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**STI risk exposure among black and minority ethnic youth in Northwest London: findings from a study translating an STI risk-reduction intervention to the UK setting.**

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**Title:** STI risk exposure among black and minority ethnic youth in Northwest London: findings from a study translating an STI risk-reduction intervention to the UK setting.

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## **ABSTRACT**

**Objectives:** Young black women are disproportionately affected by sexually transmitted infections (STIs) in the UK, but effective interventions to address this are lacking. The Young Brent Project explored the nature and context of sexual risk-taking in young people to inform the translation of an effective clinic-based STI reduction intervention (Project SAFE) from the US to the UK.

**Methods:** One-to-one in-depth interviews (n=37) and group discussions (n=10) were conducted among men and women aged 15 to 27 from different ethnic backgrounds recruited from youth and genito-urinary medicine clinic settings in Brent, London. The interviews explored the context within which STI-related risks were assessed, experienced and avoided; the skills needed to recognise risk; and the barriers to behaviour change.

**Results:** Concurrent sexual partnerships, mismatched perceptions and expectations, and barriers to condom use contributed to STI risk exposure and difficulties in implementing risk-reduction strategies. Women attempted to achieve monogamy, but experienced complex and fluid sexual relationships. Low risk awareness, flawed partner risk assessments, negative perceptions of condoms and lack of control hindered condom use. While men made conscious decisions, women experienced persuasion, deceit and difficulty in requesting condom use, particularly with older partners.

**Conclusions:** Knowledge of STIs and condom use skills are not enough to equip young people with the means to reduce STI risk. Interventions with young women need to place greater emphasis on: entering and maintaining healthy relationships; awareness of risks attached to different forms of concurrency and how concurrency arises; skills to redress power imbalances; and building self-esteem.

## **INTRODUCTION**

Young women, under 25 years of age and those from black ethnic backgrounds are disproportionately affected by sexually transmitted infections (STIs) in the United Kingdom (UK).[1] In 2006, young women accounted for 74% of Chlamydia, and 64% of genital warts diagnoses in women. A UK study of three genito-urinary medicine (GUM) clinics identified younger age (in females) and Caribbean ethnicity among the key determinants of STI re-infection within 1 year of a previous diagnosis.[2] Effective interventions are needed in the UK to address these high STI rates.[3] However, there are few effective interventions, evaluated using randomised controlled trials (RCTs), available in community or sexual health settings.[4-6]

The Young Brent Project is a UK Medical Research Council funded study exploring the feasibility of adapting Project SAFE (Sexual Awareness For Everyone) across cultural and service contexts from the United States to young people in the UK. Project SAFE is a highly effective behavioural cognitive intervention developed to reduce STI re-infection in low-income African-American and Mexican-American women in San Antonio, Texas.[7] It comprises three sessions lasting 3-4 hours held once a week with small groups of women (n=5-6) from a single ethnic background with a recent nonviral STI. The sessions are delivered through interactive facilitation techniques and correspond to the AIDS Risk Reduction Model: 1) recognition of one's risk; 2) committing to reducing risk; and 3) enacting practical effective solutions.[7,8] Efficacy was demonstrated in two RCTs over 1 and 2 years follow-up with STI infection rates cumulatively 39.8% higher in the control group compared to the intervention group.[7,9]

This paper presents data on barriers to uptake of risk-reduction strategies revealed during the qualitative phase of our translation research, the Young Brent Project. Perceptions and context of risk behaviours were explored to determine the necessary changes to Project SAFE to ensure relevance to the UK target group. Details of the translation process are presented elsewhere.[10]

## **METHODS**

Between October 2006 and February 2007 two female researchers conducted one-to-one in-depth interviews (n=37) and group discussions (n=10; 2-10 participants per group) in Northwest London (Brent) with men and women aged 15-27 years from different ethnic backgrounds. Brent was selected as an ethnically diverse borough with a high black Caribbean population, and high deprivation and teenage pregnancy rates.[11,12]

Participants were purposively selected by age, sex and type of recruitment site to include diverse sexual behaviours and experiences. Recruitment sites included a GUM clinic, an employment programme, a specialist education service for those not attending mainstream school, youth clubs and addiction and teenage pregnancy services. Group discussions were conducted with pre-existing youth groups from a sub-set of these sites and were of mixed age, sex and ethnicity. Interviews and group discussions were conducted concurrently, enabling us to explore data gathered in one session further in the next and engage with group dynamics, group norms and individual perspectives while triangulating findings.

