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Sexual Health Professionals' Evaluations of a Prototype Computer-based Contraceptive Planning Intervention for Adolescents: Implications for Practice

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Abstract

Background

This paper aims to demonstrate how an online planning intervention to enhance contraceptive and condom use among adolescents was viewed by sexual health professionals. It identifies feedback that has facilitated improvement of the intervention both in terms of potential effectiveness and sustainability in practice. The data illustrate how professionals' feedback can enhance intervention development.

Method

Ten practitioners (two males) representing a range of roles in sexual health education and healthcare were given electronic copies of the prototype intervention. Interviews were conducted to elicit feedback. Transcripts of the interviews were subjected to thematic analysis.

Results

Practitioners provided positive feedback about the intervention content, use of on-line media, the validity of planning techniques, and the inclusivity of males in contraceptive planning. Issues with rapport-building, trust, privacy, motivation, and time and resources were raised however, and the promotion of condom carrying was contentious.

Conclusions

Professionals' feedback provided scope for developing the intervention to meet practitioners' concerns, thus enhancing likely feasibility and acceptability in practice. Ways in which particular feedback was generalisable to wider theory-based and on-line intervention development are

explicated. Some responses indicated that health practitioners would benefit from training to embed theory-based interventions into sexual health education and healthcare.

Key words: sexual health, contraception, online intervention, adolescents, health professionals, implementation

Introduction

Prevention of unwanted pregnancies and sexually transmitted infections (STIs) among young people is a public health priority, worldwide. For example, in the UK, the Government had set targets to reduce conception rates amongst women under the age of 18 years by 2010 [1]. Yet, in 2009, the year for which the latest figures are available, 38 259 under 18 year-olds conceived in England and Wales alone, and almost half of those conceptions led to termination [2]. These remain the highest rates in Western Europe [2]. Moreover, rates of sexually transmitted infections (STIs) are increasing rapidly in the UK [3], and the latest available worldwide data show diagnoses of curable STIs to be around 340 million a year [4]. Effective contraceptive use and proper and consistent use of condoms or female condoms can reduce STI spread and unintended pregnancies and is therefore a priority for health promotion and intervention.

The modifiable antecedents of condom and contraceptive use motivation and behaviour have been investigated in detail [e.g. 5-12]. This research has provided good predictive support for the theories of reasoned action and planned behaviour [13, e.g., 5, 10 & 11]. These theories focus on components of motivation that are prerequisite to action. The Information Motivation and Behavioral Skills (IMB) model [14] provides a broader framework within which to design and evaluate safer sex promotion interventions [15-17]. The IMB emphasizes that as well as providing good information and targeting potentially-modifiable antecedents of motivation such as positive attitudes, positive social norms and self efficacy, interventions may also need to include behaviour change techniques [18, 19] that enhance self regulatory skills and so support the enactment of contraceptive intentions. This view is supported by evidence demonstrating that amongst adolescent condom users, for example, 85% report strong intentions to use condoms on every occasion of intercourse but only 53% reported that they had been used effectively on every

occasion of sexual intercourse in the preceding 6 months [8,20]. Thus self regulatory skills such as post-intentional planning [21] and implementation intention formation [22] are likely to be crucial to enactment of contraceptive motivation.

Prompting implementation intentions or "if-then" plans specifying exactly when and where a person will perform a particular action has been shown to promote the translation of intentions into action [23, 24]. For example, in a field trial utilizing intention-to-treat analyses and a nine-month follow up, Martin, et al. [25] found that forming written implementation intentions significantly reduced consultations for emergency contraception (EC) and pregnancy testing among young women using a sexual health clinic. Moreover, the intervention effect was maintained in relation to confirmed pregnancy at 2-year follow-up [26]. These findings demonstrate that relatively simple and inexpensive interventions focusing on planning and implementation intention formation may be effective in reducing unsafe sexual behaviour among young people and, as an important consequence, may reduce demand on sexual health services.

The present study

In consultation with sexual health professionals, the authors developed an online intervention based on the Information Motivation Behavioral Skills model which also promoted implementation intention formation. The intervention was designed to enable young people who have decided to use contraception, bolster their motivation and use planning techniques found to be effective in reducing unsafe sexual behavior. The intervention is delivered using attractive, easy-to-operate and easy-to-understand software. The package can be used on stand-alone computers, including laptops without web access or as an online resource. Working through the intervention takes young people approximately 10 minutes. The prototype intervention shown to

participants is available at http://www.healthinterventions.co.uk/interventions/intro.aspx?section=5. Figure 1 shows an example pathway through the intervention for male condom users.

