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Developing a brief online sexual health intervention for low Socio Economic Status female teenagers

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Abstract

Risky sexual behaviours are prevalent among low Socio Economic Status (SES) female teenagers, and earlier sexual initiation is associated with unplanned pregnancies and sexually transmitted infections. Large systematic reviews have found an extensive list of predictors of risky sexual behaviours, but it is not clear which of these are highly important to low SES female teenagers and if sexual health intervention programs are currently meeting teenagers' sexual health needs. This thesis sets out specifically to address this issue, by investigating the predictors and developing a brief online sexual health intervention program for low SES female teenagers.

Two research questions were explored using a mixed-methods approach across five studies. The research aimed to gain sexual health professionals and teenagers qualitative views on the predictors of risky sexual behaviours, and then confirm these predictors quantitatively with a large number of female teenagers. Teenagers views of existing online sexual health intervention programs were then explored leading to the development of a brief online self-affirmation and sexual health intervention program.

Self-esteem was found to be an important predictor of risky sexual behaviours both by sexual health professionals and low SES female teenagers. It was also clear that teenagers did not currently have access to reliable sexual health information. Therefore, a brief online self-affirmation intervention, aimed at increasing self-esteem, paired with reliable sexual health information was developed. It was found that the self-affirmation intervention significantly increased self-esteem for the self-affirmed group compared to the non-affirmed group. In addition, the self-affirmed group had significantly higher intentions to have safe sex post intervention and at a one week follow up, compared to the non-affirmed group. Therefore, low-cost brief online self-esteem and sexual health interventions can be effective in increasing intentions to have safe sex for low SES female teenagers.

The theoretical and practical implications of these results are discussed together with suggestions for future research.

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Declaration

I declare that the work contained in this thesis has not been submitted for any other award and that it is all my own work. I also confirm that this work fully acknowledges opinions, ideas and contributions from the work of others.

Any ethical clearance for the research presented in this thesis has been approved. Approval has been sought and granted by the Faculty Health and Life Sciences Ethics Committee at the University of Northumbria in Newcastle.

I declare that the Word Count of this Thesis is 64 938 **words**

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Work from this thesis has contributed to the following publications

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McKellar, K., & Toth, N. (2016). Ethical Considerations in Face-to-Face and Internet-Mediated Research with Teenage Populations. In *Perspectives on HCI Research with Teenagers* (pp. 29-59). Springer International Publishing.

Chapter 1: Introduction

1.1   Introduction

First sexual initiation is a normal and expected aspect of adolescent development (Heywood, Patrick, Smith, & Pitts, 2015). However, risky sexual behaviours are also prevalent among teenagers. Teenagers in the UK, are becoming sexually active at an earlier age (Mercer et al., 2013). Earlier sexual intercourse is related to a higher number of unplanned pregnancies and Sexually Transmitted Infections (STIs) (Heywood et al., 2015). A large survey in Britain found that although the average age of first heterosexual intercourse was 16, nearly a quarter of girls had sex before they were 16. Furthermore, half of the girls said they wish they had waited longer to have sex, and were twice as likely to say this if they were under the age of 15 at first sexual initiation (FPA, 2016). In particular, research has found low socio economic status (SES) female teenagers engage in sexual activity at a younger age, and have higher rates of underage pregnancies and STIs compared to teenagers from higher SES areas (Karakiewicz, Bhojani, Neugut, Shariat, Jeldres, Graefen, & Kattan, 2008; Langille, Hughes, Murphy, & Rigby, 2005).

To reduce the amount of unplanned pregnancies and STIs it is important that teenage sexual risk taking decreases. Teenage pregnancy rates in the UK have shown a downward trend in the last decade and are currently at the lowest level since the records began. Despite this, it is still extremely important to concentrate on teenage sexual health, as the UK continues to have one of the highest rates of teenage conceptions in Western Europe (ONS, 2017). One of the reasons for lower amounts of teenage pregnancy is that contraception use is improving among teenagers. A recent survey found a small reduction in the overall number of new sexually transmitted infections (STIs) in the teenage population; however, overall levels remained very high (Health Protection Report, 2017). Teenage abortion rates have not decreased going up slightly by 0.6% since 2014 (FPA, 2016).

There are numerous teenage sexual health interventions programs in the UK. General practitioners and school nurses offer free and confidential services for teenagers across the country (Baxter, Blank, Guillaume, Squires, & Payne, 2011) and teenagers have widespread access to free contraceptives. However, teenagers generally do not report using these services and often report reluctance to use these because of worries about confidentiality and feeling

judged (Iyer & Baxter-MacGregor, 2010). In addition, teenagers believe it is embarrassing to discuss sexual health with sexual health professionals and parents (Buhi, Klinkenberger, & Hughes, 2013). There has also been a decline in comprehensive sexual health intervention programs in low SES areas, and therefore it may be difficult for low SES female teenagers to access reliable sexual health information (Santelli, Lindberg, & Finer, 2007).

Teenagers report feeling more comfortable discussing sexual health with teachers. However, Sex and Relationship Education is a non-assessed subject in schools and as such remains inconsistent (UK Department of Education and Employment, 2000). Teachers also report having insufficient sexual health knowledge about STIs and emergency contraception to effectively teach the subject (Westwood & Millan, 2009). Consequently, sex education remains inconsistent in British schools. Even though there are numerous external, confidential and free sexual health services available teenagers are still reluctant to use them.

This may be one of the reasons that there is still a high number of unplanned pregnancies and STIs in the teenage population. Large systematic reviews have found an extensive list of predictors of risky sexual behaviours (Buhi & Goodson, 2007) for example, parents, peers, self-esteem and personality traits. It is not clear which of these are highly important to low SES female teenagers and whether these predictors are currently being incorporated into sexual health intervention programs. Therefore, it is important that sexual health intervention programs are meeting the needs of low SES female teenagers and are targeting them with up-to-date and reliable information.

1.2   Research questions

The aim of this thesis was to explore the predictors of risky sexual behaviours for low SES female teenagers and to develop a brief sexual health intervention program which addresses some key predictors. Two research questions were explored using a mixed-methods approach across five studies.

1) What predictors are most important in explaining risky sexual behaviours in low SES female teenagers?
2) Is a brief online sexual health intervention program effective in promoting safe sex intentions and improving sexual health knowledge?

1.3   Research objectives

The specific objectives of thesis were to:

- Examine the predictors of risky sexual behaviours from the perspective of sexual health professionals (Study 1)

- Identify the barriers to female teenagers accessing current sexual health intervention programs (Study 1)

- Explore teenagers' existing sexual health knowledge (Study 2)

- Investigate teenagers' existing experiences of sexual health intervention programs (Study 2)

- Quantitatively explore the high risk predictors of risky sexual behaviours for low SES female teenagers (Study 3)

- Investigate teenagers' views of current online sexual health interventions through websites and mobile apps (Study 4)

- Develop and assess a brief online sexual health intervention program based on the high risk predictors identified in study 1, 2 and 3 (Study 5)

1.4   Thesis approach to addressing research questions and objectives
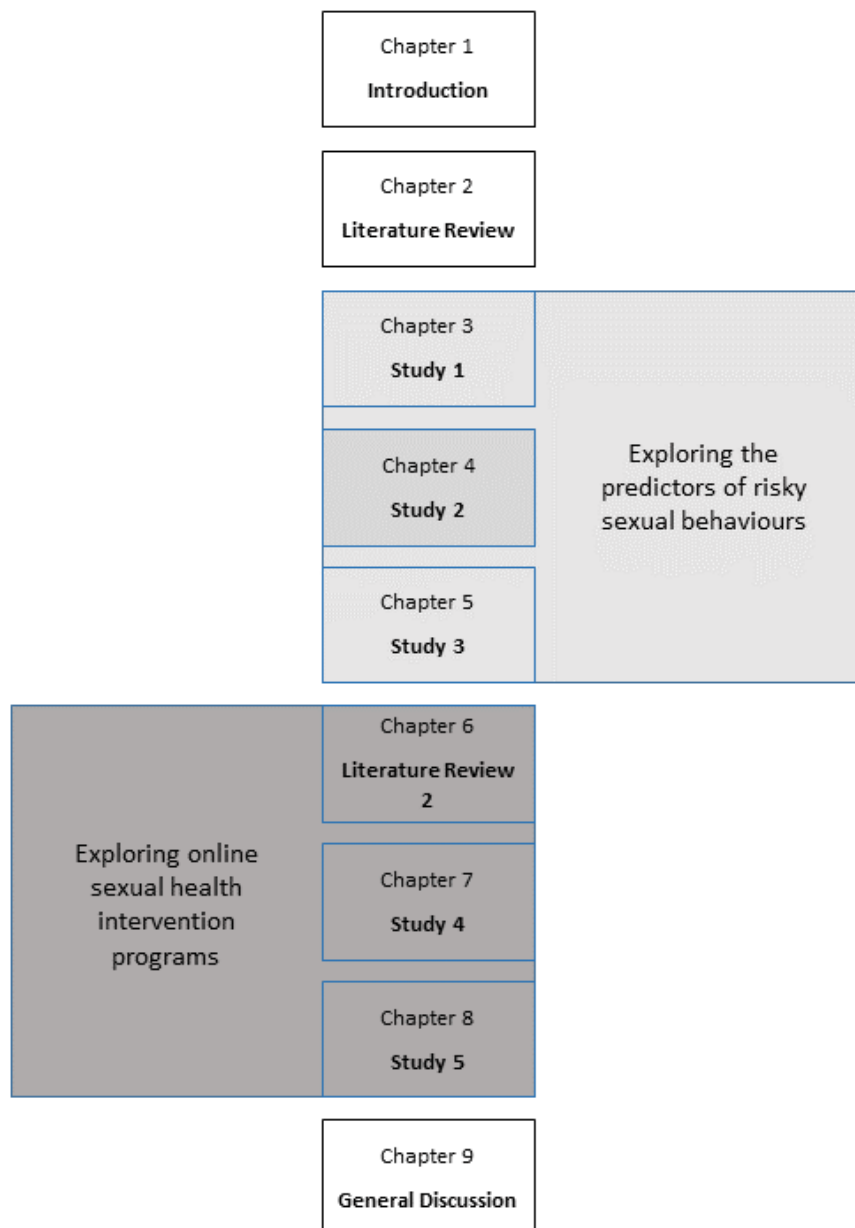
Figure 2.1 Overview of thesis structure

The thesis aimed to both explore and understand the predictors of risky sexual behaviours for low SES female teenagers and to develop a brief online sexual health intervention program. Study 1 aimed to understand the predictors of risky sexual behaviours from the perspective of sexual health professionals. Study 2 aimed to explore knowledge and experiences of sexual health and sexual health intervention studies from the perspective of low SES female teenagers. Study 3 aimed to quantitatively explore the predictors of risky sexual behaviours for female

teenagers. Study 4 aimed to explore teenagers' views of current sexual health websites and mobile apps. Study 5 developed and evaluated a brief online sexual health and self-affirmation intervention program.

1.5 Overview of studies

Overall, the thesis adopted a mixed methods approach. The first two studies used qualitative methods to explore the predictors of risky sexual behaviors and teenagers' current sexual health knowledge and experiences of sexual health intervention programs. The third study used a quantitative method to investigate the high-risk predictors identified in study 1 and 2 with a larger number of female teenagers. Study 4 used a qualitative approach to explore teenagers' views on current sexual health websites and apps. Study 5 adopted a quantitative approach to evaluate the effectiveness of a brief online sexual health and self-affirmation intervention. The following sections provide an overview of each study and their key findings.

1.5.1 Study 1 (chapter 3)

Study 1 is a qualitative study that aimed to explore sexual health professionals' views of female teenagers' sexual health information seeking practises and barriers and re-examine the sexual health predictors suggested by previous literature. The focus on sexual health professionals was deemed relevant given their position as key stakeholders in implementing sexual health interventions, yet their views are largely absent from the literature. The barriers identified were "society and media", "environment and family", "peer influences" and "the self". In terms of the sexual health predictors, sexual health professionals ranked 33 of the 57 identified as key predictors in the extant literature as highly important, thus supporting previous research. Some of the barriers identified were consistent with previous research whilst others were particularly novel. Interestingly, sexual health professionals identified self-esteem as a highly important factor influencing teenagers' likelihood to seek sexual health information, whilst also being an important predictor of risky sexual behaviours. Yet, limited evidence for self-esteem has been found in previous quantitative studies. This suggests that going forward, sexual health interventions that build self-esteem and address socio-economic stigma may encourage adolescents to feel confident to make their own informed sexual health decisions.

1.5.2 Study 2 (chapter 4)

Study 2 is a qualitative study designed to explore low SES female teenagers existing sexual health knowledge and information sources. The study utilised a four-week diary-approach due

to the difficulties with ascertaining teenagers' sexual health knowledge and information from qualitative interviews, as they do not like talking about sexual health. The diaries were analysed using thematic analysis and data presented around three themes (1) *Can I ask you a question?; (2) The social consequences of sex; (3) Information sources.* The first two themes explored teenagers misunderstandings and lack of knowledge around the biological and social experiences of sexual health. The final theme explored the limited ways in which teenagers encounter sexual health information currently despite their desire to understand more. The findings of this study highlight the juxtaposition between teenagers' lack of understanding about the biological and social aspects of sex and at the same time their curiosity and thirst for knowledge. This point was emphasised in the teenagers' use of the diaries as a confidential way of seeking sexual health information. This emphasises that teenagers do not have access to reliable sexual health information, and have very limited sexual health knowledge, but are thinking about sex. The findings of this study indicate that teenagers from low SES areas do not have any strategies for actively seeking sexual information and as such sexual health practitioners need to think more creatively about how to provide teenagers with access to reliable sexual health information in a convenient and confidential way.

1.5.3 Study 3 (chapter 5)

Study 3 is a quantitative study that aimed to investigate the predictors of early sexual behaviour and intentions to have sex for low SES female teenagers. A large online questionnaire was administered to 318 low SES female teenagers measuring the high-risk predictors found from study 1, study 2 and current literature. The analysis showed that higher sensation seeking and more high quality sexual health information, lower self-esteem, lower delayed gratification and lower sexual health knowledge significantly predicts early sex before age 16. Further, the analysis showed that higher peer pressure and higher pornography use significantly predicts intention to have sex in the next year. By contrast, none of the predictors significantly predicted intention to have safe sex in the next year. Therefore, this study provided further evidence for an intervention that targets both self-esteem and reliable sexual health information. In addition, sexual health information sources should focus on a wide range of sexual health issues including peer pressure and pornography.

1.5.4 Study 4 (chapter 7)

Having confirmed the high-risk predictors of risky sexual behaviours for low SES female teenagers in studies 1-3, study 4 moved to investigating female teenagers' views of current

sexual health websites and mobile apps. This progression was underpinned by the finding, in study 2, that female teenagers prefer confidential sources of seeking sexual health information. Therefore, this research aimed to explore whether internet-based sexual health resources via websites and mobiles apps are meeting teenagers' sexual health needs and to explore, for the first time, teenagers' perceptions of the design features of sexual health mobile apps. Twenty-three female participants aged 13-16 years either viewed six existing sexual health websites or three existing sexual health mobile apps chosen to be representative of the range and variety currently available. Participants then took part in focus groups evaluating each of the websites and mobile apps. The findings indicate that adolescents currently use their phones to access sexual health information due to ease of access and privacy. However, none of the adolescents were aware of sexual health apps. Participants believed apps should have similar design features to websites but apps should contain an appropriate interactive element paired with accurate sexual health information. At the moment, female adolescents are not using sexual health mobile apps, they believe they are more convenient and private compared to websites, yet they trust sexual health websites more than mobile apps.

1.5.5 Study 5 (chapter 8)

Study 5 evaluated a brief self-affirmation and sexual health intervention for low SES female teenagers aged 13-16 years. A self-affirmation intervention was chosen because of its links with self-esteem, and self-esteem has been found to be a highly important predictor of early sexual initiation in both study 1 and study 3. A sexual health website was used to deliver the sexual health information as it was perceived to be reliable by teenagers in study 4. The website included information about all areas of sexual health, including peer pressure and pornography, which were identified as important predictors in study 2 and 3. It was found that the brief self-affirmation intervention significantly increased self-esteem for the self-affirmed group compared to the non-affirmed group. In addition, the self-affirmed group had significantly higher intentions to have safe sex post intervention and at a one week follow up compared to the non-affirmed group. However, there were no significant post-intervention differences in sexual health knowledge between the self-affirmed and non-affirmed groups.

1.6   Original contributions of this thesis

The original contributions of this thesis:

1. Identified that sexual health professionals perceive self-esteem to be a highly important predictor of risky sexual behaviours and a barrier to female teenagers seeking sexual health information (Study 1, Chapter 3)

2. Demonstrated that sexual health professionals perceive that the predictors of teenage risky sexual behaviours are aligned with those of teenagers and their parents, as ascertained by previous studies (Study 1, Chapter 3)

3. Demonstrated using a novel diary approach that low SES female teenagers lack understanding about the biological and social aspects of sex and at the same time have a curiosity and thirst for confidentially acquired knowledge (Study 2, Chapter 4)

4. Identified that self-esteem, sensation seeking, sexual health information, delayed gratification and sexual health knowledge significantly predict early sex before age 16 in low SES female teenagers (Study 3, Chapter 5)

5. Identified that peer pressure and pornography significantly predict the intention to have sex in the next year in low SES female teenagers (Study 3, Chapter 5)

6. Identified that female teenagers prefer to access sexual health information confidentially on their phones, but apps need to contain high quality sexual health information paired with an appropriate interactive element (Study 4, Chapter 7)

7. Identified that self-affirmation techniques paired with reliable sexual health information can increase intentions to have safe sex in the next year for low SES female teenagers, and that this is sustainable over a one-week period (Study 5, Chapter 8)

Chapter 2: Literature Review

This chapter focuses on the existing literature pertaining to female teenagers' sexual health. The chapter is split into five sections to provide greater clarity around the research problem. The first section provides an overview of teenage sexual health and discusses the different definitions of risky sexual behaviours. The second section provides an overview of the main theoretical models that are discussed in the literature. The third section provides an overview of the predictors of risky sexual behaviours. The fourth section discusses the extent of the problem in females from low SES areas. The final section discusses current sexual health interventions. Taken together, the five sections identify a gap in the literature and current practice, with respect to suitable sexual health intervention programs for female teenagers from low SES areas.

2.1 Sexual health and defining risky sexual behaviours

The term, sexual health, is frequently used in the applied context of sexual education and health promotion, according to the current working definition from the world health organisation, sexual health is:

"…a state of physical, emotional, mental and social well-being in relation sexuality; it is not merely the absence of disease, dysfunction or infirmity. Sexual health requires a positive and respectful approach to sexuality and sexual relationships, as well as the possibility of having pleasurable and safe sexual experiences, free of coercion, discrimination and violence. For sexual health to be attained and maintained, the sexual rights of all persons must be respected, protected and fulfilled." (WHO, 2006, p6)

First sexual initiation is a normal and expected aspect of adolescent development, which usually takes place during adolescence or young adulthood (Heywood et al., 2015) and marks and the beginning of an individual's sexual and reproductive life. The majority of these first sexual connections are with the opposite sex (Diamond & Lucas, 2004; Diamond, 2004; Horne & Zimmer-Gembeck, 2005). Healthy teenage sexuality is defined as; teenagers accepting their bodies, gender identity and sexual orientation; communicating effectively with family, peers and partners, as well as possessing accurate knowledge of sexual health, understanding the risks, responsibilities and outcomes of sexual actions, possessing skills needed to take action

to reduce their risk, knowing how to access and seek sexual health information, and forming and maintaining healthy relationships (Department of Health, 2011). Healthy teenage sexuality is central to well-being and entails active exploration of identity, values, goals and behaviour (Halpern, 2010). Healthy and positive attitudes towards sexual health are significantly associated with better general overall health for teenagers (Hensel, Nance, & Fortenberry, 2016).

However, risky sexual behaviours are also prevalent among teenagers. The number of pregnancies and prevalence of sexually transmitted infections (STIs) in the teenage population are still high despite the development of numerous sexual health intervention programs (Health Protection Agency, 2010).

Teenage sexual risk-taking has been conceptualized in various ways:

- Early age at first intercourse (Heywood et al., 2015)
- Multiple sexual partners (Kuortti & Kosunen, 2009; Valois, Kammermann, & Drane, 1997a)
- Type of partner or length of relationship (Potard, Courtois, & Rusch, 2008)
- Frequency of intercourse (Valois, Kammermann, & Drane, 1997b)
- Consistency of condom use (Morrison et al., 2009)
- Sexual intercourse and alcohol/drug use (Brown & Vanable, 2007)

Therefore, there are various ways sexual risk taking has been measured and while these can be considered an aspect of risk taking, it has been argued that these do not measure the construct, as sexual risk-taking usually involves a combination of these behaviours (Casey & Beadnell, 2010). For example, inconsistent condom use is less of a risk with one partner if they do not have an STI; however, inconsistent condom use becomes a greater risk with multiple sexual partners. Furthermore, there are contrasting findings in the literature. Stone and Ingham (2003) found condom use but not number of partners to be a significant predictor of STIs. By contrast, Beadnell et al. (2005) found number of partners but not condom use to be a significant predictor of STIs.

Also, much of this research is correlational and has not established cause and effect. Further research has sought to establish causality using longitudinal designs. Longitudinal research has found that early age of sexual intercourse is associated with poorer social environmental

factors, such as poor connections with family and peer pressure (Crockett, Bingham, & Chopak, 1996; McBride & Paikoff, 2003; Whitbeck, Yoder, Hoyt, & Conger, 1999). Siebenbruner and Zimmer-Gembeck, (2007) reviewed published longitudinal studies and found that early sexual intercourse before age 16, is more likely to lead to other sexual risk behaviour, such as; higher number of sexual partners and inconsistent contraception use.

Furthermore, analysis from the first National Sexual Attitudes and Lifestyles (NATSAL) survey found a decline in age at first intercourse and a significant increase in condom use among the youngest age cohort (Wellings, Wadsworth, & Johnson, 1994). Findings from the second NATSAL survey found a significant association between early first intercourse and early pregnancy, but not experience of STIs (Johnson, Mercer, Erens, & Copas, 2001). Finally, early sexual intercourse, before age 16, is associated with other sexual risk-taking behaviours which can result in unplanned pregnancies and STIs (Magnusson, Masho, & Lapane, 2012; McClelland, 2012).

Therefore, it is difficult to define risky sexual behaviours for teenagers, and there is not a clear definition of risky sexual behaviour in the literature. Teenagers engage in many different sexual behaviours, and it is difficult to understand which behaviours are deemed risky (Heywood et al., 2015). In general, behaviours are deemed risky if the negative consequences outweigh the positives (Moore & Gullone., 1996; Gullone, Moore, Moss & Boyd, 2000). Consequently, many explanations of risky behaviours have focused on STIs or unplanned pregnancies. However, these only measure one construct of the behaviour and do not account for the entirety of the behaviour. Whereas, early sexual intercourse before age 16 has been found to lead to other risk taking behaviours. It has consistently been found as a significant risky sexual behaviour for female teenagers (Greenberg, Magder, & Aral, 1992; Vasilenko, Kugler, & Rice, 2016), and across different cultures (Belgrave & Marin, 2000; Day, 1992). Consequently, early sexual intercourse before age 16 may provide a stronger definition of risky sexual behaviours for female teenagers because it leads to other negative consequences.

Throughout the studies which form this PhD, participants were not given a definition of risky sexual behaviours, due to the inconsistencies and controversy of the literature. In study 1 (Chapter 3) participants (sexual health professionals) were asked to think about sexual risk taking as they define it personally within their profession. In studies 2, and 4 (Chapters 4 and 7) participants (teenage girls aged 13-16) were not provided with a definition of risky sexual behaviours. In study 3 and 5, through the use of questionnaires, risky sexual behaviours were

defined as early sexual intercourse before age 16. This was due to the findings that early sexual intercourse before age 16, can lead to other sexual risk taking behaviours (Zimmer-Gembeck & Helfand, 2008).

2.2 Theoretical models of risky sexual behaviour

This next section provides an overview of three theoretical models that are frequently discussed in the literature. The first two, theory of planned behaviour (Ajzen, 1991) and the health belief model (Hochbaum & Rosenstock, 1952) are often used in health psychology to provide a theoretical explanation of sexual health and sexual behaviours. The third model, the theory of problem behaviour (Jessor & Jessor, 1977a; Jessor, 2001) is a commonly used model in explaining adolescent risk behaviour. These three models were chosen because each model had previously been linked with adolescents and sexual health issues (Armitage & Conner, 2001; Brown, DiClemente & Reynolds, 1991; Tschannm Adler, Milstein, Gurvey & Ellen, 2002; Whitaker & Miller, 2000). Also, each model had previously been extensively cited in the literature and therefore, the models were deemed suitable to help explain adolescent sexual risk behaviour. Other models such as the self-regulation theory (Kanfer, 1970) and the subjective culture and interpersonal relations theory (Triandis, 1977), have also been used to help understand adolescent risk behaviours. However, there was less evidence that these models could significantly aid understanding of adolescent risky sexual behaviours, and so are not included in this section.

2.2.1 The theory of planned behaviour

The theory of planned behaviour (Ajzen, 1991), previously the theory of reasoned action (Ajzen & Fishbein, 1980), is one of the most prominent models of behaviour in the health psychology literature. The theory of planned behaviour has clearly-defined constructs and has consistently accounted for large predictive validity when compared to other models of health behaviour (Ajzen, 1991; Conner & Armitage, 1998). The theory of planned behaviour extends beyond the theory of reasoned action to include the concept of perceived behavioural control, as the theory of reasoned action was restricted to predicting volitional behaviours (Ajzen, 2011; Lawton, Conner, & McEachan, 2009). This model proposes that behaviour is determined by behavioural intention, which is a measure of a person's motivation to engage in particular behaviours. Intentions are determined by three constructs, *attitudes, subjective norms and perceived behavioural control* (Ajzen, 1991). *Attitudes* are a person's beliefs about the expected costs or rewards of a particular behaviour in a global positive or negative evaluation

of behaviour. *Subjective norms* are a person's beliefs about the social pressure they feel from their social group. *Perceived behavioural control* is a global summary of specific beliefs about the ease or difficulty of performing a behaviour. Consequently, people intend to engage in behaviours that they evaluate positively (*attitude*), observe within their social group (*subjective norm*), and believe it is achievable (*perceived behavioural control*). A schematic representation of the model is shown in figure 2.1 below.
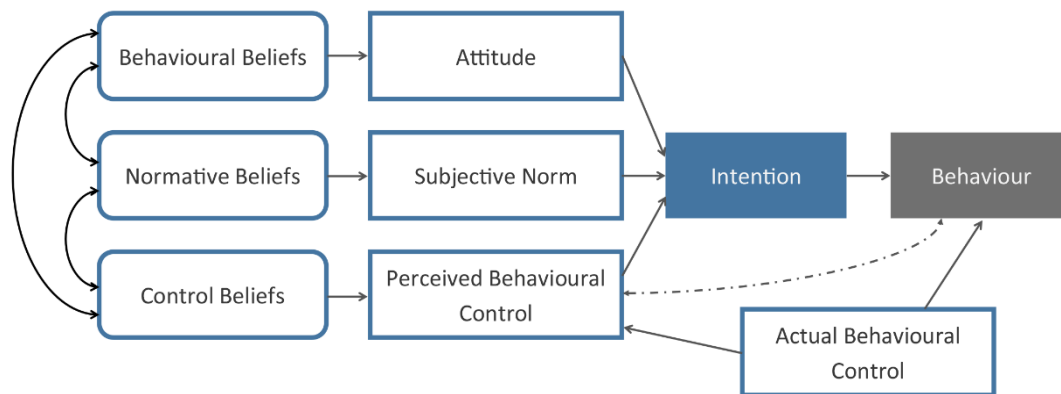
Figure 2.1. A schematic representation of the theory of planned behaviour
The theory of planned behaviour (TPB) has successfully explained a broad array of health behaviours (Armitage & Conner, 2001; Godin & Kok, 1996; Hatherall, Ingham, Stone, & McEachran, 2007; Rivis & Sheeran, 2003), including the use of condoms in sexual health (Albarracín, Johnson, Fishbein, & Muellerleile, 2001). A meta-analysis found that people are more likely to use condoms if they have previously formed intentions to use condoms, and these intentions derive from *attitudes*, *subjective norms* and *perceived behavioural control* (Albarracín et al., 2001; Gerrard, Gibbons, & Bushman, 1996). Interventions aimed at sexual behaviour underpinned by TPB have had successful results. Jemmott and Jemmott, (2000) examined 36 controlled interventions and those that had theoretically prescribed cognitive mediators of behaviour change, including; knowledge, beliefs, intention and self-efficacy were most effective. Interventions that had greater effects on cognitive mediators were found to have greater effects on behaviour, including condom use and sexual abstinence. A more recent meta-analysis (Tyson, Covey, & Rosenthal, 2014) that examined a broad view of interventions aimed at all types of STI and pregnancies in heterosexual individuals, found that the TPB provides a valuable framework for designing interventions to change heterosexual sexual risk behaviour.

However, there has been controversy in literature, as teenagers usually engage in unplanned, spontaneous sex. Therefore, it has been questioned whether TPB can explain teenage sexual behaviour (Moore, 1995). However, the empirical evidence suggests that these cognitions also predict teenagers' sexual behaviour (Jemmott, & Hacker, 1991; Gillmore et al., 2002; Morrison, Baker, & Gillmore, 1998). Gillmore et al. (2002) found support for the theory as a model of the cognitive processes underlying teenagers' decisions to have sex. They found that sexual intercourse was associated with intentions to have sex and intentions were associated with general attitudes and social norms. There were no significant differences between males and females. This was in line with Morrison et al., (1998) who found that condom use among teenagers related more to attitudes than norms, and the most predictive outcome beliefs were beliefs about potential negative effects on intimacy rather than the efficacy of condoms to prevent pregnancy or STIs. Also, recent research has found that both attitudes and perceived norms predict teenage sexual initiation (Bongardt & Reitz, 2015; Zimmer-Gembeck & Helfand, 2008).

Another criticism of the TPB is that it has failed to recognise the emotional aspect of safe sex (Norton, Bogart, & Cecil, 2005). Research has found that extending the TPB to include affective attitudes has enhanced the effectiveness of safe sex interventions (Ferrer, Klein, & Persoskie, 2016). Furthermore, safe sex interventions underpinned by TPB concentrate on one behaviour, yet safe sex for adolescents should involve a series of linked behaviours, for example, condom use and fewer sexual partners, TPB interventions that have focused on more than one behaviour have been more effective (Moore, Dahl, & Gorn, 2006). Taken as a whole, and despite the criticisms discussed here, these studies suggest that the TPB can aid understanding of teenage sexual behaviour.

2.2.2 Health belief model

The health belief model (HBM) is another extensively researched model of health behaviour (Hochbaum & Rosenstock, 1952). The HBM attempts to predict health-related behaviour in terms of certain belief patterns. A person's motivation to undertake a health behaviour can be divided into three categories: *individual perceptions*, *modifying factors*, and *likelihood of action*. *Individual perceptions* are factors that affect the perception of illness and with the importance of health to the individual, perceived susceptibility and perceived severity. *Modifying factors* include demographic variables, perceived threat, and cues to action. *The likelihood of action* is the perceived benefits minus the perceived barriers of taking the

recommended health action. The combination of these factors causes a response that often manifests into the likelihood of that behaviour (Janz & Becker, 1984; Rosenstock & Strecher, 1988).