Participants of different ethnic backgrounds were recruited after community consultations identified a need for our translated intervention to be inclusive rather than

targeting only young black Caribbean women. Although Project SAFE was aimed at women, men were included in the formative research to provide further insight into the factors contributing to STI re-infection in women. Table 1 summarises the sample characteristics.

All participants received an information sheet about the project and a sexual health website/helpline sheet. Signed consent was obtained from all participants. In-depth interviews were conducted at the recruitment site or another location preferred by participants, using a topic guide covering life circumstances, awareness and perceived risk of STIs, sexual experiences, pregnancy, alcohol and drug use. Visual aids and role-play techniques were used in the group discussions to help participants articulate their views on desirable/undesirable partner characteristics, cultural and gender differences, STI risk situations and the ease/ difficulty of discussing sexual history, sex, condoms and STIs with partners. Interviews were audio-recorded, transcribed verbatim and analysed using the principles of Framework.[13,14] Interview content was organised into themes derived from the topic guide and interview narratives. Using Excel as a data-management tool, similarities and differences between individuals and groups were identified. Two researchers crosschecked transcripts, derived themes and charts.

The study was approved by the Brent Medical Ethics Committee.

**Table 1** Sample characteristics

| <b>In-depth interviews</b>                                     |               |             |              |
|--|---------------|-------------|--------------|
| <b>Characteristics</b>   | <b>Female</b> | <b>Male</b> | <b>Total</b> |
| <b>Age (years)</b>   |               |             |              |
| 15-17  | 6             | 5           | 11           |
| 18-20  | 10            | 4           | 14           |
| 21-24  | 7             | 5           | 12           |
| <b>Recruitment site</b>  |               |             |              |
| GUM clinic   | 9             | 3           | 12           |
| Teenage pregnancy services                                     | 5             | 0           | 5            |
| Youth - general services                                       | 5             | 4           | 9            |
| Youth - specialist services                                    | 4             | 7           | 11           |
| <b>Ethnicity*</b>  |               |             |              |
| Black African  | 4             | 3           | 7            |
| Black Caribbean  | 7             | 2           | 9            |
| Black British  | 4             | 3           | 7            |
| African British/ British Caribbean/<br>Black African Caribbean | 3             | 2           | 5            |
| White British/ White Kosovan                                   | 2             | 2           | 4            |
| Mixed race   | 1             | 2           | 3            |
| Asian  | 2             | 0           | 2            |
| <b>Relationship status</b>                                     |               |             |              |
| Single   | 12            | 8           | 20           |
| Has partner  | 11            | 6           | 17           |
| <b>UK born</b>   | 13            | 9           | 22           |
| <b>Past STI</b>  | 6             | 4           | 10           |
| <b>Teenage parenthood</b>                                      | 10            | 3           | 13           |
| <b>TOTAL</b>   | <b>23</b>     | <b>14</b>   | <b>37</b>    |

\* as defined by participants

| <b>Group discussions</b>  |                                |                              |                              |
|---|--------------------------------|------------------------------|------------------------------|
| <b>Group Composition</b>  |                                |                              |                              |
| <b>Type of group<br/>(n=number of group discussions)<br/>ethnic mix ‡</b>               | <b>Female<br/>participants</b> | <b>Male<br/>participants</b> | <b>Age range<br/>(years)</b> |
| <b>Specialist addiction group (n=1)</b><br>1 black, 1 mixed race, 2 Asian youths        | <b>1</b>                       | <b>3</b>                     | <b>22-27</b>                 |
| <b>Youth group (n=2)</b>  | <b>7</b>                       | <b>2</b>                     | <b>17-24</b>                 |
| 4 black youths,   | 3                              | 1                            | 19-24                        |
| 2 black, 1 mixed race, 2 white youths   | 5                              | 1                            | 17-24                        |
| <b>Looked after young people's group (n=1)</b><br>7 black, 2 mixed race, 1 white youths | <b>5</b>                       | <b>5</b>                     | <b>15-17</b>                 |

