Pilot study in the development of an Interactive Multimedia Learning Environment for sexual health interventions: a focus group approach

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Abstract

In the UK there are high rates of sexually transmitted infections and unintended pregnancies amongst young people. There is limited and contradictory evidence that current sexual health education interventions are effective or that they improve access to appropriate sexual health services. This paper describes the outcome of focus group work with young people that was undertaken to inform the design of an Interactive Multimedia Learning Environment that incorporates message framing, intended for use in sexual health promotion. The focus group work addressed sexual attitudes, behaviour, risk perception, and knowledge of sexual health and sexual health services in Nottingham. The results provided new insights into young peoples’ sexual behaviour, and their diversity of knowledge and beliefs. Common themes expressed regarding sexual health services included concerns about confidentiality, lack of confidence to access services and fear of the unknown. The results showed that while the adolescents are reasonably knowledgeable about infection, they do not know as much about the relevant services to treat it. This work emphasizes the need for user involvement throughout the design and development of a sexual health intervention, and will form the basis of the next part of the project.

Introduction

The incidence of sexually transmitted infections (STIs) amongst young people is increasing in England, Wales and Northern Ireland (Health Protection Agency, 2003). In addition, the teenage pregnancy rates in England and Wales are the highest in Western Europe (Social Exclusion Unit, 1992). Effective interventions need to be developed in response to this. Evidence suggests that targeted interventions are more likely to be effective given the reported differences in sexual attitudes and behaviour between the sexes and different ethnic groups (Connell et al., 2004; Ellis and Grey, 2004).

One particular aspect of good design is ensuring that the language and issues addressed meet the needs, levels of understanding and concerns of the target group (DiCenso et al., 2001; OFSTED, 2002). This paper describes data from two small focus groups designed to explore these issues, as part of a larger ongoing project, within the Trent Strategic Health Authority. The work reported is part of the developmental work designed to form the basis of an Interactive Multimedia Learning Environment (IMLE) for sexual health. At present, no such environment has been developed and the advantages of such an approach over traditional classroom approaches have recently been advanced.
However, as stated above, good design requires focusing on the language and concerns of the potential user groups [cf. (Barak and Fisher, 2001)]. Therefore, this study is designed to collect such information, and in so doing explore the concerns and issues raised by adolescents about sexual health and genitourinary medicine (GUM).

**Sexual health: the local picture**

Nottingham lies within Trent Strategic Health Authority, and comprises an inner city area surrounded by suburbs and outlying villages. It has large black and minority ethnic populations with clustering in the inner city reflecting national figures. Nottingham has some of the highest rates of STIs (*Chlamydia trachomatis* and *Neisseria gonorrhoeae*) in those aged under 25 years old (Health Protection Agency, 2003). It also has the fifth highest teen conception rate in the country with 73.5 conceptions per 1000 in those aged under 15-17 years old in 2003 compared with an average of 42.3 conceptions per 1000 for England and Wales (see the Teenage Pregnancy Unit website: http://www.dfes.gov.uk/teenagepregnancy).

**STIs: predictors and interventions**

High rates of adolescent STIs and unintended pregnancy reflect: (1) poor knowledge about acquisition and prevention of STIs, (2) lack of information and access to local services, (3) fears of lack of confidentiality, and (4) sensitivity at local services (Dicenso *et al.*, 2001). Socioeconomic factors and the complex interaction of adolescent health risk behaviour and health cognition such as risk perception also contribute to young peoples’ vulnerability (Gibbons and Gerrard, 1995).

Evidence that sexual health education interventions can successfully alter attitudes and behaviour amongst young people is contradictory, and such interventions have not always been well evaluated (Oakley *et al.*, 1995; Dicenso *et al.*, 2002). There is, however, sufficient evidence to suggest that the most successful interventions address a range of aspects of personal risk as described above (Ellis and Grey, 2004). Therefore, the work reported in this paper sets out to identify a wide variety of concerns about sexual health that can be used to develop a good IMLE for sexual health. Theoretically, this is seen as the basis of a good intervention design (Barak and Fisher, 2001; Connell *et al.*, 2004; Ellis and Grey, 2004; Vandelanotte *et al.*, 2004).