The HBM proposes that the perception of a personal health behaviour threat is influenced by at least three factors, general health values, which include interest and concern about health; specific health beliefs about vulnerability to a particular health threat; and beliefs about the consequences of the health problem (Hochbaum & Rosenstock, 1952). If a person perceives a threat to their health, is consecutively cued to action and their perceived benefits outweigh the perceived barriers, then they are likely to undertake the recommended preventive health action. A schematic representation of the model is shown in figure 2.2 below.
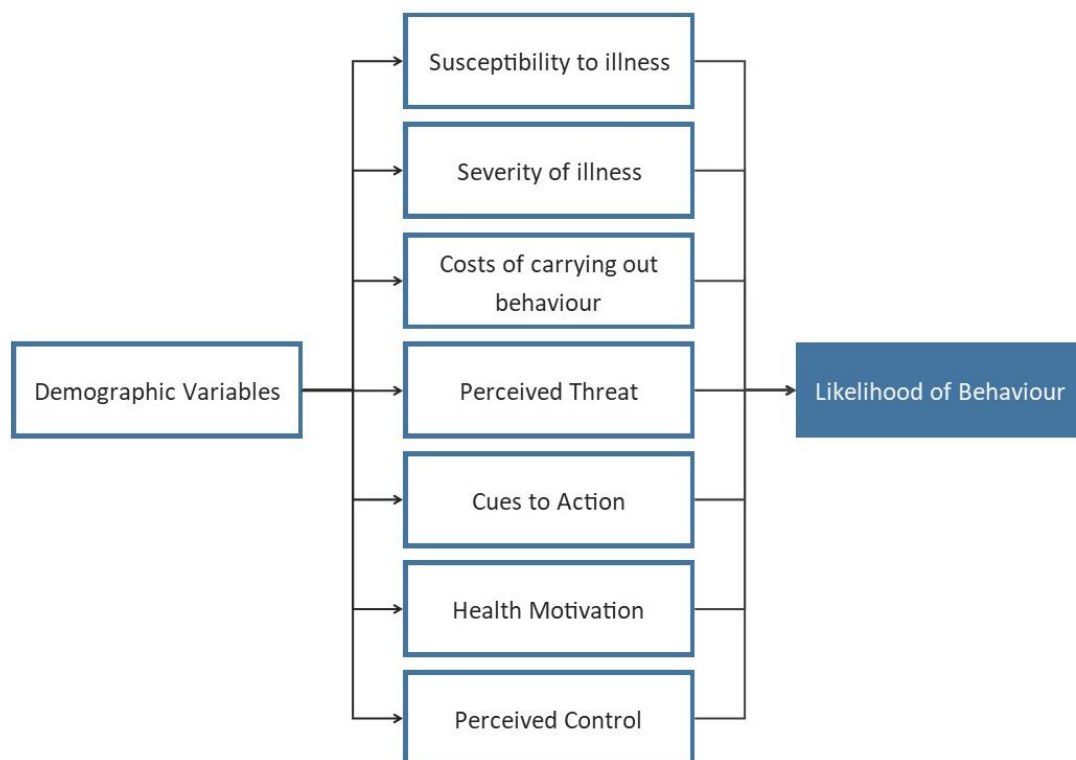
Figure 2.2 A schematic representation of the Health belief model
The Health Belief Model has been used to aid understanding in sexual risk taking behaviour among various age (Brown, DiClemente, & Reynolds, 1991) and cultural groups (Lin, Simoni, & Zemon, 2005). Numerous studies have examined the capacity of the HBM to predict whether sexually active adolescents and young adults will use protection against STIs during sexual or oral intercourse and found support for HBM in understanding safe sex behaviours (Brown et

al., 1991; Laraque, Mclean, & Brown-Peterside, 1997; Lin et al., 2005). HBM has been found to account for 43% of the variance in safe sex intentions in young adolescents (Petosa & Jackson,1991). Furthermore, Downing-Matibag and Geisinger, (2012) demonstrated that the HBM can serve as a useful framework for understanding sexual risk taking during casual hook ups, as adolescents' assessments of their own and peers susceptibility to STIs are often misinformed and situational characteristics, such as spontaneity undermine adolescents sexual self-efficacy.

However, there are issues with using the HBM and meta-analyses have found mixed results of its effectiveness (Carpenter, 2010; Taylor, 2006). In a UK review of research utilising HBM there was no evidence that HBM-based interventions have contributed positively to overall improved health outcomes in the UK (Taylor, 2006). Furthermore, a meta-analysis of 18 studies found perceived barriers and perceived benefits to be the strongest predictors of behaviour, but perceived severity was weak (Carpenter, 2010). Carpenter (2010) suggested that future research should examine possible mediation and moderation between the core components of the HBM, than to explore direct effects. However, another meta-analysis of 18 studies investigated interventions based on the HBM to improve health adherence, with 83% of these studies reporting improved adherence and 39% of studies showed moderate to large effect sizes. Yet only 6 of the studies included explored the model in its entirety (Jones, Smith, & Llewellyn, 2014). Health adherence to teenagers attending routine STI screenings and taking oral contraception pills has been reported as an issue, and as discussed above, the HBM can assist in understanding adolescents safe sex intentions (Goyal, Witt, Gerber, Hayes, & Zaoutis, 2013). Therefore, despite the criticisms discussed here, there is evidence that the HBM can assist in understanding sexual risk taking behaviour in teenagers.

2.2.3 Problem behaviour theory

Problem behaviour theory PBT is a social-psychological framework which helps to explain the development and nature of problem behaviours, for example, risky sex or alcohol use (Jessor & Jessor, 1977a; Jessor, 2001). Jessor (1987) described problem behaviour as any behaviour that deviates from both social and legal norms. The model comprises three systems of psychosocial influences: personality system (all social cognitions, personal values, expectations, beliefs and values), perceived environmental system (family and peer expectations) and the behaviour system (problem and conventional behavioural structures that work in opposition to each other). Demographic and socialisation variables affect the

personality and perceived environmental systems and have an indirect impact on behaviour. The personality and perceived environment systems are viewed as proximal or more direct determinants of behaviour than are demographic and socialisation variables.

The three systems of the PBT each utilise different variables that either influence the problem (such as risky sex) to occur or decrease the likelihood of the behaviour to take place. For each individual, when predicting a problem behaviour, the conventional-unconventional behaviours of the individual are taken into consideration (Donovan, Jessor, & Costa, 1991). Donovan et al. (1991) defined conventional behaviours as actions that are socially approved behaviours; while unconventional behaviours are defined as any behaviour deviates from social norms. By analysing conventional-unconventional behaviours in each of the three psychosocial systems in an individual, it allows to make a prediction on future behaviours. A schematic representation of the original model is shown in figure 2.3 below.
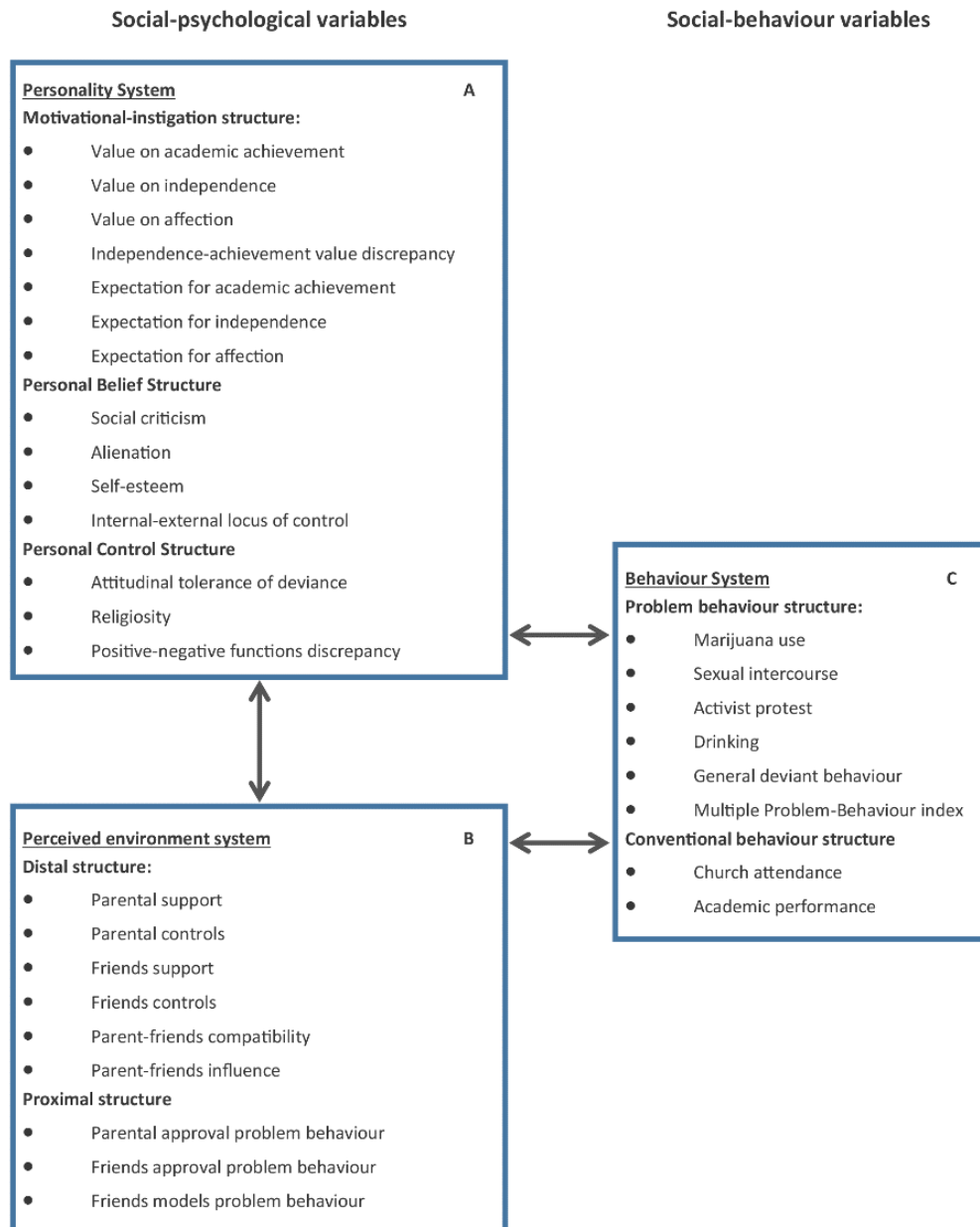
Figure 2.3. A schematic representation of the original problem behaviour theory model

Early research has supported this theory as multiple factors as a cluster can influence risky sexual behaviours. Protective factors such as self-esteem and cognition may play important roles in teenage decision making and are embedded within social and community contexts (Norman & Turner, 1993). Teenagers with low self-esteem may become sexually active at an early age to help fill a void left by feelings of inadequacy and fear of failure (Bloom, 1990). This cluster of behaviours has also carried into recent research, teenagers who engage in earlier alcohol use significantly predicted risky sex engagement of multiple partners with inconsistent condom use (Mason, Hitch, & Kosterman, 2010). Furthermore, social norms are all related to sexual risk behaviour and cluster together, risky sexual behaviours in older adolescents can be

predicted by higher sensation seeking (personality) lack of communication with parents (perceived environment) and engagement in alcohol use (behavioural factors) (Whitaker & Miller, 2015).

However, most previous research investigating PBT has only accounted for one of the three systems, or looked at the three systems individually (Davis, 2002). For example, Mason et al. (2010) has only considered the behavioural system, therefore only other problem behaviours that may coincide with risky sexual behaviours, while not taking into account the personality and perceived environmental factors. Because of this it is difficult to fully predict future behaviour, if all three systems are not investigated together. PBT also does not work for all cultures (Deutsch, Slutske, Heath, Madden, & Martin, 2014). The basis of this theory is that it works for all groups who engage in deviant behaviour, however research and development of this theory was originally conducted in a community composed of white individuals with middle-class backgrounds (Jessor, 2001). Therefore, it is difficult to generalise the theory to other subcultures. However, despite the issues found in previous research with lack of evidence for all parts of the PBT, the PBT has been shown to account for variation in a number of different problem behaviours, and can help explain risky sexual behaviours for teenagers.

2.3 Predictors of risky sexual behaviours

Previous research has suggested a number of predictors of risky sexual behaviours in teenagers. The key predictors are discussed in this section and are split into five sub-sections to provide greater clarity with respect to how these cluster together into larger categories. The subsections are; parental and peer influences, self-influences, personality, situational factors and external factors. For a full overview of key studies exploring the factors see table 2.1.

2.3.1 Parental and peer influences

One of the main factors known to predict sexual risk taking in teenagers is parental influences. Communication with parents is important. Teenagers who talk to their parents have better knowledge and attitudes towards sex and are likely to delay first sexual initiation (Guzmán & Schlehofer-Sutton, 2003; Wight & Fullerton, 2013). However, there are significant gender differences. Males who talk to their parents about sex report inconsistent condom use, whereas females who are comfortable talking to their parents report consistent condom use (Hyde et al., 2013). Also, teenagers who live with both parents have better contraception use than teenagers who live with one or a step parent (Manning, Longmore, & Giordano, 2000). Parental support is also important. Perceived maternal or paternal disapproval for engaging in sexual intercourse

is associated with better sexual behaviour outcomes (Aronowitz & Rennells, 2005; Jaccard, Dodge, & Dittus, 2002; Sr & Nagy, 2000) and high family and parental support is associated with less risky behaviours (Bobakova, Geckova, Klein, van Dijk, & Reijneveld, 2013; Coley, Votruba-Drzal, & Schindler, 2009). Females' parental warmth and emotional connection is linked with fewer sexual partners and greater condom use (Abrego, 2011; Noll, Haralson, & Butler, 2011; Zimmer-Gembeck, 2011). Therefore, parents can develop capacity for positive, healthy attitudes towards sexual health with a comfortable and supportive environment. This is further enhanced by promoting skills and values that build autonomy and encourage sex only within a relationship (Parkes, Henderson, Wight, & Nixon, 2011).

In contrast, some research has also found no link between parental attitudes, support and teenagers' sexual health. Resnicow et al., (2001) found no relationship between control strictness and frequency of sex and sexual partners. Also, research has found increased family and parental support has no effect on risky sexual behaviours (Benda & Corwyn, 1996; Lammers, Ireland, Resnick, & Blum, 2000; Sionéan et al., 2002). Therefore, evidence relating to associations between parent-teen relationships is somewhat mixed. A reason for these mixed findings might be because of inconsistencies with respect to the extent to which parents talk to their children about sexual health. Yun et al., (2012) found that even though parents believe it is important to speak to children about sexual health, only 8.3% discussed it very often and 37.2% discussed it sometimes. In addition, qualitative research has found that parents delay speaking to teenagers about sex as they believe that this is covered by sex education at school, furthermore parents worry that speaking about sex may encourage sexual activity (Hyde et al., 2013). Also, whilst some parents believed they had covered all areas of sexual health, talks only focused on the consequences of risky sex and parents had limited conversations about safe sex (Hyde et al., 2013). Therefore, there are inconsistencies and it is difficult to assess how much parents talk to their children about sex and whether they are covering all areas of sexual health. Quantitative data may reveal that parents report covering sexual health talks, yet qualitative research has identified that some parents are only covering basic issues.

Lack of communication with parents may cause adolescents to turn to other sources for advice and guidance. A source that teenagers may turn to for sexual health advice is their peers, as parental influences are known to interact with peer influences. Teenagers whose mothers are more open about sexual activity can decrease peer influence (Ajilore, 2015). Also, social norms and peer pressure are more likely when parents have not previously discussed sex or condoms

with their child (Whitaker & Miller, 2000). There are a few reasons why peers may influence risky sexual behaviours. Teenagers may engage in risk-taking because they believe the behaviour will enhance their popularity if it matches the social norms of their peer group, especially if the behaviour is reinforced by their peers, or if the behaviour contributes to a favourable self-identity (Brechwald & Prinstein, 2011). Peers also influence sexual activity through dissemination of information or misinformation about sexual health and the formation of intention to engage in sexual activity (Blume & Durlauf, 2005; Cawley & Ruhm, 2011).

It is a consistent finding in the literature that perceived peer attitudes towards sex are important to teenagers forming their own attitudes. Teenagers who believe their friends have pro-childbearing attitudes are more likely to have earlier sexual initiation and a higher number of sexual partners (Baumer & South, 2001; Robinson, 1998). Also, permissiveness of peers is related to higher frequency of unprotected sex (Potard et al., 2008). By contrast teenagers who believe their peers have less favourable attitudes towards sex are more likely to be sexually abstinent (Sr & Nagy, 2000) or delay sexual initiation (Santelli, Kaiser, et al., 2004). Furthermore social norms and peer pressure are important, as believing peers have had sex is associated with intention to have sex (Gillmore et al., 2002; Kinsman, Romer, & Furstenberg, 1998) and early sexual initiation (Skinner, Smith, Fenwick, Fyfe, & Hendriks, 2008; Vanoss Marín et al., 2000). Peer communication is therefore highly important, as how teenagers discuss sexual health with their peers influences their future sexual health decisions (Busse, Fishbein, Bleakley, & Hennessy, 2010). Also, teenagers are likely to date people in their peer groups and be more pressured into alcohol and substance use leading to riskier situations and behaviour (Allen, Porter, & McFarland, 2006). A link has been observed between alcohol use and sexual initiation, especially with an older partner. Teenagers with older partners are more likely to have early initiation and more unwanted sexual advances (Marín et al., 2000). Therefore, peer attitudes, communication, social norms and peer pressure have big influences on sexual decisions.

2.3.2 The Self

There are also self-factors that have been found to be important in predicting risky sexual behaviours. Some self-factors have been consistently and significantly linked with risk taking behaviours for example, self-efficacy (Resnicow et al., 2001), having no direction in life (Buhi & Goodson, 2007) connectedness (Markham et al., 2010) self-standards (Dilorio, Dudley, Soet, Watkins, & Maibach, 2000), belief in the future (Gavin, Catalano, David-Ferdon, Gloppen, &

Markham, 2010) and self-determination (Gavin et al., 2010). However, there have been debates in the literature about other factors, in particular around self-esteem.

Self-esteem is an assessment of one's self-worth that is a component of the self-schema (Rosenberg, Schooler, & Schoenbach, 1995). Self-esteem can be measured in two ways, global self-esteem is the overall assessment of self-worth (Rosenberg et al., 1995) and domain-specific is assessment of self-worth in a certain context (McGee & Williams, 2000). Rosenberg et al. (1995) proposed that individuals who display higher self-esteem value the self-more and demonstrate more confidence than a person with low self-esteem. Female teenagers are less likely to report having a high self-esteem compared to male teenagers (Birndorf, Ryan, Auinger, & Aten, 2005). However, teenager's self-esteem is more fragile to social comparison during the developmental stage (Harter & Whitesell, 2003) and decreases around age 12 (Simmons & Rosenberg, 1975). Self-esteem gradually increases in later adolescent around age 17 and becomes more positive as freedom, personal authority and role-taking abilities increase (Harter & Whitesell, 2003). Therefore in younger adolescents, self-esteem has been associated with higher risk engagement because it increases or maintains self-esteem or reduces the threat of having low self-esteem (Crocker & Park, 2004).

As self-esteem is linked with risk engagement it has been investigated with risky sexual behaviours. There have been significant links found between self-esteem and risky sexual behaviours (Cole, 1997). In longitudinal research, it has been found that self-esteem predicts risky behaviour (Donnellan & Trzesniewski, 2005). McGee and Williams, (2000) measured self-esteem at ages 9 and age 13 and then followed up on risk behaviours at age 15 and found that self-esteem was linked with multiple risk taking behaviours, including sexual risk taking. However, a systematic review by Goodson, Buhi, and Dunsmore, (2006) found no association between self-esteem and sexual behaviours, attitudes or intentions. This may be explained by the context in which that self-esteem develops. Boden and Horwood, (2006) found that while there were significant links between lower self-esteem and unprotected sex, greater number of sexual partners and greater risk of an unplanned pregnancy between the ages of 15 and 25, this link was non-significant when taking SES background, family and individual characteristics into account. Therefore, self-esteem may be dependent upon how it develops and interacts with other predictors.

Research that has investigated self-esteem in conjunction with these factors has found significant results, yet with small effect sizes. Laflin, Wang, and Barry, (2008) followed

teenagers from virgin to non-virgin status and found that academic achievement and lower self-esteem significantly predicted early sexual initiation in both males and females. However, while religiosity, self-efficacy and self-esteem were significant predictors for males, only peer pressure, age, family and self-esteem were significant predictors for females. Therefore, there may be important differences in the interplay of self-esteem and other factors for males and females.

Also, in older female adolescents it has been found that self-esteem may reduce the likelihood of unprotected sex, whereas multivariate analysis indicated that being employed or in school may play a protective role with respect to number of sex partners (Tevendale, Lightfoot, & Slocum, 2008). Furthermore, adolescent girls with higher alcohol use, lower religiosity, and higher self-esteem may reflect a nonconventional profile overall, of which sexual transitions are just a part (Ronis & Sullivan, 2011). Taken together, this suggests that self-esteem is difficult to measure and needs to be considered alongside multiple factors.

It has also been found that parents have an important role in self-esteem development, and by fostering high-quality relationships parents can enhance their child's self-esteem and consequently sexual relationships (Boislard, Van de Bongardt, & Blais, 2016). Therefore, there has been a lot of research on self-esteem and risky sexual behaviours, with contrasting results. It is difficult to generalise self-esteem findings as there have been significant differences between younger and older adolescents as well as between males and females. It is also important to consider how self-esteem develops and interplays with other factors. Because of this, it is difficult to draw a firm conclusion with respect to how self-esteem influences the sexual behaviours of young teenagers.

Self-efficacy however, has consistently been found to be a significant predictor of risky sexual behaviours. High levels of self-efficacy have been associated with resisting peer pressure, safer sex, delaying initiation and avoiding risky sexual behaviours (Ludwig & Pittman, 1999; Resnicow et al., 2001; Sionéan et al., 2002). Furthermore, it has been found that self-efficacy can predict intended and actual condom use (Baele, Dusseldorp, & Maes, 2001). This may be because of the perceived benefits of protected sex rather than the threat of unprotected sex (Parsons, Halkitis, Bimbi, & Borkowski, 2000). It has been suggested that self-efficacy can explain 18-45% of the variance in condom use, however, there are significant gender differences and self-efficacy may be more important in condom use for males than females (Farmer & Meston, 2006). Therefore, self-efficacy has continually been highlighted as a highly

important factor in predicating risky sexual behaviours, but may be more important for males than females in condom usage.

Three self-factors that are often linked together in predicting risky sexual behaviours are school performance, body image and depression (Perry, Braun, & Cantu, 2014). School performance has consistently been linked with risky sexual behaviours, with lower school performance linked with more vaginal sex and earlier sexual initiation (Perry et al., 2014; Wheeler, 2010a). Also a number of studies have found significant relationships between body dissatisfaction and lowered condom use self-efficacy with young female teenagers (Gillen, Lefkowitz, & Shearer, 2006; Salazar & Crosby, 2005; Watson, Matheny, & Gagné, 2013). Furthermore, depressed adolescents are more likely to be sexually active than non-depressed adolescents (Brawner, 2012) and depression is longitudinally linked with increased risky sexual behaviour, including greater number of partners (Mazzaferro, Murray, Ness, & Bass, 2006; Spencer, Zimet, Aalsma, & Orr, 2002) condom non-use (Mazzaferro et al., 2006; Noar, Clark, Cole, & Liza Lustria, 2009) and age at first sexual intercourse (Skinner, Robinson, Smith, Chenoa, & Robbins, 2015).

2.3.3 Personality

The link between individual personality traits and sexual risk taking is well documented and two large systematic reviews have indicated that there is a consistent link between the big five personality traits and risky sexual behaviours in teenagers (Bogg & Roberts, 2004; Hoyle, Fejfar, & Miller, 2000). Teenagers with higher levels of extraversion engage in more sexual behaviours and report a higher number of partners and a higher number of accounts of unprotected sex (Bogg & Roberts, 2004; Eysenck, 1976; Hoyle et al., 2000; Miller, Lynam, Zimmerman, & Logan, 2004; Raynor & Levine, 2009; Schmitt, 2004) This may be because extraverts may seek more stimulation as they may have less cortical arousal (Eysenck, 1976). Conscientiousness has been negatively associated with sexual risk taking for unprotected sex and neuroticism is weakly associated with number of partners and unprotected sex (Hoyle, Fejfar & Miller, 2000). In addition, Miller and Lynam (2003) found low agreeableness, low openness to experience and high extraversion are significantly related to multiple high risk sexual behaviours. Linking with peers it has been found that adolescents tend to make friendships based on dissimilarity in agreeableness, and similarity in gender and sexual intention (Baams, Overbeek, & Bongardt, 2015). This may help explain why peer pressure is such a big influence (Santelli, Kaiser, et al., 2004).

Furthermore, Sensation Seeking, characterised by a greater need for exciting experiences, thrill seeking and novelty (Zuckerman, Buchsbaum, & Murphy, 1980) and Impulsivity, characterised by decision making with little or no thought or planning (Donohew et al., 2000) are well documented as predicting earlier initiation, a greater number of partners and unprotected sex (Hoyle, Fejfar, & Miller, 2000). Individual differences in self-regulation have recently been suggested to explain engagement in risky activities. Zayas, Mischel and Pandey (2014) identified that health; social and academic outcomes can be predicted by delayed gratification, the ability to wait for larger delayed rewards, while resisting smaller immediate ones. Magar, Phillips, and Hosie, (2008) found that poor cognitive self-regulation and emotional regulation is linked with greater participation in risky behaviours. Similarly, Raffaelli and Crockett, (2003) found that self-regulation was associated with a greater number of partners after becoming sexually active, but had no effect on sexual initiation. Quinn and Fromme, (2010) found that an interaction between self-regulation sensation seeking and heavy drinking; in low sensation seeking self-regulation buffered against the effects of heavy drinking. This may be because internalizing such social values can enhance mechanisms of self-control and reduce problem behaviours such as unprotected sex to peer pressure (Reyna & Wilhelms, 2016). Therefore, there has been support for individual personality traits predicting sexual risk taking and these link with peer groups, as teenagers tend to make friends based on similar personality traits. The personality traits discussed in this section are considered as predictors of teenage sexual risk taking in Study 3.

2.3.4 Situational factors

Situational factors also have an effect on risky sexual behaviours and as previously mentioned, alcohol is an important predictor linked with other factors such as peer pressure (Marín et al., 2000) and self-esteem (Ronis & Sullivan, 2011). There exists a plethora of research investigating alcohol and sexual behaviours. Multiple systematic reviews have found that alcohol and marijuana use is significantly related to a higher number of partners and higher incidents of unprotected sex (Brawner, 2012; Ritchwood, Ford, DeCoster, & Sutton, 2015; Tapert, Aarons, Sedlar, & Brown, 2001). Furthermore, early age at first alcohol use is significantly linked with multiple partners, unprotected sex and unplanned pregnancies (Stueve & O'donnell, 2005). Qualitative research has investigated why this link might exist and found that under the influence of alcohol, teenagers are not too shy to have sex but remain embarrassed to talk about condom use (Hammarlund & Lundgren, 2008). In addition, teenagers

often use alcohol as an excuse for socially unacceptable behaviour, especially if it goes against social and peer norms (Hopkins, Lyons, & Coleman, 2004).

Another important situational factor found in the literature is physical and sexual abuse. A 30-year longitudinal study investigating physically and sexually abused children (aged 1-11 years) matched with non-maltreated children and followed into adulthood found that maltreated children were more likely to report early sexual initiation, engage in prostitution and have higher incidence of STIs in middle adulthood (Wilson & Widom, 2008). Systematic reviews have also found that childhood sexual abuse is a significant risk factor for unplanned pregnancies, depression and alcohol use in older adolescence (Hipwell, Keenan, Loeber, & Battista, 2010). In comparison to other factors, systematic reviews have found that the long-term impact of childhood sexual abuse on sexual health problems are similar for both males and females (Dube, Anda, Whitfield, & Brown, 2005). Therefore, it is a consistent finding that childhood sexual abuse has a significant impact on risky sexual behaviours in teenagers and these are similar for both males and females.

2.3.5 External factors

One important external factor identified in the literature is the mass media. The mass media can have an effect on teenagers' sexual attitudes. For example, teenagers who saw risky sex displayed in the media had significantly higher permissive attitudes than teenagers who had never been exposed to sex in the media (Braun-Courville & Rojas, 2009). There are also significant cultural and gender differences with respect to the extent that media exposure can influence sexual attitudes and behaviour. For example, Brown, L'Engle, Pardun, and Guo, (2006) investigated white and black adolescents aged between 12-14 years old, and found that exposure to sexual content in music, films, television and magazines accelerated white adolescents' sexual activity, whereas black adolescents were more influenced by parents than the media. Longitudinal studies have shown that exposure to risky sex in the mass media predicted less progressive gender role attitudes, more permissive sexual norms, and having oral sex and sexual intercourse two years later for males. For females, early exposure to risky sex in the mass media predicted subsequently less progressive gender role attitudes and having oral sex and sexual intercourse (Brown & L'Engle, 2009). Therefore, the mass media has important implications for the formation of teenagers' sexual attitudes and behaviours, however, it is difficult to generalise studies due to important gender and cultural differences.

Another external factor that has been found as contrasting in the literature is age of puberty. It has been established that early puberty is associated with early sexual intercourse and teenage pregnancy (Deardorff, Gonzales, & Christopher, 2005; Downing & Bellis, 2009). In a longitudinal study on pregnant female teenagers (aged 12-18 years old) it was found that early puberty was associated with early sex and teenage pregnancy, especially if their mother had also gone through early puberty (De Genna, Larkby, & Cornelius, 2011). A reason that early puberty may increase early sexual initiation is that during puberty there are hormonal changes that encourage sensation-seeking and stimulate sexual interest (Gardner & Steinberg, 2005; Halpern, 2006). This may particularly be an issue for vulnerable teenagers as the prefrontal cortex develops at a much slower rate than secondary sex characteristics (Blume & Durlauf, 2005), therefore females that have early puberty may be more influenced by social influences and their emotions and are less likely to be able to inhibit risky behaviours (Steinberg, 2005). This may also be an issue because they may look older than their peers. However, research has found that while early puberty was associated with earlier sex for males, it was not significantly related in females (Bingham & Crockett, 1996). Also, in a large Australian study it was found that girls who had early puberty were equally likely to have sex before age 16 than girls who hadn't had early puberty (Marino, Skinner, Doherty, & Rosenthal, 2013). Therefore, age of puberty has found contrasting results in previous research and may not be a risk factor for female teenagers, and may only be important for males. However, research has shown that the strength of associations and mixed results may be based on the method used to classify pubertal timing (Negriff, Fung, & Trickett, 2008). It is difficult therefore to draw a conclusion on how pubertal timing influences sexual behaviours.

Linking with the Problem Behaviour Theory (Jessor & Jessor, 1977b) discussed above, relationships have been observed between adolescent sexual activity and involvement in other problem behaviours (Crockett, Raffaelli, & Shen, 2006). Delinquency and problem behaviours have been associated with earlier age at first sexual intercourse (Skinner et al., 2015) and with age of puberty, as early maturing adolescents may actively seek out opportunities to engage in risky behaviours including sexual risk taking (Sonya Negriff, Susman, & Trickett, 2011). Longitudinal studies indicate that early sexual activity is a risk for delinquency one year later (Armour & Haynie, 2007), other studies report that delinquency is also associated with higher sexual initiation (Caminis, Henrich, & Ruchkin, 2007). Therefore, it is clear that teenage risky sexual behaviours tend to cluster around other risk taking behaviours.

