRACEPTION/	27273
exp Health Behavior/	26414
exp Patient Education/	15564
exp Counseling/	22874
exp Health Promotion/	13417
exp Interpersonal Communication/	61775
exp PROGRAM DEVELOPMENT/ or exp HEALTH PROGRAM/ or exp EDUCATION PROGRAM/	38612
exp Health Care Quality/	442729
exp Preventive Health Service/	2489
exp Minority Group/	1755
exp ETHNIC DIFFERENCE/ or exp "ETHNIC OR RACIAL ASPECTS"/ or exp "ETHNIC AND RACIAL GROUPS"/ or exp ETHNIC GROUP/	55901
exp African American/	2641
exp NEGRO/	9468
exp ASIAN AMERICAN/ or exp ASIAN/ or exp BRITISH ASIAN/	10591
exp HISPANIC/	1527

exp CHINESE/	6137
exp ARAB/	771
exp Migration/ or exp MIGRANT WORKER/ or exp Immigrant/	6899
REFUGEE/	1261
asylum.mp.	348
exp Gipsy/	117
or/40-45	45455
or/46-59	762253
or/60-71	62772
72 and 73	32093
74 and 75	2727
72 and 73 and 74	2727
limit 77 to (human and english language and english and yr=1996-2005 and (adolescent <13 to 17 years> or adult <18 to 64 years>))	1626

CINAHL search

1	sexual health.mp.	2292
2	exp Sexual Health/	723
3	(sexual health and well being).mp. [mp=title, subject heading word, abstract, instrumentation]	211
4	or/1-3	2292
5	exp Pregnancy in Adolescence/ec, ed, ep, pc, pf, ev, td [Economics, Education, Epidemiology, Prevention and Control, Psychosocial Factors, Evaluation, Trends]	661
6	exp HIV Infections/ec, ep, eh, di, pc, pr, pf, rh, rf, ss, th, tm, td [Economics, Epidemiology, Ethnology, Diagnosis, Prevention and Control, Prognosis, Psychosocial Factors, Rehabilitation, Risk Factors, Symptoms, Therapy, Transmission, Trends]	11056
7	exp Sexual Partners/ev, ed, pf [Evaluation, Education, Psychosocial Factors]	101
8	exp SEXUALITY/ev, ed, ep, pc, eh, td [Evaluation, Education,	593

	Epidemiology, Prevention and Control, Ethnology, Trends]	
9	exp Sexually Transmitted Diseases/di, pc, ec, pr, ed, pf, ep, rf, ss, eh, th, tm, td [Diagnosis, Prevention and Control, Economics, Prognosis, Education, Psychosocial Factors, Epidemiology, Risk Factors, Symptoms, Ethnology, Therapy, Transmission, Trends]	13242
10	exp Sex Factors/ev, pf [Evaluation, Psychosocial Factors]	28
11	or/5-10	14389
12	4 or 11	16036
13	exp Sex Education/mt, ec, ed, pf, st, ev, td, ut, og, am [Methods, Economics, Education, Psychosocial Factors, Standards, Evaluation, Trends, Utilization, Organizations, Administration]	106
14	exp Safe Sex/ed, eh, ep, ev, td [Education, Ethnology, Epidemiology, Evaluation, Trends]	97
15	exp "TEACHING: SAFE SEX (IOWA NIC)"/ or TEACHING/	749
16	exp Sex Education/am, mt, ec, og, ed, pf, st, ev, td, ut [Administration, Methods, Economics, Organizations, Education, Psychosocial Factors, Standards, Evaluation, Trends, Utilization]	106
17	exp HIV Education/ec, og, pf, ev, st, td, ut, mt [Economics, Organizations, Psychosocial Factors, Evaluation, Standards, Trends, Utilization, Methods]	128
18	exp School Health Education/am, ec, mt, ed, og, pf, ev, st, td [Administration, Economics, Methods, Education, Organizations, Psychosocial Factors, Evaluation, Standards, Trends]	305
19	exp Health Education/am, ec, mt, ed, og, pf, st, ev, td, ut [Administration, Economics, Methods, Education, Organizations, Psychosocial Factors, Standards, Evaluation, Trends, Utilization]	3585
20	exp Student Health Education/ed, st, ev, td [Education, Standards, Evaluation, Trends]	9
21	exp Patient Education/am, ec, mt, ed, og, pf, st, ev, td, ut [Administration, Economics, Methods, Education, Organizations, Psychosocial Factors, Standards, Evaluation, Trends, Utilization]	1781
22	exp Sexual Counseling/ed, ev, mt [Education, Evaluation, Methods]	18
23	exp Health Knowledge/	5348
24	exp Health Behavior/ev, ed, ep, eh, td [Evaluation, Education, Epidemiology, Ethnology, Trends]	1551
25	(knowledge attitudes and practices).mp. [mp=title, subject heading word, abstract, instrumentation]	388
26	exp ADOLESCENCE/	63127
27	exp Adolescent Behavior/ev, ed, ep, pf, td, eh [Evaluation, Education, Epidemiology, Psychosocial Factors, Trends, Ethnology]	114
28	exp Risk Taking Behavior/ev, ed, ep, pc, eh, td [Evaluation, Education, Epidemiology, Prevention and Control, Ethnology, Trends]	700
29	exp ATTITUDE TO SEXUALITY/eh, ev, td [Ethnology, Evaluation, Trends]	109
30	exp "Attitude of Health Personnel"/ed, eh, td, ev [Education, Ethnology, Trends, Evaluation]	3184
31	exp Attitude to Pregnancy/eh, ev [Ethnology, Evaluation]	22
32	exp COMMUNICATION/am, ec, mt, ed, st, td, eh, ut, ev [Administration, Economics, Methods, Education, Standards, Trends, Ethnology, Utilization, Evaluation]	3458
33	exp Health Promotion/am, mt, ec, og, ed, pf, st, ev, td, ut [Administration,	1445