The aim of this work is to develop an intervention based on a common framework around two different methods of health intervention (computer based and message framing). Detailed below is a brief overview of the effectiveness of these two techniques.

**Computer-based interventions**

Computers are widely accessible to and frequently used by young people, and computer-based learning tools are used in other areas of education (Goold *et al.*, 2003). User-sensitive, IMLE and training packages have been developed and evaluated in national and European sponsored projects successfully tackling other aspects of social exclusion, e.g. literacy and numeracy (Neale *et al.*, 1999; Brown *et al.*, 2002). Although computer-based sexual health information and education is widely available, it has not been formally designed using this format nor adequately evaluated. There is evidence that existing general web-based sexual information may be difficult to locate (Smith *et al.*, 2000) and that the interactive design of web-based sexual health information needs to be improved (Keller *et al.*, 2004). In other areas of health promotion there is evidence that tailored computer-based interventions are seen as acceptable and usable by different user groups (Vandelanotte *et al.*, 2004). Examining drug users’ perception of a computer-based system of information gathering, Williams *et al.* (Williams *et al.*, 1998) report that respondents believe that the information that they provided will remain private and confidential. Therefore, an IMLE approach to sexual health promotion would seem an appropriate line of investigation to pursue.

Furthermore, an IMLE for sexual health has the potential for being incorporated into school-based sex education programmes with the additional potential for being accessible at other sites to young
people who may not be attending school or who have been excluded from school. It may offer an individual confidence to be able to explore more sensitive questions that they are too embarrassed to discuss with parents, peers or at school. If the IMLE is designed in a format that is popular with young people it may further encourage use, offering effective delivery of sexual health messages (Vandelanotte et al., 2004).

**Message framing**

Framing represents the phenomena whereby people respond differently when equivalent information is presented as either a gain (e.g. lives saved) or a loss (e.g. deaths) (Kahneman and Tversky, 1979, 1982). Within the realm of health behaviours, recent evidence suggests that gain frames work more effectively for prevention behaviours (e.g. using sun block) and loss frames for detection behaviours (e.g. breast self-examination) (Rothman and Salovey, 1997; Farrell et al., 2001). Types of behaviours that would be examined in relation to sexual health may also relate to prevention, in terms of disease and pregnancy prevention (e.g. using a condom, taking the oral contraceptive pill) as well as detection of disease (e.g. tests for STIs). Indeed, there is recent evidence to show that framing effects are observed with respect to the uptake of HIV screening (Apanovitch et al., 2003) and intentions to use the male hormonal contraceptive (O’Connor et al., 2005). This indicates that framing can be successful with respect to sexual health issues, and that sexual health issues relate to both prevention and detection behaviours. Hence, both gain and loss framed messages are required within an intervention for sexual health—gain frames aimed at screening and gain frames at prevention.

It has been argued that to improve the predictive power of frames, theoretically, they should be developed within the cognitive framework of the audience to which they are to be applied (Weinstein, 1992; Ferguson, 2001; Ferguson et al., 2003; Ferguson and Kerrin, 2004). Using participant’s own descriptions enhances the perceived usefulness of any framed message. Perceived usefulness refers to the relevance of the message and has been shown to predict intentions to perform health-related behaviour (Ferguson et al., 2003). Therefore, as a first step to developing useful/relevant messages it is necessary to identify the positive and negative aspects of a behaviour as described by the target group (Weinstein, 1992; Ferguson et al., 2003). These principles are consistent with those described above for successful health promotion and IMLE.

Furthermore, attending a GUM clinic is likely to be a stressful experience. Work in the fields of stress and coping indicates that for negative life experiences people will endeavour to find positive meaning (Ferguson et al., 2000; Folkman and Moskowitz, 2000). While most of this work has been conducted on adults and in relation to general health problems (Folkman and Moskowitz, 2000), the same principles are also pertinent within the context of teenage sexual health. Identifying the positive and negative thoughts and beliefs about sexual health and local sexual health services makes it possible to offer a qualitative test for this theoretical perspective.