As discussed in this section there are a range of predictors of risky sexual behaviours, with some consistent predictors (for example, alcohol use) and other non-consistent predictors (for example, self-esteem) found across the literature. Further, there are known differences for males and females. Most of the predictors have been studied across different populations and the mixed findings may be due to different characteristics of the sample. There has also been a range of definitions used for risky sexual behaviours and different study designs used. Therefore, because of these issues and the findings in previous literature, it is not currently known which predictors are most prevalent to females from a low SES background in predicting earlier sexual initiation. For an overview of the key predictors see table 2.1 below.

Table 2.1. Overview of predictors, participants and behaviours found in previous research

Group	Factor	Literature	Participants	Behaviour
Peers	Peer pressure	(Gillmore et al., 2002)	Males and females 14-16 years	Earlier sexual initiation
	Social norms	(Skinner, Smith, Fenwick, Fyfe, & Hendriks, 2008)	Females 14-19 years	Intention to have sex
	Age of partner	(Vanoss Marín et al., 2000)	Males and females 16-18 years	Early sexual initiation
	Peers approval of sex	(Baumer & South, 2001; Robinson, 1998).	Male and females 10-18 years	Early sexual initiation. Higher number of sexual partners
	Coercion from sexual partners	(Skinner et al., 2008)	Females 14-19 years	Intention to have sex
	Conforming to peer norms	(Gillmore et al., 2002)	Males and females 14-16 years	Intention to have sex
	Social support	(Mazzaferro et al., 2006)	Females 13-16 years	Likelihood of STIs
	Peer communication	(Busse et al., 2010)	Males and females 14-16 years	Intention to have sex
Parents	Negative parenting	(Guilamo-Ramos, Bouris, Lee, McCarthy, Michael, , Pitt-Barnes, & Dittus, 2012)	11-18 years Males and females	Age at first intercourse
	Role models	(Guilamo-Ramos et al., 2012)	11-18 years Males and females	Age at first intercourse
	Education and social class of parent	(Manning, Longmore, & Giordano, 1995)	13-17 years Males and females	Age at first intercourse and higher number of partners

	Parental attitudes towards sex	(Dittus & Jaccard, 2000)	12- 16 years Males and females	Early sexual intercourse and contraception use
	Family support	(Hyde et al., 2013)	12- 16 years Males and females	Earlier sexual intercourse
	Parental influences and monitoring	(Wight & Fullerton, 2013)	Review of parental sexual health interventions	Knowledge and behaviour improved after parental interventions
	Younger parents	(Manning et al., 1995)	13-17 years Males and females	Age at first intercourse and higher number of partners
	Lone parents	(Guilamo-Ramos, Bouris, Lee, McCarthy, Michael, Pitt-Barnes, & Dittus, 2012)	11-18 years Males and females	Age at first intercourse
Self	Self-esteem	(McGee and Williams 2000)	11-16 years males and females	Earlier sexual behaviour and condom use
	Self-efficacy	(Dilorio, 2001)	Review - Teenagers	Earlier sexual behaviour
	No direction	(Buhi & Goodson, 2007)	Systematic review - adolescents	Earlier sexual behaviour
	Low Aspirations	(Pearson, Child, & Carmon, 2011)	Review – adolescents	Earlier sexual behaviour
	Connectedness	(Markham et al., 2010)	Review – teenagers	Protective against sexual risk taking

	Self-standards	(Dilorio et al., 2000)	Review - teenagers	Earlier sexual behaviour
	Beliefs and attitudes towards sex	(Sieverding, Adler, Witt, & Ellen, 2005)	Male and female teenagers (Mean age 15)	Less sexual initiation
	Depression	(Brawner et al., 2012)	Females aged 13-19 years	Higher frequency of having sex, higher number of partners more alcohol and drug use
	Belief in the future	(Gavin et al., (2010)	Systematic review - teenagers	Less teen pregnancy and STIs
	Self-determination	(Gavin et al., 2010)	Systematic review - teenagers	Less teen pregnancy and STIs
	Body image	(Schooler, 2012)	Females 14-17 years	Condom use
	Low school aspirations and performance	(Wheeler, 2010a)	Adolescents	Sexual initiation
Personality	Big-five	(Bogg & Roberts, 2004; Hoyle et al., 2000)	Teenagers males and females	Higher number of sexual partners and more unprotected sex
	Sensation seeking	(Hoyle, Fejfar & Miller, 2000).	Teenagers males and females	Earlier sexual initiation
	Impulsivity	(Hoyle, Fejfar & Miller, 2000).	Teenagers males and females	Higher number of sexual partners and more unprotected sex
	Self-regulation	(Rafaelli & Crockett, 2003)	14-16 years males and females	Greater number of sexual partners

	Delayed gratification	(Zayas, Mischel & Pandey, 2014)	13-18 years males and females	Higher account of unprotected sex
Situational factors	Spontaneous sex	(Buhi & Goodson, 2007a)	Systematic review - adolescents	Condom use
	Alcohol	(Ritchwood et al., 2015)	Systematic review - teenagers	Unprotected sex, number of sexual partners, drug use.
	Drug use	(Brawner et al. 2012)	Females aged 13-19 years	Higher frequency of having sex, higher number of partners more alcohol use.
	Not considering the long term implications	(Rothspan & Read, 1996)	Males and females - teenagers	STIs
	More ego-centric thinking	(Catania et al., 1989)	Female adolescents	STIs
	Boredom	(Buhi & Goodson, 2007)	Systematic review - adolescents	Earlier sexual behaviours
	Time spent alone at home	(Resnicow et al., 2001)	Systematic review - adolescents	Earlier sexual behaviours
	Lack of awareness	(Buhi & Goodson, 2007)	Systematic review - adolescents	Earlier sexual behaviours and condom use
	Sexual abuse	(Valle et al., 2009)	Males and females – 15-16 years	Earlier sexual behaviour
	Early physical intimacy experiences	(Pearson et al., 2011)	Review – adolescents	Earlier sexual behaviour

	Low awareness of contraception	(Lader, 2009)	Review – adolescents	STIs, pregnancy and earlier sexual behaviour.
External factors	Media	(Brown et al., 2006)	Males and females 12-14 years	Earlier sexual behaviour
	Culture	(Karakiewicz, Bhojani, Neugut, Shariat, Jeldres, Graefen, & Kattan, 2008)	Review - adolescents	STIs
	Age of puberty	(De Genna, Larkby, & Cornelius, 2011)	Pregnant teenagers – 12-18 years	Earlier sexual behaviour, unplanned pregnancy

2.4 Females from low socio-economic areas

This PhD focuses on female teenagers because it has been identified that female teenagers from low SES areas are more likely to feel pressure to engage in earlier sexual intercourse (Nahom et al., 2001), and the majority of teenagers report regretting the age they started having sex (Meier, 2007). Early intercourse for female teenagers can lead to negative influences on females' psychological wellbeing and their reproductive health (Olesen et al., 2012). Negative sexual health outcomes include an increased risk of STIs (Kaestle, Halpern, & Miller, 2005), unplanned pregnancies (Finer & Philbin, 2013) and increased number of sexual partners (Sanjose, Cortés, & Méndez, 2008). In addition, female teenagers are more likely to engage in general health risk behaviours if they have an earlier age of first intercourse, such as alcohol and drug use (Kellam, Wang, Mackenzie, & Brown, 2014).

There are consequences of teenage pregnancies on the mother and baby, as teenage mothers are more likely to be disadvantaged than women who have children past teenage years (Bissell, 2000). Teenage mothers usually face many disadvantages arising from the families and communities in which they live, they may have lower incomes, poorer support systems and weaker school systems which all contribute uniquely to poorer overall health outcomes (Hoffman & Maynard, 2008). In terms of health issues, teenage mothers are at an increased risk for pre-term delivery and low birth weight (Chen et al., 2007). Many studies report an increased risk of foetal death and infants born to teenage mothers have an increased tendency to have a lower birth weight, be born premature, have poorer cognitive development, lower educational attainment, more frequent criminal activity, higher risk of abuse, neglect, abandonment, and behavioural problems during childhood (Dahinten, Shapka, & Willms, 2007; Jolly, Sebire, Harris, & Robinson, 2000). In terms of social and emotional impact, a large qualitative study conducted in the UK with pregnant teenagers found teenagers felt they were on the road to social death, as there is a lot of stigma around teenage pregnancy and teens reported that they lost contact with friends (Whitehead, 2001). There are many negative psychological and health consequences for the mother and baby. Consequently, it is highly important to research the predictors of risky sexual behaviours for female teenagers.

It is important that female teenagers have access to sexual health information and an appropriate sexual health intervention program before they become sexually active. Females with increased sexual health knowledge are more likely to delay first sexual initiation and have greater confidence in using condoms (McElderry & Omar, 2003; Weinstein, Walsh, & Ward,

2008). It is critically important that teenagers are targeted with reliable information because teenagers report concern for negative consequences of sexual behaviour (Hagan, Shaw, & Duncan, 2007). Ideally, teenagers should receive information that is medically accurate and is reinforced from multiple sources (Martino, Elliott, Corona, & Kanouse, 2008). Thus, early information may help protect against and delay earlier sexual initiation. As mentioned above, earlier initiation leads to unplanned pregnancies and STIs (Heywood et al., 2011).

Also, research has demonstrated that differences exist between girls from a lower Socio-economic status (SES) area and girls from a higher SES area, in regards to sexual health and access to appropriate sexual health information. SES, measured by parental education and parental income, is associated with many measures of health status (Santelli, Lowry, & Brener, 2000; Sieverding, Adler, Witt, & Ellen, 2005). Previous research has shown that females from lower SES areas engage in sexual activity at a younger age, and have higher rates of underage pregnancies and STIs compared to teenagers from higher SES areas (Karakiewicz, Bhojani, Neugut, Shariat, Jeldres, Graefen, & Kattan, 2008; Langille, Hughes, Murphy, & Rigby, 2005). Additionally girls from a lower SES area, whose sister or mother had had a teenage birth are significantly more likely to experience a teenage pregnancy (East, Reyes, & Horn, 2007). High education and social class of parents are associated with greater contraception use (Abma, Driscoll, & Moore, 1998; Manning, 2000). One reason for this may be because there has been a decline in comprehensive sexual health programs in low SES areas (Santelli, Lindberg, & Finer, 2007). Thus, it is difficult for low SES female teenagers to access reliable sexual health information.

Throughout the studies in this PhD, female teenagers aged 13-16 years have been recruited. There are currently a number of effective interventions aimed at adolescents aged 16-24 years (Copen, Dittus, & Leichliter, 2016; Hendry, Brown, Dowsett, & Carman, 2017; Hoffman, O'Sullivan, Harrison, Dolezal, & Monroe-Wise, 2006). This is because STIs are most prevalent for 16-25 year olds (Satterwhite, Torrone, & Meites, 2013). However, these interventions may not be suitable for younger teenagers. Female teenagers under age 13 are not included because sexual activity and pregnancy are rare among 10-12 year olds, and sex is more likely to be non-consensual, because of this, it represents a different public health and legal issue than sex among older teenagers (Finer & Philbin, 2013). Therefore, there is a lack of research on female teenagers aged 13-16 years who represent a public health concern as they are under the age of legally consensual sex (age 16 in England), but still have a high rate of risky sexual behaviours.

2.5 Current interventions

Sex and Relationship Education (SRE) is a non-assessed subject within British schools and as such remains inconsistent (UK Department of Education and Employment, 2000). Currently it is only compulsory for local authority maintained schools to teach basic biology and reproduction. Academies and free schools do not have to teach this as they do not have to follow the national curriculum. However, this is due to change in 2019, with the introduction of Relationships and Sex Education which will be compulsory for all secondary schools, including academies and maintained schools (Schulkind, Hurst, Biggart, & Bowsher, 2015; Sellgren, 2017). In a 2002 review, it was found that over a third of SRE in schools was outdated and needed improving (OfSTED, 2002). An example of the narrow perspective of current Sex and Relationship Education was highlighted by a recent study that found 4 out of 10 schoolgirls in England aged 14–17 years reported having experienced sexual coercion (Barter et al., 2016), yet the girls did not understand coercion as they are currently not taught basic information such as consent.

Sex and Relationship Education in schools is provided primarily by teachers (Westwood 2001), yet teachers often report having insufficient sexual health knowledge about STIs and emergency contraception to effectively teach the subject (Westwood & Mullan, 2007). Sexual health professionals have better knowledge of SRE, however pupils have less positive attitudes towards them as they do not see them frequently (Westwood & Mullan, 2009). As teachers do not have sufficient knowledge to teach SRE, it is not clear what sexual information teenagers are provided with and SRE remains inconsistent.

Therefore, it is important to review sexual health interventions outside of schools. Ingram and Salmon (2007) reviewed the 'no worries clinics'. These are sexual health clinics designed for teenagers inside existing GP surgeries and health clinics. These exist in the South West of England and cover all areas of sexual health advice and screening. Ingram and Salmon concluded that teenagers who attended these clinics felt more confident about sex, were informed about sex and reported less intention to take risks.

There are also the adolescent pregnancy prevention clinics, which are privately funded clinics for adolescents and young adults (Yoost, Hertweck, & Barnett, 2014). These clinics provide female family planning and sexual education to females aged 11-24 years. They concentrate on contraception methods and sexual health information and work on building a positive relationship between the patient and health care provider so that confidential information and

advice can be sought. A review of these clinics found that they had a significant influence on knowledge and sexual intentions in younger adolescents 11-16 years. However, they had less of an effect on older adolescents.

Yet even though these clinics are more effective for younger adolescents, the majority of younger adolescents do not feel comfortable accessing these types of clinics and worry about confidentiality and judgement when visiting (Mulholland & Wersch, 2007). The biggest worries for teens are confidentiality and anonymity as well as staff members being unfriendly or critical (Iyer & Baxter-MacGregor, 2010). Also, teenagers are only likely to access these clinics when they are already sexually active (Jones & Biddlecom, 2011). Only a third of young people use a service prior to having first sex (Stone & Ingham, 2002). As early sex is linked with more risky behaviours (Zimmer-Gembeck & Helfand, 2008), it is important to target teens at age-appropriate times. While drop-in clinics are effective there also needs to be a way to ensure that teens can feel comfortable accessing information before they become sexually active. Ingram and Salmon (2010) found that delivering services within schools and communities make them more accessible. However, many low SES schools and areas cannot afford to have these types of drop-in services available.

The recommended standard for sexual health provision in the UK is to provide individuals with safe sex information and access to free contraceptives (Recommended standards for sexual health services, 2011) , and for teenagers to have access to free contraceptives throughout the UK. Yet as mentioned, many teenagers are uncomfortable visiting sexual health professionals. Previous sexual health interventions that have been underpinned by theoretical models such as the theory of planned behaviour have tried to increase the number of teenagers visiting sexual health clinics. The Department of Education in the UK ran a national campaign called 'Sex. Worth Talking About' (SWTA) (Goodwin, Smith, Davies, & Perry, 2011). Although this campaign was not based on the TPB, it was developed from extensive evidence of the role of health communication on behaviour change (Brown, Burton, Nikolin, & Crooks, 2012; NHS Choices, 2012). This intervention was aimed at sexually active adolescents under the age of 25, using posters and television advertisements (Ajzen, 2006). Brief health messages were provided in speech bubbles, which directed the reader to a website with further contraception information. Research investigating the impact of the campaign found that the number of young adolescents requesting sexual health appointments increased (NHS Choices, 2012). Therefore, brief messages can have an impact on changing behaviour, but the content of the message (DiClemente, Marinilli, & Singh, 2001), and mode of delivery, need to be carefully considered

(Abraham & Michie, 2008). Using this approach, teenagers are encouraged to make informed decisions about health behaviours, and be aware of negative consequences of not performing these behaviours (Broadstock & Michie, 2000). However, nudging a person to change their behaviour by increasing their knowledge about safe sex and providing free condoms only has a modest effect on changing an individual's behaviour (Ajzen, 2011; Marteau, 2011).

Other interventions widely discussed in the literature are Positive Youth Development programs (PYD). The aim of PYD programs are to provide teenagers with the confidence to be able to refuse sex or practise safer sexual behaviours (Gavin et al., 2010). This is achieved by helping teenagers strengthen their relationships and skills and develop a more positive view about their future (Mji, 2016; Turner, 2017). PYD programs aim to provide a holistic view of adolescent development that then aims to reinforce skills needed for safer sex (Schwartz et al., 2010). Bonding and relationships are an important part of PYD programs and so the atmosphere is supportive so that the program staff and teenagers can connect and a sense of belonging with the other program participants can be achieved (Eccles & Gootman, 2007). In this format prosocial behaviours are encouraged and peer pressure towards problem behaviours is minimised, with positive and safe behaviours being actively promoted.

There have been mixed results from PYD programs. There have been significant gender differences, with male students reporting less sexual intercourse and more condom use after a PYD program, but no significant differences in sexual behaviour for females (Clark, Miller, Nagy, Avery, & Roth, 2005; Flay, Graumlich, & Segawa, 2004). However, another study found that female participants were significantly less likely to have sex or get pregnant than the control group, yet there were no differences for males (Quinn & Fromme, 2010). A further study found similar results with no significant differences for males but females were significantly less likely than controls to have sex under pressure, to have ever had sex, and to have a pregnancy or birth. Female participants were also significantly more likely to use hormonal contraception than those in the control group, but the groups did not differ significantly on condom use (Philliber, Kaye, Herrling, & West, 2002). Furthermore in a longitudinal study on PYD youth, PYD teens were significantly less likely to be parents at age twenty than the control group (Campbell, Ramey, & Pungello, 2002). A further two studies found no significant differences on sexual behaviour and pregnancy rates between the PYD teens and control group (Melchior, 1998; Piper, Moberg, & King, 2000). However, a large systematic review of the literature concluded that overall PYD programs do significantly improve condom use and frequency of sex (Gavin et al., 2010).

Thus, there are contrasting results found from positive youth development programs, with some studies concluding they are effective for males but not females (Clark et al., 2005; Flay et al., 2004), and other studies concluding they are effective for females but not males (Quinn & Fromme, 2010). Also, studies have concluded that PYD programs have no significant effects on sexual behaviours (Piper, Moberg & King, 2000). Yet large systematic reviews have found significant effects on contraception use (Gavin et al., 2010. One of the reasons for these contrasting results might be the definitions used to describe PYD programs. PYD programs have many different definitions developed by academic researchers, program providers and funding organisations who have worked in the area. A literature review of PYD programs identified 15 different definitions; ranging from specific goal setting to spirituality and volunteer work (Catalano, Berglund, & Ryan, 2004). It is difficult to assess how these programs work due to the difference in definitions. It is also difficult to assess whether each program is targeting the same behaviours and skills. Consequently, it is not clear if all of the programs discussed are actually positive youth development programs.

Another issue with PYD programs is that they tend to be long-lasting for an entire school year or longer, so that teens have adequate time to benefit from the program (Gavin et al., 2010). Because of their heavy emphasis on human resources and length of program, they have a large upfront cost (Schulman & Davies, 2007). Therefore, these types of programs are not appropriate for low SES areas and schools do not have the funding in England to incorporate a yearlong program. Therefore, as these kinds of face-to-face, time and labour intensive programs may not be feasible in low SES areas in particular, then it must be considered whether different more cost-effective mechanisms, such as online delivery, needs to be developed for delivering sexual health intervention messages to groups such as low SES teenagers.

2.6 Rationale

It should be emphasised that although the factors discussed in this chapter increase the chances of an individual engaging in sexual risk-taking, nearly all teenagers and young people experience pressures of some kind to have sex which places them at risk for pregnancy or STIs (Kirby & Laris, 2009). This PhD has focused on females from low SES backgrounds, given that they may be at relatively greater risk of many of the predictors of risky sexual behaviours that may increase the likelihood of having an unplanned pregnancy or STI (Finer & Philbin, 2013). It is important that interventions are targeted at specific groups of individuals, in order

to identify interventions that appropriately meet their needs (Kreuter, Lukwago, Bucholtz, Clark, & Sanders-Thompson, 2003).

There are many predictors of risky sexual behaviours identified in previous literature for teenagers. Yet, it is not clear which of these are the most important to female teenagers. In addition, even though there have been developments in sexual health intervention programs, it is not clear whether teenagers are accessing these and if they are currently meeting the sexual health needs of teenagers. It is vital for sexual health intervention programs to be meeting the needs of low SES female teenagers and to be targeting them with up-to-date and reliable information.

Due to the lack of formal sexual health education programs and teenagers being reluctant to visit sexual health professionals, it is not known what sexual health information low SES female teenagers are being targeted with and whether they are accessing reliable sources of sexual health information. All of these questions will be addressed by this PhD research.

2.7 Chapter 2 summary

This chapter has provided an overview of the current literature on sexual health in low SES female teenagers. An extensive list of predictors of risky sexual behaviours has been identified including; parents, peers, self-factors, personality, situational factors and external factors. Female teenagers from low SES areas are more likely to engage in earlier intercourse, and earlier sexual intercourse before age 16 is associated with other risky sexual behaviours. It is not known if current sexual health interventions are targeted at low SES female teenagers, and if these interventions are currently meeting teenagers' sexual health needs.

The following chapter outlines a qualitative study that explored the views of sexual health professionals – the key stakeholders in the delivery of sexual health intervention programs – with respect to the barriers that stop teenagers from accessing sexual health information. The study also investigates the beliefs of sexual health professionals with respect to the legitimacy of the extensive list of risky sexual behaviours predictors identified from previous research.

Chapter 3: Sexual health professionals' views of female teenagers seeking sexual health information (Study 1)

3.1 Introduction

Sexual health professionals are key stakeholders in implementing sexual health interventions (Department of Health, 2013). Yet, the perceptions and experiences of health care providers are largely absent from the literature. A large systematic review investigating 268 qualitative studies on teenagers and young people sexual behaviour found most studies have focused on teenagers' views (55%) and parents' views (35%) with only a few studies incorporating sexual health professionals' views (10%) (Marston & King, 2006). There are few UK studies that have investigated health care professionals' views of sexual health, particularly around the predictors of risky sexual behaviours, one UK study investigated how sexual health care providers view teenage patients (Jacobson et al., 2001), but most studies have focused onadolescents' or young parents attitudes towards health care providers (Brown & Wissow., 2009; Freakem Barley & Kent, 2006) (Norman, Moffatt & Rankin, 2016). The aim of this study, therefore, is to expand on the limited existing research to explore the views of professionals who specialise in adolescent sexual health issues, taking into account their vast experience and knowledge in the area.

Previous research has noted a number of predictors of teenage sexual risk-taking; for example, socio-economic status (SES), peers, personality traits, self-esteem, parental advice, support and guidance (Buhi & Goodson, 2007). For a full review of the predictors see Chapter 2 (literature review). The majority of these findings have been derived from questionnaires and/or qualitative interviews with teenagers and parents. Yet, sexual health professionals are in a special and privileged position engaging with adolescents in an in-depth and confidential manner on the topic. Whilst GPs do not proactively address sexual health issues with patients (Gott, Galena, Hinchliff, & Elford, 2004), sexual health professionals are in a unique position to identify issues around information seeking practices to highlight the barriers to female teenagers seeking sexual health information. Sexual health professionals are defined as professionals who work with any sexual heath or genitourinary medicine (GUM) advice or management (Department of Health, 2013). Sexual health professionals may be based in GP

surgeries, family planning centres, GUM clinics, pharmacies and smaller initiatives such as school nurse schemes. These professionals provide advice, knowledge or treatment on all areas of sexual health including; contraception, relationships, pregnancy and STIs. Sexual health professionals may also work with pregnant teenagers or teenage mothers. As they listen to the concerns and problems faced by teenagers during their discussions, their experience will provide insight into the factors that in their opinion lead to risky sexual behaviour.

The current study adopted a qualitative method to explore sexual health professionals' perspectives on sexual health information seeking. Furthermore, the study re-examined the predictors of risky sexual behaviours through the lens of the sexual health professionals. This enabled determination of whether there is overlap between the views of sexual health professionals, parents and teenagers, particularly with respect of sexual health in female teenagers from low SES areas.

Therefore, this study had two aims: (1) to explore the sexual health information seeking practices and barriers for female teenagers from the point of view of sexual health professionals (through the use of semi-structured interviews); and (2) to re-examine the sexual health predictors suggested by previous literature (through the use of a rank order task). Understanding the perceived risk factors and the information seeking barriers from a sexual health professional's perspective would provide key information to feed into the development of an intervention program.

3.2 Methods

3.2.1 Approach

A thematic approach was used to analyse the data in this study. Braun and Clarke (2006) six phase guide for analysing qualitative data was applied to strengthen the findings. This procedure provides researchers with a well-defined explanation of thematic analysis and how to effectively carry it out. Braun and Clarke highlight that it is a useful tool for allowing for social and psychological interpretations of the data.

Thematic analysis allows for theoretical flexibility regarding the level of depth and detail at which the data is analysed. Thematic analysis allows for a position of essentialism or realism and constructionism, known as contextualist (Braun & Clarke 2006). When adopting an essentialism or realism approach, motivations, experiences and meanings can be theorised in a

direct way (Braun & Clarke, 2006; Widdicombe & Wooffitt, 1995). This approach, effectively allows the exploration of participants' individual experiences related to teenagers sexual health issues and the meanings they attach to them, whilst also allowing investigation into the broader role of how societal factors influence sexual health issues.

3.2.2 Participants

A purposeful sampling method was used to recruit nine sexual health professionals across the North East of England. Participants were drawn from a range of allied health and other professions from both the private and public sector which involve provision of sexual health advice, including working with pregnant teenagers and teenage mothers. All participants were required to have at least one years' experience working with female teenagers. This ensured a sample of professionals who have expertise in different sexual health issues with female teenagers. See table 3.1 (below) for each participant's professional expertise.

Table 3.1 Professional expertise of study participants

Participant – job title	Years at job	Sexual health issues covered in job
1 – Health improvement specialist for the NHS	11 years	Trains sexual health workers who work with adolescents.
2 – Sex and relationship outreach worker for the NHS	5 years	Works with individual and vulnerable teenagers in schools, youth groups and shelters.
3 – Midwife practitioner for a private pregnancy advisory clinic	2 years	Deals with pregnancy, terminations and post-operative care, for women off all ages starting at 13.
4 - Client care co-ordinator for a private pregnancy advisory clinic	6 years	Works with pregnant teenagers and offers advice and counselling.
5 - Client care co-ordinator for a private pregnancy advisory clinic	12 years	Works with pregnant teenagers and offers advice and counselling.
6 - Project worker for an individual charity	7.5 years	Works with teenagers and young adults aged 12-15 years, they have drop in sessions at their organisation – for individuals and groups. Covers all sexual health issues.
7 - Volunteer and support worker for a teenage pregnancy team	3 years	Volunteers with new teenager mothers, from the ages of 13-17 and offers advice and guidance.
8 - Teenage pregnancy and adolescent sexual health co-ordinator for the NHS	10 years	Co-ordinates sexual health and pregnancy services across the North East of England.

| | 7 years | Visits schools and youth groups offering sexual |
| **9-** Youth and school health worker for an individual charity | | health services to groups of teenagers. Covers all sexual health issues. |

3.2.3 Materials and Procedure

The study received ethical approval from Northumbria University's Faculty of Health and Life Sciences Ethics Committee prior to the interviews taking place. Examples of the information, consent and debrief forms can be found in appendix 10.1. The study itself comprised two parts. The first part comprised a semi-structured interview designed to explore the barriers to teenagers seeking sexual health information and the second part was a rank order task designed to confirm the perceived predictors of risky sexual health from a professional's perspective with female teenagers.

The interview schedule was formulated by creating open-ended and semi-structured questions grounded in current literature in order to keep on topic but allowing participants to provide further explanations and discuss their own experiences (See appendix 10.2 for interview schedule). A pilot interview with a teacher who works with teenagers was conducted to trial the interview schedule. All questions were deemed relevant to the research question and the timings were appropriate. Example questions on the interview schedule included: *"What are the main sexual health issues for female teenagers?" and "What are the main factors associated with unplanned teenage pregnancies?"*

Interviews took place over a five-month period between December 2014 and April 2015. All of the interviews were carried out either at Northumbria University or a quiet location at the participants' work place. Participants took part on a voluntary basis. Participants were informed about the confidentiality procedures in place, how their data was to be used and that they were free to withdraw from the study at any time without explanation. All participants were provided with an information sheet, signed an informed consent form and fully debriefed at the end of the session. See figure 3.1 for overview of procedure.

The length of the interviews ranged between 30 and 60 minutes. All interviews were digitally recorded using an Olympus Dictaphone. Questions were open-ended and semi-structured, allowing for flexibility and elaboration by the researcher or the participant. Closed-questions were avoided and the researcher summarised back to the participant what had been said. This

achieved a two-way dialogue allowing exploration of key themes. See Appendix 10.3 for an example transcript and rank order task.
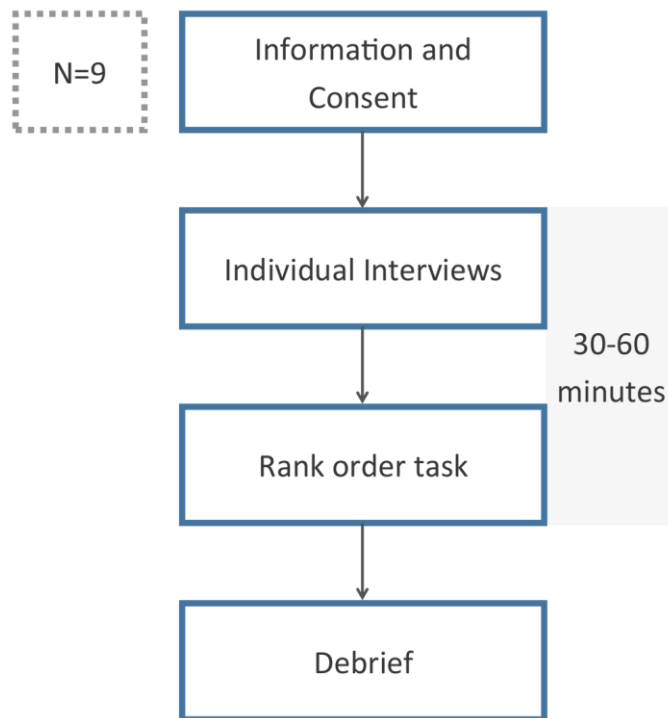
Figure 3.1 Overview of procedure for Study 1

3.2.4 Rank order task

The rank order task comprised a list of 57 factors drawn from the current literature that have been found to predict risky sexual behaviours in teenagers (examples of the factors are; parents, peers and self-esteem). Each factor was typed on a small card. Participants were asked to arrange the cards in order from most important to least important in terms of the degree to which they believe that factor predicts risky sexual behaviours in teenagers. Participants were asked to "think aloud" as they completed this task and describe why they were putting the factor in that position. At the end of the task participants were asked to summarise their choices and discuss whether any factors should be removed from or added to the list. The complete procedure lasted no longer than 90 minutes.

3.2.5 Analysis procedure

Thematic analysis was used to analyse the data. The data collected from all of the interviews was transcribed verbatim and initial thoughts and ideas were noted down. The main researcher then familiarised herself with the data by "repeated reading" (Braun & Clarke, 2006). The transcribed data was read and re-read several times and the recordings listened to in order to

ensure accuracy of the transcription. The second stage was identifying initial codes within the data. These codes were generated by building on the notes and ideas generated through transcription, all of the codes identified features that were relevant to the research question. The third stage involved searching for themes; all initial codes were incorporated into a theme. Codes which were similar or explained the same aspect within the data were incorporated into a theme to explain a larger part of the data. However, to verify final themes the full research team reviewed the data and by use of constant comparisons agreed on the initial themes. Analysis of the interviews at this stage suggested that no new themes around professionals' perceptions of teenagers' sexual health information seeking practises were emerging. A thematic map was created to visualise the links between the themes and to ensure each theme had enough data to support it (Braun & Clarke, 2006). Coding was repeated to ensure no important codes or information had been missed out at earlier stages. Finally, stage five then involved naming and defining the themes. It was important to have appropriate names for each theme. The final stage of producing the report involved choosing examples of quotes from the transcript to illustrate each theme and to give a good explanation of the point being made.