A prerequisite for implementation of potentially effective interventions in routine practice is the acceptance and subsequent adoption of the intervention by potential users. For example, the Intervention Mapping approach to intervention design and evaluation specifies that potential users and adopters should be involved at an early stage of intervention design [27-29]. Consequently, in order to understand how our intervention would be received by practicing sexual health professionals, we invited practitioners to review the prototype intervention materials. The aim was to clarify how such an intervention would be viewed by professionals and identify feedback that could facilitate improvement of the intervention both in terms of potential effectiveness and sustainability in practice [30]. Recent research in other health domains has had similar aims [30, 31]. Below we report the analysis of feedback from professionals. These data provide a qualitative, in-service evaluation of our prototype intervention and illustrate the value of early involvement with users during intervention design.

Method

Participants and procedure

Following ethical approval by a University Faculty ethics committee at the lead author's institution, a sample of 10 practitioners representing a variety of professional roles was recruited in a UK city. The lead researcher contacted sexual health leads, who contacted all relevant professionals about potential participation. The study sample consisted of those who volunteered to participate. It included three youth outreach workers who run sexual health education sessions

and condom distribution services in local schools and youth centers, three school and two family-planning nurses, one Chlamydia screening officer, and one trainer with sexual health expertise. Two practitioners (both youth outreach workers) were male. Thus, although small, the sample represented a range of relevant professionals reflected the gender bias in these staff groups.

Each participant was sent briefing information and copies of the prototype intervention to evaluate before an agreed interview. Interviews were conducted by the first author at participants' places of work after informed consent was given. Time was allowed before interviews for participants to re-familiarize themselves with the intervention materials. Interviews lasted between 45 and 60 minutes, were audio-taped with participants' permission and transcribed verbatim. The prototype intervention was available on a lap-top computer screen before and during interviews.

Interviews began with open-ended questions about job roles (e.g. "Tell me about your role in relation to sexual health"), and thoughts relating to the materials they had viewed (e.g. "Tell me about what you thought of the intervention materials"). Further information was elicited, based on prompt items from the interview schedule, but determined by the responses of participants. We were especially interested to discover how useful practitioners thought the intervention would be to them and how use of the program could augment their practice. A list of prompt questions is available from the first author.

Analysis

A thematic analysis [33] of interview transcripts was conducted. The analysis focused on identifying practitioners views' on positive aspects of the intervention that would facilitate adoption, perceived barriers to intervention implementation and specific suggestions for further

development of the intervention. Themes were identified by reading through interview transcripts several times before coding each section of participants' speech into emerging themes. Conceptual themes were then reviewed and refined through repeated inspection of transcripts. Illustrative quotes representing these themes are presented below.

Results

Evaluation of mode of delivery: The potential of computer-based or online interventions

Practitioners viewed computer-based interventions as an attractive and effective way of engaging young people in contraceptive use promotion in a manner that facilitated privacy. For example,

> *"this is what kids would like... with the laptops, click here and click there, but then again a good way of creating conversation and getting them talking too" (HP5, lines 1189-90).*

> *"...this sort of thing it might be useful because it's on the computer, because it's private, and if they want to access something like this you couldn't do it in a big group setting." (HP6, line 156-58).*

While recognizing the advantages of online interventions, practitioners also highlighted the importance of building a rapport with young people when dealing with sexual health issues, thereby emphasizing the interpersonal context in which online or computer-based interventions might be best placed;

> *"... in a clinic setting they're almost pushed through the door, and it's the friend who starts the consultation going, ' the girl who is affected just sits there quietly until you*

can try and build some kind of rapport and she realizes that you're not completely horrible" (HP3, lines 353-356).

"say I do two sessions, say one session on STIs the second on contraception, the second session's often much better because they've got to know me a little bit, there's that trust, respect a little bit, all those things that go on in a session…so [with a computer] that's the only thing I would be worried about..." (HP5, lines 468-475).

"...the methodologies we use is get along side young people and there being a two way process, now clearly with something like a computer program it's limited in terms of its, the paths it can take..." (HP4, lines 118-121)

Thus practitioners viewed the program as a potential adjunct to face-to-face services rather than a replacement of these services.