**The Trent STI multimedia project**

Based on the arguments above and in recognition of the local problems with STIs and unintended pregnancy amongst teenagers, we propose to develop a novel sexual health learning ‘tool’ that combines message framing with an IMLE developed from the focus group work with young people described in this paper. The focus group work addresses sexual behaviour, sexual health knowledge, awareness and access of sexual health services, and risk recognition.

The intervention aims to address multiple components of personal risk including improving knowledge, exploring negotiation skills, encouraging risk recognition and risk-modifying behaviour, and improving awareness and therefore access to local services. It will be tailored to the needs of the users by using information gained from the focus group work described in this paper. The IMLE is designed to be flexible and able to respond to the needs of the individual user, thereby taking into account their potential different knowledge, beliefs and attitudes. The end-product will be available for
use in schools, and by youth outreach projects and other places where computer access is available to young people. User groups will continue to formally evaluate it and modifications will be implemented in response to this.

**Method**

**Sampling procedure and samples**

For the pilot study, two schools were selected. This selection was based on the following considerations: (1) taking advantage of existing links with heads of ‘Personal, Social and Health Education’ (PSHE), (2) the schools were in different wards within Nottingham [one in a ward with the highest teenage pregnancy rate (14%) and the other in a ward with one of the lowest (5%)] and (3) there was a good ethnic mix. As such, it was believed that this procedure would encourage a good attendance (existing links) and would examine across a diversity of pregnancy rates, and thus provide a wider range of potential responses and thoughts.

Focus groups were designed to fit into the PSHE schedule (1 hour a week for 7 weeks). The Head of PSHE at each school selected eight young people who were:

1. A cross-section of the diversity of young people in the school. This was so that no one group’s views were excluded and a more complete set of themes were uncovered, rather than to generalize results to a wider population. It also meant that the mixture of the groups reflected the schools and as such the participants may feel more comfortable in a more familiar situation.
2. Willing to participate for the duration of the project
3. In Year 9 (13–14 years old)

A total of 12 females and four males participated in the focus group sessions. The mixed-sex group had an equal male:female ratio. The mixed-sex school group were ‘White British’ except for one ‘Black British’. This was reversed at the single-sex school, where two participants were ‘White British’, two identified their ethnic origin as ‘Pakistan’, one as ‘Jamaica’, one as ‘British Muslim’ and one had a ‘Mixed Ethnic’ origin.

**Focus group aims**

The focus groups were based around the following five aims designed to provide useful information for the project but to also be educational and helpful to the participants.

1. To engage young people in the topic through discussion and group work.
2. To find out their views and knowledge about access to sexual health services.
3. To increase participants knowledge of local sexual health services.
4. To add to the school’s Sex and Relationship Education programme.
5. For young people to build relationships and have fun.

**Procedure and design**

The same person (S. B.) facilitated both focus groups each week. Information from the interview section of the focus group was tape-recorded and transcribed by S. B. To establish the validity of the transcription it was then either read back to the participants or they were allowed to read it. All other data from the focus groups were written on flip charts by the participants.

Participants were made aware that what they said in the group would be confidential unless related to a child-protection issue, and that information gained from and recorded during sessions would be anonymous. They were also made aware of the pilot status of the project and the potential for future involvement. Evaluation of the focus group work was undertaken by 14 of the young people attending the final session by completing an anonymous questionnaire.

The procedures for the focus groups followed a standard protocol described below.

1. Initially participants designed two fictional characters—‘typical young people from Nottingham’. Fictional characters were used for
the following six reasons: (a) it fosters anonymity in the participants as they do not have to discuss anything about themselves, (b) it means that general themes and ideas rather than person specific ones are elicited, (c) it gave the participants ownership on the task—it was their character not the researchers, (d) it removed the possibility that the researcher would impose meaning on the participants, (e) the use of characters to explore perceptions of sexual activity, safer sex and sexual health services achieved a non-confrontational method of obtaining more information from the focus groups, and (f) it provided valuable information on prototypes—the type of people the participants think are likely to have sexual health problems. This is important as there is growing empirical evidence that the prototypes people hold for those taking risky behaviours influences perceived risk and behavioural change (Gibbons and Gerrard, 1995).