Table 1 continued **Sample characteristics**

| <b>Type of group<br/>(n=number of group discussions)<br/>ethnic mix‡</b>              | <b>Female<br/>participants</b> | <b>Male<br/>participants</b> | <b>Age range<br/>(years)</b> |
|---|--------------------------------|------------------------------|------------------------------|
| <b>Specialist educational service (n=6)</b><br>black, mixed race, Asian, white youths | <b>4</b>                       | <b>12</b>                    | <b>15-16</b>                 |
|   | 0                              | 2                            | 15                           |
|   | 1                              | 1                            | 15                           |
|   | 1                              | 1                            | 15                           |
|   | 1                              | 3                            | 15-16                        |
|   | 1                              | 2                            | 15                           |
|   | 0                              | 3                            | 16                           |

‡ participants in the group discussions were not asked to define their ethnic background. Broad details are from discussion content and researcher recall. For the sessions at the specialist education service it was not possible to determine the ethnic background of each individual so only the broad overall site ethnic mix is reported.

## RESULTS

Avoidance of STIs was a concern for young people. In some instances, low perceived vulnerability to STIs arose due to limited STI/HIV knowledge and over reliance on obvious symptoms. However, STI risk exposure also occurred among those with good knowledge who had intentions to minimise risk or believed they were adopting appropriate risk-reducing strategies. Even STI experiences did not always lead to a re-evaluation of strategies or consistent condom use.

Risk reducing strategies described by young people included getting to know partners before sex, STI testing before stopping condom use, entering only mutually monogamous relationships, using condoms outside relationships or with new partners, and in a few instances consistent condom use. Here we focus on the three dominant factors that contributed to STI risk exposure and difficulties in implementing risk-reduction strategies: (i) concurrent sexual partnerships, (ii) mismatch of perceptions and expectations, and (iii) barriers to condom use.



## **Concurrent relationships**

Although young people aspired to monogamous relationships, concurrent sexual partnerships were common and occurred as casual encounters within relationships, between relationships and as coterminous relationships. STI risk exposure could be active with the participant having multiple sexual partners, or passive where a participant's partner had multiple partners. Table 2 summarises the types of concurrent relationships identified and box 1 provides explanatory quotes.

### Active concurrent partnerships while single

Young people described casual partners as 'links'. Some younger men felt it was important to have several 'links' available particularly for sex when single. Men described little emotion or respect and no expectation of monogamy from 'links'. This increased the likelihood of multiple partners and STI risk. In contrast, women reported being in a vulnerable emotional state when having casual partners and concurrent partners, describing heartbreak, times of confusion and loneliness.

### Active concurrent partnerships within relationships

Both males and females reported sex outside their relationships or with someone who already had a partner. Women attributed this to being bored with a partner, unable to end a relationship, being in an emotionally vulnerable state such as seeking revenge for a partner's infidelity and revisiting previous partners because of lingering feelings or familiarity. Men explained needing sex when regular partners were unavailable, wanting more varied sex or to prevent boredom, and difficulty resisting temptation. Some saw their ability to persuade other women to have sex as a way to boost self-esteem.