One specific concern about content focused on potential oversimplification of the social processes involved in refusing sex without condoms;

"all sorts of coercion goes on and that really impacts quite strongly on young women that want to hang onto their boyfriends… and that sort of manipulation that goes on… there's a danger of over simplifying, maybe people will be turned off this [computer program] because you don't understand what it's really like" (HP4, lines 424-431).

While practitioners recognized the privacy a computer-based could ensure, they also noted that young people would need to be reassured that any information they provided would not stored or accessed later;

"and it's a bit official, it's on the computer, 'why are you asking about me?, is it gonna be saved? Who's gonna read it?', you know?" (HP7, 899-904).

Overall, then practitioners saw great potential in the use of an online intervention but also expressed concerns that this should not detract from the important trust-building interactions at the core of their service and noted clients' need to be reassured about confidentiality of data entry.

Integrating implementation intention prompts into everyday service delivery

Participants were not familiar with behaviour change theory and the idea of specific planning facilitating the enactment of intentions. Use of "if-then" plans was explained to each participant and illustrated with reference to the intervention content. Many practitioners provided positive feedback on this approach.

"I like the idea of getting young people to link contraceptive use to something else, and actually writing that down.." (HP3, lines 95-96)

"I think writing things down is a great thing, and their own planning diary is something too.." (HP5, lines 397-401)

In addition, it was reassuring to find that this theory-based method corresponded to approaches already being used by practitioners in contraceptive counseling. For example,

"yeah [I do that] verbally, like use the example of when to take the pill and try to get them in the clinic setting to think about first thing in the morning with breakfast, when they get home, when they're going to bed , whatever, something to link it with… but the way that it

was expressed in here seemed to take it a step further and make it much more a conscious decision because they've actually got to write it down" (HP3, lines 233-236).

"My work is often about helping teenagers decide when to take the pill and activities that tie in with pill taking, so that's really in-line with the program" (HP2, lines 345-346).

"the idea that they're gonna think of ways to mention condoms and that will help them to then bring it up at the right moment, I found that quite useful..." (HP4, lines 452-54).

"the unpredictability of sex sometimes and the difficulties in that planning which takes us back to your materials and hopefully setting the scenes and reinforcing what we're doing at a clinic, yes it is fine to carry a condom and maybe to be prepared whenever" (HP3, lines 335-337).

These evaluative comments show that implementation intention formation can be introduced as an extension of existing practice. They also show that practitioners welcomed the intervention's emphasis on preparatory action, including carrying condoms and discussing condom use. However, there was some concern about writing down such plans as advised by our intervention.

"...if you are going to use this in all sorts of settings, that creates issues in itself doesn't it. If we're going to put this on in a clinic waiting room then how do you get people to write it down? It is difficult, unless, the only thing is, anything they could write down that's destroyable afterwards" (HP3, lines 256-259).

> *"then you've got written, very personal stuff written down, about yourself. Where you gonna put it so that it's safe, what happens if your mate finds it and takes the piss, or your teacher finds it, or your mum finds it?" (HP7, lines 801-805).*

These concerns highlight the importance of offering some level of privacy when making written plans in a clinic setting and emphasize the utility of providing advice on how to conceal such written plans.

Intervention targets: men and motivated young people

A number of practitioners welcomed the intervention's focus on young men's responsibility for contraceptive use;

> *"I liked the encouraging men to take an active interest in what their partner's taking" (HP6, line 9).*

Practitioners' also recognized, that in line with theory, an intervention of this kind was likely to be more effective for motivated young people;

> *"...well it depends on who you're thinking of using it with really, because with some people, I would have thought that that would be an issue..." (HP7, lines3-4).*

> *"...they need to want to be able to do it, you know what I mean, so it all depends on the young people" (HP8, lines 696-696).*

Thus, in line with the theoretical basis of implementation intention formation, practitioners suggested that planning prompts might not be appropriate for everyone they see in relation to sexual healthcare practice and education. Identifying those motivated enough to engage with the

planning process recommended in the intervention was regarded as crucial to effectiveness in everyday practice.