	Methods, Economics, Organizations, Education, Psychosocial Factors, Standards, Evaluation, Trends, Utilization]	
34	exp Health Care Delivery/am, mt, ec, pf, ed, st, td, ev, ut [Administration, Methods, Economics, Psychosocial Factors, Education, Standards, Trends, Evaluation, Utilization]	13227
35	exp "Quality of Health Care"/am, ec, mt, ed, st, td, ev [Administration, Economics, Methods, Education, Standards, Trends, Evaluation]	7142
36	exp Adolescent Health Services/am, mt, ec, og, ed, pf, st, ev, td, ut [Administration, Methods, Economics, Organizations, Education, Psychosocial Factors, Standards, Evaluation, Trends, Utilization]	180
37	exp Adolescent Health/ed, pf, ev, st, td [Education, Psychosocial Factors, Evaluation, Standards, Trends]	102
38	exp Health Information/am, ma, ec, mt, ed, og, st, td, ev, ut [Administration, Manpower, Economics, Methods, Education, Organizations, Standards, Trends, Evaluation, Utilization]	561
39	exp Community Health Services/am, mt, ec, og, ed, pf, st, ev, td, ut [Administration, Methods, Economics, Organizations, Education, Psychosocial Factors, Standards, Evaluation, Trends, Utilization]	18914
40	exp Health Beliefs/ed, eh, td, ev [Education, Ethnology, Trends, Evaluation]	499
41	exp Health Resource Utilization/am, ev, ec, st, ed, td [Administration, Evaluation, Economics, Standards, Education, Trends]	357
42	exp Health Services Accessibility/am, ec, mt, st, ev, td, ut [Administration, Economics, Methods, Standards, Evaluation, Trends, Utilization]	716
43	exp Program Planning/	2510
44	exp Program Development/am, ec, mt, ed, st, ev, td [Administration, Economics, Methods, Education, Standards, Evaluation, Trends]	546
45	exp Program Implementation/am, ec, mt, ed, st, ev, td [Administration, Economics, Methods, Education, Standards, Evaluation, Trends]	123
46	exp Program Evaluation/ec, ed, mt, st, ev, td, ut [Economics, Education, Methods, Standards, Evaluation, Trends, Utilization]	278
47	exp SUMMATIVE EVALUATION RESEARCH/ or exp FORMATIVE EVALUATION RESEARCH/ or exp EVALUATION RESEARCH/	8367
48	or/13-47	120312
49	12 and 48	4723
50	asylum.mp.	263
51	migrants.mp. or exp "Transients and Migrants"/	535
52	refugees.mp. or exp REFUGEES/	1122
53	gypsies.mp. or exp GYPSIES/	35
54	hispanics.mp. or exp HISPANICS/	6137
55	arabs.mp. or exp ARABS/	230
56	asians.mp. or exp ASIANS/	4353
57	blacks.mp. or exp BLACKS/	11197
58	ethnic.mp. or exp ETHNIC GROUPS/	24787
59	minority.mp. or exp Minority Groups/	5152
60	or/50-59	29170
61	49 and 60	833

Additional search strategy

OVID database s

1. sexual health.mp.
2. exp Sexually Transmitted Diseases/
3. sexually transmitted infections.mp.
4. exp Pregnancy in Adolescence/
5. exp Sex Education/
6. sexual health services.mp.
7. exp ADOLESCENT BEHAVIOR/ or exp SEXUAL BEHAVIOR/ or exp CONTRACEPTION BEHAVIOR/
8. exp UNSAFE SEX/ or exp SEX COUNSELING/ or exp SAFE SEX/
9. exp Sexual Partners/
10. sexual health promotion.mp.
11. or/1-10
12. (black and ethnic minorities).mp. [mp=ti, ab, tx, kw, ct, hw, it, sh, tn, ot, dm, mf, nm]
13. (african or asian or chinese or indian or pakistani or irish).mp. [mp=ti, ab, tx, kw, ct, hw, it, sh, tn, ot, dm, mf, nm]
14. exp GYPSIES/
15. travellers.mp.
16. exp MINORITY GROUPS/ or exp ETHNIC GROUPS/
17. exp Refugees/ or asylum.mp.
18. immigrants.mp. or exp "Emigration and Immigration"/
19. migrants.mp. or exp "Transients and Migrants"/
20. or/12-19
21. (training or support or communication).mp. [mp=ti, ab, tx, kw, ct, hw, it, sh, tn, ot, dm, mf, nm]
22. exp Parent-Child Relations/ or exp Parenting/ or exp Parents/ or parent education.mp.
23. exp Caregivers/ or carers.mp. or exp Family/
24. grandparents.mp.
25. exp Foster Home Care/
26. or/22-25
27. 26 and 21
28. exp HEALTH PERSONNEL/ or exp ALLIED HEALTH PERSONNEL/ or exp "ATTITUDE OF HEALTH PERSONNEL"/
29. professional.mp. or exp EDUCATION, PROFESSIONAL, RETRAINING/ or exp EDUCATION, PUBLIC HEALTH PROFESSIONAL/ or exp EDUCATION, PROFESSIONAL/
30. exp SEX EDUCATION/ or exp EDUCATION, PUBLIC HEALTH PROFESSIONAL/ or exp EDUCATION, NURSING, CONTINUING/ or exp EDUCATION, MEDICAL, CONTINUING/
31. exp Teaching/ or teachers.mp.
32. social workers.mp. or exp Social Work/

33. youth workers.mp.
34. general practitioners.mp. or exp Physicians, Family/
35. or/28-34
36. 21 and 35
37. exp Health Services Accessibility/ or access to health care services.mp.
38. 11 and 20 and 27
39. 11 and 20 and 36
40. 11 and 20 and 37
41. limit 38 to english
42. limit 41 to human
43. limit 42 to yr="1996 - 2005"
44. limit 39 to english
45. limit 44 to human
46. limit 45 to yr="1996 - 2005"
47. limit 40 to english
48. limit 47 to human
49. limit 48 to yr="1996 - 2005"
50. remove duplicates from 43
51. remove duplicates from 46
52. remove duplicates from 49