**Table 2** Concurrent sexual partnerships- circumstances, type and risk

| <b>Circumstances and type of concurrent sexual partnerships</b>         | <b>Examples</b>  |
|---|--|
| <i>Active* concurrency while single (no regular partner)</i>            |  |
| Repeat encounters in a short space of time with more than one partner   | 'Links' (casual sex partners), who may also in turn have multiple partners. No expectation of monogamy. Men in particular spoke of having many 'links' and meeting them for sex.   |
| <i>Active* concurrency within relationships (own or partner's)</i>      |  |
| Sexual encounters with past partners                                    | Mainly described by women when feelings for a past partner (including 'baby father' i.e. the man who fathered their baby but with whom they are not in a regular relationship) remained or sexual encounters continued after that relationship ended and a new one had begun.  |
| Sex with someone known to have other casual sexual partners             | Men had no expectation from 'links' to be their only partner. Some exchanged mobile phone numbers with friends or visited 'links' with friends.  |
| Sex with a person known to be in a relationship with someone else       | This would be understood by both individuals to be a relationship based on sex only. When reported by women it was described as occurring during emotionally vulnerable times.   |
| Sex outside the relationship with regular partner(s)                    | Occurs when relationships are in transition, for example when one relationship is ending and sex starts with a new partner; or if sex with a regular sex partner continues after another relationship is established; or for men, when sex starts with a girlfriend who wanted to wait and continues with existing sex partner(s). |
| <i>Passive † concurrency within relationships</i>                       |  |
| Partner has casual sex outside the relationship                         | Described mainly by women who discovered their partner was cheating while they had believed they were in a monogamous relationship.  |
| Partner has sex with another regular partner outside 'the relationship' | Described only by women who had believed they were their partner's girlfriend and in a monogamous relationship, whereas he already had a girlfriend.   |

\* Known multiple partnerships

† Partner's multiple partnership- unknown

Experiences of sex outside their relationships were viewed by some young people as: (1) intentional when there was an intent to cheat, whether for revenge, pleasure or personal satisfaction; or (2) unintentional as a result of excess alcohol or an opportunity occurring during unhappy or transitional relationships.

#### Passive concurrent partnerships within relationships

Women reported exposure to STI risk having agreed not to use condoms within what they believed were mutually monogamous relationships, unaware of their partner's other sexual partner(s) or having misjudged their relationship status as permanent rather than casual. While expressing that sharing a partner was unacceptable, some women stayed in relationships when suspecting or after discovering infidelity. Condom use was not necessarily consistently enforced but some women used regular STI testing as a strategy to ascertain fidelity and be safe. In contrast men generally believed that their girlfriends did not have sex with other men and that it would be otherwise unacceptable.

#### **Perceptions and expectations (box 1)**

A mismatch between men and women in their perceptions and expectations of regular and casual partners had an important impact on risk-reduction strategies. Men mainly described distinct partner categories while women's perceptions were more fluid and underpinned by greater expectations or hope of casual encounters developing into more committed relationships. Women also reported establishing sex-only relationships to avoid emotional entanglements, but these distinctions could be difficult for them to maintain.

Although some women expressed feeling lonely without a boyfriend, none claimed they needed one. Nonetheless, the ability to end undesirable relationships was problematic for some women, particularly when confidence was associated with male attention. This vulnerability was labeled as low self-esteem by some while others described lacking confidence, low expectations of partners and difficulty communicating with partners without labeling them as low self-esteem. Furthermore, strong feelings for a partner and insecurity in finding and rebuilding the same closeness made leaving a cheating partner difficult.

**Box 1** Concurrent relationships, perceptions and expectations

**Concurrent partnerships while single**

*"This was after I split up with the love of my life... he'd left me for another girl... I turned really, really horrible in the space of about a year."* Female, age 23, interview

**Active concurrent partnerships within a relationship**

*"[After bad break up] There was one situation where actually I met this guy at college ... he said I've got a girlfriend. I said I don't care, I didn't ask you about your girlfriend."* Female, age 23, interview

**Intentional**

*"It's for myself not just to stop me from getting bored [of my girl]. Cause girls are different. They can look in the mirror and think 'oh I look good!' ...Same way I need something to big myself up. Girls can do their nails, do their hair, makeup, put nice tight dresses... All we can do is get a hair cut, maybe a massage."* Male, age 24, focus group