(2) Next they explored situations that the fictional characters might find themselves in, where they may to need to seek information about sex, safer sex and sexual health.
(3) Participants then discussed sources of information about sex and safer sex. What would be the pros and cons of each source of information? What barriers might there be to either character accessing these resources?
(4) Next they discussed what each character might know or perceive about sexual health services in Nottingham. This allows an assessment of knowledge about local services. Participants identified what they felt young people need to know about services and used this to plan questions for visitors from local sexual health services.
(5) Based on the above they then interviewed visitors from a local sexual health services.
(6) They then explored ways to help these characters to understand what sexual health services are available to them, the reasons that they should consider accessing services and ways in which information could be presented to enable them to access these services easily.
(7) The group was then introduced to the Information Technology builder, who gave a demonstration of the types of websites, games and virtual reality that could be used.

Data analysis
The data were content analysed by hand using the transcripts and flip chart data [cf. (Krippendorf, 1981)]. No software was used. This strategy is based on identifying themes. These themes were initially derived by S. B. Once derived, these categories were refined and a final agreement reached through consensus discussion with the wider research group (based on the authors and the Acknowledgements to this paper).

Results

Fictional characters and situations
There were some similarities in the four fictional characters (sexual partners) created by the two groups. Both females were 14 years old, with older male characters of 16 and 18 years, and all were physically attractive. They all drank alcohol, and three of them smoked cigarettes and cannabis. The ethnicity chosen for the characters reflected the ethnicity of the participants. The all-girl group created a male with positive characteristics such as not smoking cigarettes or cannabis, drinking alcohol at weekends only and being in a gang, but never doing bad things himself. In contrast, the mixed-sex school characters no longer lived with their parents and displayed more negative behaviour characteristics, such as truancy in the female and high-risk sexual activity in the male (multiple female partners), leading to acquisition of HIV infection.

There was a strong theme from both groups of alcohol and drugs associated with sexual activity in the imaginary situations. This was more extreme in the mixed-sex group where their fictional situations included drug-assisted sexual assault by multiple assailants as well as HIV transmission, which leads to death. The single-sex group reported more planned consensual sexual activity, but three of
the four situations involved alcohol or drugs. Lack of use of any method of contraception or barrier against STI was emphasized by both groups in certain situations or not mentioned at all. Negative attitudes towards condom use were revealed relating to physical comfort and image.

**Knowledge about sexual health and services**

The young people identified that STIs were the main reason why their characters might need to access sexual health services. The two groups identified infections that they had knowledge of and perceived were relevant (Table I).

Half of the participants had heard of the GUM clinic at the City Hospital and knew where it was simply because they had been to the hospital; they had not actually seen the GUM building. Almost half were aware of the main city centre young people’s contraception and sexual health service.

Knowledge and use of sexual health services was then explored through use of the fictional characters. Three of the characters were aware of the local services. Issues that arose included embarrassment, fear of lack of confidentiality, fears of peer or partner response to attending services and belief that sexual health services are only for particularly promiscuous people.

Few qualitative studies that have studied knowledge or understanding of sexual health services [cf. (Baraitser et al., 2004)]. The results reported here also add to this literature by showing that adolescents can identify the types of infection that might mean a visit to a GUM clinic and this highlights good understanding. The results reported here are also generally consistent with those of Baraitser et al.’s (Baraitser et al., 2004) work with older populations, in that there is a generally lack of knowledge about services. Therefore, while the adolescents appear to be reasonably knowledgeable about infection they do not know as much about the relevant services to treat it. This disparity is something that sexual health education could fruitfully focus on.