Appendix 3

SYSTEMATIC REVIEW OF INTERVENTIONS TO ENHANCE SEXUAL

HEALTH AND WELL-BEING IN BLACK AND ETHNIC MINORITY

COMMUNITIES IN SCOTLAND

DATA EXTRACTION AND QUALITY ASSESSMENT FORM

Reviewer:

Article Reference Number:

Citation: (Author, Title, Journal, year)

Study Design

Literature Review meta-analysis secondary analysis

Randomised Trial

Non-randomised Trial (including quasi-experimental)

Cohort Study Prospective Retrospective

Case Control

Survey

Case Series

Qualitative

Aim of Paper

Location (geographical location of study)

Population

Study population

Sample size

Population characteristics:

Age

Ethnicity

Social class

Religion

_____
_

Intervention(s)

_____

Outcomes

Outcomes assessed

Follow up period

Analysis

Meta-analysis

Descriptive

Bivariate

Multi-variate

Intention to treat

Qualitative

Others (please specify)

_____
_

Results

Intervention	Baseline	Endpoint	Effect measure (OR, RR)

Relevant findings

_____

Quality Assessment Score*

Quality assessment of methods (matched control group, blinding, attrition)

Relevance to Systematic review (did it match inclusion/exclusion criteria?)

Quality of Evidence (confounding adequately dealt with?)

Quality of Reporting (?)

Limitations (Declared and Undeclared)

Total Score (Max. 15, Min. 0)

Comments

Why the study was given the particular Quality Assessment Score and any other relevant comments.

Studies to be scored from 1to 3 in each sub-category, the best getting 3 and the worst 1, and the scores totalled to assess overall quality

Additional questions to assess the quality of the study:

Are the results generalisable to a UK population group?

Yes

No

Can’t tell

Are there cultural differences from the UK?

Yes

No

Can’t tell

Is the study focused on a particular target group (age, sex, ethnicity etc.)?

Yes

No

Can’t tell

Appendix 4

>University of Aberdeen letter head<

16th May 2005

Dear Sir /Madam:

Request for Information: on sexual health interventions

of young people from Black and Ethnic Minority (BME) Communities

The University of Aberdeen is currently conducting a systematic review of sexual health interventions of young people from BME communities. We aim to identify good practice and gaps that may exist in sexual health needs of this target group.

If your organisation has done any kind of research e.g. questionnaire studies, audit, assessment or produced reports on sexual health of young people age 10- 25 years from Black and Ethnic Minority communities, we will like to know and shall be grateful if you send us information on your work.

For any further questions you can contact:

Myself (Bertha) by telephone 07803 227650 or email: b.d.yakubu@abdn.ac.uk

Thank you very much in advance!

Yours sincerely,

Bertha D. Yakubu

Research Student

Organizations contacted

Asian Action Group
C/o Maxwelltown InformationCentre
121/123 Hilltown
Dundee DD3 7AE

Asian Boys Club
St Saviours High School
Drumgieth Road
Dundee

The Bharaty Ashram
Ancrum House
Morven Terrace
Dundee DD2 2JU

Dragon Group – Chinese Young People
Rockwell High School
Lawton Road
Dundee
DD3 6SY

Dundee Islam Society
35 Strathern Road
West Ferry
Dundee DD5 1PP

Maxwelltown Information Centre
121-123 Hilltown
Dundee
DD3 7AE

Pakistan Society Dundee
418 Strathmartine Road
Dundee DD3 8NF

Healthcare for Asian Women
Taybank Health Centre
10 Roberson Street
Dundee DD4 6EL

Black Community Development Project
Room D6 Craigroyston Community High School
Pennywell Road
Edinburgh EH4 4QP

Council of British Pakistanis
79A Broughton St
Edinburgh
EH1 3RJ

Edinburgh Urdu Circle
58 Frederick Street
Edinburgh EH2 1NH

Edinburgh Street Work Project
Unit 1-5 East, Castle Cliff,
25 Johnston Terrace
Edinburgh EH2 1LS

Nari Kallyan Shangho
Darroch Annexe
7 Gillespie Street
Edinburgh EH3 9NH

Pilmeny Development Project
19-21 Buchanan Street Edinburgh
EH6 8SQ

Saheliya
10 Union Street
Edinburgh, EH1 3LU

Scottish Council For Minority Rights
PO Box 23203
Edinburgh EH8 8YG

Scottish Gypsy Travellers Association
31 Guthrie Street
Edinburgh
EH1 1JG

Sisterhood
53 St Leonards Street
Edinburgh EH8

Smith's Placegroup
15 Smith's Place
Edinburgh EH6 8NT

Travellers Project Edinburgh & West Lothian
Castlebrae Community Education Office
Greendyke Road
Edinburgh EH16 4DP

Volunteers Tutor Organisation Central Edinburgh
Unit 11, Abberymount Techbase
2 Easter Road
Edinburgh EH7 5AN

Y.W.C.A Roundabout Centre
4B Gayfield Place
Edinburgh EH7 4AB

Men in Mind Project
56 Queen Charlotte Street
Edinburgh
EH6 7EX

Minority Ethnic Learning disability initiative
Unit 17 John cotton Business Centre
10 Sunnyside
Edinburgh EH7 5RA

Minority Ethnic Health Inclusion Project
Springwell House Health Centre
Ardmillan EH11 2JW

Govan Youth Information Project
9 Water Row
Govan
Glasgow G51 3UW

Scottish Refugee Council
98 West George Street
Glasgow, G2 1PJ

Glasgow Healthy City Partnership
Black and Ethnic Minority Working Group
City Chambers, George Square
Glasgow, G2 1DU

CSV Health Action Project
236 Clyde Street
Glasgow
G1 4JH

Ethnic Junior Group
Unit One
156 Main Street
Holytown
Motherwell, ML1 4TA

Maryhill Community Health Project
Module 8, Napiershall Street Centre
39 Napieshall Street
Glasgow, G20 6EZ

Asian Women's Action Group
C/o Crossroads Youth and Community Centre,
Bellisle Street Govanhill
Glasgow G42

West Lothian Gay Men's Health Group
Gay Men's Health Ltd
10a Union Street
Edinburgh, EH1 3LU