3.2.5.1   The rank order task

The main researcher noted and took photos of each of the rank order tasks on the interview day, to create a record of each participant's rank order. Using the photos and the think aloud data in the transcripts, each factor was grouped in to one of three categories; low importance, medium importance and high importance. These categories were based on the rating of each factor provided by the majority of participants. Again to verify final categories the full research team reviewed the data and by use of constant comparisons agreed on the ranking of importance.

3.3   Results

Four key themes emerged from the data: "*society and media*"; "*environment and family*"; "*peer influences*" and "*the self*". These were viewed as essential to understanding the participant's knowledge and attitudes towards information seeking practices and barriers.

3.3.1   Society and media

This theme is defined by the way participants expressed that society and the media can heavily impact on adolescents' understanding of sex and relationships. Participants described that there is a taboo around openly discussing sexual health information and this causes problems for sexual health workers. It is difficult for sexual health workers to get access to teenagers,

because of the taboo in society. This also results in difficulty openly discussing sexual health information and becomes a barrier for adolescents seeking advice, making this group vulnerable and often confused.

> *As the sexual health worker for children, and what was interesting there was despite the fact that they employed someone to do that role, I spent a lot of time explaining why that role was appropriate, and access to the under 13s was challenging. (*Project worker)

> *Teenagers, particularly, feel really vulnerable coming in here. Because they don't know whether they are going to be judged* (Midwife practitioner)

Society also views sex differently for males and females this double standard can be a confusing concept for teenagers. Participants discussed how this issue could stop teenagers feeling comfortable accessing sexual health information or discussing what a healthy relationship is. Yet, even though it is not acceptable to speak openly about sexual health, sex is portrayed widely and negatively in the media.

> *When I asked the students this morning if they thought teenage pregnancy was going down or up and a few of them said down but most of them thought it was going up. And that is because of the media. Because becoming a dad at 13 or whatever, that sells a paper. (*Teenage pregnancy and adolescent sexual health co-ordinator)

It was clear during the interviews that participants had negative views of the media. Participants became angry and defensive when discussing how sexual health is often portrayed. Participants believe the media normalises risky sex and objectifies women, which can be confusing for teenagers and ignores information on safe sex.

> *There is no consent in porn, basically, in some porn they actually violate consent, where it is, there are rapes in scenarios, there usually isn't any protection involved, there usually isn't any talking about what people want and what is pleasurable. (*Health improvement specialist)

Therefore, pornography is easily accessible and can portray negative views of consent and contraception. Yet, this is easily accessible and more accessed than speaking about safe sexual health because of the taboo in society. The aspects of taboo and stigma within this theme lead on to the next theme of environment and family. Stigma exists for adolescents from low SES

environments; however this stigma can also be reinforced by parents and linked to their family backgrounds.

3.3.2 Environment and family

This theme is defined by the stigma around teenagers, pregnancy and sexual health information if they are from a low SES area. Sexual health professionals believe there is a societal preconception that low SES female teenagers want to become pregnant before age 16. This is not because they do not have sexual health education but because pregnancy is associated with perceived benefits such as social housing.

> *Teenage mums, they are obviously going to be a bad mum, there are a lot of misconceptions about what is a teenage mum, she must have got herself pregnant, all she wants is her council house. (*Sex and relationship outreach worker*).*

The perception that they will be stigmatised can become a barrier to them seeking sexual health information. The professionals in this study believe teenagers feel that seeking advice will result in being labelled as 'wanting to get pregnant'. In addition, there are fewer opportunities in lower SES areas, less access to information and intervention programs and less access to abortion.

> *It's likely they don't have access to, to services, like abortion clinics, sexual health advice because of the area they live in.* (Midwife practitioner)

Therefore, the environment in which adolescents live can become a barrier to seeking sexual health advice. Also, family can reinforce this barrier. Mothers can be excited for their daughters to become pregnant at a young age, due to norms surrounding teenage pregnancy in some low SES communities. This can lead to an inherent self-fulfilling cycle of teenage mothers that because of family influences, can be difficult to break away from.

> *Working with quite a social deprived area and not in [...], in another area and some of the mums bringing along their daughters who were pregnant the mums were delighted. For 16 year olds or younger, they are saying it is marvellous, they are so excited to be a grandma.* (Teenage pregnancy co-ordinator)

Teenage pregnancies can be the norm in certain areas and there can be a lot of pressure and expectations from families for their teenage children to have a baby. Professionals believe this could stop teenagers seeking sexual health advice because it lowers their aspirations and future

plans if they do not have the support to aspire and achieve in their own lives. Teenagers need to see people achieving to see its benefits and rewards.

> *Low socio-economic status, yeah, yeah I think your aspirations are going to be lower for some people I don't want to generalise it. But yeah I think if you are kind of bored and you are stuck in a rut and you feel like you have nothing to aspire to, then it could make you have more risky sex.* (Client care co-ordinator)

Therefore, their parents' attitude towards sexual health is important, especially in an environment that has a norm of young pregnancies. Family and environment are therefore interactive; if parents' attitudes are positive then this can overcome the environment they live in. If they can talk to their parents openly about safe sex then this can have a big impact on their own attitudes.

> *That [SES] kind of doesn't really matter. Because if that is all negative, if parental attitudes towards sex is good, and influences and monitoring is good, if that is good or a positive then, the social and educational background doesn't really come into it.* (Sex and relationship outreach worker)

Parental attitudes can protect against the environment they live in, because living in a lower SES area can increase the prevalence of other factors such as negative parenting, norm of young pregnancies and reduced access to services. However, if these other factors are not present and parental influences and attitudes are positive then environment on its own does not have a major effect on sexual health decisions. In the same way, teenagers that do not speak openly to their parents about sexual health decisions may be influenced more by their environment. Participants mentioned that many teenagers would not discuss sexual health issues with their parents.

> *A lot of the teenagers that come here come without their parent's knowledge, they don't have to have their parents but they do have to have an adult with them, when they come for treatment but that adult doesn't have to be a parent. And we don't have to inform the parents.* (Midwife practitioner)

Environment and family support can influence information seeking practices, as the stigma in the environment can lead to teenagers having lower aspirations and motivation to seek sexual health information and advice. Parents can reinforce this stigma or have positive attitudes that can protect against the environment. This theme links onto the next theme of peer influences,

as parents can shape teenagers' initial understandings and attitudes of sexual health but if teenagers choose not to talk to parents then peers can be highly influential.

3.3.3 Peer influences

Peers can become a major influence on teenagers' sexual health understanding as they are more likely to speak to their peers than anyone else. Participants discussed that teenagers are less likely to talk to their parents, especially about sex and relationships.

> *[Peers] Quite a big influence, especially at that age because I think sometimes, that is where you are probably not going to listen to your parents because they know nothing. What do they know, they are old* (Sex and relationship outreach worker)

Teenagers feel more comfortable talking to their peers about sex and relationships, and seek sexual health advice from their peers. Peers can be a positive influence, as having many friends and feeling connected to people can encourage teenagers to discuss sexual health issues. Participants discussed that teenagers usually share information on sexual health information centres and can encourage peers to visit.

> *Yeah, and there is a place, the teenagers all know about it, I know they do cause my daughter and all her friends know about it, it is specifically targeted for teenagers* (Project worker)

However, participants mentioned that teenagers who do not have many friends to talk to can become isolated and this becomes a barrier to them seeking sexual health advice. Participants mentioned that a lot of pregnant teenagers feel they do not have anyone to speak to and this stopped them seeking sexual health advice before they became pregnant.

> *Peer communication is quite a high up one I would say, we get a lot of pregnant girls who have been in who have felt that they do not have any friends and they are being bullied, stuff like that* (Client care co-ordinator)

However, participants noted that it can be problematic if peers become the main source of sexual health information because they are not a reliable source in comparison to parents or sexual health professionals. Therefore, their knowledge and understanding often comes from less reliable sources such as the mass media. Even though teenagers feel more comfortable talking to peers about sexual health issues, they may not be the most reliable or best source of sexual health advice.

Adults might go to more reliable sources of information, children because they don't have that experience to source where is reliable or not, are going to maybe the loudest or most popular voice. (Project worker)

There is also an element of pressure from peers associated with risky behaviours, especially alcohol and drugs, which can lead to other risk taking behaviours. Having a bigger peer group may lead to greater peer pressure. This peer pressure may be more influential if having sex at a younger age is seen as normal and expected within the individual's peer and sociocultural group. Therefore, while friends can be important in encouraging teenagers to seek sexual health information, pressure from peers can also act as a barrier in seeking sexual health information.

There can be a lot of peer pressure, again a lot of myths, and misconceptions about the fact that if you are 16 and you haven't had sex you are an alien. (Sex and relationship outreach worker)

3.3.4 The Self

Self is defined by the way participants expressed that seeking sexual health information is dependent on the individual person; including their self-esteem, self-standards, personality, self-resilience, self-regulation, attitudes, beliefs and self-efficacy. The influence of the other themes is dependent on these aspects of the self.

If they have a lot more self-resilience and their self-regulation is a lot better, then obviously they are not going to need as much social support. (Health improvement specialist)

Participants believe that self-esteem is highly important; low self-esteem will influence aspirations leading to more risky sexual behaviours. In addition a person with higher self-esteem will be more likely to seek sexual health information and have the confidence to use the information.

For girls who have low self-esteem, I think they look to heighten their self-esteem in so many different ways, and it can just lead to like, not good judgements really, you can end up doing things that are not, I just think it is such a shame (Support worker for teenage pregnancy)

It's all due to self-esteem. Sometimes it works like that, sometimes it does give them the push (Support worker)

Therefore, self-esteem and personality traits are important to risky sexual behaviours. Participants believe that because of this, it is important for adolescents to have a strong self-esteem to be able to make their own informed decisions. However, participants also thought that current intervention programs concentrate on sexual health information and prevention methods, rather than empowering self-esteem. Participants discussed that this is a barrier to teenagers seeking sexual health information, as they may not receive the information that they want to know.

They get so much information about, well don't get pregnant, don't get an STI, but they don't get a lot about what actually, you know having a good relationship with somebody (Sex and Relationship outreach worker)

Participants discussed that the main intervention programs target prevention strategies for STIs and unplanned pregnancies and that there is a lot of information available. However, fewer interventions target what a healthy and positive relationship is. Interventions need to target sexual health information that is important and appropriate for teenagers, so that they feel happy and confident with the information they have received.

3.3.5 Rank order task

All 57 main predictors drawn from the literature were rated during the rank order task and none were removed from the list. Participants added two extra predictors to the list: consent and pornography. The factors were split into three categories of high importance factors, medium importance factors and low importance factors. Table 3.2 (below) shows that 32 predictors, identified in the literature, were perceived as highly important.

Table 3.2: Factors rated as high importance.

High importance factors	Previous literature	Behaviour
Self-esteem	(Buhi & Goodson, 2007)	Systematic reviews have found mixed findings of self-esteem and sexual behaviour/attitudes and intentions.
Belief in the future	(Gavin et al., (2010)	Females who have no aspirations have earlier sexual initiation
Pornography	(Owens, Behun, Manning, & Reid, 2012)	Higher permissive sexual attitudes, more casual sex and greater occurrence of sexual intercourse.
Media	(Brown et al., 2006)	Females who see more sex in the media have more permissive sexual attitudes
Consent	(Hlavka, 2014)	Females who do not understand consent have earlier sexual initiation.
Alcohol	(Hipwell et al., 2010)	Alcohol use is significanly related to a higher number of partners and higher incidents of unprotected sex
Drug use	(Hipwell et al., 2010)	Drug use is significantly correlated with a higher number of partners and higher incidents of unprotected sex
Conforming to peer norms	(Skinner et al., 2008)	Significantly higher intention to have sex.
Self-efficacy	(Sionéan et al., 2002)	Significantly earlier sexual initiation.
Knowledge	(Wight & Fullerton, 2013)	earlier sexual initiation.
Age of partner	(Vanoss Marín et al., 2000)	Having an older partner leads to significantly earlier sexual initiation.
Low aspirations	(Pearson et al., 2011)	Earlier sexual behaviour.
Body image	(Valle et al., 2009)	Inconsistent condom use.
Social norms	(Skinner et al., 2009)	Intention to have sex.
Not seeing the long term implications	(Rothspan & Read, 1996)	Systematic reviews have found not seeing the long term implications is related to higher accounts of teen pregnancy and STIs
No direction	(Buhi & Goodson, 2007)	Teen pregnancy and higher amounts of STIs.
Self-standards	(Dilorio et al., 2000)	Teen pregnancy and higher amounts of STIs.
Believing peers have had sex	(Gillmore et al., 2002)	Earlier sexual initiation and higher number of sexual partners.
Depression	(Skinner et al., 2015)	higher frequency of having sex, higher number of partners and more alcohol and drug use.
Peers approval of sex	(Santelli, Abma, et al., 2004)	Earlier sexual initiation and higher number of sexual partners
Coercion from sexual partners	(Skinner et al., 2008)	Intention to have sex
Connectedness	(Markham et al., 2010)	Protective against sexual risk taking
Beliefs and attitudes towards sex	(Sieverding et al., 2005)	Positive beliefs related with less sexual initiation.

Personality	(Hoyle et al., 2000)	Big five related to higher number of sexual partners and more unprotected sex.
Low school aspirations and performance	(Pearson et al., 2011)	Earlier sexual initiation
Peers	(Hlavka, 2014)	Earlier sexual initiation
Peer pressure	(Hlavka, 2014)	Earlier sexual initiation
Spontaneous sex	(Buhi & Goodson, 2007a)	Inconsistent condom use
Peer communication	(Busse et al., 2010)	Higher intention to have sex.
Social support	(Valle et al., 2009)	Lower social support correlated with higher likelihood of STIs.
Self-determination	(Gavin et al., 2010)	High self-determination correlated with less teen pregnancy and STIs.
More ego-centric thinking	(Catania et al., 1989)	Earlier sexual initiation

As shown in table 3.2 participants ranked that 32 of the 57 factors are highly important in predicting risky sexual behaviours for female teenagers. These core findings are important, as most of these factors have previously been found in teenager and parent studies; however it is important to know that sexual health professionals who are implementing interventions also perceive these factors as important. Therefore, this confirmation of factors endorses the fact that these high importance factors should be taken into consideration during intervention programs. Secondly, this rank order task highlights the importance of self-esteem. Sexual health professionals expressed the view that self-esteem is one of the most important factors that can predict risky sexual behaviours in female teenagers.

Table 3.3: Factors rated as medium importance.

Medium importance factors	Previous literature	Behaviour
Sexual abuse	(Valle et al., 2009)	Earlier sexual behaviour.
Role models	(Guilamo-Ramos et al., 2012)	Negative role models correlated with age at first intercourse.
Fatalism	(Rothspan & Read, 1996)	intention to have sex.
Poor self-regulating	(Raffaelli & Crockett, 2003)	Greater number of sexual partners.
Lack of awareness	(Buhi & Goodson, 2007)	Earlier sexual behaviours and inconsistent condom use.
Family support	(Wight & Fullerton, 2013)	earlier sexual intercourse.
Parental influences and monitoring	(Skinner et al., 2008)	Knowledge and behaviour improved after parental interventions.

Negative parenting	(Guilamo-Ramos, Bouris, Lee, McCarthy, Michael, , Pitt-Barnes, & Dittus, 2012)	Age at first intercourse.
Boredom	(Buhi & Goodson, 2007)	earlier sexual behaviours.
Poverty	(Catania et al., 1989)	earlier sexual behaviours.
Age of first sexual intercourse	(Manning et al., 1995)	Higher number of partners and STIs.
Lower-socio economic status	(Catania et al., 1989)	Earlier intercourse .
Time spent alone at home	(Resnicow et al., 2001)	Earlier sexual behaviours.
Intention or motivation to have sex	(Gillmore et al., 2002)	Earlier sexual behaviours.
Early physical intimacy experiences	(Pearson et al., 2011)	Higher number of teen pregnancy and STIs
Age of puberty	(De Genna et al., 2011)	earlier sexual behaviour and unplanned pregnancies.
Education and social class of parent	(Manning et al., 1995)	Age at first intercourse and higher number of partners.
Environment with no chance of social and economic advancement	(Duncan, Duncan, Biglan, & Ary, 1998)	Age at first intercourse and higher number of partners.

As shown in table 3.3 and 3.4 30 factors were rated as medium important and six factors were rated as low importance. These are still seen as important in predicting risky sexual behaviours as participants noted that they could not disregard any of these factors. However, while they have some degree of importance in predicting risky sexual behaviours in terms of implementing these factors in intervention programs, they are not perceived as important as the higher rated factors.

Table 3.4. Factors rated as low importance.

Low importance factors	Supported by Previous literature	Behaviour
Low awareness of contraception	(Lader, 2009)	Higher number of STIs.
Parental attitudes towards sex	(Dittus & Jaccard, 2000)	Negative attitudes correlated with earlier sexual intercourse and inconsistent condom use.
Younger parents	(Manning et al., 1995)	Higher number of sexual partners.
Love of babies	(Fedorowicz, Hellerstedt, Schreiner, & Bolland, 2014)	Teen pregnancy and earlier sexual intercourse.

| Lone parents | (Guilamo-Ramos, Bouris, Lee, McCarthy, Michael, Pitt-Barnes, & Dittus, 2012) | Earlier age at first intercourse. |

3.4 Discussion

The findings of this study highlight sexual health professionals' perceptions of the barriers to female teenagers' sexual health information seeking and the factors those professionals believe predict risky sexual behaviours for that same population. In terms of barriers, professionals believe that the double standard in society, whereby safe sexual health is not discussed yet risky sexual health is widely displayed in the mass media prevents teenagers seeking safe sexual health information. The increasing availability of pornography, made easier via the proliferation of smartphones (Owens et al., 2012; Ybarra & Mitchell, 2005), presents a very unrealistic and potentially harmful resource regarding sexual information (Martellozzo, Monaghan, Adler, Davids & Horvath, 2016). Whilst we know that large numbers of young people are accessing pornography (Adler & Livingstone, 2015) it is less clear as to whether teenagers are regularly accessing safe and reliable sexual health information. Certainly, the sexual health professionals in the current study believe that teenagers are not being targeted with reliable sexual health information and as such there is scope for intervention programs to counter the misinformation provided by pornography and to promote safe sexual health as a more mainstream topic available for open discussion.

Secondly, professionals viewed family, environment and peers as barriers to seeking sexual health information. It is known that teenagers from low SES areas are more likely to become pregnant during their teenage years, especially those with a sister or mother who became parents during their teens (East, Reyes, & Horn, 2007; Karakiewicz, Bhojani, Neugut, Shariat, Jeldres, Graefen, & Kattan, 2008). However, this study has highlighted that because of this teenagers from low SES areas can feel stigmatised and are reluctant to seek sexual health information, in case they are seen by others as 'wanting' to become pregnant. Sexual health professionals also highlighted that parents can encourage their daughters to have a teenage pregnancy, as it is normal and expected in some areas. This presents a potential conflict for teenagers and can make it difficult for them to seek alternative, safe sex information. The professionals thought that as teenagers get older their peers become more of an influence. In early adolescence, individuals start to emotionally separate from their parents and form strong peer identification (Viner & Macfarlane, 2005). Peer influence has a strong influence on sexual

health and seeking sexual health information (Gillmore et al., 2002) and peer to peer resources are seen as increasingly important aspect of health information and communication (Ziebland & Wyke, 2012). Incorporating accurate, credible peer-to-peer resources into intervention programmes could thus provide a powerful tool for increasing safe sex knowledge and intention.

Finally, self-esteem was found to be a barrier to teenagers seeking sexual health information. Teenagers need to have the self-esteem and confidence to seek reliable sexual health advice. Interestingly, low self-esteem was identified in the rank order task as a strong perceived risk factor for risky sexual behaviours. Self-esteem has provided a mixed picture in previous research, systematic reviews have found no evidence for self-esteem as a statistical predictor of sexual behaviours, attitudes or intentions (Goodson et al., 2006). Whereas, in longitudinal research, it has been found that self-esteem predicts risky behaviour (Donnellan & Trzesniewski, 2005). However, this may reflect the complex nature of self-esteem development, which is known to interact with SES background, family and individual characteristics (Boden & Horwood, 2006). In early adolescence self-esteem is still developing, peer interest is strong and health risk behaviours such as sexual risk taking and alcohol use behaviours begin to emerge (Viner & Macfarlane, 2005). The present study findings highlight the emphasis placed on self-esteem by sexual health professionals in accounting for adolescent risky sexual behaviour, despite the contrast of evidence from quantitative studies of whether low self-esteem is a statistically significant predictor of sexual health information seeking in this group (Goodson et al., 2006). As mentioned above, self-esteem development in adolescents occurs amongst a myriad of other intrapersonal characteristics, which can make its detection as a risk factor in quantitative studies difficult. The present qualitative work indicates the importance that sexual health professionals place on this key risk factor, which suggests that future intervention programs would benefit from focussing on improving self-esteem, despite a lack of quantitative evidence to support self-esteem as a significant predictor of sexual behaviours. We know that knowledge based interventions on their own are not effective (Campbell et al., 2000) a point reiterated by the health professionals in their ranking task. However, there is scope for combined self-esteem and knowledge interventions. Teenagers may know about the importance of condom use; however, they also need the confidence to insist their partner actually uses a condom. This type of intervention would overcome the barriers discussed, instilling in teenagers the confidence to deal with external pressures such as media, family influences and peers.

3.4.1 Limitations

Sexual health professionals' provided an interesting perspective on information seeking barriers and practices in adolescent females. Gaining professionals' views on the existing factors that can predict risky sexual behaviours was also beneficial confirming that these factors are indeed viewed as highly important by the key stakeholders in intervention programs. Each participant had regular contact with a large number of adolescents, and, therefore, could provide an unbiased view of the risk factors that influence most teenagers. However, only a small sample size (N=9) from the North East of England, an area that has a high rate of teen pregnancy (McClelland, 2012), were recruited. The findings may not be generalizable to areas that have a lower rate of teen pregnancy. Also, due to the small sample size, it is difficult to achieve data saturation. However, the analysis suggested that no higher level themes around professional's perceptions of teenager's sexual health information seeking practises were emerging and therefore, we believe that data saturation was achieved.

3.4.2 Implications

The findings of the current study indicate that sexual health interventions should aim to build self-esteem and address socio-economic stigma, so adolescents feel confident to make their own informed sexual health decisions. Peers were found to have a major influence on adolescent sexual health information seeking decisions; therefore, intervention strategies should try to incorporate accurate, reliable information delivered via a peer channel (for example, videos in which teenagers discuss safe sexual health practices). This type of intervention would give adolescents both the knowledge and the skills to deal with pressures from their environment, family, peer groups and media.

3.5 Chapter summary

This chapter described a qualitative study designed to explore sexual health information seeking practises and barriers for female teenagers from the point of view of sexual health professionals and to re-examine the sexual health predictors suggested by previous literature. The focus on sexual health professionals was deemed relevant given their position as key stakeholders in implementing sexual health interventions, yet their views are largely absent from the literature. The barriers identified were "society and media", "environment and family", "peer influences" and "the self". In terms of the sexual health predictors, sexual health professionals ranked 33 of the 57 identified predictors as highly important, agreeing with previous research. Some of the barriers identified were consistent with previous research

whilst others were particularly novel. Interestingly, sexual health professionals identify self-esteem as a highly important factor influencing teenagers' likelihood to seek sexual health information, whilst also being an important predictor of risky sexual behaviours. Yet, limited evidence for self-esteem has been found in previous quantitative studies. This suggests that going forward sexual health interventions that build self-esteem and address socio-economic stigma may encourage adolescents to feel confident to make their own informed sexual health decisions.

This chapter has explored the views of sexual health professionals – the key stakeholders in the delivery of intervention programs; however, it is important to also understand the views of teenagers themselves. In the next chapter, the focus shifts to teenagers and a qualitative study that examines teenagers' knowledge of sexual health and sexual health information sources over a 4-week period is presented.

Chapter 4: A diary approach to ascertain female teenagers' understandings of sexual health (Study 2)

4.1 Introduction

It is vital to understand what existing sexual health knowledge teenagers have and what sexual health issues are important to teenagers. Teenagers cannot be targeted with relevant and useful sexual health information, without understanding teenager's current sexual health knowledge and information sources. A better understanding of these issues will be beneficial for the development of intervention programs to target teenagers with key and up-to-date sexual health information.

Currently, in the UK Sex and Relationship Education (SRE) is a non-assessed subject within schools and as such remains inconsistent (UK Department of Education and Employment, 2000). As previously discussed in Chapter 2, it is only compulsory for local authority maintained schools to teach basic biology and reproduction (Schulkind et al., 2015). Furthermore, academies and free schools do not have to teach this, and sex education in these schools vary from extensive sex education to no sex education (Long, 2017). In a 2002 review it was found that over a third of schools' SRE was outdated and needed improving (OfSTED, 2002). It is vital that teenagers have access to up-to-date and relevant sexual health information. Female teenagers with increased sexual health knowledge are more likely to delay first sexual initiation and have greater confidence in using condoms (McElderry & Omar, 2003; Weinstein et al., 2008).

Sex and Relationship Education in schools is provided primarily by teachers (Walker, 2001), yet teachers often report having insufficient sexual health knowledge around STIs and emergency contraception to effectively deliver the subject (Westwood & Mullan, 2007). Given the inconsistencies in the teaching and delivery of formal sexual health education it also remains unclear as to where else teenagers may go to seek their sexual health information. Research conducted in UK has found that parents do not often talk to their children about sexual health because they feel embarrassed and lack sufficient knowledge themselves (Turnbull, van Wersch, & van Schaik, 2011). Also, parents worry that speaking about sex with their children may encourage sexual activity (Hyde et al., 2013). Teenagers often regard the media as a more

useful source for learning about sex and relationships (Buckingham & Bragg, 2004) with teenagers from low SES backgrounds most likely to search for sexual health information online (Zhao, 2009). Sexual health professionals are ideally placed to provide SRE but are not easily accessible in the eyes of teenagers and so are viewed in a less positive light than other potential sources of information (Westwood & Mullan, 2009). Therefore, it remains unclear as to the extent to which teenagers come into contact with sexual health information during the course of their everyday lives.

If current Sex and Relationship Education programs are outdated, then it is unlikely teenagers are accessing vital sexual health information (OFSTED, 2013). However, inconsistencies in sexual health education programs (OFSTED, 2013) and the fact that teenagers do not like talking about sexual health (Buzi, Smith, & Barrera, 2015) means it can be difficult to assess teenagers' understanding or identify gaps in their knowledge.

In this study, qualitative diaries are used to explore this problem. Diary studies are appropriate for teenagers, as they are familiar with diary keeping and diaries provide a more confidential way of recording sexual health information than face-to-face methods. Previous diary studies have provided rich and valuable sexual health data (Hoffman, Sullivan, Harrison, Dolezal, & Monroe-Wise, 2006; Kiene, Barta, Tennen, & Armeli, 2009). In comparison to telephone interviews, it has been found that daily written diaries are just as detailed and rich in data as telephone interviews (Morrison et al., 2009). Also, as diaries allow teenagers to note sexual health information each day, they provide a more detailed and accurate record of the day relative to retrospective self-report. Therefore, using this qualitative approach this research aimed to:

(1) Identify gaps in knowledge regarding sexual health information and to identify what sexual health issues are important for teenagers
(2) To understand to what extent teenagers come into contact with sexual health information over a 4-week period

4.2 Methods

4.2.1 Approach

A thematic approach following Braun and Clarke's (2006) six phase guide for analysing qualitative data was used in this study. Thematic analysis allows for theoretical flexibility

regarding the level of depth and detail at which the data is analysed. Thematic analysis allows for a position of essentialism or realism and constructionism, known as contextualist (Braun & Clarke 2006). When adopting an essentialism or realism approach, motivations, experiences and meanings can be theorised in a direct way (Braun & Clarke, 2006; Widdicombe & Wooffitt, 1995). This approach, effectively allowed the exploration of teenagers' individual experiences of sexual health knowledge and information sources, and the meanings they attach to them.

4.2.2 Participants

Thirty female pupils, from two school year groups (school years 8 and 9) were recruited to take part in this study. Participants were all aged 13 and 14 years old (Mean =13.6, SD=.48) and were from two schools in the North East of England. Eleven of the participants reported that they were in heterosexual romantic relationships, with a single partner and had been with their partners between 1 and 12 months. For all participants who reported that they were in a relationship, their partners were the same age or no more than two years older than the participants. Six participants reported previously having sex with condom and three participants reported having sex without a condom. See table 4.1 for full overview of previous sexual behaviours.

Table 4.1. Overview of participants' previous sexual behaviours (Study 2)

Age	Haven't yet	Under 13 years	13 years	14 years
	n (%)	n (%)	n (%)	n (%)
Kissing	2 (7.4%)	16 (59.3%)	8 (29.6)	0
Touching a partners genitals	14 (53.8%)	3 (11.5%)	9 (34.6%)	0
Being touched on genitals	15 (57.7%)	1 (3.8%)	9 (34.6)	1 (3.8%)
Giving oral sex	16 (61.5%)	2 (7.7%)	7 (26.9%)	1 (3.8%)
Receiving oral sex	20 (76.9%)	0	4 (15.4%)	2 (7.7%)
Sex with a condom	20 (76.9%)	1 (3.8%)	3 (11.5%)	2 (7.7%)
Sex without a condom	23 (88.5%)	0	1(3.8%)	2(7.7%)

4.2.2.1 SES Background

This research was investigating the sexual health knowledge and information available to teenagers from low SES backgrounds. Six questions were asked in order to assess SES status measured by parental income and parent's educational background. Questions included *(1) are you on full price or reduced school meals, (2) do you live with both parents, (3) what's the*

highest educational attainment your parents have received, (4) mothers job, (5) fathers job, (6) (or) carers job. Participants were categorised as low SES if they were on free or reduced price school meals (parents/carers yearly gross income was below £16,190), or if parent's highest educational attainment was primary or secondary school or if their parents were either unemployed or had working class jobs (for example, builder or factory worker). If all of these questions were left blank or participants selected '*don't know*' to all questions, then their data was removed from further analysis. These categories for SES background were also used in Studies 3, 4 and 5 (Chapters 5, 7 and 9) and are consistent with previous studies measuring children and teenagers socio economic background (Santelli, Lowry, & Brener, 2000).

From these categories, twenty-nine participants were categorised as low SES and one participant was categorised as high SES and was excluded from further analyses. Of these 29 participants, 26 participants completed the full four-week diaries. See table 4.2 for an overview of participants' demographic background.

Table 4.2. Demographic background information for participants

		N (%)
	Free or reduced price lunches	5 (19.2%)
Ethnicity	White British	23 (57.7%)
	Black or black British African	1 (3.6%)
	Other mixed background	2 (7.7%)
Living with parents	Living with mum	8 (28.6%)
	Live with both parents	15 (53.6%)
	Living in care	1 (3.6%)
	Other	2 (7.1%)
Parents education background	Primary school	2 (7.7%)
	Secondary school	13 (46.4%)
	Sixth form or college	10 (35.7%)
	University (undergraduate)	1 (43.6%)

4.2.3 Materials

4.2.3.1 Demographic form

Demographic information was measured using a self-developed online questionnaire. The questionnaire consisted of seven items aimed to measure; age, ethnicity, SES status and parental background. *Previous sexual behaviours* were measured using the Raine previous sexual behaviours scale (Skinner et al., 2015). Participants were asked what age measured from '*Haven't yet'* to '*16 years'* they had engaged in kissing to vaginal sex without a condom (See table 4.1 for full list of behaviours). Four questions measured relationship status, partner gender, age and length of relationship.