**Interview of sexual health service representatives**

The groups planned questions to ask visitors from the local GUM and young people’s services (Table II). The questions represented the things that the groups felt young people needed to know about these services. These were all of a practical and logistic nature, and could form the basis of future education/informational programmes.

**Sexual health—focus group ideas for improving awareness, access and services**

Suggested modes of improving awareness of local services included leaflets, magazines, radio and television. These advertisements need to be colourful and attractive, with information about and directions to the services. They should be available in schools/colleges and other places where young people go, e.g. clubs, buses and sports grounds. Use of computer games was also suggested, as was a ‘virtual sexual health clinic’. Participants also mentioned a number of concerns about attending a GUM clinic (Table III).

Participants felt that a virtual tour could provide accurate information about a service. They also felt that a virtual character using the service could provide answers to questions that may otherwise be too embarrassing to ask in the same way that problem pages and chat rooms allow anonymity.

**Evaluation of the focus group process**

Most participants identified things that they learned from the focus groups, these learning outcomes can be split into three areas: (1) general learning (e.g. ‘I learned lots about sex’), (2) learning about services (e.g. ‘That everything is confidential at the GUM

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<tr>
<th>Table I. STIs identified by focus group participants</th>
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<tbody>
<tr>
<td><strong>Single-sex group</strong></td>
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<tr>
<td>HIV and AIDS</td>
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<tr>
<td>Gonorrhoea</td>
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<tr>
<td>Crabs</td>
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<td>Thrush</td>
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<td>Herpes</td>
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<tr>
<td>Warts</td>
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<td>Cervical cancer</td>
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Development of an IMLE for sexual health interventions

Table II. Young people’s questions for sexual health service staff

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<th>Mixed-sex group</th>
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<tr>
<td>1. Is it confidential?</td>
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<tr>
<td>2. How much information do we need to tell you?</td>
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<tr>
<td>3. How many condoms can you take away?</td>
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<tr>
<td>4. Does it boost your confidence?</td>
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<tr>
<td>5. Would you learn about boys and girls in sex help videos?</td>
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<tr>
<td>6. Will they be slags mainly at [local young people’s sexual health outreach project]?</td>
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<tr>
<td>7. What times/days is it open?</td>
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<td>8. How long does it take?</td>
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<table>
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<tr>
<th>Single-sex group</th>
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<tbody>
<tr>
<td>1. Where do you work and how long have you worked there?</td>
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<td>2. Why were you interested in working there?</td>
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<td>3. What do you think about young people coming to talk about sex?</td>
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<td>4. What is your job in the clinic?</td>
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<td>5. What was your experience of teenage clinics when you were a teenager?</td>
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<td>6. Do you think they’ve changed?</td>
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<td>7. What do your family think of you working there?</td>
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<td>8. Do you think staff need to have experienced the things that they talk to young people about?—tests, contraception</td>
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<td>9. Where is it?</td>
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<td>10. When is it?</td>
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<tr>
<td>11. What services do you offer?—testing, abortion, contraception</td>
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<td>12. Is testing free?</td>
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<td>13. Is it all free?</td>
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<tr>
<td>14. Is it a walk-in or do you have to make an appointment?—phone number/advertisement</td>
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<td>15. What’s it like when you go in?—receptionist, privacy, posters, leaflets</td>
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<tr>
<td>16. Is it just for young people?—ages</td>
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<tr>
<td>17. What is your confidentiality policy/rules?</td>
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<td>18. What details do you have to tell them?</td>
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<tr>
<td>19. Staff—male or female? Can you choose? Do you see them in private? How many people talk to you?</td>
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<tr>
<td>20. What kind of people go?—ages, female/male</td>
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<tr>
<td>21. Are people nervous and how do you make them comfortable?</td>
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<tr>
<td>22. Can you go in together [with your friend or your partner]?</td>
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<tr>
<td>23. Do they tell you about other services/places to get information?</td>
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<tr>
<td>24. Which type of contraception is the most popular?</td>
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<td>25. Which type of contraception is the least painful?</td>
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Table III. Key themes