Grampian AIDS LINE
Grampian Primary Care NHS Trust
Royal Hospitals NHS Trust
Woolmanhill Aberdeen
AB25 1LD

Information on HIV, Safer sex and STDs
Ms Eileen McKenzie
Grampian Primary Care NHS Trust
Royal Hospitals NHS Trust
Woolmanhill Aberdeen
AB25 1LD

Information provision to schools, youth groups
Ms Eileen McKenzie
Grampian Primary Care NHS Trust
Royal Hospitals NHS Trust
Woolmanhill Aberdeen
AB25 1LD

Mr Patrick Stoakes
PHACE West
49 Bath Street
Glasgow
G2 2DL

Education and Training
Positive Steps Partnership
2 Gitzroy Place
Glasgow
G3 7 RH

Scot –Pep
Ms Ruth Morgan Thomas
50 Coburg Street
Edinburgh
EH6 6HE

Needle Exchange
Orkney Health Board
Health Promotion Service
62-64 Victoria Street
Kirkwall, Orkney
KW15 1DN

Provision of condom Vending Machine
Orkney Health Board
Health Promotion Service
62-64 Victoria Street Kirkwall
Orkney
KW15 1DN

Condom Availability
PHACE West
49 Bath Street
Glasgow
G2 2DL

Borders GLBT Youth Group
SHPO sexual Health
Health Promotion Department
Borders Primary Care NHS Trust
Dingleton Hospital
Roxburghshire TD6 9HN

Client Led Approach
P.O Box 169
Edinburgh
EH1 3UU

Think about it Campaign
NHS Health Scotland
Woodburn House
Canaan Lane
Edinburgh
EH10 4SG

Waverley Care Trust
4A Royal Trust
Edinburgh
EH7 5AB

Avert (Aids Education and Research)
Ms Sarah Allen, Information Officer4
Brighton Road
Horsham – West Sussex
RH13 5BA

Buddy/Flexible Support Service
PHACE
49 Bath Street
Glasgow G2 2DL

Outreach Work
PHACE West
49 Bath Street
Glasgow
G2 2DL

Teen Aid
Lomond and Argyll Primary Care Trust
Lorn and Islands District General Hospital
Glengallan Road
OBAN
PA 34 4HH

C:Card Scheme
Lothian Primary care NHS Trust
Harm Reduction Team
Spittal Street Centre
22-24 Spittal Street Edinburgh
EH3 9DU

HIV Awareness Workshop
Mr Sid Cheuk
The State Hospital
CARSTAIRS
Lanark
ML11 8RP

Condom Availability
The Web Dundee
Dundee Drugs and Aids project
76 Bell Street
Dundee
DD1 1HF

Information and Research Team
Mr Stevie Lydon, Coordinator
Health Centre
2 Newfield Drive
Dundonald
KA2 9EW

Centre for HIV/AIDS and Drug Studies
Mr Jim Sherval
Deaconess House,
148 Pleasance
Edinburgh
EH8 9RS

Barnardos
Tanner's Lane
Barkingside
Essex, England
IG6 1QG

Brook
Brook Central, 421 Highgate Studios
53-79 Highgate Road
London
England
NW5 1TL

CRUSAID
Mr Robin Brady
1-5 Curtain Road
London
EC2A 3JX

Maryhill Community Health Project
35 Avenuepark St,
Glasgow, G20 8TS

CSV Glasgow
12-14 Draffen St,
Motherwell, ML1 1NJ

Scottish Ethnic Minority Research Unit
School of the Built Environment
Heriot Watt University Riccarton
Edinburgh EH14 4AS

Grampian NHS Board Health Promotions
181 Union Street
Aberdeen
AB11 6BB

British Association for sexual and relationship
P.O Box 13686
London
SW20 9ZH

Crew 2000 Scotland Ltd
32 and 32A Cockburn Street
Edinburgh
EH1 1PB

Family Planning Association
Jackie Nicholson
Unit 10 Firhill Business Centre
76 Firhill Road
Glasgow
G20 7BA

Health Development Programme
Napiershall Street Centre
39 Napiershall Street
Glasgow G20 6EZ

Ethnic Minority Research Unit
Cowcaddens Road
Glasgow
G4 0BA
Scotland

Naz Project London
Palingwick House
241 King Street
London
W6 9LP

National Aids Trust
New City Cloister
196 Old Street
London EC1 9FR

Terrence Higgins Trust
52-54 Grays Inn Road
London
WC1X 8JU

Terrence Higgins Trust Midlands
10 Manor Road
Coventry
CV1 2LH

Light House South London
The Landmark Centre
47 Tulse Hill
SW2 2TN

Terrence Higgins Trust Oxfordshire
43 Pembroke Street, Oxford
OX1 1BP

Terrence Higgins Trust
Graham Wilkinson House
61 Ship Street
Brighton
BN1 1AE

Terrence Higgins Trust
1-2 Bridewell Lane
Bath
BA1 1AE

East London and City Health Authority
Community Relation and Health Promotion
Directorate
81-91 Commercial Road
London E1 1RD

Camden and Islington Health Authority
Health Promotion Services
ST Pancras Hospital
4 St Pancras Way
London, NW1 0PE

Black Sexual Health Project
Zion community Health and Resource
Centre, Royce Road, Hulme
Manchester M15 5FQ

Health Promotion Team Leader Sexual Health
Enfield and Haringey Health Authority
Health Promotion Unit
Holbrook House, Cockfosters Road
Barnett Herts, EN4 0DR

Leeds City Council
Department of Social Services
HIV and Drugs Unit – Merrion House
10 Merrion Centre
Leeds LS2 8QB

Ugandan AIDS Action Fund
Unit 333 Great Guildford
Business House,
30 Great Guildford Street
London, SE1 0ES

National AIDS Trust
New City Cloister
188/196 Old Street
London EC1 V9FR

National HIV Prevention Information Service
Dept of Health
30 Great Peter Street
London SW1P 2HW

Camden and Islington Health Promotion Service
St Pancras Hospital
4 St Pancras Way
London NW1 0PE