Contentiousness of condom carrying and other preparatory messages

Our intervention strongly promoted carrying condoms as a prerequisite of safer sex and not all health practitioners were comfortable with this approach. Promoting routine condom carrying was especially contentious;

> *"it's about them making the choice and a decision, you wouldn't want to take them [condoms] to school necessarily but you know...if a couple have found some spot at a school where.. they're having sex unbeknown to everyone ...then you know the message there you want to give them is to make sure they're being safe and looking after each other and that's it" (HP4, lines 353-362).*

> *"certainly not the sort of thing I've done when I'm talking about condoms, you must carry one round with you... I've got a 16 year old daughter and if I said to her you must carry a condom I mean she might be insulted...people think you're easy, a slag, cuz you carry a condom and I don't think people can come away from that" (HP5, lines 294-5 & 299-301 & 308-9).*

Yet practitioners did emphasize the importance of condom carrying;

> *"we do need to make it ok for young people to carry contraception and that it is a positive thing" (HP8, lines 875-876),*

> *"I think as long as it's put alongside, if you are sexually active or thinking of becoming sexually active, certainly yeah" (HP4, lines 335-336).*

Thus while practitioners welcomed the promotion of condom carrying by the intervention they were uncertain about, and in some cases uncomfortable with, promotion of routine carrying on the grounds that sexual encounters may be unpredictable for young people.

Identifying appropriate implementation contexts

Finally, health practitioners considered the potential barriers that time, resources and context might place on implementing online interventions;

> *" The clinics I do are drop in clinics so in a space of an afternoon we can see up to thirty people, all ages obviously…and for fifty percent of that clinic I'm on my own… so to take somebody aside to go through this means that the clinic comes to a halt essentially ... from a personal point of view it would be difficult" (HP3, lines 48-59).*

> *"yes I mean there's no way of showing [the intervention] at the minute, there's a radio in there and leaflets but there's not even a television… we would have issues with equipment" (HP3, lines 76-81).*

> *"all my stuff is done in a 50 minute, hour session in a group of you know 25 to 30 children, so it's who you're basing this at, I think if you were in a youth club with a small number of children or maybe where school have highlighted high risk children (Interviewer: sure) or you might be doing it where children are excluded, those sort of children so you've got a small group to work with, you know it's probably much more effective, I don't think you could just go into a group of 30 kids (laughs)." (HP5, lines 475-492).*

Thus unsurprisingly practitioners wanted clearer proposals as to how the intervention could be integrated into current services and what the implications of this would be for staff time, space and equipment within their sexual health service.

Discussion and Conclusion

Our aim was to clarify how our intervention would be viewed by professionals and to use professionals' feedback to improve the intervention and, potentially, enhance its effectiveness and sustainability in practice [30]. Below we discuss how this in-service, practitioner evaluation helped us develop the intervention and plan for its implementation. This work emphasizes the importance of user and practitioner involvement in intervention design and implementation [27-29] and also how practitioner feedback can be used to optimize implementation of new health care technologies. In addition, this evaluation illustrates how evidence-based interventions exploiting relatively inexpensive laptop technology can be integrated into existing services for adolescents.

It was encouraging that practitioners were supportive of the use of a computer-based intervention. Given that around 97% of children, adolescents and young adults in the UK and other similar countries make at least some use of digital media in their lives [33] it is likely to be an increasingly more appropriate medium for intervention delivery with this population. Thus the challenge is to develop computer-based interventions that complement and enhance current services.

Practitioners concerns about (1) the loss of rapport-building through use of a computer-based intervention on (2) young people's confidence in data security, (3) the potential oversimplification of complex decision-making by use of if-then planning prompts and (4) the

need to select young people who are motivated to engage with planning safer sexual behaviour identify important issues which we, as intervention designers, need to address. In each case we concluded that these issues can be addressed by providing clear implementation guidance for practitioners themselves.

This study clarified that optimal use of our intervention was as an 'add-on' resource for existing contraceptive services in young people's sexual health drop-in clinics. This implementation ensures that existing rapport is maintained and used to prepare the ground for our more-focused planning intervention. This form of implementation will allow us to provide practitioners who 'prescribe' the intervention with training notes explaining for whom the intervention is most appropriate and how the intervention should be introduced to maximum effectiveness. The intervention would be made available to young people who access services voluntarily, and they will be able to choose to use the intervention after being fully briefed about it. This will allow selection of young people motivated to plan contraceptive use. A practitioner-delivered introduction will allay doubts about data security and clarify that acting on one's intentions, especially in complex and distracting contexts can be enhanced by making clear and relatively simple plans. In this way, the intervention can be presented as a tool to help young people manage complex decision making rather than an attempt to oversimplify the decisions and negotiation they face.