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<tr>
<th>Confidentiality</th>
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<tbody>
<tr>
<td>1. Fear of the unknown</td>
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<tr>
<td>the service, e.g. location, physical appearance</td>
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<tr>
<td>the consultation, e.g. questions asked</td>
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<tr>
<td>2. Access e.g. opening times, waiting times, is it free</td>
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<tr>
<td>3. Staff—gender, judgmental, experience</td>
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<td>4. Stigma</td>
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Positive and negative themes

Across the two schools 23 positive and 20 negative thoughts and feelings about the GUM clinic were elicited. Positive themes included free contraception, confidential and non-judgmental service. Negative themes included a dislike of waiting and they might not understand the language of the staff. A number of themes related to prevention (e.g. free condoms, find out information before having sex) and detection (e.g. pregnancy screening, screening for STIs). This indicates that these teenagers are able to generate almost as many positive ideas as negative ones about a visit to the GUM clinic. This is consistent with theory in stress and coping, and this information can be used as the basis of developing framed messages.

Discussion

The Independent Advisory Group on Teenage Pregnancy lays down the challenge to ‘identify and establish mechanisms that allow young people to become involved in service delivery’
With this in mind the primary aim of this study was to gain background ideas and impressions about sexual health from local young people with respect to overcoming barriers to access. The second and related aim was to inform the initial design of the IMLE and message frames. The discussion will focus, therefore, on what the study tells us about how to overcome barriers to access, the design of IMLE and frames, and, finally, examine the studies limitations.

**Barriers to access and knowledge**

The participants expressed a reasonable level of awareness about STI, but much less awareness about the services. They were also able to generate many questions about the consultation process, the logistics of attending at a clinic, as well as the emotional costs (fear of the unknown). This disparity between awareness of infection and less awareness about services is an important one, and also needs further study. Again, simple interventions could be adopted, such as providing more information and an IMLE system would be a good means to do this. The finding that the level of awareness about services is low is consistent with other studies (Baraister et al., 2004), but indicates that information on awareness about infections is reasonably good.

The mixed-sex group expressed themes of violence and sexual oppression in their focus groups. This may reflect (1) stereotyping, (2) fantasy or (3) reality. Clearly, this needs further exploration. If it reflects stereotyping or fantasy, this indicates a negative conception of sexuality that might be disempowering for young people and reinforces the idea that people who access sexual health services are ‘abnormal’ in some way. Again, if it can be established that this is a stereotype then health education should focus to reduce it.

**Requirements for good sexual health access and how IMLE might help**

Young people want to be provided with detailed information about local sexual health services in order to reduce ‘fear of the unknown’, thereby increasing their confidence to access them. Fear of the whole clinic process was also a major concern for the young people. A closely representative virtual tour of the sexual health clinic would provide this. Details of directions, local maps, bus routes, opening times of the clinic and that it is a free service could be easily incorporated within the tour.

Furthermore, virtual characters, designed with user input, could be guided by the user through the whole clinic process within the context of an IMLE. The virtual characters developed by the participants in this study could form the initial basis of these characters, which could be developed later. Creating representative virtual characters would help to create positive images of attending the service and clear information around confidentiality could be available. This could include initial access to the clinic, registration and the consultation including answering questions that are routinely asked. The same-sex group identified particular anxieties about the staff at sexual health services such as whether there would be a choice of sex of the doctor or nurse and how they would be made to feel comfortable. This may be linked to the diverse ethnicity of this group. Evidence suggests that some groups may have particular worries around confidentiality as a result of cultural barriers (Adams, 2001). Information could be available within the ‘virtual tour’ on all such issues that might otherwise, by being unknown, create a barrier to a young person accessing services.

Confidentiality is clearly a perceived barrier to access for young people. Information about this needs to be available to them in advance to increase their trust and confidence in accessing sexual health services. Stigma was also a strongly expressed concern. These could both be addressed within the context of an IMLE [cf. (Williams et al., 1998)].