4.2.3.2 Diary

Participants kept a four-week paper-based diary. The diary asked participants to discuss "*Any thoughts and feelings of anything to do with sexual health, you have had today. This could be anything to do with sexual health or sexual health intervention programs.*" This prompt encouraged participants to be as open and broad as possible with respect to their thinking around sexual health. This allowed us to note the types of sexual health information participants thought about and the types of sexual health information participants want to know. We purposefully avoided prescribed topics for them to discuss nor presented a fixed format for them to use. The second part of the diary asked teenagers to write *"Any information you have had about sexual health or sexual health intervention programs. This could be anything to do with someone talking about sexual health or sexual health intervention programs. Or any information you have heard or seen about sexual health or sexual health intervention programs."* It was verbally explained to participants that this involved any sexual health information, such as a formal sexual health talk at school or searching for sexual health information themselves. This question allowed us to assess how often participants were targeted with sexual health information over a four-week period and to explore whether this information met their sexual health needs. Participants were required to write their participant number and the date on the top of each diary.

4.2.4 Ethical considerations

Due to the sensitive nature of this study many ethical issues were considered before testing began. As teenagers would be disclosing sensitive information, it was very important to ensure their data would be kept confidential and that participants were kept anonymous. However, due to the sensitive nature of the research topic, participants may have disclosed information that

they or someone else was at risk of harm. Therefore, while confidentiality was important there needed to be a way to identify a participant if they disclosed a risk of harm.

In order to achieve this, the researcher contacted the University's law team and met with them to discuss the legal obligations and duty of care of researchers reporting any concern that someone is at risk of harm. After an investigation by the law team it was finalised that there were no legal obligations. However, Child protection/safeguarding legislation states that if a known (not blind) young person aged under 18 years discloses any sexual abuse or any information that is of concern that they or someone else is at risk of harm, there is a duty of care to report this to a relevant safeguarding officer but not to the police or their parents. Therefore, a structure of safeguarding and reporting was put in place in case any safeguarding issues were to arise.

The researcher made contact with each school and asked for the name and contact details of their school safeguarding officer. A face-to-face or telephone meeting was arranged to discuss each schools safeguarding policies and the procedure if they believe a child is at risk of harm. A mutual responsibility of the research and safeguarding was determined between the researcher and the safeguarding officers. The safeguarding policies were then forwarded to the researcher and she made herself familiar with each school's safeguarding policies and highlighted the key information around risk of harm. The information, consent and debrief forms for teenagers were updated, explaining that their data will remain confidential, however, if any information is disclosed indicating that they or someone else is at risk of harm then this information will be disclosed to their school safeguarding officer.

The researcher worked closely with each school to confirm there was a school sexual health nurse or counsellor available, in case participants had questions or were affected in anyway by the research. Sexual health practices in the area were also contacted and asked if they were happy to be contacted by participants and the name and contact details of the practice were added to the debrief forms. Therefore, assistance was available for participants in and outside of the school.

Parental consent was also a primary concern. Parental consent was sought offline, using an opt-out procedure. An Opt-out method was chosen because it was the method schools and parents were most familiar with as it was standard practice within the schools. The opt-out method utilised included head teachers granting the school permission to use an opt-out method and

signing a consent form. The parental opt-out form was then mailed to parents from the school to ensure parents received them. Letters given to teenagers to take home does not guarantee that the parent has seen the letter, which is highly important when using an opt-out method. The parents were given a two-week period to reply if they did not want their child to take part. The letters included the contact details and affiliations of the lead researcher so parents were able to contact the researcher with questions. After the two-week period, teenagers could not take part in the research if their parents had contacted the school or researcher to opt-out of the study. Before the study, participants gave their consent to take part. The participants were given full information about the study and asked if they were happy to take part before the opt-out consent forms were sent to parents. This was to ensure that teenagers did not feel pressured to take part by their teachers or parents as research participation was voluntary. These ethical considerations were followed in Studies 3, 4 and 5.

4.2.5 Procedure

Testing took place in a school setting. Parental consent was sought using an opt-out procedure (See Appendix 10.4 for parental information, consent and debrief forms). The schools sent home parental letters explaining the study, and parents informed the schools within two weeks if they did not want their daughters taking part in the research. Participants gave their consent to take part in the diaries on the testing day (See Appendix 10.5 for teenager information, consent and debrief forms). Participants were allocated an anonymous participant number on a small card and were asked to keep this number safe throughout the study.

Firstly, participants completed the online demographic questionnaire at school, to access the questionnaire participants entered their anonymous participant number. This asked participants about their previous sexual behaviour, parental education background, age and school year. The researcher then introduced and explained the diary to the participants and asked them to complete diaries at home over a four-week period. Participants had sufficient time to ask the researcher any questions about completing the diary. It was explained to participants that they needed to write their participant number and the date at the top of the page each day. A locked box was placed in the schools' reception area and participants ripped out the page of the diary, folded it and placed it in the locked box every day. Throughout the four weeks, teachers reminded the pupils to complete the diaries. At the end of the four weeks, the diaries were collected and participants were thanked for their time and fully debriefed. For an overview of the procedure see figure 4.1.
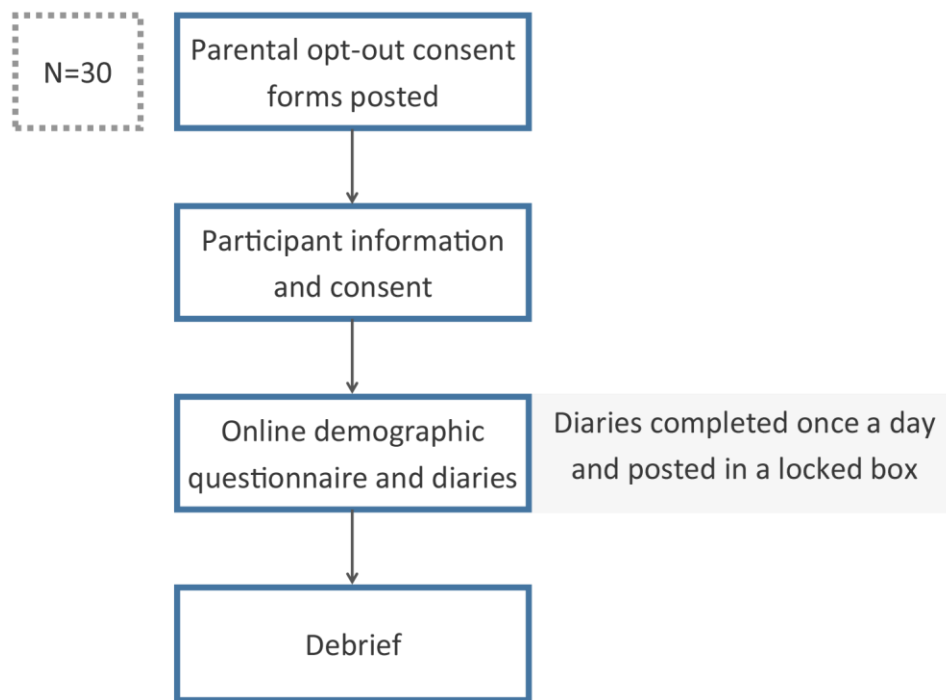
Figure 4.1 Overview of Study 2 procedure

4.2.6 Analysis procedure

Thematic analysis was used to analyse the diaries, in order to find similar themes across all of the diaries (Braun & Clarke, 2006). In total 234 diary pages were collected. The diaries were read and re-read and any initial ideas related to the research questions were noted down. The diaries were categorised into topic areas and a count of each topic area was made. This then allowed us to explore inductively the nature of participants' concerns. Initial codes in each of the topic areas were then identified. During the next stage, each code was were incorporated into a theme, and the themes were able to explain a larger part of the data. These themes were aided by a thematic map, which allowed us to visualise the links between the themes, and to ensure that each theme had enough data to support it. Coding was then repeated to ensure no important codes or information had been left out at earlier stages. Each of the three themes were then named and defined. Finally, the report was produced which involved choosing example extracts from the diaries to illustrate each theme and to provide a clear example of the point being made. See appendix 10.6 for an example diary.

4.3 Results

In explaining their sexual health knowledge and access to information, data presented around three themes (1*) Can I ask you a question?; (2) The social consequences of sex; (3) Information sources.* The first two themes relate to the first research question and explore gaps in teenagers' sexual health knowledge and the sexual health issues that they believe are important. The final theme explores the extent and type of the sexual health information that teenagers experienced over a four-week period. The themes are illustrated with extracts from the diaries.

4.3.1 Can I ask you a question?

Teenagers displayed their lack of knowledge and misunderstandings around sexual health in seven main categories; naivety, pregnancy, STIs, contraception, oral and anal sex and slang term clarification. In each category, participants expressed their lack of knowledge by writing questions in the diaries. These questions showed that teenagers lacked knowledge in these subjects but also that they wanted to know more about them. Teenagers asked how to have sex and how long to have sex, showing a general naivety around sexual intercourse. These general sexual health questions showed that teenagers are thinking about sex but at the same time have gaps in their knowledge and show misunderstandings about the topic.

> *How long do you have sex for?*

> *Can you have sex on your period?*

This naivety of sexual health knowledge was also apparent in relation to pregnancy. Questions about pregnancy centred on participants worrying that they could be pregnant and how they could become pregnant. As well as showing a general confusion about the ways to become pregnant, the questions show that pregnancy is one of the main sexual health concerns for female teenagers.

> *If your* [sic] *pregnant how do you know?*

> *How long do you have sex before you are pregnant?*

In addition, teenagers worried that they may become pregnant from having oral or anal sex. This showed a severe lack of knowledge around the biological aspects of sex and pregnancy.

> *If you have anal and the boy ejaculates inside me can I get pregnant?*

If someone cums [sic] *in your mouth can you get pregnant?*

Oral and anal sex were frequently discussed throughout the diaries. It was clear from the diary entries that participants had some understanding of oral and anal sex and it although some participants were sexually active, there are still misunderstandings around this topic.

How do you give suckys [sic]

If you have anal does it class losing your virginity?

Teenagers wanted to know more about methods of contraception. Teenagers had some basic knowledge around contraception methods such as condoms and the oral pill. However, teenagers still wanted to know more about these methods and participants were not sure which methods would be the best for them. The questions showed that while teenagers had heard of some contraception methods, they were unsure of the positives and negatives of each type of contraception. Many of the diaries mentioned condoms splitting and teenagers believed that condoms were not fully effective. There was a general agreement in the diaries that teenagers did not believe that condoms were the best method of contraceptive, but were not sure what alternative would be suitable.

Should I use protection or go on the pill?

Can you feel a condom split?

Teenagers were also worried about different types of STIs. Teenagers have some basic STI knowledge; however, they showed misunderstandings about how they might contract an STI and how to protect themselves from an STI. There were no questions surrounding how to get treatment for an STI, only how they might contract one. Although teenagers knew about condoms in relation to contraception they were unaware of using condoms to protect against STIs.

Can you get an STI off a blowjob?

Do you definitely get an STI if you have sex with someone who has one?

Lastly, teenagers had misunderstandings around appropriate terminology. Teenagers had heard many different slang words, but they were not sure what the words meant. If there are

inconsistencies in formal sexual health education, then it is not surprising that teenagers are unsure of appropriate terminology and even slang words for this terminology. This can lead to confusion for teenagers.

My boyfriend asked to "lick my muff" what does that mean?

Someone asked me to give them a sucky what does that mean?

4.3.2 The Social consequences of sex

Teenagers also reported misunderstandings and anxiety around the social consequences of sex. It was clear from the diary entries that teenagers often spoke about sex with their friends, in fact, the only communication teenagers reported about sexual health was with their friends. However, these exchanges did not comprise reliable sexual health information per se but rather focussed on a broader discussion of the social implications of having sex. Despite their naivety around sex, it was clear that teenagers were sexually active; however, they only discussed sexual activity when speaking about it with their friends.

One of my friends has sex and never used a condom and we were all talking about it.

My friend got drunk at the weekend and can't remember if she had sex.

Me and my friends talk about sex quite often as a joke, but sometimes they tell me stuff that really surprises me. One of my girl friends told me yesterday she'd lost her virginity and who she lost it to. I just don't understand why girls aren't proud to be virgins.

When discussing the sexual experiences of their friends the participants often used shaming words. Teenagers would name and 'shame' their friends if they had sex with someone – a process that appeared to be commonplace. This caused anxiety for participants and they were worried they might be shamed themselves. It was clear that participants were aware that females were often shamed for having sex, and this led to confusion about what is and is not acceptable.

If I have sex does it make me a slag? What number of people do you have to have sex with to be a slag?

When people in my class talk about sex they don't really worry about the consequences they just think it looks good that they have lost their virginity under the age of 16. But really its [sic] *not and a lot of girls in my year get called slags.*

Teenagers were not sure if they should be having sex at their age or if it would be considered wrong. It was clear from the diaries that while participants were unclear about the basic information regarding STIs and pregnancy they nevertheless worried about these issues. Likewise, they also worried about the social consequences of having sex. Some teenagers, for example, worried about the relationship consequences of having sex – and were anxious about attachment issues and sexual intercourse.

Is it okay if I have sex and do things with my boyfriend after a 2-year relationship?

Why do you get attached to someone when they take your virginity?

4.3.3 Information sources

These misunderstandings around biological and social aspects of sex tied in with teenagers' information sources on the topic. In the majority of diaries, teenagers wrote that they had not seen any sexual health information. Therefore, over a four-week period, teenagers were not targeted with any sexual health information. Due to their general lack of knowledge, it is likely that teenagers had not previously had comprehensive sexual health sessions in school. Teenagers acknowledged their lack of formal sexual health education, and stated that they would like more sexual health sessions. Teenagers were aware that they do not know a lot about sexual health or their own bodies.

I need more sexual health lessons in school I don't hardly know out [anything]

Today I was talking to my friends […] about sexual organs and [name] didn't even know the parts of the vagina. I don't want to name and shame but I think schools need to teach sexual health/sex ed more and explain so people know their own bodies

Yet teenagers are passive receivers of information. Despite stating a desire for more sexual health information, they did not actively search for this information at any point over the four-week period. The sexual health information that teenagers did come across was almost coincidental to their daily lives. For example, teenagers had read a poster about sexual health or they had seen a television show that featured some sexual health information. Teenagers

also stated that they had come across some sexual health information through advertisements on social media. None of the teenagers in this study had actively searched for sexual health information.

> *I saw a condom poster in the chemist*

> *Me and my sister watch embarrassing bodies [television programme] every Thursday and last time we watched it was about vaginas*

As the sources of information within the diaries were limited, there was not a lot of discussion about the types of information participants preferred. However, a few of the diaries mentioned that participants were aware of a confidential text messaging service for sexual health advice. Teenagers commented that they liked the sound of this because it was confidential. It is known that teenagers are less likely to speak to someone reliable, for example, a teacher or sexual health nurse directly but they are happier to access this information in a confidential way.

> *I understand that you can get chlamidia [sic] test in {town name} centre they then send you a text conferming [sic] if you have or haven't got an STI/STD. I think this is clever and confidential.*

4.4 Discussion

The findings of this study highlight a juxtaposition between the lack of understanding about the biological and social aspects of sex and at the same time the curiosity and thirst for knowledge about sexual health. Teenagers have numerous misunderstandings about the biological aspects of sex, particularly with respect to pregnancy, STIs, contraception, slang terminology, oral and anal sex. This is surprising given the age of participants, as is expected that 13 and 14 year olds would have some sexual health knowledge from SRE taught in schools (UK Department of Education and Employment, 2000). However, teenagers demonstrated a clear desire to know more about sexual health and their own bodies through the questions they asked in the diaries. Teenagers taking part in the study used the diaries as a tool to ask questions about the topics and issues that concerned them. The confidentiality afforded by the diary encouraged participants to be open in expressing their questions. We know that teens, particularly those of low SES, are more likely to use confidential sources of information, such as the internet (Zhao, 2009). This emphasises the need for private and confidential ways of asking sexual health questions.

This juxtaposition was situated within a context that emphasises perceived social norms, as teenagers worried about the social consequences of having sex before the age of 16. This is a confusing concept for teenagers as they openly talk to their friends about sex, yet, they worry about the shaming that could come from engaging in the activity. We know that peer communication and popularity are huge influences on sexual health (Allen et al., 2006; Bobakova et al., 2013; Neppl, Dhalewadikar, & Lohman, 2015; Prinstein, Meade, & Cohen, 2003), but the double standards between peers speaking openly about sex and also shaming peers who have had sex causes confusion for teenagers. There was a disconnect in the diaries between sex and relationships. Teenagers worried about becoming attached to their sexual partners. Some participants expressed that they wanted to wait to have sex, in case they became attached to their partner. This indicates that female teenagers may be seeking more short-term relationships, which is already known from existing literature (Manlove, Welti, Wildsmith, & Barry, 2014). In the UK, SRE is to become a compulsory subject by 2019 (Sellgren, 2017) . This research has highlighted a need for comprehensive knowledge of sex and relationships. It is important that SRE programs are designed to help teenagers fully understand the emotional and social aspects of sexual health. In addition, due to the anxiety around the stigma and shaming of females who do engage in sexual intercourse, it is important that any misinformation or double standards provided by peers is incorporated into sexual health education programs.

This study suggests that current sexual health interventions are not meeting teenagers' sexual health needs. Over a four-week period teenagers had very limited exposure to sexual health information. Certainly, the teenagers in this sample had no direct sexual health interventions targeted at them and teenagers did not actively seek sexual health information themselves. Instead they discovered this information coincidentally via posters, TV and social media adverts.

4.4.1 Limitations

The diary method has allowed participants to disclose their sexual health thoughts in an anonymous way. Because of this, participants were very honest and open with respect to the information that they disclosed. The material derived may not have been as rich had an alternative methodology been used, such as a face-to-face interview. However, the method did not allow to compare sexually active and non-sexually active teenagers, in regards to their knowledge and sexual health information seeking practises. This was because participants were

required to write their own participant number on the top of each diary, and the majority of diaries were missing the participant number. In this sample, 24% of the participants reported having sex with a condom and 12% reported having sex without a condom. As previous research has identified that sexually active teenagers are more likely to seek sexual health information than non-sexually active teenagers (Jones & Biddlecom, 2011), it would be interesting for future research to compare the information seeking practises of sexually active and non-sexually active teenagers. This information would provide insight into the most effective time and ways to target teenagers with sexual health information. This could have been achieved in the current study, if participant numbers were typed on the diaries before they were given to participants. However, if this was the case, participants may not have perceived the diaries as confidential and anonymous, and participants may not have been as open and honest with the information that they disclosed. Future research could seek to employ methods that allow to link diaries with the questionnaire data, yet are still perceived as anonymous to teenagers. One way this could be achieved is through the use of online diaries. With the constraints of a school based study, and the number of websites that are blocked on school computers, this was not possible to trial in this study, but would be interesting for future research to address.

4.4.2 Implications

Female teenagers from low SES areas lack key and basic knowledge around the biological and emotional aspects of sexual health. Over a four-week period, teenagers were not targeted with comprehensive sexual health information. Even though teenagers want sexual health information, they do not actively seek information. The sexual health information that teenagers do encounter is through posters, the internet and television. Peers are a huge influence on sexual health decisions, as teenagers do not want to be judged or shamed. Teenagers worry that there might be negative social implications from having sex. The findings of this study indicate that teenagers from low SES areas need to be able to access reliable sexual health information in a convenient and confidential way, as teenagers will not actively seek out information. In addition, incorporating peer stigma and social norms into sexual health interventions could minimise worry about social implications and promote positive peer influence. The findings from this study highlight important implications for the way sexual health education programs are advertised and delivered to female teenagers.

4.5 Chapter summary

This chapter described a qualitative study designed to explore low SES female teenagers existing sexual health knowledge and information sources. The study utilised a four-week diary-approach due to the difficulties examining teenagers' sexual health knowledge and information, as they do not like talking about sexual health. Using thematic analysis data presented around three themes (1*) Can I ask you a question?; (2) The social consequences of sex; (3) Information sources.* The first two themes explored teenagers lack of knowledge and misunderstandings around the biological and social experiences of sexual health. The final theme explored the limited ways in which teenagers come into contact with sexual health information currently despite their desire to understand more. The findings of this study highlight the juxtaposition between teenagers' lack of understanding about the biological and social aspects of sex and at the same time their curiosity and thirst for knowledge. This point was emphasised in the teenagers' use of the diaries as a confidential way of seeking sexual health information. This emphasises that teenagers do not have access to reliable sexual health information, very limited sexual health knowledge but are thinking about sex.

In the next chapter, a quantitative study is described, in which a larger number of low SES female teenagers are recruited. As we know that female teenagers have limited access to reliable information and limited sexual health knowledge, the focus moves to the predictors of risky sexual behaviours.

Chapter 5: A questionnaire study measuring the predictors of risky sexual behaviours for female teenagers (Study 3)

5.1 Introduction:

An extensive list of predictors of risky sexual behaviours has been identified in the literature review and throughout the previous chapters. In Chapter 3 (Study 1) sexual health professionals identified that self-esteem, peer pressure, parental influences and the presence of pornography and safe sex in media are highly important predictors of risky sexual behaviours for female teenagers. In Chapter 4 (Study 2) female teenagers' qualitatively identified a chronic lack of sexual health knowledge and access to reliable sexual health information sources may be factors involved in sexual risk taking. However, previous quantitative evidence is mixed with respect to the factors, which predict sexual risk taking in female teenagers from low SES areas.

Self-esteem has been identified as highly important by sexual health professionals, yet it remains uncertain from previous literature (Goodson et al., 2006) the extent to which this factor plays a role in teenage sexual risk taking. Longitudinal research has found statistically significant links between self-esteem and sexual behaviours (Jackman & MacPhee, 2017), whereas, no statistically significant links have been found in cross-sectional studies (Salazar & Crosby, 2005). School performance, body image and depression are three important factors that have been identified which relate to self-esteem. Self-esteem, school performance and lower school grades have been associated with earlier sexual initiation (Perry et al., 2014) and greater sexual activity (Wheeler, 2010). Females who feel more confident and higher in self-esteem evaluate their body image more positively and are less likely to report risky sexual behaviour (Gillen et al., 2006). Depression and low self-esteem has been linked with adolescents reporting being more sexually active, having a greater number of sexual partners and not using condoms (Brawner, Gomes, Jemmott, & Deatrick, 2012; Brawner, 2012; Mazzaferro et al., 2006). Study 1 (Chapter 3) and Study 2 (Chapter 4) findings have been consistent with previous literature identifying self-efficacy, peer pressure and parents as important predictors to risky sexual behaviours (Dilorio et al., 2000; Sionéan et al., 2002; Velez, 2016; Wight & Fullerton, 2013) .

In Chapter 4 (Study 2) it was also identified that female teenagers have a severe lack of sexual health knowledge and limited access to reliable sexual health information. Access to sexual health information is especially important for female teenagers, as females with increased sexual health knowledge are more likely to delay first sexual initiation and have greater confidence in using condoms (McElderry & Omar, 2003; Weinstein et al., 2008). It is also important that teenagers are accessing reliable sexual health information to counteract any misinformation in pornography (for example, no consent), because pornography is easily available. It has been reported in the UK that approximately 53% of 11-16 years olds have seen pornography online, and 94% of those has seen it before age 14 (Martellozzo, Monaghan, Adler, Davids & Horvath, 2016). A review of the literature found that adolescent males are more likely to use pornography than females, however, sensation seekers with weak or troubled family relationships are most likely to access pornography. Also, accessing pornography in teenagers is associated with higher permissive sexual attitudes, more casual sex and greater occurrence of sexual intercourse (Peter & Valkenburg, 2016). Therefore, it is clear that pornography is having a significant influence on teenagers' sexual behaviour and attitudes. However, it is less clear whether pornography use is a predictor of earlier sexual intercourse. Also, it is unclear how regularly teenagers are exposed to safe sex (e.g. in the mass media) and how this affects earlier sexual initiation.

The link between individual personality traits and sexual risk taking is well documented in previous literature. High sensation seeking and impulsivity can predict earlier sexual initiation, a greater number of partners and unprotected sex in adolescents (Hoyle, Fejfar & Miller, 2000). Conscientiousness, which shares features with impulsivity and sensation seeking has been negatively associated with unprotected sex and neuroticism is weakly associated with number of partners and unprotected sex (Hoyle, Fejfar & Miller, 2000). Also, Miller et al. (2003) found that low agreeableness, low openness to experience and high extraversion were significantly related to multiple high risk sexual behaviours. Delayed gratification can enhance mechanisms of self-control and reduce unprotected sex in relation to peer pressure (Reyna & Wilhelms, 2016).

In summary, there is an extensive list of risky sexual behaviour predictors identified as being important both in the literature and in the earlier thesis studies. These predictors, however, are typically examined in isolation and until now have been examined across both male and female teenagers across a range of SES backgrounds. Furthermore, the definitions used for risky sexual

behaviours have varied considerably in the previous literature. For example, some studies have used early sexual initiation as a risky behaviour (Perry et al., 2014), whereas other studies have identified multiple sexual partners and condom misuse as a risky behaviour (Brawner, Davis, & Fannin, 2012; Mazzaferro et al., 2006). The aim of this study is to explore which predictors are important in predicting early sexual initiation in female teenagers from low SES backgrounds, given that these individuals have been identified as a high-risk group for early sexual initiation and sexual risk taking more generally. Drawing on the definition identified in chapter 2, risky sexual behaviour is defined, in this PhD, as early sexual initiation before age 16, because of its link with other risk taking behaviours (Zimmer-Gembeck & Helfand, 2007). Therefore, the most important predictors identified from the literature and the previous two studies were combined into a survey for use with female teenagers. The predictors were: *self-esteem, big five personality traits, self-efficacy, sensation seeking, body image, delayed gratification, peer pressure, peer conformity, peer/parental support, communication, sexual attitudes, depression, school performance, sexual health knowledge, sexual health information, pornography and safe sex in media.*

This research was conducted in two parts both of which are reported below. The first part consisted of the development and piloting of the survey to assess its appropriateness for female teenagers. The second part involved the deployment of the survey and the collection of data from a large number of low SES female teenagers from the North East of England. Due to the exploratory method it is difficult to draw any precise hypotheses, however, due to all the predictors previously being associated with sexual risk taking, it was hypothesised that the predictors would significantly be able to predict early sex initiation in low SES female teenagers.

5.2 Method: Initial Phase: Pilot of Questionnaire

5.2.1 Approach:

Questionnaires suitable for teenagers that measured the identified predictors were chosen. Following its initial development, the questionnaire was piloted using a two stage process; stage 1: reviewed by professionals, parents and teenagers and stage 2: tested by teenagers. The importance of piloting a questionnaire is highlighted by previous literature (Oppenheim, 1992; Rattray, & Jones, 2007) and is particularly important with questionnaires with children and teenagers (Bell, 2007; Presser, Couper, Lessler, Martin, Martin, Rothgeb, & Singer, 2004).

5.2.2 Participants:

5.2.2.1 Stage 1: Review

A purposive sample was recruited and fifteen female participants took part (5 professionals, 5 parents and 5 teenagers). Professionals were recruited due to their expertise in working with teenagers, two sexual health professionals were recruited due to their understanding and knowledge of the area and familiarisation of working with teenagers (job experience ranged from 2-5 years). Three teachers were recruited due to their experience of understanding how long teenagers will concentrate on a task and whether they will understand the questions (job experience ranged from 1-12 years). Five parents of female teenagers (aged 13-16 years) were recruited due to their understanding of whether teenagers would find the questionnaire appropriate, and if they would be happy with their daughters completing the questionnaire. Five female teenagers aged 13-15 years were recruited (Mean age=13.5 SD=0.53), in order to evaluate if they understood the questionnaire. Participants were recruited from advertisements in the University, and friends and family of the researcher.

5.2.2.2 Stage 2: Testing

An opportunity sample of ten female teenagers were recruited for the stage 2 pilot. Participants were recruited through parents; parents were recruited on social media platforms, for example, Facebook and Twitter. Parents asked their daughters if they would be interested in taking part in the online pilot study. Participants were from the North East of England, aged 13-14 years old (Mean=14.2, SD=0.84). Participants were all White British, six participants were from a low SES background measured by parental education (highest education was secondary school) and four participants were from a high SES background measured by parental education (highest education was University Postgraduate).

5.2.3 Materials:

The online survey was hosted on Qualtrics and contained 11 standardised questionnaires and 13 self-developed questionnaires. The questionnaires covered five different areas; self, personality, peers and parents, sexual health and school performance, these covered the previously identified high-risk predictors (The full final questionnaire can be found in appendix 10.7).

5.2.3.1 Self-measures

Demographic information was measured using a self-developed questionnaire. The questionnaire consisted of seven items aimed to measure; age, ethnicity, SES status and

parental background. The questions were identical to those used in Study 2 (Chapter 4) and from that study were deemed as suitable to use with female teenagers.

The Rosenberg Self-Esteem Scale (Rosenberg, 1965) was used to measure self-esteem and contains 10 statements, for example*, "I take a positive attitude toward myself."* Items are scored from strongly disagree (0) to strongly agree (3), five questions are reversed scored. The scale ranges from 0-30, higher scores indicate higher self-esteem.

The General Self-Efficacy Scale was used to measure self-efficacy (Sherer & Adams, 1983). This contained 17 statements, for example, *"I give up easily."* Items were measured from strongly disagree (1) to strongly agree (5). Six questions were reversed scored. The highest score available was 85, higher scores indicated higher levels of high efficacy.

Physical Appearance State and Trait Anxiety Scale (PASTAS) was utilised to measure body image (Reed, Thompson, Brannick, & Sacco, 1991). The scale contains 16 body parts for example*,"hands"* participants are asked to score how anxious, tense or nervous they feel about that body part from not at all (0) to exceptionally so (5). The scores range from 0-80, higher scores indicate more body image anxiety.

The *Delay Gratification Scale* (Zytkoskee, Strickland, & Watson, 1971) was used to measure delayed gratification, this contained five statements, participants were asked to choose one of two choices for each statement. For example, *"would you rather have £10.00 today or £20.00 in three weeks."* Participants scored one point for choosing today or three points for choosing to wait three weeks, the highest score available was 20. Higher scores indicated higher delayed gratification.

The Centre For Epidemiological Studies Depression Scale (Radloff, 1977), was used to measure depression, this consists of 20 statements for example, *"I felt lonely."* Participants were asked to rate *how often they had felt this in the past week* from rarely or none of the time (1) to all of the time (5). The highest score available was 100, higher scores indicated higher self-reported depression.

5.2.3.2   Personality measures

The Big 5 Mini-Markers (Saucier, 1994) was used to measure personality traits. This contains 40 adjectives for example*, "kind"* participants were asked to score how much the adjective applies to them from extremely not accurate (1) to extremely accurate (9). The questionnaire has five sub-scales; extraversion, agreeable, conscientious, neurotic and openness. Each sub-

scale has a possible score of 72. Higher scores indicate that the participant identifies more with that personality trait.

The Child Sensation Seeking Scale (Russo, Stokes, Lahey, & Christ, 1993), consists of 26 statements. Participants were asked to choose one out of two choices for each statement for example, *"I like to do 'wheelies' on my bike.* (1) Or *Kids who do "wheelies" on their bikes will probably get hurt sometime* (0)." Each sensation seeking statement chosen was scored with a 1, the highest score was 26. Higher scores indicated higher levels of sensation seeking.