**Unintentional**

*"I was going out with this guy that I'd been seeing for a year and ...[I] just had sex with this [other] guy on a drunken night and it was nothing...there was no need for it, I'm not having problems with my relationship."* Female, age 19, interview

*"When I get into a relationship I don't want to be sleeping with other girls. Things happen because the relationship is not healthy or you could be drunk one night... it just happens by mistake, it could be an accident."* Male, age 22, focus group

**Passive concurrent partnerships within a relationship**

*"He was with another girl but he told me that they broke up and then when I found out I was pregnant she was pregnant so...our kids are one day apart."* Female, age 19, interview

*"My friends were like... you've got chlamydia and he's obviously cheating on you. And I was so blind to it I was like no, no, no he's all right. I don't know I might have got it somewhere or another but I didn't listen to them... I just went to clinic got myself checked out...[just] carried on."* Female, age 24, interview

*"Obviously we're together but I still don't trust him a hundred percent... I don't know ...If something's put on a plate, whatever, even though we're in a relationship you don't know what they'll do [men]."* Female, age 18, interview

### **Box 1 continued** Concurrent relationships, perceptions and expectations

#### **Expectations**

*“Just ‘cause of the way that I felt about him and how he [said] that he was sorry and it was a mistake and... ‘cause.. (pause) I believe it was a mistake, that he was sorry. So I just decided to have a go at it [the relationship] again.”* Female, age 18, interview

*“It was OK for him to do it [cheat] because he was a man. It wasn’t OK for me to do it because I was his woman. But to me I don’t understand that, men, a lot of men, think like that. If you’re going to cheat on your man he’ll never ever accept you back.”* Female, age 24, interview

[Girlfriends cannot sleep with another man] *“they’re not meant to be misbehaving, meant to be... a one man girl only.”* Male, age 22, interview

*“I think every single person [6 men] I’ve slept with has had sex with someone else whilst they’ve been sleeping with me... Yeah two I didn’t think [were] sleeping with other people I found out later.”* Female, age 23, interview

#### **Confused relationship status perceptions**

*“The only person I have been with [recently] is my daughter’s dad.... I think I do it because if I do feel like I need to sleep with someone he’s the easiest person to go to... We spend a lot of time together and we go out, we do everything that people in a relationship would do... on the one hand I’m saying to you we’re not together but you can’t sleep with anyone else, it’s sort of sending mixed messages... Just don’t want [relationship]... So much has happened throughout the years and I think I hold grudges! And until I can sort of say all right then I’m going to get past that, there’s nothing would ever come of it.”* Female, age 23, interview

### **Barriers to condom use**

Condom use was recognised as the main way of preventing STI transmission but consistent use was rarely achieved (box 2).

#### **Defined by relationship**

Condom use was deemed necessary for sex outside a relationship, with ‘links’ or unfamiliar partners. It did not occur or was inconsistent within relationships with partners trusted to be STI free, and/or with partners after GUM check-ups.

Overestimating relationship status was a problem among women whereas some men but no women described deciding not to use condoms, despite perceived risk.

### Defined by partner risk perceptions

Young people generally accepted that anyone could have an STI and that you cannot tell by looking; however, females spoke of taking into account closeness, knowledge of past partners and 'vibes' in assessing partners' STI risk. Males in turn categorised girls, which determined STI risk and the nature of their relationship. They spoke about 'good' and 'bad' girls based on reputation, behaviour, appearance, previous partners and the ease with which they were willing to have sex.

### Perceptions of condoms

Associating condom with reduced pleasure, interrupting sex and lack of trust hindered their use, as did limited knowledge about STIs and condoms.

### Lack of autonomy

Lack of control arising from being drunk or having sex impulsively featured frequently across accounts of unprotected sex among men and women. However, recurring overarching themes for women were: lack of control due to power imbalances within relationships and inability to express sexual needs and desires. Lack of agency undermined sex-related planning and negotiation or led to yielding control.