Nam,
Lincoln House
1 Brixton Road
London SW9 6DE

AKINA MAMA wa AFRIKA.
334-336 Goswell Road
London
United Kingdom
EC1V 7LQ

Appendix 5

PAPERS EXCLUDED AND REASONS FOR EXCLUSION

S.No	Article	Reasons for exclusion
1.	Innovative HIV prevention campaigns focus on high-risk youth, minorities: black ministers step into HIV testing limelight, sending message home", 2000, *AIDS Alert,* vol. 15, no. 8, pp. 85-8, 96. (2 ref).	Talks about HIV prevention programmes for minority youth, not evaluating any intervention in particular.
2.	Armstrong, B., Kinn, S., Scoular, A. & Wilson, P. 2003, "Shared care in the management of genital Chlamydia trachomatis infection in primary care", *Sexually transmitted infections,* vol. 79, no. 5, pp. 369-370.	Ethnicity of the population was not mentioned in the study.
3.	Apoola, A., Mantella, I., Wotton, M. & Radcliffe, K. 2005, "Treatment and partner notification outcomes for gonorrhoea: Effect of ethnicity and gender", *International Journal of STD & AIDS,* vol. 16, no. 4, pp. 287-289.	No intervention targeting ethnic minorities is assessed. Study assesses influence of gender and ethnicity on partner notification and treatment of gonorrhoea.
4.	Beck, A., Majumdar, A., Estcourt, C. & Petrak, J. 2005, "'We don't really have cause to discuss these things, they don't affect us': A collaborative model for developing culturally appropriate sexual health services with the Bangladeshi community of Tower Hamlets", *Sexually transmitted infections,* vol. 81, no. 2, pp. 158-162.	Not an intervention. But qualitative data.
5.	Bearinger, L.H. & Resnick, M.D. 2003, "Dual method use in adolescents: A review and framework for research on use of STD and pregnancy protection", *Journal of Adolescent Health,* vol. 32, no. 5, pp. 340-349.	Not an intervention
6.	Bettinger, J.A., Celentano, D.D., Curriero, F.C., Adler, N.E., Millstein, S.G. & Ellen, J.M. 2004, "Does parental involvement predict new sexually transmitted diseases in female adolescents?", *Archives of Pediatrics & Adolescent Medicine,* vol. 158, no. 7, pp. 666-670.	No evaluation of an intervention.
7.	Branson, B.M., Moore, J.S. & Byers, R. 1996, "HIV sexual risk-reduction interventions for African-American women.[comment]", *JAMA,* vol. 275, no. 8, pp. 593-594.	Letter commenting on the methodological rigour of a paper by DiClemente and Wingwood (1995) argue that results do not show that the intervention was not effective.
8.	Brown, N.L., Pennylegion, M.T. & Hillard, P. 1997, "A process evaluation of condom availability in the Seattle, Washington public schools", *Journal of School Health,* vol. 67, no. 8, pp. 336-340.	Majority white sample.
9.	Caldwell, C.H., Wright, J.C., Zimmerman, M.A., Walsemann, K.M., Williams, D. & Isichei, P.A. 2004, "Enhancing adolescent health behaviors through strengthening non-resident father-son relationships: a model for intervention with African-American families. [Review] [45 refs]", *Health education research,* vol. 19, no. 6, pp. 644-656.	No intervention
10.	Connell, P., McKevitt, C. & Low, N. 2004, "Investigating ethnic differences in sexual health: Focus groups with young people", *Sexually transmitted infections,* vol. 80, no. 4, pp. 300-305.	Primarily focuses on investigating ethnic and geographic variations in sexual health. The initiative mentioned in this article is given in detail in another article, which is included in the review.
11.	Conner, R.F., Takahashi, L., Ortiz, E., Archuleta, E., Muniz, J. & Rodriguez, J. 2005, "The Solaar HIV prevention program for gay and bisexual Latino men: using social marketing to build capacity for service provision and evaluation", *AIDS Education & Prevention,* vol. 17, no. 4, pp. 361-374.	No age group specified.
12.	Crosby, R.A., DiClemente, R.J., Wingood, G.M., Lang, D. & Harrington, K.F. 2003, "Value of consistent condom use: a study of sexually transmitted disease prevention among African American adolescent females", *American Journal of Public Health,* vol. 93, no. 6, pp. 901-902.	Did not look at an intervention but looked at the relationship between reported consistent condom use and testing positive for STDs looking at effectiveness of consistent condom use.