5.2.3.3 Peers and parents' measures

Peer Pressure, Popularity and Conformity scales were used (Santor, Messervey, & Kusumakar, 2000). All three scales were measured on a scale of strongly disagree (1) to strongly agree (5). Eleven items were utilised to measure peer pressure, for example *"I've felt pressured to get drunk at parties."* The highest score was 55, higher scores indicated more peer pressure. Twelve items were utilised to measure popularity for example *"I've neglected some friends because of what other people might think."* The highest score available was 60, higher scores indicated more popularity. Conformity was measured using seven items for example *"I Rarely follow the rules."* The highest score available was 40, higher scores indicated higher conformity levels.

Peer and Parental Support, Sex Communication and Sexual Attitudes were measured using self-developed questionnaires due to there being no suitable questionnaires available. Each scale had 15 items, five items measuring parental support for example, *"I receive a good deal of attention from my parents/carers."* Five items measuring parental sex attitudes *"My parents/carers believe teenagers should be encouraged to stay virgins."* Five items measuring sex communication *"I feel I can talk to my parents/carers about STIs."* The questionnaire was then repeated with *parents/carers* changed to *friends*. The scale was scored on a 5-point Likert scale from strongly disagree (1) to strongly agree (5). Two questions were reversed scored; the highest score available was 25 for each sub-scale. A higher score in the parental/peer support scale indicated teenagers had higher support from their parents/carers or peers. A higher score in the parental/peers sex attitudes scale indicated their parents/carers or peers had more open sexual attitudes and a higher score in sex communication indicated teenagers felt they could talk more openly to their parents/carers or peers about sex. The scoring system was developed based on the previous peer pressure scale, to keep all scales similar and easier for teenagers to navigate.

5.2.3.4 **Sexual health**

The SKAT-A (Lief, Fullard, & Devlin, 1990), was used to measure sexual health attitudes this contains 43 statements scored on a *Strongly Disagree* (1) to *Strongly Agree* (5) scale. The statements included question such as *"Masturbation is unhealthy."* The scale has four sub-scales Sexual myths, responsibility, sex and its consequences and sexual coercion. Each sub-scale is scored out of 55, with higher scores indicating a more liberal attitude.

A Sexual Health Knowledge questionnaire was utilised developed from the NHS website, this contained 14 statements about sexual health for example *"16 is the age of sexual consent in England."* Items were scored with a Yes (1), No (0) or Don't Know (0) response. Two items were utilised that allowed participants to free type responses to the questions *"Please write the contraception methods you have heard of"* and *"Please write the sexually transmitted infections (STIs) you have heard of."* Participants gained one point for every correct STI (for example, chlamydia) or contraception method (For example, condom), using NHS guidelines there was a maximum of 8 points for the STI question and 10 points for the contraception question. Overall, the maximum score was 32, with higher scores indicating higher sexual health knowledge.

Sexual Health Information was measured on a self-developed question. Participants were asked to type any sexual health information they had encountered over the past month. This was scored from (0) no information, (1) low quality information and (2) high quality information. Low quality information included speaking to friends and seeing sexual health information on social media. High quality information included attending a sexual health talk or speaking to a sexual health professional or teacher about sexual health.

Safe Sex in the Media and *Pornography* was measured using self-developed questions. For example*, "How often have you seen safe sex portrayed in magazines or comics in the last six months?"* These were scored from never (0) to about once a week or more (3), the highest score available was nine. Higher scores indicated participants had seen more safe sex in the media or pornography. The questions and scoring system were adapted and modified to suit a female UK sample from the *'Exposure to Pornography in Traditional media'* scale (Lo & Wei, 2005) which has found to be reliable with Taiwanese teenagers.

Previous sexual behaviours were measured using the Raine previous sexual behaviours scale (Skinner et al., 2015). Four questions measured relationship status, partner gender, age and length of relationship. Early sex before 16 was measured using two questions, participants

were asked what age measured from *Haven't yet* to *16 years* they had vaginal sex with and without a condom.

5.2.3.5   School performance

School performance was measured using four self-developed items. For example, *"I expect to do well in school this year."* The scale was scored on a 5-point Likert scale from strongly disagree (1) to strongly agree (5). The highest score available was 20, with higher scores indicating better school performance. The scoring system was based on the previous Likert scales from strongly disagree to strongly agree to keep consistent with the rest of the questionnaire.

5.2.3.6   Construction of questionnaire

Barker and Weller, (2009) identified that it is important to ensure questionnaires are fun for children and teenagers in order to keep them engaged and interested. Reliable data cannot be collected if participants become bored with the questionnaire. Therefore, after each questionnaire interesting facts and pictures were added to keep the questionnaire exciting and interesting. The facts included items such as *"Did you know? Deer can't eat hay!"* A bold and bright colour scheme was used throughout the questionnaire, with animal pictures added.

5.2.4   Procedure:

Ethical approval was gained for the pilot study from Northumbria University's Faculty of Health and Life Sciences ethics committee. The survey was piloted using a two-stage process.

5.2.4.1   Stage 1 - review

Professionals, parents and teenagers reviewed the questionnaire in paper-format. This builds upon Bell's (2007) recommendation to use a review panel to pilot a questionnaire designed for teenagers. Professionals and parents were asked to review the questionnaire as they were likely to know whether teenagers would find the questionnaire interesting and whether they believed the questionnaires were appropriate for teenagers. This was particularly important as the questionnaire was targeting sexual health a highly sensitive topic. Teenagers were asked to review the questionnaire in order to fully identify any questions or words that teenagers found ambiguous, or could not understand.

Opt-in parental consent was sought for teenage participants, parents were provided with an information and consent form and returned this to the researcher if they were happy for their

child to take part. Opt-in consent was used as participants were not recruited through schools. All participants were provided with an information sheet about the study and provided their written informed consent.

Professionals and parents were asked to individually review the questionnaire in paper-format. Participants were asked to read and annotate the questionnaire with any comments, amendments or suggestions. Participants were asked to think about whether questions were suitable for female teenagers, aged 13 to 16 years and whether the wording was appropriate and within teenagers' comprehension level. Participants also commented on the overall questionnaire, wrote down overall strengths and weaknesses, and whether they believed teenagers would find the task engaging. Teenage participants were asked to read the questionnaire in paper-format and highlight any words that they did not understand. Teenagers were asked to write a few comments about the overall questionnaire and whether they found it interesting. Following the study all participants were fully debriefed and thanked for their time.

5.2.4.2 Stage 2: - testing

Parents were recruited on social media and gave their opt-in consent for their child to take part in the study. Ten female teenagers completed the online questionnaire, with any amendments made from the Stage-1 pilot (see table 5.1 below). Information about the study was provided online and informed consent from teenagers was sought online via Qualtrics. Participants worked through the online questionnaire and were timed to evaluate how long the questionnaire took to complete. At the end of the questionnaire participants were asked to write down how they found the questionnaire overall, and write any strengths and/or limitations with the questionnaire. Following the completion of the study participants were fully debriefed and thanked for their time.

5.3 Results

5.3.1 Pilot - Stage 1: review

Professionals and parents annotated the questionnaire with suggestions and amendments, commenting on the overall questionnaire and any questions they believed were not suitable for teenagers. Teenagers highlighted any words that they did not understand and provided comments on the overall questionnaire. See table 5.1 for overview of changes.

Table 5.1. Overview of suggested amendments to the questionnaire, by professionals, parents, teachers and teenagers

Scale	Comments professionals	Comments teenagers	Amendments
Demographic questionnaire	Like the picture (n=7) Change parents/guardians to parents/carers (n=4)	Like the picture (n=2)	Slight wording changes
Mini-markers	Teenagers will struggle with these words (n=8)	Words highlighted that they did not understand (e.g. complex) (n=5)	Scale removed
Self-esteem	Questions could be worded better (n=8)	Issues with wording (n=5)	Scale reworded for example, satisfied changed to happy
Self-efficacy	Questions not aimed at teenagers (n=6)	Questions seem childish (n=3)	Replaced with 8-item self-efficacy scale (Muris, 2001) suitable for teenagers
Sensation seeking	Too long (n=7) Some choices not relevant to teenagers (n=3)	Too long (n=3)	Replaced with the brief sensation seeking scale (Hoyle, Stephenson, & Palmgreen, 2002)
PASTAS	Not suitable for teens (n=4)	This is embarrassing (n=2)	Scale removed
Delayed gratification	Enjoy this task because different to other scales (n=3)	No comments	No amendments
Peer pressure	Slight wording changes	No comments	Slight wording changes, for example, 'urged' changed to 'made'
Popularity	No comments	No comments	Scale removed
Peer conformity	No comments	No comments	Scale removed
Peer support, communication and sexual attitudes	No comments	No comments	No amendments
Parental/carer support, communication and sexual attitudes	No comments	Like picture (n=2)	No amendments
Depression	Words not suitable (n=4) Scale not appropriate for young people (n=7)	Issues with wording	Scale removed
School performance	No comments	Like picture (n=4)	No amendments
Sexual health knowledge	Slight wording changes	No comments	Slight wording changes for example, 'obtain' to 'get'
Sexual health information	No comments	No comments	No amendments
SKAT-A	Teenagers will struggle with a lot of these words and feel awkward - won't take scale seriously (n=3)	Questionnaire is embarrassing (n=2)	Scale removed
Safe sex in media	No comments	No comments	No amendments
Pornography in media	No comments	No comments	No amendments
Sexual behaviours	'Relationship' should be defined (n=1)	No comments	Definition added in for 'relationship'

5.3.1.1   Review findings

Professionals, parents and teenagers provided comments on what they thought about the overall questionnaire. All participants agreed that the questionnaire was too long. Professionals commented that "*Students can only concentrate for 20 minutes; this is twice as long*" (Teacher). Teenage participants mentioned that they would become *"bored"* and stop the questionnaire because it was too long. In terms of strengths of the questionnaire, professionals and parents believed that the interesting facts and pictures would keep teenagers engaged. Professionals also believed that the scales were in-depth and liked the easy to use Likert scales. Teenagers thought that the online questionnaire was appealing as they could complete it on their phones and laptops. Teenagers also liked the pictures and facts used throughout, especially the animal pictures.

Following this first stage of the pilot study the survey was amended, five questionnaires were removed and two questionnaires were replaced. This was due to participants commenting that the overall survey was too long, therefore, questionnaires measuring factors that were not deemed highly important from professionals in Study 1 (popularity and peer conformity) or questionnaires that participants in this pilot study deemed as not appropriate for teenagers were removed from the survey (PASTAS, depression and SKAT-A). Therefore, the big 5 mini-markers (Saucier, 1999), PASTAS (Reed et al., 1991), conformity questionnaire (self-developed), Centre for Epidemiological studies depression scale (Radloff, 1977) and the SKAT-A scale (Lief et al., 1990) were removed from the survey. Two questionnaires were removed the self-efficacy scale was replaced with a shorter 8-item self-efficacy scale (Muris, 2001) and the Sensation seeking scale was replaced with the brief sensation seeking scale (Hoyle et al., 2002). Therefore, the 240-item questionnaire was reduced to 118 items.

5.3.2   Findings from Pilot - Stage 2 (testing):

Teenagers completed the final amended survey online via Qualtrics. No issues were identified through Qualtrics and participants were able to complete the full questionnaire. The average time to complete the questionnaire was measured, it took between 20-35 minutes with an average time of 23 minutes. Upon completion of the questionnaire, teenagers were asked to provide some overall comments about the questionnaire. Teenagers commented that they "*enjoyed the facts*" and "*pictures*" throughout the survey. Participants were asked to comment on the length of the questionnaire, and participants commented that it was "*not too long.*" However, it was clear from the pilot results that teenagers may not disclose many previous

sexual behaviours, as teenagers in the pilot study all selected *haven't yet* to the previous sexual behaviours questionnaire. Therefore, two questionnaires were added measuring intention to have sex in the next year and intention to have safe sex in the next year.

5.4 Pilot summary

The questionnaire was deemed suitable for low SES female teenagers aged 13-16 years from the two pilot studies. The next part of this chapter moves onto the second part of this study – the deployment of the final survey. As discussed in the introduction, using the amended survey, the research aimed to explore the predictors of risky sexual behaviours in low SES female teenagers. In addition, the research aimed to explore these predictors in relation to intentions to have sex and intentions to have safe sex. It was hypothesised that the predictors would significantly predict early sexual initiation in low SES female teenagers. It was also hypothesised that the predictors would be able to predict intention to have sex and intention to have safe sex in low SES female teenagers.

5.5 Method: Main study

5.5.1 Design:

The study utilised a quasi-experiment design. The criterion variables were early sex before 16 and no early sex before 16. In addition, criterion variables included intention to have sex in the next year and intention to have safe sex in the next year. Predictor variables were; self-esteem, self-efficacy, sensation seeking, delayed gratification, peer pressure, peer support, peer sex communication, peer sex attitudes, parental support, parental sex communication, parental sex attitudes, sexual health knowledge, safe sex in media, pornography, sexual health information and school performance. Age was included as a control variable.

5.5.2 Participants:

360 female teenagers were recruited from the North East of England. Teenagers were aged between 13-16 years old (Mean= 14.2 SD= .87). Teenagers were recruited using an opportunity sample from schools and the wider population. There were five schools involved all from the North East of England, and 320 participants were recruited from schools. The survey link was advertised on social media, through youth group organisations Twitter and Facebook accounts, N=40 participants were recruited externally. SES status was determined using parental education background and parental income, using the same criterion as discussed in Chapter 4,

Study 2 (see table 5.2 for full demographic background). Participants were categorised as low SES if they were on free or reduced price meals (parents/carers yearly gross income was below £16,190), or if parent's highest educational attainment was primary or secondary school or if their parents were either unemployed or had working class jobs (for example, builder or factory worker). If all of these questions were left blank or participants selected '*don't know*' to all questions, then their data was removed from further analysis. Twelve participants were categorised as high SES and 30 participants failed to complete the full survey and were excluded from the analysis. Complete data was available from N=318 participants.

Table 5.2. Overview of participant demographic information, including free school lunches, ethnicity and parental educational background

		N (%)
Age	13	59 (18.9%)
	14	149 (46.9%)
	15	80 (25.2%)
	16	30 (9.4%)
School lunches	Free or reduced price lunches	92 (28.7%)
Ethnicity	White British	275 (85.9%)
	Black or black British Caribbean	3 (.9%)
	Other mixed background	3 (9%)
	Other white background	18 (4.4%)
	Asian or Asian British	15 (3.7%)
	White Irish	6 (1.5%)
Living with parents	Live with mother	120 (29.4%)
	Live with father	33 (8.1%)
	Live with both parents	104 (25.5%)
	Living in care	34 (8.3%)
	Other	20 (4.9%)
	Live with another relative	9 (2.2%)
Parents' education background	Primary school	5 (1.6%)
	Secondary school	98 (30.6%)
	Sixth form or college	47 (14.8%)
	University (undergraduate)	34 (10.6%)
	Don't know	134 (41.9%)

Participants were split into early sex before 16 (n=39) and no early sex before 16 (n=279). The age range in the early sex group was 13-16 years (Mean=14.6, SD=.74). Six of the *'early sex'* participants (15%) reported being in a heterosexual relationship and reported being with their partners between less than 3 months to 3 years. All partners were the same age or one year older than participants were. In the no early sex group the age range was 13-16 years (Mean=14.2, SD=.87). 70 (24%) participants reported being in a heterosexual relationship and reported being with their partners less than 3 months to over 3 years. All partners were the same age or two years older than participants were. See table 5.3 for full overview of previous sexual behaviours for all participants.

Table 5.3. Overview of previous sexual behaviours for the age in which participants reported having first experience with each behaviour. Frequencies and (percentages) are reported for each behaviour the percentages add up to 100% for each behaviour (e.g. kissing).

Age	Haven't yet n (%)	Under 13 years n (%)	13 years n (%)	14 years n (%)	15 years n (%)	16 years n (%)
Kissing	71 (22.3%)	114 (35.7%)	86 (27.0%)	42 (13.2%)	5 (1.6%)	1 (0.2%)
Touching a partners genitals	221(69.3%)	11 (3.4%)	39 (12.2%)	24 (7.5%)	15 (4.7%)	9 (2.8%)
Being touched on genitals	237 (74.8%)	9 (2.8%)	23 (7.3%)	20 (6.3%)	19 (6.0%)	9 (2.8%)
Giving oral sex	249 (78.1%)	6 (1.9%)	21 (6.6%)	14 (4.4%)	18 (5.6%)	11 (3.5%)
Receiving oral sex	257 (60.6%)	4 (1.3%)	15 (4.7%)	16 (5.0%)	15 (4.7%)	12 (3.8%)
Sex with a condom	269 (84.6%)	1 (0.3%)	9 (2.8%)	15 (4.7%)	13 (2.8%)	11 (3.5%)
Sex without a condom	269 (84.6%)	1 (0.3%)	9 (2.8%)	14 (4.4%)	15 (4.7%)	10 (3.1%)

5.5.3 Materials:

The final amended survey consisted of sixteen questionnaires: eleven self-developed questionnaires and five standardised questionnaires. The survey was hosted on Qualtrics and all amendments from the pilot study were incorporated.

5.5.3.1 Self-measures

Demographic information was measured using a self-developed questionnaire. The questionnaire consisted of seven items aimed to measure; age, ethnicity, SES status and parental background. *Self-esteem* was measured with the amended Rosenberg Self-esteem Scale (Rosenberg, 1965). The original scale consisted of 10 items (α = .83) in this sample the scale was found the be highly reliable (α =.883). *Self-efficacy* was measured with the 8-item self-efficacy scale (Muris, 2001). An example item was *"How well can you give yourself a pep-talk when you feel low?"* Items were scored from *Not at all* (1) to *Pretty well* (5), the highest score available was 40. A higher scored indicated higher levels of self-efficacy. The original

scale consisted of 8 items (α = .94) in this sample the scale was also found the be highly reliable (α =.844).

5.5.3.2 Personality measures

Delayed gratification was measured with the modified Delay Gratification Scale *(Zytkoskee, Strickland & Watson, 1971).* The Delayed Gratification Scale was deemed reliable 4 items (α = .656) . *Sensation seeking* was measured using the Brief Sensation Seeking Scale (Hoyle et al., 2002). The questionnaire has 8 items, for example, *"I like to do frightening things."* Items are scored from Strongly Disagree (0) to Strongly Agree (7). The scale ranges from 0-56, higher scores indicate higher levels of sensation seeking. The original item scale had a Cronbach's alpha coefficient of α =.81, it was also deemed reliable in this current sample (α =.763).

5.5.3.3 Peers and Parents

Peer pressure was measured with the peer pressure scale (Santor et al., 2000). The original scales Cronbach's alpha coefficient was .69, in this current sample it was 11 items (α =.896). *Peer and parental/carers support, sex communication and sex attitudes* scales were utilised from the pilot study with no amendments. All scales in this current sample were reliable; Peer Support 5 items (α =.910), Peer Sex Communication 5 items (α =.893), Peer Sex Attitudes 5 items (α =.745), Parental Support 5 items (α =.934), Parental Sex Communication 5 items (α =.930) and Parental Sex Attitudes 5 items (α =.673).

5.5.3.4 Sexual health

Sexual health knowledge, Sexual health information, safe sex in the media and *pornography* were measured with the self-developed questionnaires in the pilot study. No amendments were made to these scales. All scales in this current sample were reliable; Sexual Health Knowledge 12 items (α =.810), Safe Sex in the Media 3 items (α =.692) and Pornography 3 items (α =.692).

Previous sexual behaviours were measured using the Raine previous sexual behaviours scale (Skinner et al., 2015). Four questions measured relationship status, partner gender, age and length of relationship. Early sex before 16 was measured using two self-developed questions. Following from the pilot study a definition was added for relationship status:

"A relationship is an emotional connection with another person. You may have relationships with your friends and family. For this relationship, we mean a romantic relationship with another person. This may also include a sexual relationship. You may have multiple romantic

or sexual relationships, but for this question just think about if you are in a romantic relationship with ONE other person." (NHS choices, 2016).

Participants were asked at what age they had vaginal sex with and without a condom, this was measured from '*Haven't yet*' to '*16 years*'. *Intentions to have sex* was measured using three questions. For example, "*During the next year I expect to have sex." Intentions to have safe sex* was measured using three questions. For example, "*During the next year if I have sex it is likely I will use contraception.*" Items are scored from *Strongly Disagree* (0) to *Strongly Agree* (7). The scale ranges from 0-21, higher scores indicate higher intentions to have sex and higher intentions to have safe sex. The intentions questions and scoring system were developed from Godin, Bélanger-Gravel, and Vézina-Im, (2012) recommendations for developing intention questionnaires.

5.5.3.5   School performance

School performance was measured using the previously described self-developed scale. No amendments were made to this scale. The final scale for this current sample was deemed reliable 4 items (α =.738).

5.5.3.6   Overview of questionnaire

The majority of questionnaires demonstrated an acceptable level of alpha normally deemed to be 0.70 and above (Hinkin, 1998; Kline, 1999). However, a few self-developed or modified questionnaires fell short of this .70 level (e.g. delayed gratification, parental sex attitudes and safe sex in the media) however they were still above .65 level considered to be at the lower end of the acceptable level for new scales (Hair, Anderson, Tatham, & Black, 2006). Therefore, all questionnaires were deemed as reliable for the study.

5.5.4   Procedure:

Participants were recruited from schools and the wider population (see figure 5.1 for overview of study procedure). An opt-out parental consent procedure was utilised with participants who were recruited from schools. Parents were posted parental consent letters and informed the school within two-weeks if they did not want their daughter to take part. For participants recruited externally, parental consent was sought online. Parents/carers were asked to review and sign an online consent form and supply a phone number or postal address and convenient times to be contacted. The researcher then contacted parents/carers and asked if they were happy for their consent to be used. All participants gave their informed consent online.

In schools, the participants completed the survey in a class room setting with a teacher and the researcher present, in case any issues arose. Participants recruited externally completed the survey on their own. Participants completed the questionnaires online via Qualtrics online instructions were provided so that participants could work through the survey on their own. The survey took approximately 25 minutes to complete. At the end of the survey, participants were fully debriefed online and directed to a sexual health website if they had any further sexual health questions. The researchers email address was online in case participants had any questions about the research. Parental debrief forms were posted home to parents by schools. For participants who were recruited eternally parents were emailed electronic debrief forms.
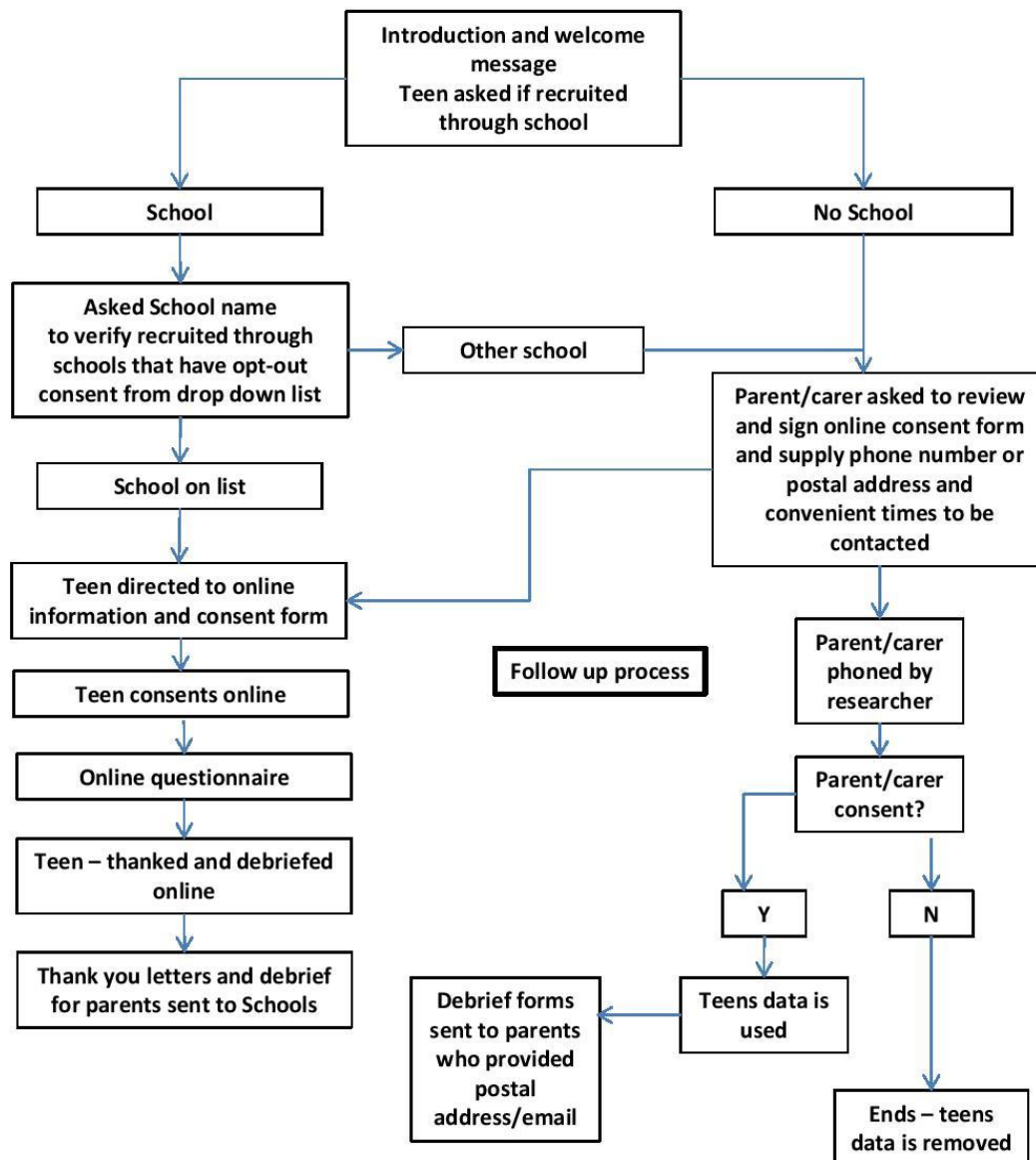
Figure 5.1 Overview of study procedure for participants recruiting through schools and externally

5.6 Results

5.6.1 Treatment of data

All questionnaires were scored and the data entered into SPSS for analysis. Descriptive statistics including frequencies, means and standard deviations were calculated for each scale and age group. Due to there being an uneven split of ages (see Table 5.2) with 46.9% of participants being aged 14, age was added in the analysis as a control variable. A logistic regression was conducted to assess the likelihood of the predictors predicting early sex before age 16. Two multiple regressions were conducted to assess the likelihood of the predictors predicting intention to have sex and intention to have safe sex. The data was screened for

outliers and there were no significant outliers or high leverage points. Residual errors were checked and were all normally distributed. The correlational coefficients were inspected and there were no issues with multicollinearity. The main SPSS outputs can be found in appendix 10.8.

5.6.2 Early sex

Logistic regression analysis was conducted to predict likelihood of early sex before age 16 using self-esteem, self-efficacy, sensation seeking, delayed gratification, peer pressure, peer support, peer sex communication, peer sex attitudes, parental support, parental sex communication, parental sex attitudes, sexual health knowledge, safe sex in media, pornography, sexual information and school performance. Age was included as a control variable.

A test of the full model against a constant only model was statistically significant, indicating that the predictors as a set reliably distinguished between early sex and no early sex ($\chi^2(17) = 59.015, p < .001$). Hosmer and Lemeshow tests non-significant value indicates a good fitting model ($\chi^2(8) = 15.438$, $p = .051$). See table 5.4 for overview of predictors.

Table 5.4. logistic regression model assessing independent predictors of early sex before age 16.

Variable	B(SE)	Odds ratio	95% CI for the odds ratio		p- value
			Lower	Upper	
Constant	-10.580 (4.334)				
Age					
Self-esteem	-.108 (.047)*	.898	.819	.984	P=.022
Self-efficacy	-.037 (.038)	.965	.895	1.038	P=.328
Sensation seeking	.116 (.044)*	1.123	1.031	1.223	P=.008
Delayed gratification	-.078 (.038)*	.925	.859	.995	P=.037
Peer pressure	-.010 (.023)	.990	.947	1.035	P=.671
Peer support	-.077 (.052)	.926	.836	1.026	P=.140
Peer sex communication	.084 (.055)	1.088	.977	1.211	P=.126
Peer sex attitudes	.063 (.071)	1.065	.927	1.225	P=.372
Parental support	-.056 (.059)	.946	.842	1.062	P=.347
Parental sex communication	..032 (.049)	1.033	.939	1.136	P=.504
Parental sex attitudes	.109 (.071)	1.115	.969	1.282	P=.128
Sex knowledge	-.075 (.037)*	.928	.863	.998	P=.044
Safe sex in media	-.116 (.194)	.890	.608	1.302	P=.549
Pornography	-2.68 (.245)	.765	.474	1.236	P=.274
Low quality sex information	.596 (.711)	1.814	.451	7.306	P=.402
High quality sex information	1.556 (.753)*	4.738	1.082	20.741	P=.039
School performance	.073 (.085)	1.076	.910	1.272	P=.389

$R^2 = .195$ (Cox & Snell), .371 (Nagelkerke), .051 (Hosmer & Lemeshow) Model $\chi^2(17) = 59.015$, p < .001.
* *p<.05,*

The odds ratio shows that likelihood of early sex before age 16 significantly increases with higher sensation seeking (p=.008) and higher high quality sexual health information (p=.039). Early sex decreases with higher self-esteem (p=.022), higher delayed gratification (p=.037) and higher sex knowledge (p=.044). The other predictors were non-significant.

5.6.3 Intention to have sex

A multiple regression was carried out for intention to have sex in the next year with the predictors *self-esteem, self-efficacy, sensation seeking, delayed gratification, peer pressure, peer support, peer sex communication, peer sex attitudes, parental support, parental sex communication, parental sex attitudes, sexual health knowledge, safe sex in media, pornography, sexual information* and *school performance*. *Age* was included as a control variable (see Table 5.5).

Using the enter method it was found that the predictors could explain a significant amount of the variance in intention to have sex in the next year $F(17, 300) = 2.956$, $p < .001$ ($R^2 = .14$, $R^2_{Adjusted} = .09$).

Table 5.5. multiple regression analysis of the individual predictors related to intention to have sex in the next year

	B	SE B	B	p
Step 1				
Constant	1.61 (-9.27, 12.50)	5.53		P=.771
Age	0.51 (-0.26, 1.26)	0.38	.07	P=.197
Step 2				
Constant	-5.60 (-17.64, 6.43)	6.11		P=.360
Age	0.46 (-0.39, 1.33)	0.43	.06	P=.291
Self-esteem	0.12 (-0.02, 0.26)	0.07	.11	P=.100
Self-efficacy	-0.10 (-0.21, 0.02)	0.06	-.11	P=.106
Sensation seeking	-0.30 (-0.15, 0.09)	0.06	-.03	P=.619
Delayed gratification	0.01 (-0.10, 0.16)	0.06	.01	p =.923
Peer pressure	0.16 (0.11, 0.22)	0.03	.26	p < .001**
Peer support	0.11 (-0.06, 0.29)	0.09	.09	P=.214
Peer sex communication	-0.09 (-0.25, 0.07)	0.08	-.09	P=.259
Peer sex attitudes	-0.04 (-0.25, 0.17)	0.11	-.04	P=.651
Parental support	0.11 (-0.19, 0.15)	0.08	-.02	P=.797
Parental sex communication	-0.09 (-0.10, 0.18)	0.07	.03	P=.620
Parental sex attitudes	-0.04 (-0.26, 0.18)	0.11	-.02	P=.722
Sex knowledge	-0.09 (-0.15, 0.20)	0.06	.11	P=.091
Safe sex in media	-0.22 (-0.69, 0.25)	0.24	-.06	P=.362
pornography	-0.63 (0.08, 1.17)	0.28	.15	P=.024*
sex information	-0.50 (-0.32, 1.33)	0.42	.07	P=.232
School performance	-0.14 (-0.08, 0.36)	0.11	.09	P=.210

*p<.05, **, p < .001.