**Developing intervention and the use of framed messages**

There is a strong body of evidence that the same information framed as either positives (e.g. lives saved) or negatives (e.g. deaths) influences peoples’ health behaviours (Rothman and Salovey, 1997). The information derived from this study could be
used to develop framed interventions that could be incorporated into stand-alone public health information or as a component of a wider computer-based package.

The evidence shows that gain frames (emphasizing the benefits or what is to be gained by performing the behaviour) are more effective in encouraging prevention behaviours (e.g. using a condom) and loss frames (emphasizing the cost) are more effective in encouraging detection behaviours (e.g. screening) (Rothman and Salovey, 1997). As sexual health issues are about both prevention and detection, there is a need to develop both gain and loss frames. Therefore, the qualitative data from this study provide user-based information, and therefore of high group relevance, on the benefits and cost of GUM. These can be used to develop framed messages for prevention and detection behaviours.

For example, a simple gain framed prevention message might look like: ‘By going to your local clinic you will benefit from advice from qualified staff, where you can collect free contraception (e.g. condoms) and advice leaflets’. The loss frame would be identical, except phrased in terms of what is missed by not using the service: ‘By not going to your local clinic you will miss out on the benefit from advice from qualified staff, and miss out on collecting free contraception (e.g. condoms) and advice leaflets’.

The above only serves as a rough example of how frames might start to be developed from such material. More extensive frames would be written by psychologists, using the basic information from the focus groups, in conjunction with GUM clinical staff. These would then be screened for reading age to make sure they were at an accessible reading age for the target audience. This would increase the usability of the frame (i.e. make it easy to read and understand). Finally, they would be piloted on a sample of potential users to check that they were seen as meaningful and comprehensible. This procedure for frame development has been shown to be successful in other research programmes and a detailed description can be found in Ferguson et al. (Ferguson et al., 2003).

The results from this study also address the issue of finding potential positive meaning within stressful situations. While it has to be acknowledged that the participants were thinking and discussing a hypothetical scenario, they were still able to see the potential benefits. This implies that going to GUM clinic, at least in terms of the content of thoughts elicited, is not viewed as an especially negative situation. Further research could use these constructs to design instruments to assess how important each of the reported benefits and costs is with respect to helping them make a decision to attend a clinic or not. This would allow some quantification on the relative weight that adolescents place on each of these factors. Where particular barriers are identified processes (both physical and psychological) to help the adolescent cope with the barrier could be put in place. Indeed, a number of psychological models (e.g. Health Belief Model, Theory of Planned Behaviour) that are used to address compliance with medication and health-related behaviours would begin by identifying such factors (Conner and Norman, 1996).

The future

Once developed, the frames will also be evaluated using randomized designs with one group having gain frames, one loss frames, one a standard intervention and a fourth no intervention. Effects on attitudes and behaviour pre- and post-intervention could be assessed. Once validated, these frames will be incorporated into the IMLE.

The next stage of this project will be to create the IMLE using a virtual tour of local sexual health services incorporating message frames based on this initial focus group work. The IMLE will then be assessed by young people in a pilot study at several different settings within Nottingham using an in-built evaluation tool, thereby influencing its further development. It will not only be evaluated in schools, but in other areas.

Limitations

The method of participant selection was open to sampling bias and final groups may represent a more motivated sample than the population.
from which they were selected. Although the groups constituted a diverse ethnic mix, the numbers are small and therefore opinions may not be truly representative. However, the information gained appears to be consistent with previous work on other populations [see (Baraitser et al., 2004)].

It might be argued that the results do not generalize to other populations. The two schools involved in this pilot work were chosen for good reasons (differences in geography, gender mixes and numbers of ethnic minority students). Generalizability to different populations and geographical areas is an issue for many projects involving sexual health. However, this was a qualitative study and as such issues of generalization are at this stage less important [cf. (Mook, 1983)]. Rather the importance lies in gathering useful and accurate information about participants’ beliefs and knowledge. However, user relevance will be addressed in the next phase of our project where the IMLE will be evaluated across diverse groups of young people and modified appropriately to appeal to any special needs.

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