13.	Crosby, R.A., DiClemente, R.J., Wingood, G.M., Lang, D.L. & Harrington, K. 2003, "Infrequent parental monitoring predicts sexually transmitted infections among low-income African American female adolescents", *Archives of Pediatrics & Adolescent Medicine,* vol. 157, no. 2, pp. 169-173.	Sample selected from an RCT. it looks at perceptions. Not looking at an intervention.
14.	Crosby, R.A., Newman, D., Kamb, M.L., Zenilman, J., Douglas, J.M.,Jr & Iatesta, M. 2000, "Misconceptions about STD-protective behavior", *American Journal of Preventive Medicine,* vol. 19, no. 3, pp. 167-173.	Not an intervention-but data used for analysis in this article.
15.	Crosby, R., DiClemente, R.J., Wingood, G.M., Sionean, C., Cobb, B.K., Harrington, K., Davies, S., Hook, E.W.,3rd & Oh, M.K. 2001, "Correct condom application among African-American adolescent females: the relationship to perceived self-efficacy and the association to confirmed STDs", *Journal of Adolescent Health,* vol. 29, no. 3, pp. 194-199.	Not an intervention
16.	Coyle, K., Basen-Engquist, K., Kirby, D., Parcel, G., Banspach, S., Collins, J., Baumler, E., Carvajal, S. & Harrist, R. 2001, "Safer choices: reducing teen pregnancy, HIV, and STDs", *Public health reports,* vol. 116, no. Suppl 1, pp. 82-93.	Multiple Publication of same intervention in another journal.2004 publication included.
17.	DiClemente, R.J. & Wingood, G.M. 1995, "A randomized controlled trial of an HIV sexual risk-reduction intervention for young African-American women", *JAMA: Journal of the American Medical Association,* vol. 274, no. 16, pp. 1271-1276.	Published in 1995
18.	Das, S., Sabin, C., Wade, A. & Allan, S. 2005, "Sociodemography of genital co-infection with Neisseria gonorrhoeae and Chlamydia trachomatis in Coventry, UK", *International Journal of STD & AIDS,* vol. 16, no. 4, pp. 318-322.	No intervention assessed or reported. Epidemiological study to assess the incidence of co-infection of gonorrhoea and chlamydia.
19.	Dancy, B.L., Marcantonio, R. & Norr, K. 2000, "The long-term effectiveness of an HIV prevention intervention for low- income African American women", *AIDS Education & Prevention,* vol. 12, no. 2, pp. 113-125.	Mean age 31, 33 years .
20.	Dickson-Gomez, J., Knowlton, A. & Latkin, C. 2003, "Hoppers and oldheads: Qualitative evaluation of a volunteer AIDS outreach intervention", *AIDS & Behavior,* vol. 7, no. 3, pp. 303-315.	Median age of participants was 35 years, not focussed on young people.
21.	Donenberg, G.R., Schwartz, R.M., Emerson, E., Wilson, H.W., Bryant, F.B. & Coleman, G. 2005, "Applying a cognitive-behavioral model of HIV risk to youths in psychiatric care", *AIDS Education & Prevention,* vol. 17, no. 3, pp. 200-216.	No intervention
22.	Elford, J., Hart, G., Sherr, L., Williamson, L. & Bolding, G. 2002, "Peer led HIV prevention among homosexual men in Britain", *Sexually transmitted infections,* vol. 78, no. 3, pp. 158-159.	Editorial
23.	Fang, X., Stanton, B., Li, X., Feigelman, S. & Baldwin, R. 1998, "Similarities in sexual activity and condom use among friends within groups before and after a risk-reduction intervention", *Youth & Society,* vol. 29, no. 4, pp. 431-450.	Multiple publication of the article
24.	Gardner, L.I., Metsch, L.R., Anderson-Mahoney, P., Loughlin, A.M., Del Rio, C., Strathdee, S., Sansom, S.L., Siegal, H.A., Greenberg, A.E. & Holmberg, S.D. 2005, "Efficacy of a brief case management intervention to link recently diagnosed HIV-infected persons to care", *AIDS,* vol. 19, no. 4, pp. 423-431.	Does not focus on young people. Focused on HIV infected people.

25.	Goicoechea-Balbona, A. 1998, "Children with HIV/AIDS and their families: a successful social work intervention based on the culturally specific health care model", *Health & social work,* vol. 23, no. 1, pp. 61-69.	Hiv families and their babies. Not useful for our review.
26.	Greening, L., Stoppelbein, L. & Jackson, M. 2001, "Health education programs to prevent teen pregnancy", *Journal of Adolescent Health,* vol. 28, no. 4, pp. 257-258.	No intervention. Evaluates the utility of a health belief model for predicting contraceptive behaviour among rural African American adolescents.
27.	Hutchinson, M.K., Jemmott, J.B.,3rd, Jemmott, L.S., Braverman, P. & Fong, G.T. 2003, "The role of mother-daughter sexual risk communication in reducing sexual risk behaviors among urban adolescent females: a prospective study", *Journal of Adolescent Health,* vol. 33, no. 2, pp. 98-107.	Not an intervention but a prospective study
28.	Korte, J.E., Shain, R.N., Holden, A.E., Piper, J.M., Perdue, S.T., Champion, J.D. & Sterneckert, K. 2004, "Reduction in sexual risk behaviors and infection rates among African Americans and Mexican Americans", *Sexually transmitted diseases,* vol. 31, no. 3, pp. 166-173.	Multiple publication
29.	Lesser, J., Verdugo, R.L., Koniak-Griffin, D., Tello, J., Kappos, B. & Cumberland, W.G. 2005, "Respecting and protecting our relationships: a community research HIV prevention program for teen fathers and mothers", *AIDS Education & Prevention,* vol. 17, no. 4, pp. 347-360.	Only preliminary data reported on very small sample size.
30.	Li, X., Stanton, B., Galbraith, J., Burns, J., Cottrell, L. & Pack, R. 2002, "Parental monitoring intervention: practice makes perfect", *Journal of the National Medical Association,* vol. 94, no. 5, pp. 364-370.	Multiple publication
31.	Low, N. 2002, "Phase specific strategies for the prevention, control, and elimination of sexually transmitted infections: Case study in Lambeth, Southwark, and Lewisham, London, UK", *Sexually transmitted infections,* vol. 78, no. SUPPL. 1, pp. 133-138.	Talks about strategies. The paper talks about targeted interventions in brief. The detailed article of the intervention is included.
32.	McCormick, A., McKay, M.M., Wilson, M., McKinney, L., Paikoff, R., Bell, C., Baptiste, D., Coleman, D., Gillming, G., Madison, S. & Scott, R. 2000, "Involving families in an urban HIV preventive intervention: how community collaboration addresses barriers to participation", *AIDS Education & Prevention,* vol. 12, no. 4, pp. 299-307.	No evaluation of intervention
33.	Moss, N.J., Gallaread, A., Siller, J. & Klausner, J.D. 2004, ""Street medicine": Collaborating with a faith-based organization to screen at-risk youths for sexually transmitted diseases", *American Journal of Public Health,* vol. 94, no. 7, pp. 1081-1084.	A detailed description of the intervention was given, but no real evaluation of the intervention in terms of improving sexual health of young people.
34.	O'Donnell, L., San Doval, A., Duran, R. & O'Donnell, C.R. 1995, "The effectiveness of video-based interventions in promoting condom acquisition among STD clinic patients", *Sexually transmitted diseases,* vol. 22, no. 2, pp. 97-103.	1995 publication
35.	O'Donnell, L., Stueve, A., San Doval, A., Duran, R., Haber, D., Atnafou, R., Johnson, N., Grant, U., Murray, H., Juhn, G., Tang, J. & Piessens, P. 1999, "The effectiveness of the Reach for Health Community Youth Service learning program in reducing early and unprotected sex among urban middle school students", *American Journal of Public Health,* vol. 89, no. 2, pp. 176-181.	Multiple publication in another journal
36.	Oliva, G., Rienks, J., Udoh, I. & Smith, C.D. 2005, "A university and community-based organization collaboration to build capacity to develop, implement, and evaluate an innovative HIV prevention intervention for an urban African American population", *AIDS*	Age group 18-55.,only 25% of sample under 25years. Analysis not done as per age groups.