The analysis shows that higher *peer pressure* (Beta = .26, t(17) = 4.46, p < .001) and *higher pornography* (Beta = .15, t(17) = 2.26, p =.024) significantly predicts intention to have sex in the next year. The other predictors were non-significant.

A second multiple regression was conducted on intention to have safe sex in the next year with the predictors *self-esteem, self-efficacy, sensation seeking, delayed gratification, peer pressure, peer support, peer sex communication, peer sex attitudes, parental support, parental sex communication, parental sex attitudes, sexual health knowledge, safe sex in media, pornography, sexual information* and *school performance*. *Age* was added as a control variable. Using the enter method it was found that the predictors did not explain a significant amount of the variance of intention to have safe sex in the next year $F(17, 300) = 2.072$, $p < .381$ ($R^2 = .05$, $R^2_{Adjusted} = .04$).

5.7 Discussion

The analysis has shown that higher *sensation seeking* and more *high quality sexual health information, lower self-esteem, lower delayed gratification* and *lower sexual health knowledge* significantly predicts early sex before age 16. Throughout the PhD *self-esteem* has qualitatively been identified as a highly important factor, and in this study has now been identified quantitatively as a predictor to early sex before age 16. This statistically significant finding of self-esteem is in contrast to previous literature (Salazar & Crosby, 2005). However, this may be due to the complex nature of self-esteem development, which is known to interact with SES background, family and individual characteristics (Boden & Horwood, 2006). Research that has included these factors in the analyses has found significant results of self-esteem on risk taking behaviours (Laflin, Wang, & Barry, 2008). This current study included parental support and attitudes, peer influences and other self-characteristics and this may help explain the reason for the statistically significant finding of self-esteem in this study. Therefore, for low SES female teenagers' self-esteem with the interplay of sensation seeking, sexual health information, sexual health knowledge and delayed gratification can predict early sex before age 16.

The finding that sensation seeking and delayed gratification are predictors of early sex is consistent with previous research. Other studies have shown links with sensation seeking and earlier initiation (Hoyle, Fejfat & Miller, 2000) and higher delayed gratification predicting less unprotected sex (Reyna & Williams, 2016). The present study has extended the delayed gratification findings and shown that this factor is also significantly related to early sexual

intercourse. These findings also support the problem behaviours theory discussed in chapter 2 (Donovan, Jessor & Costa, 1988), as self-regulatory deficits often manifest themselves in a cluster of problem behaviours, linking with higher engagement in risky sex (Skinner et al., 2015).

The findings with respect to sexual health information present a more mixed and inconsistent picture. While it is an inconsistent finding that lower sexual health knowledge but higher quality sexual health information significantly predicts early sex. This may be an issue with the self-report nature of the sexual health information question. Teenagers may have reported that they have received a sexual health talk, and therefore, were categorized as receiving high quality sexual health information. Yet, due to the outdated nature of Sex and Relationship Education focusing on the biological aspects of sexual health, such as periods (OfSTED, 2002), teenagers may still have little sexual health knowledge when it comes to other areas of sexual health, such as consent, pregnancy and STIs. For that reason, methodological issues with the sexual health information self-report questions may mean that this finding needs to be interpreted with caution. Thus, due to poorer sexual health knowledge significantly predicting risky sexual behaviors, it is still important that teenagers have access to reliable and up to date sexual health information.

The analysis shows that higher peer pressure and higher pornography use significantly predicts intention to have sex in the next year. Whereas, none of the predictors could significantly predict intention to have safe sex in the next year. Peer pressure has been highlighted throughout the two previous studies of the present thesis (Chapter 3 and 4), and the existing literature, as an important predictor of teenage sexual risk taking. Peer pressure has been associated with earlier sexual initiation and higher number of sexual partners (Lagus, Bernat, Bearinger, Resnick, & Eisenberg, 2011; Santelli, Abma, et al., 2004). However, the present study has highlighted that while peer pressure is associated with intention to have sex in the next year, peer pressure does not significantly predict earlier sexual initiation. This is consistent with Gillmore et al. (2002) who found that social norms and peer pressure are important, as believing peers have had sex is associated with intention to have sex. Peer pressure also links with the findings in table 5.4 of delayed gratification, higher delayed gratification has been protective against peer pressure (Reyna & Wilhelms, 2016). This is in line with the theory of planned behaviour (Ajzen, 1991) discussed in chapter 2, as a model of cognitive processes underlie teenagers' decisions to have sex, subjective norms and attitudes influence teenagers sexual intentions (Gillmore et al., 2002; Morrison et al., 1998). Therefore, as table 5.4 shows

that lower delayed gratification is a statistically significant predictor of early sex before age 16, and table 5.5 shows peer pressure is a significant predictor of intention to have sex, the two may be interacting together in predicting sex before age 16.

Also, table 5.5 highlights that pornography is important in determining intention to have sex in the next year. Previous research has found teenagers who access pornography tend to have higher permissive sexual attitudes, more casual sex and greater occurrence of sexual intercourse (Peter & Valkenburg, 2016). However, in this study even though pornography does not significantly predict earlier intercourse, it is linked with intention to have sex in the next year. Sensation seekers are more likely to access pornography, and more likely to have early sex, and therefore, the influence of sensation seeking and pornography may also be interactive in predicting sex before age 16 (Peter & Valkenburg, 2016).

5.7.1 Limitations and strengths

The reliance on self-report means of assessment is a serious limitation given the highly sensitive nature of sexual behaviour (Schaeffer, 2000). Although the anonymity of this method tends to increase the validity of sexual health surveys for teenagers, especially when compared to face-to-face interviews (Alexander & Fisher, 2003) and previous research has demonstrated that adolescent girls can reliably report sexual behaviour and contraceptive use as long as reliable scale is administrated (Sieving et al., 2005), relying solely on the use of self-report measures as means of assessment remains a limiting factor. Also, the testing environment varied for teenagers recruited externally verses teenagers recruited through schools. Teenagers recruited through schools completed the online questionnaire in a classroom setting, and were asked to concentrate on the task and not discuss the questions with anyone in the room. However, there was no control over the testing environment for teenagers recruited externally, and they may have discussed the questions with someone. An online questionnaire was administered because for highly sensitive topics, online surveys elicit less social desirability bias (Booth-Kewley, Larson, & Miyoshi, 2007). However, those teenagers completing the questionnaire in a classroom setting with the researcher present may not have perceived the questionnaire to be as anonymous and confidential as teenagers completing the questionnaire at home. Therefore, it would be better to use one standard testing environment to avoid any issues with social desirability and confidentiality.

However, the survey was piloted using a robust procedure and following appropriate guidelines from previous research (Oppenheim, 1992; Rattray, & Jones, 2007). Further, the individual

questionnaires demonstrated an acceptable level of Cronbach's alpha. Therefore, the questionnaires were appropriate and reliable measures for female teenagers.

5.7.2 Implications

Self-esteem has been identified as a statistically significant predictor of early sexual initiation in this study of low SES female teenagers. This is consistent with the findings of Chapter 3 (Study 1) in which sexual health professionals identified self-esteem as a highly important predictor to risky sexual behaviours in female teenagers. Corresponding with Study 2 (Chapter 4) it was found that lower sexual health knowledge is also an important predictor of early sexual behaviours. Therefore, this highlights that interventions targeting both self-esteem and sexual health knowledge may be effective for low SES female teenagers. Female teenagers who report higher levels of peer pressure and are exposed to greater pornography in the media have higher intentions to have sex in the next year, hence, information about pornography and minimising peer pressure should also be included in sexual health information sources.

5.8 Chapter summary

This chapter has described a quantitative study that aimed to investigate the predictors of early sexual behaviour. The analysis has shown that higher sensation seeking and more high quality sexual health information, lower self-esteem, lower delayed gratification and lower sexual health knowledge significantly predicts early sex before age 16. Further, the analysis shows that higher peer pressure and higher pornography use significantly predicts intention to have sex in the next year. However, none of the predictors could significantly predict intention to have safe sex in the next year. This chapter has further provided evidence for an intervention that targets both self-esteem and reliable sexual health information. Sexual health information sources should focus on a wide range of sexual health issues including peer pressure and pornography.

Understanding the predictors of risky sexual behaviours provides a strong basis for a sexual health intervention program. Consequently, the following chapter describes the current literature on sexual health interventions. Given the findings in studies 1 and 2 (Chapters 3 and 4) that teenagers prefer anonymous and confidential ways of acquiring sexual health information and remain reluctant to discuss the issue face to face, the following chapter examines the provision of current digital and online sexual health interventions as a way of meeting teenagers' requirements in this context.

Chapter 6: Online sexual health interventions: Literature review

This chapter moves on to online sexual health intervention programs. This is because teenagers in Study 2 (Chapter 4) indicated that they would prefer anonymous and confidential means of accessing sexual health information. Patton, Sawyer, Santelli, Ross, and Afifi, (2016) highlight that digital technologies hold some of the greatest possibilities in improving health outcomes for teenagers. It has been identified that teenagers do not like speaking about sex, therefore for sexual health interventions, online delivery may help reduce the embarrassment teenagers often report when discussing sexual health (Bailey et al., 2015). Also, online interventions offer a low-cost solution to sexual health making it a suitable method for low SES areas. This chapter is separated into four sections to provide greater clarity of the research literature. The first section provides an overview of the benefits of using the internet for health information. The second section discusses how teenagers use the internet to search for health information. In the third section online trust and privacy is addressed, the final section provides an overview of current online sexual health interventions.

6.1 Benefits of the internet for health information

Teenagers are known for their early adoption of the internet and mobile technology (Fox & Jones, 2009; Lenhart, Purcell, Smith, & Zickhur, 2010; Rideout, Foehr, & Roberts, 2010). In a recent 2017 survey it was found that 99% of teenagers had recently used the internet (ONS, 2017), and according to the 2015 Pew Research centre report, 92% of adolescents report going online daily (Lenhart, 2015). Teenagers report that the internet is their primary source when seeking health information (Gray & Klein, 2006). This may be because of the anonymity it affords, given that we know from Study 2 that teenagers do not feel comfortable discussing their sexual health with others. Discussing sex with teachers, parents, or even friends is considered embarrassing in a society that problematizes teenage sexuality (Kendall & Funk, 2012; Moran, 2000). Teenagers noted the internet is an appealing source of sexual health information because they can access the information without the embarrassment of their parents finding out (Kanuga & Rosenfeld, 2004). As highlighted by sexual health professionals in Study 1, discussing safe sex is often seen as a taboo in society. In contrast, the Internet is perceived as a more private and anonymous place. Therefore, teenagers may feel more comfortable seeking and accessing sexual health information through the internet.

There are many appeals of using the internet to deliver a health intervention such as; its ability to deliver timely information, convenience for the user as it can be completed anywhere, reduction of stigma for sensitive issues and there is increased user and supplier control of the intervention (Griffiths, Lindenmeyer, & Powell, 2006). Another main appeal of using the internet to deliver health information is its low cost (Michael & Cheauvront, 1998; Napolitano, Fotheringham, & Tate, 2003). It is an effective method when working with low SES or hard-to-reach populations, such as teenagers. As long as they have access to the internet then high quality and interactive sexual health information (a sensitive issue) can be delivered to them. Research has found that low SES teenagers are more likely to search for health information online than high SES teenagers (Madden, Lenhart, Cortesi, Smith, & Beaton, 2013). One of the reasons for this is that low SES teenagers have less access to physical health services. Therefore, the internet is a suitable method for reaching low SES teenagers.

Teenagers are interested and enthusiastic about digital technology to enhance sexual health education and are happy to use the internet to search for sexual health information (Selkie, Benson, & Moreno, 2011). Simon and Daneback, (2013) qualitatively observed that teenagers report engaging with sex information online and are interested in a number of topics, including sexually transmitted infections and pregnancy. Even though teenagers thought the quality of some sexual health websites was lacking, teenagers believed it was a suitable source for information. This shows that teenagers are positive about using the internet for sexual health information, despite the poor quality of such websites.

A systematic review of internet interventions for teenagers found that using tailored messaging and reminders to perform positive health behaviours, along with an incentives-based approach, was successful at eliciting behaviour change (Crutzen, 2010). Therefore, there is potential to use new media and mobile technology to communicate effectively with teenagers about sexual health (Levine, 2011). Teenagers are familiar with the internet and use it every day. Paired with reliable behaviour change techniques, the internet appears to be successful for delivering sexual education. However, due to the increasing volume of internet-based resources it is important teenagers can navigate, select and evaluate health information online.

6.2 How do teenagers seek online health information?

Teenagers, like adults, struggle finding relevant health information online because of the sheer volume of websites retrieved by most search engines. This is often resolved by teenagers

confining their interest to the first few results (Hansen, Derry, & Resnick, 2003). Also teenagers have noted that while they enjoy using the internet as a source of information, they are often unable to locate satisfactory information for a specific query (Zeng & Parmanto, 2004;Bickmore, Utami, Matsuyama & Passche-Orlow, 2016). Teenagers believe that high quality information does exist on the internet, but they are insufficiently skilled to find it (Skinner, Biscope, & Poland, 2003).

Teenagers often begin their searches on Google, or other search engines, however, the vast number of results generated makes it difficult to determine a site's credibility (Gray, Klein, Noyce, & Sesselberg, 2005; Hameed & Swar, 2016). When using search engines online to answer health-related questions, teenagers tend to choose between the first nine results, without searching further (Hansen, Derry, & Resnick, 2003). Thus, adolescents' use of the Internet to search for health information may be limited in relation to their search heuristics and tactics, this behaviour is not dissimilar to adults. This may be an issue particularly with sexual health information, as there are a vast number of websites available.

Wartella, Rideout, and Montague, (2016) found even though teenagers usually use Google to direct them to health information, younger teens (13-15 year olds) also use novel online sources such as 'YouTube' for health information or websites specifically for teens. In addition, girls were more likely than boys to use actual medical websites for health information. Girls in particular noted that using a novel source like YouTube is more interesting than using traditional websites. This shows that teenagers are interested in novel and interactive ways of receiving health information, rather than just information websites. Linking with Study 2, Wartella et al., (2016) reported that some teens noted that they simply came across health information, rather than actively searching for it. This usually occurred while browsing, through links on social networking sites or via adverts on websites. Generally, teens tend to be quite passive when searching for health information online, unless they specifically have a health issue. This may link with teenagers feeling that they have insufficient skills to locate specific information (Skinner, Biscope, & Poland, 2003), and may need more guidance when searching for health information online.

Teenagers are using the internet for a wide range of health topics including sensitive issues such as sexual health and researchers have investigated the topics that teenagers search for online. A focus group study with teenagers indicated that they search for a wide range of health topics on the Internet including sexual health, relationships, specific medical conditions,

violence, body image and nutrition (Skinner et al., 2003). Therefore, even though teenagers have limited searching abilities, they do use the internet to search for sensitive health information, including sexual health. There is a vast amount of information available on the internet regarding sexual health (Keller, Labelle, & Karimi, 2002; Von Rosen & Von Rosen, 2017), including online health sources specifically geared toward teenage users that allow teenagers to seek advice and reassurance on sensitive topics. These websites serve as anonymous online venues that foster peer acceptance (Mitchell, Patrick, & Heywood, 2014). Other reasons teenagers use the Internet for sexual health information include low cost of access, accessibility of health information without having to speak to a provider face-to-face, and teenagers report that peers are friendly and helpful online (Yager & O'Keefe, 2012).

Willingness to search for sensitive health information online differs by age and gender. Girls, especially older girls, are far more likely to search for uncomfortable health topics online, whereas, younger boys (ages 12–13) were the least likely to search for sensitive health topics (Lenhart et al., 2010). As stated above, girls are also more likely to use actual medical and novel websites when seeking health information (Wartella, Rideout, & Montague 2016). However, while girls are happy to use the internet to seek sexual health information, as earlier stated they may be hindered by poor search techniques (Holstrom, 2015). Research has recommended using key terms that teenagers are familiar with, may make it easier for teenagers to locate reliable sexual health websites (Holstrom, 2015).

6.3 Issues with using the internet for health information

It is clear that teenagers use the internet for health information. However, even though they use the internet for sexual health information they are still worry about privacy and credibility of sexual health information online (Gray et al., 2005; Jones, Biddlecom, 2011; Lenhart, 2015). Therefore, trust and privacy issues with online sexual health information are discussed below.

6.3.1 Trust

With the proliferation of sexual health information available on the internet, it is key to understand *if* and *how* teenagers trust online information. There are many factors that influence trust in eHealth (Beldad, De Jong, & Steehouder, 2010). Within trust two terms are commonly used *credibility* which can be defined as believability, as credible information is believable information (Fogg et al., 2001). Whereas *Trust* is defined as well intentioned, truthful and unbiased information (Rousseau, Sitkin, & Burt, 1998). Online trust is important to teenagers,

Veinot, Campbell, Kruger, Grodzinski, and Franzen (2011) found when teenagers (14-24 year olds), investigated eHealth sites they had concerns about design recommendations and trust, especially about condom and STI related information. Trust is important because it acts as a mechanism to counter concerns about uncertainty and risk (Kim, 2016). As sexual health is a sensitive issue the risks are quite high and so trust is an issue.

Researchers have investigated the factors that increase trust in online health websites. Users have a rapid screening process for rejecting sites that they do not trust, based on poor design appeal, sites with adverts, pop up surveys or sites that were poorly laid out (Sillence, Briggs, Fishwick, & Harris, 2004). After this initial judgement, users then evaluate trust based on a more careful evaluation of the website and content (Sillence et al., 2004). Individuals trusted websites that were unbiased and had information that was supported by an original source, or had frequently asked questions or hints and tips. Therefore, people make initial rapid judgements of trust and then evaluate websites more carefully. Research has supported this initial trust judgement of websites based on usability and found that this is especially important when users are still searching for information (Chau, Hu, Lee, & Au, 2007). Therefore, trust is at least initially, heavily influenced by the design and usability of the website. One of the reasons for this is that low levels of usability generates technical errors and these errors increase feelings of distrust (Flavián, Guinalíu, & Gurrea, 2006; Flavián & Guinalíu, 2006). Recent reviews have supported these findings, that found trust is based on well-known brands, reliable content, credibility, ease of use, recommendation from trusted others, usefulness and verification of sources (Rowley, Johnson, & Sbaffi, 2015).

Even though the majority of past studies have been conducted with adult users trust factors appear to be similar for teenage users. Starling and Cheshire (2016) conducted a qualitative study on how teenagers search and evaluate online sexual health information. Participants initially based judgement on first impression and ease of use of websites. Advertisements and pop-ups were also part of the process for deciding about particular sites. Generally, teenagers preferred professional layouts and believed these were more credible, and preferred websites that were shown first on search engines. Mendes, Abreu, Vilar-Correia, and Borlido-Santos, (2016) highlighted that teenagers often rank health websites based on whether they believe the information is trustworthy and prioritise those at the top of the search engine list. Therefore, similar to adults, teenagers have a rapid judgement system for trust, basing it on the design and usability of websites.

Individuals also make judgements based on who has authored and produced the information (Sillence et al., 2007). Medical expertise can be conveyed explicitly or by association with a health organisation. Reputation is also important with information seekers trusting in the benevolence of charity websites and the expertise of the author. In addition to the information produced by healthcare professionals, the Internet now allows 'lay experts' to share their health experiences online. User-generated content exists in online health communities such as forums, blogs and social networking sites. Peer resources can vary enormously making it more difficult to assess whether or not the information and the author can be deemed trustworthy. People seek out like-minded individuals to provide support and reinforce pre-existing views (Sillence et al., 2010). Those giving the information and advice develop ways to portray their competence and trustworthiness online, so that others take their advice. Therefore, trust is influenced by information that users feel is personalised and similar to them. This is important to teenagers, especially females as even though they use professional medical websites, they prefer user generated resources such as the videos found on YouTube (Wartella et al., 2016). However, studies have found that user generated content through vlogs such as YouTube often have misleading and inaccurate information (Liu, Huh, Neogi, Inkpen, & Pratt, 2013). Therefore, teenagers may need more guidance on how to trust information from a variety of different sources.

Familiarisation and time spent using the internet also impacts trust. Zhang (2013) found that people believe that it is important to use websites that are trustworthy and have high quality information; however, they are also inclined to use sources that they are familiar and comfortable with. Metzger, Flanagin, Macarthur and Eysenbach, (2008) found that those who are highly proficient with the web have lower perceptions of risks in online transactions, and are happier to use the internet. However, Aiken and Boush, (2006) found although users trust increases in the early stages of internet experiences, at higher levels trust declines, especially when something goes wrong. They found that familiarisation with the website or provider was more important for trust than experience of the internet. Teenagers are highly proficient internet users and are happy to use unfamiliar websites (Garside, 2014), therefore, it is likely they may have experienced technical issues with websites and may have lower levels of trust. This highlights the importance of having well designed and usable websites aimed at teenagers, to increase this initial trust judgement.

6.3.2 Privacy

We know that teenagers like to use online sources for sexual health information because of the privacy it affords (Buhi, Daley, Oberne, & Smith, 2010). Yet, even though teenagers perceive the internet as a private source, they still have privacy concerns. Privacy in general is a complex issue, lacking a single, straightforward definition. In relation to digital domains, the majority of research has centred on privacy within e-commerce (Buchanan, Paine, & Joinson, 2007), however given the sensitive nature of health information there are overlapping themes. Several types of privacy are relevant to digital interventions (Little & Briggs, 2006), and three types of privacy concern congruent with teenagers are discussed here, parental privacy concerns, user privacy concerns in the virtual world and user privacy concerns in the physical world.

While parents are supportive of teenagers searching for sexual health information online (Gaskin, Bruce, & Anoshiravani, 2016) the nature of online interaction can make it easy to collect information from teenagers without parental involvement or awareness (Montgomery, 2000). Thus, there are growing parental concerns about privacy. Parents worry about teenagers disclosing personal or sensitive information online which may constitute an invasion of privacy (Turow, 2001b). Also, parents worry that teenagers may access inappropriate information when searching for sexual health advice (Scheff, 2013; Turow, 2001a). In a survey, 81% of parents were concerned about their child's online behaviour, with 46% being 'very' concerned (Zickuhr & Smith, 2012). This is important as teenagers do appear to be less likely to understand the future ramifications of disclosing personal information, and the potential implications of their actions on their future careers or social lives (Yan, 2005).

Parents can protect their children online through direct intervention or active mediation (Livingstone, Haddon, Görzig, & Ólafsson, 2010). Direct intervention involves parents using the parental controls online and/or reading teenagers' browser history, whereas active mediation involves talking to teenagers about what they visit online. Direct intervention by itself has been found to have a suppressive effect on teenagers, reducing their exposure to online risk but also their ability to engage with others online and learn how to effectively cope with risks (Wisniewski, Jia, Xu, & Rosson, 2015). Clemons & Wilson, (2015) investigated privacy concerns between teenagers and their parents, and found parents privacy concerns are very different to their children, and because of this parental monitoring may not be as effective as they could be missing key privacy issues. Therefore, it may be better to combine active mediation with direct intervention so that parents can protect their teens from severe online

risks whilst empowering teens to engage with others online and then learn to make safe online privacy choices. It is important for sexual health websites to encourage this, so teenagers and parents can feel comfortable accessing the information.

Online personal information can be accessed in a variety of different systems and users want the choice to be able to reveal or hide their information (Little & Briggs, 2006). Social media sites allow for this and in general, teens understand privacy and on social media, 60% keep their profiles private (Rainie & Madden, 2012). Teenagers also engage in several risk-reducing strategies such as falsifying information, providing incomplete information or going to alternative websites that do not ask for personal information (Youn, 2005). If teenagers do not understand requests for personal information 70% of teenagers (ages 13-17 years) reported they would ask a parent how to handle the request and 64% reported they would read the privacy policy statement (Turow & Nir, 2000). Therefore, even though teenagers may not fully understand privacy issues, the majority of teenagers report they would seek further information about privacy. Also, older teenagers are more likely to be competent in managing and understanding their online privacy settings (Walgrave et al., 2012)

When accessing sensitive information online, physical privacy is also a concern. Little and Briggs (2009) found people show greater stress in a crowded situation viewing information than in isolated conditions. Users are concerned that someone may see them accessing a sensitive website, for teenagers it is a particular worry that friends or parents may see them accessing a sexual health website (Bailey et al., 2015). Mobile phones can help ease this stress, and teenagers may prefer to use phones to search for sexual health information. Smaller screen sizes are perceived as more private than larger screens (Little, Briggs, & Coventry, 2005; Nilash, Ibrahim, Mirabi, Ebrahimi & Zare, 2015). Therefore, teenagers may prefer to use their phones to search and view sexual health information in comparison to a laptop or shared computer. In a design context, it has been found that teenagers prefer sexual health websites that warn them to use head phones before a sexual health video plays (Cranor, Durity, Marsh, & Ur, 2014). It is highly important for sexual health websites to consider privacy concerns for teenagers, including discreet design features like warnings for headphones or allowing the website to be viewed on a mobile device; this may help teenagers feel more comfortable using these websites.

Therefore, trust and privacy are highly important issues in relation to sexual health interventions. As discussed in this section, teenagers may perceive apps are more private in

comparison to websites, as they can easily view this information on their phones. Therefore, privacy and trust are investigated in Study 4 (Chapter 7) in relation to sexual health apps and sexual health websites. Teenagers' views are explored to evaluate how teenagers perceive websites and apps, and whether they believe they are private and trustworthy. The websites chosen reflected both familiar and unfamiliar sources and a range of different ownership types. Since teenagers like YouTube videos and novel sources, websites and apps that incorporated interactive and novel features were chosen. In addition, websites and apps that did not include these interactive features, novel sources or identifiable trust cues were also chosen to provide a comparison of websites and apps. Therefore, these websites and apps should provide a good basis for examining which websites and apps teenagers perceive as trustworthy and private.

6.4 Current online sexual health interventions

There are a wide range of current sexual health interventions available online. Four of the main ones that are discussed in this section are; sexual health websites, social networking sites, text messaging (also known as short messaging service SMS) and mobile apps.

6.4.1 Sexual health websites

In recent years, there have been further developments of sexual health websites. Many of these are designed to act as interventions, to increase sexual health knowledge and research has found that websites can improve teenagers sexual health knowledge (Simon & Daneback, 2013). Bailey et al., (2015) found that interactive sexual health websites that combine sexual health information with behaviour change techniques can exert a positive influence on self-efficacy, intention to carry out health promoting sexual behaviours and sexual behaviour itself. These sites typically provide interactive advice in accessible, non-technical language allowing teenagers to freely express their health questions to sexual health professionals, as well as sharing their concerns with their peers. Therefore, these websites offer confidential advice and information that might be otherwise difficult to obtain (Borzekowski & Rickert, 2001; Suzuki & Calzo, 2004). Buzi, Smith and Barrera, (2015) investigated teenagers' interactions with sexual health websites, and found that on websites that included contact information teenagers regularly emailed the websites because of the privacy and anonymity it affords. Sexual health websites are effective because they provide teenagers with immediate advice without the embarrassment of discussing sexual health.

However, evaluations of current sexual health websites have found issues with the quality of the information they provide. In a review of 177 sexual health websites the information

provided on more technically complex (e.g. contraception and STIs) and controversial topics (e.g. penis size, abortion and emergency contraception) often contain inaccurate information (Buhi et al., 2010). In addition, there were no associations between quality scores and accurate information, therefore quality indicators were not related to accuracy of information. In a review of websites offering contraception advice, only 23% of 238 websites offered up-to-date information (Harris, Byrd, Engel, & Weeks, 2016). Tietz, Davies, and Moran, (2004) found that government-sponsored websites comprised more accurate and up-to-date information than university, non-profit, or commercial websites. Keller et al., (2002) found that a number of important safe sex messages exist on the Internet but such websites can be difficult to both locate and navigate for teenagers. Even though internet-based interventions can increase teenagers' sexual health knowledge only a few websites offer up-to-date and accurate information. Websites that do offer more reliable and updated information may be difficult for teenagers to locate and navigate, and therefore may be viewed as less credible.

An interactive sexual health website developed in the UK is the 'S*exunzipped'* website, which aims to deliver reliable sexual health education to all young people in the UK. Development of the 'Sexunzipped' website suggests that from a teenage user perspective, there is a preference for sexual health websites that present clear information, free from technical or complex language. Websites should cover a wide range of sexual health topics including sexual pleasure, relationships and STIs. Websites should also include videos that adolescents can relate to (McCarthy, Carswell, Murray, & Free, 2012). Teenagers also prefer resources that are accessible, trustworthy, private and safe (Selkie & Benson, 2011). Using these recommendations, a pilot of a sexual health website used in a classroom setting improved self-efficacy for condom use and condom use intentions in 14-16 year olds. In addition, teenagers reported having high satisfaction with the website content and design (Willoughby, 2015).

Therefore, previous literature has shown that sexual health websites can be successful in increasing sexual health knowledge, intentions and behaviours and teenagers are enthusiastic about using them. However, many websites comprise inaccurate information, which can make it difficult for teenagers to evaluate the most credible websites. Also, most sexual health websites are difficult to locate via passive web searching. As teenagers are passive searchers online, they may not be accessing the most reliable and accurate sexual health websites.

6.4.2 Social networking sites

Social networking sites are websites that enable people to form, use and maintain their social networks (boyd, 2007). The most popular global social networking sites for teens in 2017 are Instagram, Facebook, Snapchat, YouTube and Twitter (Lohmann, 2017). The growth of social networking sites are rapid, especially among teenagers (Antheunis & Schouten, 2016), in 2016 90% of teenagers were using social media, a 78% increase since 2005 and teenagers are among one of the heaviest users of social media (Perrin, 2016).

Most social networking sites are based on a web 2.0 framework, which emphasise collaboration and multi-level interaction between users (Thackeray, Neiger, Hanson, & Mckenzie, 2008). As discussed above most Web 2.0 platforms tend to focus on a single domain of media (for example, videos), however social networking sites can support multiple media formats this allows for flexibility, creativity, collaboration and user control (Byron, Albury, & Evers, 2013; Moreno & Kolb, 2012; Takhteyev, Gruzd, & Wellman, 2012). These unique properties make social networking sites potentially useful tools for conducting sexual health interventions. Most social networking sites also have direct messaging which allow for confidential one-on-one discussions. These sites can therefore provide a way of connecting teenagers with sexual health professionals (Ventola, 2014) and to signpost to external sexual health services. Teenagers perceive social networking interventions as credible and essential methods of communication (Vyas, Landry, Schnider, Rojas, & Wood, 2012). Therefore, there is an advantage of using social networking sites for health information because it is a cost-effective way to target sexual health information to a large number of teenagers in an interactive and confidential way.

Sexual health interventions on social networking sites have steadily increased over the past five years (Capurro et al., 2014; Lenhart, 2015). A systematic review of sexual health information on social networking sites found 71% of sexual health promotion was on Facebook (Gold & Pedrana, 2011). It was also found that social networking sites generally tend to be an addition to other sexual health websites or a way to advertise sexual health clinics rather than provide standalone information. Qualitative studies exploring teenagers' views of sexual health information on social networking sites have found that teenagers prefer positive messages that are peer-based and involve interaction (Veinot et al., 2011).