It was encouraging that practitioners accepted the value of making implementation intentions and writing them down as a potentially effective technique for translating good intentions into protective behaviour. This evidence-based technique [19, 22, 33, 23] was easily accepted as an extension of current practice. This facilitates the creation of briefing notes allowing practitioners to "own" the intervention.

Practitioners' concerns about the privacy of written plans persuaded us that, at least initially, young people should be able to use private areas/rooms and headphones for listening to the audio track accompanying on-screen messages. In addition, sealed boxes or envelopes that only get opened when data need to be analysed should be used for collecting written plans to ensure anonymity. A further suggestion for addressing privacy issues around forming implementation intentions could be use of a 'volitional help sheet' [36] that provides standard 'if' and 'then' scenarios that participants simply link in order to form their plan.

The involvement of men in contraceptive use beyond condom use was welcomed by practitioners but they noted the need for potential male users to be motivated. This type of intervention is only likely to be effective with a motivated population [20,22] and this again emphasizes the role of practitioners in highlighting aspects of the intervention to particular clients in advance of recommending it. By embedding our intervention into contraceptive drop-in services, we allow practitioners to use it with those most likely to benefit and to introduce it in a manner that will optimize use. This facilitates the integration of evidence-based interventions into existing practice.

Practitioners accepted the importance of making contraceptive carrying more acceptable to young people, but the issue was, nonetheless, contentious. Our intervention will continue to promote condom carrying to participants who intend to use condoms. Arguably, professionals who exhibit a reluctance to promote condom carrying, may exacerbate negative beliefs associated with this behaviour and it may be important to run training workshops for professionals to ensure a coherent and consistent service delivery in relation to promotion of condom carrying. For sexually active young people who may not be able to predict sexual encounters condom carrying is prerequisite to use [12].

A final issue raised by practitioners was the time and resource demands of using the intervention in practice. In further developing and trialling our intervention we have planned to provide staff with technological back up and to laptops for clinics. As staff become used to using the technology we anticipate that additional staff resources will become redundant. Testing sites have been chosen to allow privacy and minimal disruption to existing practice.

Many of the issues highlighted in this paper apply generically to on-line and evidence-based intervention development. For example, it is very encouraging that practitioners welcomed a computer-based intervention as a good way to engage young people and that forming implementation intentions and written plans is recognized as a useful adjunct to current practice. If generalised this would open the door to integration of computer-based interventions for other behaviours in a range of health services. Other issues, for example, privacy, are likely to be particularly pertinent for sexual behaviour. Feedback from practitioners has allowed us to develop a collaborative implementation plan that rendered our intervention acceptable to services so emphasizing the importance of involving users in the development of new intervention packages. In addition, the study highlighted issues that may need attention in ongoing service development such as how to best address the promotion of condom carrying. Overall then, we conclude that this type of user-engagement during the intervention development and implementation is crucial to detection and resolution of nuanced, intervention-specific issues as well as broader service development planning. This approach has allowed us to specify intervention-related training and support essential to effective implementation and illustrates how important such collaborative implementation is to the dissemination of evidence-based practice.