	Education & Prevention, vol. 17, no. 4, pp. 300-316.	
37.	Operario, D., Nemoto, T., Ng, T., Syed, J. & Mazarei, M. 2005, "Conducting HIV interventions for Asian Pacific Islander men who have sex with men: Challenges and compromises in community collaborative research", *AIDS Education & Prevention,* vol. 17, no. 4, pp. 334-346.	No evaluation of intervention
38.	Peragallo, N., Deforge, B., O'Campo, P., Lee, S.M., Kim, Y.J., Cianelli, R. & Ferrer, L. 2005, "A randomized clinical trial of an HIV-risk-reduction intervention among low-income Latina women", *Nursing research,* vol. 54, no. 2, pp. 108-118.	Sample age is 18-44yrs.Mean ages is not given and less than 25% of the sample fall under our inclusion criteria.
39.	Pinkerton, S.D., Holtgrave, D.R. & Jemmott, J.B. 2000, "Economic evaluation of HIV risk reduction intervention in African-American male adolescents (Structured abstract)", *Journal of acquired immune deficiency syndromes,* vol. 25, no. 2, pp. 164-172.	Economic evaluation of an intervention
40.	Philliber, S., Kaye, J.W., Herrling, S. & West, E. 2002, "Preventing pregnancy and improving health care access among teenagers: an evaluation of the children's aid society-carrera program", *Perspectives on sexual and reproductive health,* vol. 34, no. 5, pp. 244-251.	Not sure of the intervention status.
41.	Raj, A., Amaro, H., Cranston, K., Martin, B., Cabral, H., Navarro, A. & Conron, K. 2001, "Is a general women's health promotion program as effective as an HIV-intensive prevention program in reducing HIV risk among Hispanic women?", *Public health reports,* vol. 116, no. 6, pp. 599-607.	Mean age is 28years.
42.	RIPPLE Study Team. Randomized Intervention of PuPil-Led sex Education 2002, "Peer-led sex education--characteristics of peer educators and their perceptions of the impact on them of participation in a peer education programme", *Health education research,* vol. 17, no. 3, pp. 327-337.	Excluded as there is no breakdown of data for ethnic minorities and the majority of the sample are White.
43.	Robinson, B.B., Uhl, G., Miner, M., Bockting, W.O., Scheltema, K.E., Rosser, B.R. & Westover, B. 2002, "Evaluation of a sexual health approach to prevent HIV among low income, urban, primarily African American women: results of a randomized controlled trial", *AIDS Education & Prevention,* vol. 14, no. 3 Suppl A, pp. 81-96.	The sample age is 18-44 yrs. mean age of the sample not given.
44.	Rogers, A.S., Futterman, D.K., Moscicki, A.B., Wilson, C.M., Ellenberg, J. & Vermund, S.H. 1998, "The REACH Project of the Adolescent Medicine HIV/AIDS Research Network: design, methods, and selected characteristics of participants", *Journal of Adolescent Health,* vol. 22, no. 4, pp. 300-11. (42 ref).	The intervention is Clinical rather than behavioural
45.	Rhodes, S.D. 2004, "Hookups or health promotion? An exploratory study of a chat room-based HIV prevention intervention for men who have sex with men", *AIDS Education and Prevention,* vol. 16, no. 4, pp. 315-327.	Mean age 31 years
46.	Saul, J., Moore, J., Murphy, S.T. & Miller, L.C. 2004, "Relationship violence and women's reactions to male- and female-controlled HIV prevention methods", *AIDS & Behavior,* vol. 8, no. 2, pp. 207-214.	Not an intervention.
47.	Sethi, G., Lacey, C.J., Fenton, K.A., Williams, I.G., Fox, E., Sabin, C.A., Shaw, A. & Kapembwa, M. 2004, "South Asians with HIV in London: Is it time to rethink sexual health service delivery to meet the needs of heterosexual ethnic minorities? [4]", *Sexually transmitted infections,* vol. 80, no. 1, pp. 75-76.	Not an intervention
48.	Staehelin, C., Egloff, N., Rickenbach, M., Kopp, C., Furrer, H. & Swiss HIV Cohort, S. 2004, "Migrants from sub-Saharan Africa in the Swiss	Not an intervention