Experiences of having older male sexual partners were common among younger women who felt they were more sophisticated, mature and provided opportunities such as cars and money. However, age differences particularly in early relationships led to misplaced confidence in older men's condom skills, knowledge, and claims of being STI-free, as well as women yielding control to them.

Other barriers for women included: embarrassment about genitals; condoms being taken off during sex; giving in to pressure; and not knowing when and how to ask for condom use. Gender stereotypes also hindered some women's ability to carry and suggest condom-use and resulted in beliefs that sex was about a man's enjoyment and that condoms were a man's responsibility.

**Box 2: Condom use barriers- active decision vs. lack of autonomy**

**Active decision**

*" Sometimes I just take my chances...living dangerously man (laughs)... depending on the person as well...Looks, looks...That's about it really. If I find her highly attractive 'cause normally those are the ones that are passing it on as well (laughs)!... I don't know, it's just silly behaviour."* Male, age 22, interview

**Pressure**

*"Once you sort of caved in and said OK... It was a lot more difficult...I was sort of just really weak, I just didn't really stand up for myself... wanted to please him which sounds really stupid... So I just gave in."* Female, age 20, interview

**Age differences leading to power imbalances**

*"I think when I was younger it was sort of down to the guy...I think that's how I got pregnant the first time...Didn't know when to ask! ...Because he was a lot older than me...you sort of put age to experience."* Female, age 23, interview

**Embarrassment**

*"I didn't feel like I could put my hand round to check, to feel, to make sure [condom was on]... didn't even... want to look at it [penis]."* Female, age 22, interview

**DISCUSSION**

Findings from interviews, which focused on detailed past and present personal experiences and group discussions, which provided insight in peer interactions and norms within various combinations of peer groups, enabled us to understand the circumstances within which young women experience and conceptualise their STI risk.

Young women's risk-reduction strategies were undermined by: exposure to concurrency through partners incorrectly believed to be monogamous; underestimations

of personal risks; and flawed partner risk assessments. Poor communication, lack of planning, excess alcohol and condom's association with lack of trust and pleasure further restricted their use when risk was perceived. Power imbalances particularly with older men and in early relationships led women to cede control of condom use, or not have any control. Low self-esteem, low expectations of relationships and weak communication skills also created barriers to risk-reduction as high-risk relationships were maintained. The breadth and depth of skills needed by these young women to address barriers to STI risk-reduction suggest that sexual health interventions should be delivered by skilled facilitators over time rather than in the form of written information or one-off events.

Limited sexual health knowledge among young people and associated STI risks have been described in similar contexts[15,16] but we were able to understand in greater detail why those with knowledge fail to implement risk-reduction strategies.

Additionally, although young people report greater numbers of sexual partners and concurrent partnerships compared to older people[17], little previous work has focused on the context of concurrency. We found that concurrency played an important role in STI-related risk and took different forms. Differences in cause and outcome for young men and women, and different levels of agency have implications for women's risk perceptions and risk-reduction strategies which need to be considered in developing interventions that resonate with their sexual landscape.

Condom-use based on subjective assessments of partners' STI risk, and communication barriers due to social expectations and gender stereotypes, have been reported in studies worldwide.[18] Power imbalances and age differences are also risk factors in dating violence among young women.[19] These barriers to STI risk-reduction were replicated



in our findings with the benefit of contextual understanding to inform interventions. Conclusions about the association between self-esteem and sexual behaviour vary. The review by Goodson *et al* questions the linear association of self-esteem and adolescent sexual behaviour favouring the inclusion of self-efficacy, self-control and youth development in interventions.[20] As a broad concept self-esteem requires further exploration; however, the emphasis identified here and deemed necessary for the target population relates to the importance of helping young women feel empowered to consider their own emotional and sexual needs and be able to enter and maintain healthy relationships.