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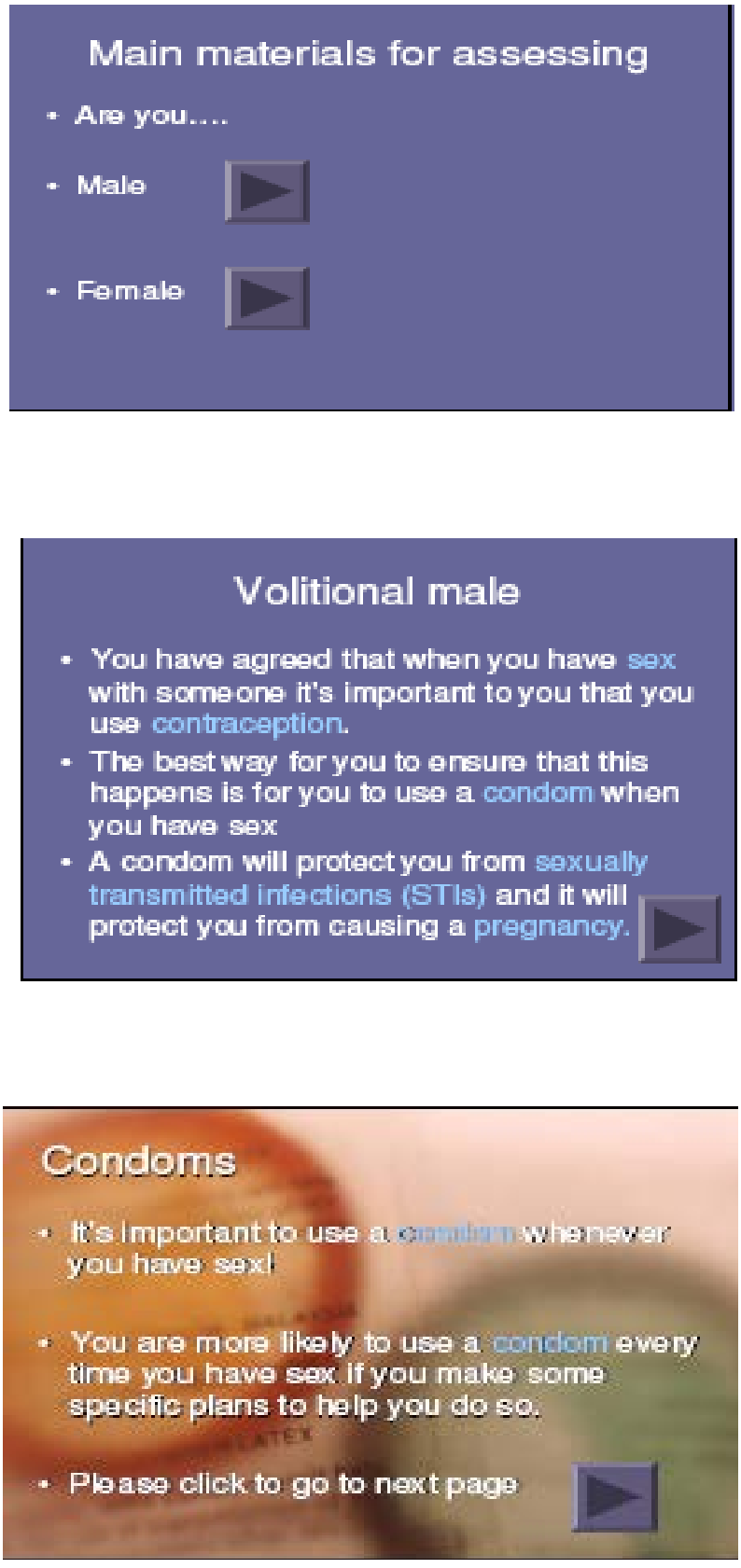
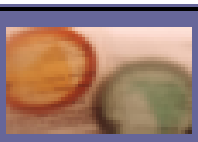
Figure 1.

Example pathway through the prototype intervention materials.

Clicking on arrows moves participants to the next screen dependent on answer choice



Making sure you always have condoms



- You will be more likely to use condoms if you always have them with you
- You will be more likely to have condoms with you if you make a specific plan or decision about how you will get hold of and carry condoms
- Please click to go to next page

Making sure you always have condoms

- Make a decision now about when and where you will get hold of condoms and how you will ensure you always have them with you.
- Write that decision down now as a promise to yourself.
- For help and suggestions doing this click here

Condoms

- You will be more likely to use the condoms you're carrying if you check you've got them before you have sex and mention them to your partner
- Below are some behaviours that tend to happen just before two people have sex
  - Undressing
  - Touching in private places
- Choose one of these or think of another behaviour, but it needs to be one that you think you would always do before you have sex with someone

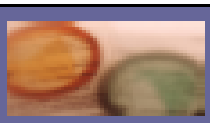
More choices…

- If condoms are the only method you want to use click here
- If you or your partner also use or want to use the contraceptive pill click below
  - Males
  - Females
- If you or your partner also use or want to use hormonal injections or implants click below
  - Males
  - Females
- If you wish to end the program now click here

Condoms

- Write your decision down now in your planning booklet as a promise to yourself
- What to write :
- "Whenever I am (insert your chosen behaviour) I will check I have condoms with me and mention them to my partner"
- Remember if you want to use a condom and your female partner doesn't, you should refuse to have sex. How do I do this?
- When you've done this click here

Condoms



- Think about the behaviour you have just chosen.
- Now, make a decision that whenever you are doing that behaviour you will check you have your condoms with you – this will help you remember to use one before you begin to have sex.
- Click to go to next page