	HIV Cohort Study: a single center study of epidemiologic migration-specific and clinical features", *AIDS Patient Care & Stds,* vol. 18, no. 11, pp. 665-675.	
49.	St Lawrence, J.S., Brasfield, T.L., Jefferson, K.W., Alleyne, E., O'Bannon III, R.E. & Shirley, A. 1995, "Cognitive-behavioral intervention to reduce African American adolescents' risk for HIV infection", *Journal of Consulting & Clinical Psychology,* vol. 63, no. 2, pp. 221-237.	1995 publication
50.	St Lawrence, J.S., Crosby, R.A., Brasfield, T.L. & O'Bannon III, R.E. 2002, "Reducing STD and HIV risk behavior of substance-dependent adolescents: A randomized controlled trial", *Journal of Consulting & Clinical Psychology,* vol. 70, no. 4, pp. 1010-1021.	Not focussing on ethnic minorities and neither analysing by it.
51.	Stanton, B., Fang, X., Li, X., Feigelman, S., Galbraith, J. & Ricardo, I. 1997, "Evolution of risk behaviors over 2 years among a cohort of urban African American adolescents", *Archives of Pediatrics & Adolescent Medicine,* vol. 151, no. 4, pp. 398-406.	Multiple publication in different journals
52.	Stanton, B.F., Li, X., Galbraith, J., Cornick, G., Feigelman, S., Kaljee, L. & Zhou, Y. 2000, "Parental underestimates of adolescent risk behavior: A randomized, controlled trial of a parental monitoring intervention", *Journal of Adolescent Health,* vol. 26, no. 1, pp. 18-26.	Data used from another article. Multiple publication in different journals
53.	Stanton, B.F., Li, X., Ricardo, I., Galbraith, J., Feigelman, S. & Kaljee, L. 1996, "A randomized, controlled effectiveness trial of an AIDS prevention program for low-income African-American youths", *Archives of Pediatrics & Adolescent Medicine,* vol. 150, no. 4, pp. 363-372.	Multiple publication in different journals
54.	Stevens, S.J. & Estrada, A.L. 1996, "Reducing HIV risk behaviors: Perceptions of HIV risk and stage of change", *Journal of Drug Issues,* vol. 26, no. 3, pp. 607-618.	No split of data as per age groups. Mean age is 37.4yrs
55.	Stevens-Simon, C., Dolgan, J.I., Kelly, L. & Singer, D. 1997, "The effect of monetary incentives and peer support groups on repeat adolescent pregnancies. A randomized trial of the Dollar-a-Day Program", *JAMA : the journal of the American Medical Association,* vol. 277, no. 12, pp. 977-982.	The intervention is neither aimed at ethnic minorities nor analysed by ethnic subgroups.
56.	Stephens, T., Braithwaite, R.L. & Taylor, S.E. 1998, "Model for using hip-hop music for small group HIV/AIDS prevention counseling with African American adolescents and young adults", *Patient Education & Counseling,* vol. 35, no. 2, pp. 127-137.	Describes the intervention but there is no evaluation of the intervention.
57.	Sweat, M., O, apos, Donnell, C., O, apos & Donnell, L. 2001, "Cost-effectiveness of a brief video-based HIV intervention for African American and Latino sexually transmitted disease clinic clients (Structured abstract)", *AIDS,* vol. 15, no. 6, pp. 781-787.	Economic evaluation of an intervention
58.	Wang, L.Y., Davis, M., Robin, L., Collins, J., Coyle, K. & Baumler, E. 2000, "Economic evaluation of safer choices: a school-based human immunodeficiency virus, other sexually transmitted diseases, and pregnancy prevention program (Structured abstract)", *Archives of Pediatrics & Adolescent Medicine,* vol. 154, no. 10, pp. 1017-1024.	Economic evaluation of an intervention
59.	Wingood, G.M., DiClemente, R.J., Bernhardt, J.M., Harrington, K., Davies, S.L., Robillard, A. & Hook III, E.W. 2003, "A prospective study of exposure to rap music videos and African American female adolescents' health", *American Journal of Public Health,* vol. 93, no. 3, pp. 437-439.	No intervention noted. A prospective study.
60.	Wingood, G.M., DiClemente, R.J., Harrington, K., Davies, S., Hook III, E.W. & Oh, M.K. 2001, "Exposure to X-rated movies and adolescents' sexual and contraceptive-related attitudes and behaviors", *Pediatrics,* vol. 107, no. 5, pp. 1116-1119.	Not an intervention

61.	Wagstaff, D.A., Delamater, J.D. & Havens, K.K. 1999, "Subsequent infection among adolescent African-American males attending a sexually transmitted disease clinic", *Journal of Adolescent Health,* vol. 25, no. 3, pp. 217-226.	The paper is about identifying predictors of re-infection rather than comparing interventions or looking at the effect of the educational interventions.
62.	Walter, H.J. & Vaughan, R.D. 1993, "AIDS risk reduction among a multiethnic sample of urban high school students", *Journal of the American Medical Association,* vol. 270, no. 6, pp. 725-730.	No analysis of the effect of intervention reported by ethnic background.
63.	Winett, R.A. & Kalichman, S.C. 1996, "HIV sexual risk-reduction interventions for African-American women.[comment]", *JAMA,* vol. 275, no. 8, pp. 593.	Letter related to an article published in 1995 by DiClemente.
64.	Williamson, L.M., Hart, G.J., Flowers, P., Frankis, J.S. & Der, G.J. 2001, "The Gay Men's Task Force: The impact of peer education on the sexual health behaviour of homosexual men in Glasgow", *Sexually transmitted infections,* vol. 77, no. 6, pp. 427-432.	Mean age 32.1 yrs. sample ethnicity not described.
65.	Worth, H., Denholm, N. & Bannister, J. 2003, "HIV/AIDS and the African Refugee Education Program in New Zealand", *AIDS Education & Prevention,* vol. 15, no. 4, pp. 346-356.	Mean age not known. Age range from 20-35 years.
66.	Wu, Y., Stanton, B.F., Galbraith, J., Kaljee, L., Cottrell, L., Li, X., Harris, C.V., D'Alessandri, D. & Burns, J.M. 2003, "Sustaining and broadening intervention impact: a longitudinal randomized trial of 3 adolescent risk reduction approaches", *Pediatrics,* vol. 111, no. 1): Supplement, pp. e32-8.	Multiple publication
67.	Yoo, S., Johnson, C.C., Rice, J. & Manuel, P. 2004, "A qualitative evaluation of the Students of Service (SOS) Program for sexual abstinence in Louisiana", *Journal of School Health,* vol. 74, no. 8, pp. 329-334.	Majority of sample white population
68.	Ziersch, A., Gaffney, J. & Tomlinson, D.R. 2000, "STI prevention and the male sex industry in London: Evaluating a pilot peer education programme", *Sexually transmitted infections,* vol. 76, no. 6, pp. 447-453.	The majority of the samples were from White ethnic background.

Appendix 6-Grey literature references

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Bakshi, N., Ross, R., Heim, D. 2002, Drug and Alcohol issues Affecting Pakistani, Indian and Chinese Young people and their Communities: A Study in Greater Glasgow, Greater Glasgow NHS Health Board.

Barr, A., Bettie, J. 2002, Towards effective policy and practice for black and minority ethnic young people: An enquiry for the Glasgow Anti-Racist Alliance (GARA), Scottish Community Development Centre, Edinburgh.

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