The purposively selected recruitment sites provided access to groups at higher risk for STIs which were the main target for the intervention; however, these tended to be located mostly in deprived areas of Brent or accessed by disadvantaged young people. Compared to England as a whole, black Caribbean and black African populations make up a two and a half times greater proportion of the population in the most deprived areas and unemployment rates are twice the average UK rate.[21,22]

The number of non-black and Asian young people interviewed is lower than planned due to limited numbers attending the selected sites, the ethnic make-up of the areas and the epidemiology of STIs in London. We did not find differences in accounts by recruitment site but the study was not designed to explore how accounts varied by site distinct from age and gender.

Whilst we may have sufficient ethnic diversity in our sample to tailor Project SAFE to the needs of young women at risk of STIs in Northwest London, further work may be required to adapt this intervention in localities with different ethnic compositions to account for different relationship and sexual behaviour norms.

We did not have sufficient numbers to make conclusive comparisons by ethnicity but found distinct variations in STI risk perceptions and behaviour based on gender rather than ethnicity or age. We also found behavioural cues derived from youth, generational and local affiliations. The strong influence of gender and common youth culture on sexual behaviour and risk-taking across ethnic groups supports research in South and East London on ethnic and cultural differences in sexual behaviour and relationships.[23,24]

Exposure to STI risk due to blind faith in partners, particularly older partners and greater naiveté about sex, were particularly problematic during early relationships. These were mainly reported as current circumstances by less experienced respondents and as past ones by more experienced ones suggesting they relate more to early relationships than age. However, problems with concurrency, relinquishing control and forming/ remaining in unhealthy relationships were not age or experience related but more general female experiences.

Social disadvantages including poverty and limited opportunities are likely to influence the identified risk behaviours;[25-27] however, investigating these in depth and tackling the key factors leading to social exclusion was beyond the scope of this study. More work needs to be done to address underlying social circumstances in the process of encouraging STI risk-reduction. Further research resulting from our findings is in progress to examine the mechanisms and wider socio-economic influences leading to risk-taking.

Project SAFE reduced STI re-infection rates by taking a multi-focused approach to encouraging the recognition and reduction of personal STI risk, including

understanding transmission, symptoms and consequences; providing a variety of risk-reduction strategies; improving communication; making condoms pleasurable; building self-esteem; and exploring relationship choices.[28] Our work indicates that these are all relevant to the UK target group and highlights the importance of addressing barriers to achieving risk-reduction strategies beyond STI knowledge, skills in condom use and condom negotiation. It identifies areas to be addressed in STI reduction interventions/ counselling and integrated with teenage pregnancy prevention targeting young women in the UK to bridge the gap between knowledge, intentions and behaviour.

Gender-based variations in experience of risk, power and communication reported here emphasise the relevance of single sex sessions to address these problems. However, lack of information, self-esteem and difficulties within relationships also affected young men. These areas require further exploration with young male participants. As we found many of the elements of Project SAFE to be relevant to STI reduction among men, the feasibility of a UK version for young men should be explored.

## **KEY MESSAGES**

- Interventions for young women need to address gender power imbalances, emotional vulnerability, low self-esteem and provide skills to enter into and maintain healthy relationships.
- Concurrency played an important role in STI-related risk among our target population and took different forms, in particular a mismatch between gendered expectations.
- Different forms of concurrency affect women's risk perceptions and risk-reduction strategies and require consideration in developing interventions that resonate with their sexual landscape.
- Sexual health interventions need to be delivered by skilled facilitators over time rather than in the form of written information or one-off events.

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None

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## **AUTHOR CONTRIBUTIONS**

JI had the original idea for the study and initiated collaboration with RS. JI developed the study design and applied for funding in collaboration with RS, GB, JE, GE, JS and JDC. CB and RF contributed to study design as members of the steering group. RS made all Project SAFE data available for the study. GH and GE took over as joint chief investigators during the first year of the project. GE supervised all aspects of the study and was responsible for the management of the grant. GE and MG carried out the fieldwork, analysis and data interpretation. MG wrote the first draft of the paper which was revised by GE. All authors contributed to subsequent drafts. MG and GE are joint guarantors.

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