Researchers have also found that many teenagers are not comfortable accessing sexual health information on social networking sites (Lim, 2014) and this may be dependent on who moderates and shares the information. The moderator voice needs to be engaging and friendly

so that teenagers feel they can engage with the sexual health information. Teenagers rated sexual health information as simplistic when the moderator was professional but unengaged (Nguyen, Gold, Pedrana, & Chang, 2013). Therefore, it is important that there is a moderator on social media who is an engaged and interactive presence designed to maintain interest that generates new material for discussion and is responsive to user requests (Syred, Naidoo, & Woodhall, 2014).

One study that had psychologists and general practitioners moderating sexual health information had successful results. Moretti, Cremaschini, Brembilla, and Fenili (2015) designed and evaluated a Facebook intervention for 15-18 year olds aimed at increasing STI knowledge. This Facebook intervention was tested in a classroom setting with half the students assigned to the intervention and half assigned to no intervention. The Facebook intervention involved sexual health information delivered on a closed group in Facebook, as well as a private chat. This encouraged the sharing of reliable sexual health information and provided a listening space for teenagers. After one month, there was a significant increase in knowledge in the intervention group, but no difference in behaviours. This shows that a team of 4-5 people can handle a Facebook intervention with 1-2 hours work per day, which is cost-effective. However, it is not known if this would still be effective longer-term.

Therefore, there has been some effective sexual health promotion on social networking sites. However, these interventions may be more effective as a signpost to sexual health websites or external clinics than as a standalone intervention. Especially as most social networking sites have an 'acceptable use' policy and they can restrict what information is presented (Gold & Pedrana, 2011). Social Networking Sites are limited to what can be shown and promoted on the sites and may not be suitable for all sexual health concerns. Research has also found that in general teenagers are still wary of using social media sites for viewing health related information (Watella, Rideout, Montague, Beaudoin-Ryan & Lauricella, 2016). Teenagers believe that the internet is anonymous; however, they do not believe this is the case for social media, as their names can be associated with such information (Divecha, Divney, & Ickovics, 2012).This may indicate that social media may not be the best outlet for attempting to target teenagers with sensitive health information and instead may be better used as a signpost for reaching teenagers and directing them to reliable sexual health information.

6.4.3 Text messaging

A large percentage of teenagers use mobile media, with over 87% of youths aged 13–17 owning a smartphone (Len-Ríos, Streit, & Killoren, 2016). In the UK 79% of 12-15 year olds owned a phone in 2016, which had gone up from 68% in 2014 (OfCom, 2016). Therefore, this shows that phone usage is rapidly expanding. On average teenagers (aged 13-17 years) send more than 3300 texts a month, females send significantly more than males at an average of 4,050 a month. As more teenagers have access to smartphone technology, the potential to reach this demographic through mobiles has grown.

There are many advantages of using text-messaging services to receive sexual health information. Text messaging is fast and transmitted messages are received almost immediately. It is convenient as text messages can be stored until the recipient is ready to read it, or until the phone is switched on (Lim, Hocking, Hellard, & Aitken, 2008). The cost of sending text messages is also relatively low and messages can be sent to multiple recipients simultaneously. In contrast to emails, text messages has not extensively overused by spammers and marketing companies, making it a more respected mode of message sending (Muench, Weiss, & Kuerbis, 2013). Teenagers view text messages as more confidential for receiving sexual health information, especially given that mobile phones feel personal to them (Cole-Lewis & Kershaw, 2010). In a qualitative study, it was found that teenagers had not experienced sexual health information through text messaging but were enthusiastic about how this could work and liked the confidentiality of receiving information through text messaging (Selkie & Benson, 2011).

Willoughby and Jr, (2013) investigated the types of text messages teenagers send about sexual health information. Questions were about sexual acts (33.9%), unplanned pregnancy (20.2%), contraception (13.7%), physical or sexual development (12.9%) and STIs (10.8%). Willoughby (2015) found that teenagers who have already had sex, been in a relationship and low SES teenagers who are less connected to schools are more likely to use text-messaging services. Therefore, it is more high-risk teenagers who view text-messaging services as helpful. This may be due to sexually active youth in general being more likely to seek sexual health information, or may suggest that this mode of accessing sexual health information is preferred by more at risk individuals.

Over the past five years there has been further development of sexual health text messaging interventions. In a text messaging intervention for adolescents and young adults (aged 16-29

years) it was found that text-messaging was a feasible, popular and effective way to promote sexual health information (Gold & Pedrana, 2011). Goodwin et al., (2011) evaluated a weekly text messaging intervention aimed at teenagers and young adults (aged 15-20 years) and found that participants enjoyed the informative content of the sexual health text messages. Participants also believed that the intervention was convenient and liked the low cost. Devine, Bull, Dreisbach, and Shlay, (2014) evaluated a 4-week text-messaging service for 14-18 year olds, that covered all aspects of sexual health, and teenagers rated that they enjoyed receiving the messages. Teenagers received on average 11 text messages per week, which they rated as a sufficient amount. However, privacy was a concern with both interventions and younger adolescents worried about the stigma from peers and worried that they may see the text messages. Teenagers perceive mobile phones as private but when they cannot control when a text message might pop up, for example, when their friends are looking at their phone, this causes anxiety that the sensitive messages may be viewed. Therefore, it is highly important that these types of interventions are discreet.

Interventions have also combined face-to-face sessions with text messaging. Cornelius and Appiah (2016) evaluated an intervention aimed at teenagers aged 15 years, promoting safe sex and preventing STIs. Participants received 7 face-to-face sessions and then daily text messages for 3 months about STIs and contraception (text messages contained messages, pictures and short videos). Participants believed they benefitted from the intervention and believed the texts were helpful. Buhi et al., (2013) evaluated a text messaging intervention aimed at 13-19 year old teenagers who visited a sexual health clinic. Teenagers rated that they preferred text messaging to social networking sites for sexual health information and believed that the text-messages made them feel more comfortable attending the sexual health clinic. However, these evaluations are based on specific samples of teenagers who were already sexually active and attending sexual health clinics. This may not be generalizable to teenagers who are just seeking sexual health information before being sexually active.

France (2014) recruited teenagers from two secondary schools to evaluate a larger sample of teenagers who may not be have seeked sexual health information from external services, 202 teenagers between the ages of 11 and 16 year old were recruited. Teenagers were given a number to text the school nurse, and asked questions about sexual health and relationships (56%), emotional health (25%), physical health (7%), HPV (8%) and healthy eating (5%). This led to a rise of 83% of teenagers knowing about their school nurse and 70.2% rated the service as a good way to seek help and access face-to-face methods. Teenagers also viewed the text

messages as confidential. However, this intervention was time consuming for the school nurses running the program, as they had to respond to multiple text messages, therefore, increasing administrative and potentially staff costs. However, it was a good starting point for advertising services and making teenagers feel more comfortable accessing sexual health information.

There have been successful sexual health text messaging interventions which have been developed for teenagers; however, there are limitations to these types of interventions. Text messages have a 160-character limit before expanding to a MMS which may not be received due to data limits, therefore, they are more suitable for directing teenagers to other information outlets. With a text message it is not possible to deliver complex or lengthy answers and having to collect phone numbers of teenagers compared to having information on a website, is more time consuming. There are also potential privacy and safeguarding issues with collecting young teenagers phone numbers, as they could be accessed by someone unauthorised to do so. In addition, if teenagers reply to messages they may disclose sensitive or personal information. As digital technologies advance and grow and smart phones become more popular, it is important for health interventions to keep up-to-date in order to have real-time impact and feasibly target teenagers with the technology and applications that they are using.

6.4.4 Sexual health mobile apps

Even though text messaging has been identified as a successful way to target teenagers with sexual health information, it is important to keep-up-to date with technology that the group are using in order to be able to reliably reach teenagers. There has been a decline in adolescents using text messaging as adolescents use mobile apps for example, 'what's app' to send text messages instead (Holland, Sastry, Ping, & Knopp, 2014). There have also been recent developments of apps aimed at teenagers for general health purposes (Buhi et al., 2010).

Mobile apps are different from text messaging and allow for more interaction, as they can constantly be accessed and updated (Apps & Krebs, 2016). Unlike text messaging, users can personalise the app by allowing which app features they would like to be notified on. Whilst text messaging may be seen as indiscreet, well-designed apps could potentially solve this issue. In a privacy context users want the ability to personalise settings, therefore apps may be viewed as a more private source (Little & Briggs, 2006). Apps also offer the potential for boosting peer-to-peer sharing of content, information and interactivity (Levine, 2011). Apps offer a lot of potential because they offer a flexible way to reach a large audience at an affordable cost. This is especially important when working with hard-to-reach populations, such as low SES

teenagers. Apps can provide individually tailored and interactive sexual health intervention and promotion that are constantly accessible and allow the user to seek information while maintaining anonymity. This is important as intervention customisation and interactivity has been found to be important for effectiveness in behaviour change interventions, including those that are technology based (Singh, Gibbs, Estcourt, & Sonnenberg, 2017).

However, there are limited reviews of sexual health apps and there are no reviews of sexual health apps aimed at teenagers. In two reviews investigating STI prevention apps, Muessig, Pike and LeGrand (2013) reviewed current sexual health apps aimed at all ages. Among these apps, 71% provided information about STIs, 36% provided STI testing information or resources, 29% included information about condom use or assistance locating condoms, and 24% promoted information on safe sex. There were only six apps (11%) that covered all four of these prevention areas. In a more recent review, it was found that HIV and STI apps are not fit for purpose and tend to take a one-size-fits all approach and do not support the breadth and complexity of sexual health (Singh, Gibbs, Estcourt, & Sonnenberg, 2017). Therefore, current sexual health apps are lacking in detail and do not address all areas of sexual health.

Gibbs, Gkatzidou and Tickle (2016) investigated sexual health apps on Google play and iTunes, that covered all areas of sexual health for the purpose of seeking sexual health information for all ages. It was found that in general, sexual health apps are difficult to identify, and no apps documented where the information was sourced, so users have no way of assessing the reliability of the app. Only one app out of 87 comprised fully comprehensive and accurate information about chlamydia, the UK's most common STI. Over one-third of the apps comprised errors in more than one aspect of the information. These types of apps could potentially be undermining the benefits of e-health.

More successful apps have concentrated on interactive games. An interactive game approach to relationships and sex education with traditional classroom delivery encouraged teenagers and teachers to engage in discussions during and after the game play (Arnab et al., 2013). Another sexual health game through the Facebook app found that teenagers believed the game to be interesting and interactive and close to reality. It was found that this game could significantly increase teenagers' sexual health knowledge (Kwan et al., 2015).

Wood, Wood and Balaam, (2017) designed and evaluated a 'sex talk' multiplayer game that aimed to increase the likelihood of adolescents speaking about sex with each other. 58 adolescents (aged 13-19 years) took part in evaluating the game over a period of 18 months.

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The game was successful and they found that particularly young adolescents (under 16) found the game lively, fun and enjoyed speaking with their peers about sex. This shows that games can be effective in encouraging teenagers to discuss sex.

There have been further developments of sexual health apps for teenagers, and there have been successful results from sexual health apps. However, while each app has been evaluated with teenagers, it is not known if teenagers would use these sexual health apps in their own time away from a study setting. In addition, most apps have been evaluated in a school-setting and it is not known if they would be used outside of school to promote sexual health education. Reviews of apps in general, have found that sexual health apps are currently lacking detailed information but there have been no reviews on apps specific to teenagers. Given that teenagers are likely to engage with mobile apps, it seems relevant and important to improve the currently available suite of sexual health apps to enhance the efficacy of this medium in teenage sexual health promotion.

6.5   Chapter summary

This chapter has reviewed the literature on how teenagers use the internet to search for sexual health information, including the issues and benefits of teenagers using the internet to search for health information. In addition, it has provided an overview of current online sexual health interventions including, sexual health websites, social networking sites, text messaging and mobile apps. It has been identified that although interventions need to target newer technology and teenagers are favouring mobile apps, there is a lack of literature on teenagers' views of sexual health apps. Reviews evaluating existing sexual health apps aimed at all ages have found that they do not support the breadth and complexity of sexual health. Further, it is not clear how to assess the reliability of information on sexual health apps. This is in comparison to websites that have been extensively researched.

Therefore, the next chapter moves on to a qualitative study that aimed to gain low SES female teenagers views of existing sexual health websites and mobile apps. Websites and mobile apps are included, as we know from the existing literature what teenagers want from a sexual health website. It is not known if teenagers trust and regularly use sexual health mobile apps and whether websites and apps are meeting teenagers' sexual health needs. Consequently, this study aimed to build upon existing research concerning sexual health websites by exploring the preferences of female teenagers with respect to accessing sexual health information via websites and mobile apps. Specifically, the research was interested in investigating the

similarities and differences, from the perspective of female teenagers with respect to searching for sexual health information via these two formats.

Chapter 7: Teenagers views of sexual health websites and apps (Study 4)

7.1 Introduction

As previously discussed the internet plays an important role in teenagers everyday lives and 92% of teenagers report using the internet daily (Lenhart, 2015). It is well documented that the internet is a common source for teenagers seeking sexual health information (Gray & Klein, 2006). Although teenagers view health care providers as the most reliable sources of sexual health information, discussing sex with health care providers, parents or even friends can be considered embarrassing in a society that considers discussing sex a taboo (Eisenberg, Bernat, & Bearinger, 2008). As female teenagers receive less instruction about birth control, consent and STIs in traditional, formal settings such as at school (Lindberg, Maddow-Zimet, & Boonstra, 2016), the internet becomes an increasingly important and appealing anonymous and private resource for sexual health information.

In recent years, there has been an increase in the development of internet-based sexual health resources. Many of these are designed to act as interventions, improving teenager's knowledge of sexual health (Simon & Daneback, 2013). Four of the main ways interventions are delivered online are through sexual health websites (Buhi et al., 2010), social networking sites (Gold & Pedrana, 2011), text messaging (Selkie, 2011) and mobile apps (Muessig et al., 2013). However, social networking sites (SNS) are more useful as a signpost to other health websites, because SNS are restrictive in the amount and type of information that can be presented (Gold & Pedrana, 2011). Also, teenagers worry that because their names are associated with SNS they may not be private and anonymous (Divecha et al., 2012). Text messages are perceived as more private, as phones feel personal to teenagers (Cole-Lewis & Kershaw, 2010). However, it is time consuming to collect teenagers phone numbers and someone unauthorised could gain access to this personal information, consequently there could be serious issues with confidentiality. Due to the limited character length of text messages, and the decline in teenagers using text messaging services (OfCom, 2014), it may be more appropriate to target teenagers through more up-to-date services such as mobile apps.

Mobile apps are different from text messaging and allow for more interaction, they can constantly be accessed and updated (Apps & Krebs, 2016). However, we do not know whether

teenagers use mobile apps to access sexual health information or what they consider to be important in terms of the design and content of sexual health mobile apps. It is also not clear what features teenagers perceive as important for determining trust and privacy in mobile apps.

In comparison, websites have been extensively researched. Evaluations of current sexual health sites reveal issues around the quality of the information they provide. The information provided on more technically complex websites is often inaccurate (Buhi, Daley, Oberne, & Smith, 2010) and outdated (Harris et al., 2016). From a user perspective, the literature also suggests a preference for sexual health websites that present clear information, free from technical or complex language. Websites should cover a wide range of sexual health topics including; sexual pleasure, relationships and STIs. Also, websites should include videos that teenagers can relate to (McCarthy et al., 2012) and resources should be accessible, trustworthy, private and safe (Selkie & Benson, 2011).

We know what design features teenagers like in sexual health websites, however, we do not know if these are the same for mobile apps. Therefore, this study aimed to build upon existing research concerning sexual health websites by exploring the preferences of female teenagers with respect to accessing sexual health information via websites and mobile apps. Specifically, the research was interested in investigating the similarities and differences, from the perspective of female teenagers with respect to searching for sexual health information via these two formats alongside the trust and privacy cues within these two formats. The research also aimed to explore if female teenagers currently use sexual health websites and mobile apps to seek sexual health information and if so, if they are currently meeting their sexual health needs.

7.2 Method

7.2.1 Approach

A thematic approach was used to analyse the data in this study. Braun and Clarke's (2006) six phase guide for analysing qualitative data was applied to the findings. This was because it allows for theoretical flexibility regarding the level of depth at which the data is analysed. Specific codes were used as markers when searching for themes relating to reasons for liking and disliking the websites and apps, trust, privacy and ways in which participants use the internet when seeking sexual health information. The use of thematic analysis allowed these

markers to explore participants' experiences of sexual health websites and apps, and the meanings they attach to them.

7.2.2 Participants

Twenty-three female participants aged 13-16 years (M = 14.3, SD = 0.91) took part in the study. Participants were recruited from five schools in the North East of England. The delivery, content and amount of formal sexual health education received differed between schools. The existing sexual health sessions ranged from 1 hour of sexual health education in Year 7 to regular sexual health classes ran by an external health centre. See table 7.1 below for full overview of existing sexual health knowledge.

Table 7.1. Overview of schools existing sexual health sessions

School	Participants	Existing sexual health sessions
School 1	Year groups 9-10, ages 14-15 years. (N=4)	1 hour of sexual health education in Year 7. Session focused on reproductive talks, teacher had no previous sexual health education or experience. No drop in services available.
School 2	Year group 10, ages 14-15 years. (N=5)	1 hour of sexual health education in Year 8, Session focused on reproductive talks teacher had no previous sexual health education or experience. No drop in services available.
School 3	Year groups 10-12, ages 15-16 years. (N=5)	Regular sexual health enrichment classes ran by external health central. Also, drop in services twice a week at dedicated youth centre in school.
School 4	Year group 9, ages 15-16 years. (N=5)	1 hour of sexual health education in Year 7. Session focused on reproductive and period talks. Previously had nurses running a drop-in service with the c-card scheme.
School 5	Year group 9, ages 13-14 years. (N=4)	1 hour of sexual health education in Year 8, Session focused on reproductive and period talks. No drop in services available at school but local ones advertised to pupils.

Participants were low SES based on parental educational background and parental income, 12 participants' parent's highest educational attainment was primary school, 8 secondary school and 3 sixth form or college. Five participants were on free or reduced price school lunches, which meant their parents have an annual income of less than £16,190. Twenty participants

identified as White British, 2 as Black or Black British African and 1 as Other Mixed Background. See table 7.2 for full overview of participant's demographic background.

Table 7.2. Overview of participants' demographic background

		N (%)
	Free or reduced price lunches	5 (21.7%)
Ethnicity	White British	20 (86.9%)
	Black or Black British African	2 (8.7%)
	Other Mixed Background	1 (4.4%)
Living with parents	Living with mother	8 (34.8%)
	Live with both parents	12 (52.2%)
	Living in care	3 (13.1%)
Parents education background	Primary school	12 (52.2%)
	Secondary school	8 (34.8%)
	Sixth form or college	3 (13.1%)

7.2.3 Materials

7.2.3.1 Websites and apps

Google was used to search for sexual health websites between June 20th and July 20th 2016. The websites on the first three pages of the Google search were then examined, this is because previous research has found that teenager searches that return a large number of results are often resolved by confining their interest to the first few results (Hansen et al., 2003a). Inclusion criteria included: the website addressed one or more aspects of sexual health/safe sex advice, specifically aimed at and suitable for female teenagers, contained English language and accurate sexual health information. Exclusion criteria included the following: specifically stated that it was not suitable for teenagers, stated that it was not regarded as a source for health-related information, websites for healthcare professionals, absence of original content (links to secondary sources), focused solely on HIV/AIDS and websites that did not provide a holistic coverage of sexual health. Websites deemed suitable from these criteria were categorised as: charity websites, US websites, independent websites, websites by teens for teens, UK health provider websites and discussion forums. One website from each category was then chosen for the study (see Table 7.3 for full details of websites and apps).

Search terms included the following: *can you have sex on your period? how do you get an STI? sexual health advice UK, sexual health advice, girl's sexual health, Sex education, teen sex education, teen sexual health, safe sex, safer sex, teen safe sex, condoms.*

IPads were used to view the sexual health mobile apps therefore the researchers searched for sexual health apps on the Apple App Store, using the same search terms as the websites. Inclusion criteria included; the app addressed one of more aspects of sexual health promotion/safe sex advice, app rated as suitable for under 16s, accurate sexual health information, relevant to female teenagers and contained English language. Exclusion criteria included the following; specifically stated that it was not suitable for under 16s, stated that it was not regarded as a source for health-related information, apps for healthcare professionals, apps categorised as 'Entertainment', 'Games', 'Casual' or 'Puzzle'; focused solely on HIV, sexual positions, sexual performance, technique or sex trivia, sexual dysfunction, fertility and ovulation checker, contraception or condom size; apps that could not be downloaded because of country restrictions that prevented access in the UK; technical problems with the app, sexual health clinic/condom locators outside the UK; paid apps that are a paid version of a free app ('lite' version). The apps deemed suitable from this criterion were then categorised as school based sexual education apps, interactive game apps and information provider apps. One app from each category was chosen. Six websites but only three mobile apps were chosen, due to there being limited appropriate mobile apps, whereas there were hundreds of suitable websites. Screenshots of each of the websites and apps can be found in appendix 10.9.

7.2.3.2   Focus group

A focus group schedule was formulated by creating open-ended and semi-structured questions in order to keep on topic but allowing participants to provide further explanations and discuss their own experiences. Example questions on the focus group schedule included: *"How have you previously searched for sexual health information?"* and *"Which website did you find most useful, any reasons why?"* The focus group schedule and worksheets can be found in appendix 10.10.

Teenagers were also provided with a worksheet to write down any thoughts about the websites or apps while they were viewing them. The website/app name was on the top of the page, with four statements; *"I like this website because…"; I dislike this website because…"; "The information I find useful is…"* and *"any other comments"*. A large box was provided after each statement so participants could write their answers in. Participants were told that these answers

would help them during the focus group and that the researcher would be collecting the worksheets when the focus group had finished.

Table 7.3 Overview of chosen websites and apps

	Provider	Category
Websites		
www.brook.org.uk	Brook – UK charity providing sexual health services for young people under 25.	Charity website
www.girlshealth.gov	Office of women's health as part of U.S. department of health and human services	US website
www.youngloverguide.com	Independent website providing sex education for teens.	Independent website
www.sexetc.org	Written by teens for teens but published by answer, a national organization.	By teens for teens
www.nhs.uk/Livewell	NHS – National health service in the UK	UK health provider
www.healthtalk.org	Healthtalk.org provides free, reliable information about health issues, by sharing people's real-life experiences.	Discussion forum
Mobile apps		
Condom Craze	Free app that promotes a social media dialogue on safe sex	Interactive game
My teen mind	Gaia Technologies - research work carried out by a UK school. Covering all areas of sexual health.	School based sexual education app
Girl empowered	Developed by Medical Services Pacific (MSP), a charity that provides free holistic healthcare to women and youth in need.	Information provider

7.2.4 Procedure

The study was granted ethical approval from Northumbria University's Faculty of Health and Life Sciences Ethical Committee. The study took place in a school setting and parental consent was sought using an opt-out procedure. Parental letters were posted home by the school, explaining the study and parents informed the schools within two weeks if they did not want their daughters taking part in the research. The testing day took place two weeks after the last parental letter had been posted. An information sheet was given to the participant and the researcher verbally explained the procedure. Participants gave their informed consent to take part in the research on the testing day.

7.2.4.1 First discussion

Participants took part in focus groups in groups of either four or five. The focus groups took place in a quiet location within their school. The researcher and a teacher were present during the focus groups. The researcher kept the focus group on track using the focus group schedule. In the first discussion, participants discussed their previous experiences of sexual health education and experiences of searching for sexual health information. Participants were asked to think about the ways in which they have previously searched for sexual health information, and if they haven't searched for sexual health information how they might go about it. If participants had not mentioned the internet, this was prompted and participants were asked to think about the positives and negatives of using the internet for searching for sexual health information.

7.2.4.2 Viewing and interacting with websites and apps

Participants viewed either the six sexual health websites or the three sexual health mobile apps. Each website/app was used for 5 minutes, the researcher let the participants know when to move onto the next website/app. Participants were asked to write notes about each of the websites and apps to use as prompts in the next discussion. They were then instructed to concentrate on what they liked and disliked about the website/app and whether the information provided on the website/app was useful. Participants then took part in another group discussion, using their written prompts, in which their thoughts on each of the websites and mobile apps were discussed.

7.2.4.3 Return to website/app and final discussion

Participants then had 15-minutes to revisit their favourite app or website. They also wrote notes on why they visited that particular website or mobile app. Participants then took part in a final group discussion to discuss their 'favourite' app or website. The entire session lasted approximately 1 hour. These sessions were audio recorded using an Olympus dictaphone and transcribed verbatim. At the end of the study participants were fully debriefed and thanked for their time. For an overview of the procedure see figure 7.1.
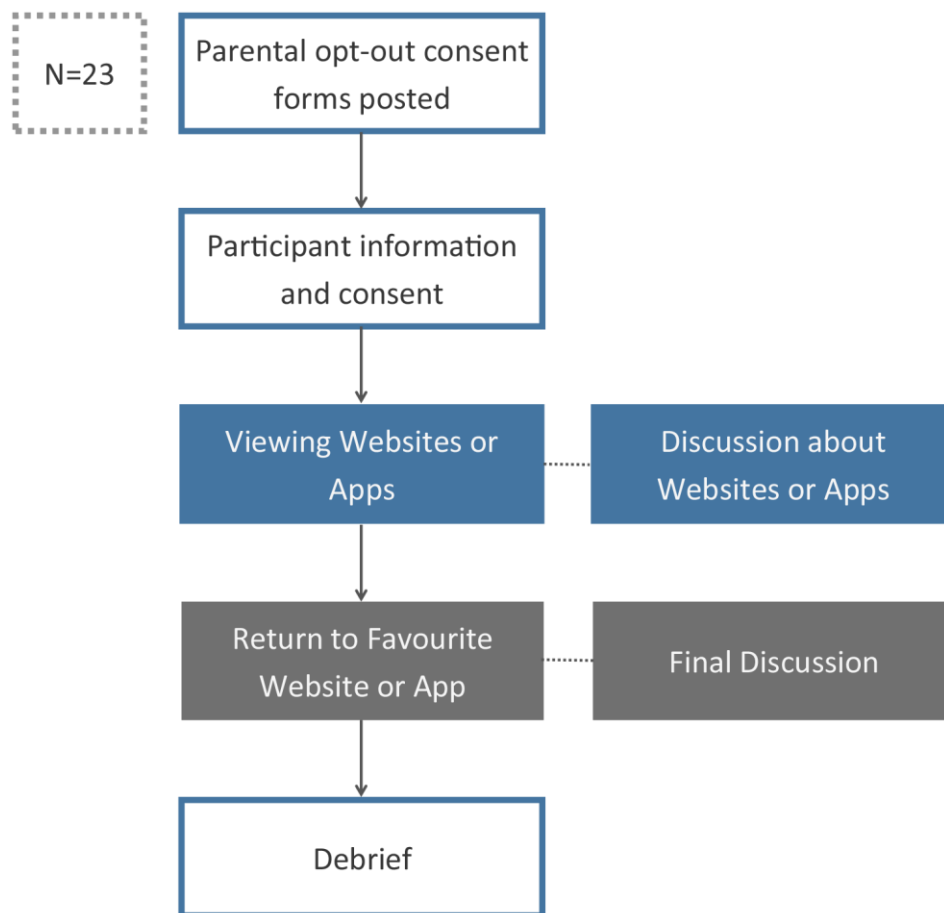
Figure 7.1 Overview of procedure for Study 4

7.2.5 Analysis Procedure

The written comments on the worksheets were added to the verbatim transcripts. The transcripts were analysed using thematic analysis (Braun & Clarke, 2006) for emerging themes based on the markers used by the participants to assess their preferences and selection patterns. A coding scheme was developed and a first pass through the transcripts revealed a number of themes relating to the first impressions of the websites and mobile apps and participants' reasons for liking and disliking the websites and mobile apps. These themes were then checked with the original coding scheme to ensure that all areas were covered in the themes; reasons for liking the websites/apps, reasons for disliking the websites/apps, reasons for trusting the websites/apps and favourite website/apps. The themes were then appropriately named and defined. The final stage involved producing the report and choosing examples of quotes from the worksheets and transcripts to illustrate each theme and to give a good explanation of the point being made.

7.3 Results

In trying to understand the context in which websites and mobile apps may or may not be used for sexual health information analysis sought to clarify participants' current practice with regard to seeking sexual health information. Firstly, findings are presented on teenagers' current sexual health information seeking practises and then the key factors in terms of shaping preferences for web based and mobile app based sexual health information are discussed. There are five themes; "*Drivers for seeking sexual health information online*"; "*Design of websites and apps*"; "*Website and app content*"; "*Trusting and using websites and apps*" and "*Return to favourite website/app.*" The themes are illustrated by quotes from the focus groups and written comments on the worksheet.

7.3.1 Drivers for seeking sexual health information online

Teenagers knew where local sexual health centres were located, but did not feel comfortable visiting them. Although they thought information at the health centre would be reliable they were too embarrassed to access this resource. In contrast, teenagers reported that they regularly search the internet for sexual health information and that searching online was their preferred way of obtaining information in this context. However, participants were wary of the information they find on sexual health websites, and they knew that speaking to a healthcare provider would be more reliable.

> *P7: Like they [health care providers] look at you funny (Starts laughing)* (School 2)

> *P5: Like it's embarrassing.* (School 2)

All participants preferred to access sexual health information on their phones. The ease of access and the privacy afforded by mobile phones were particularly important factors. Mobile phones as personal devices, were individual to them unlike computers which were shared with other family members. Participants did not want their parents to see their internet history or question why they were using the sexual health websites. Despite the prolific use of mobile phones for accessing sexual health information, not a single participant had previously heard of a sexual health app.

> P5: *I haven't seen a sexual health app before*

> I: *OK, has anyone seen a sexual health app?*

All: *No* (School 2)

7.3.2 Design of website and apps

There was a clear consensus that participants preferred bold, colourful websites and apps but also ones that looked professional, rather than ones which were childish in nature. It was important that websites included images of people that our participants could relate to; in a sense people like them. Participants did not like websites that contained images of people who appeared younger than themselves. Indeed, this was a barrier to use and this would prevent teenagers from using the website.

> *P13: Well, it is because like it talks about sexual health and well-being but like it looks like, with the children there, it's like for children.* (School 5; Brook)

It was also important that websites and apps were easy to use with a clear layout (see figure 7.2). Participants did not want to have to spend time searching for information and preferred websites that were simple to access. If a website contained a broken link or would not allow teenagers to access part of the website, then they would quickly close the website and not use it again. Therefore, it was important that the website was easy to use and worked well.

> *P21: Yeah, like it's better a bit simpler, to like read (School 3, Brook)*

A key difference between the participants' perceptions of the websites and the apps concerned the importance of appropriate names and icons. For apps, having a neutral name and icon was important – something that did not immediately point to the nature of its content. As the app name and icon would be displayed on the home screen of the phone, it was important that it was not embarrassing or too overt an indicator of sexual health content (see figure 7.3 for the mobile app icons). Participants would not download an app that looked embarrassing as they did not want their parents or friends to see it.

> *P23: I'm not, my mam will be like, what's this doing on your phone* (School 5, condom craze)

> *P22: No way would I have this on my phone.* (School 5, condom craze)

Figure 7.2 Participants believed the Brook website was easy to use and had a clear layout

Figure 7.3 The My teen mind app icon, condom craze icon and girls health icon. Participants believed icons should be discreet, whereas the condom craze app was overtly about sexual health.

7.3.3 Website and app content

In terms of website features, all participants enjoyed the videos. This was because videos make it easier and quicker to access information. It was important that the videos were short, contained relevant information, covered different sexual health topics and included personal experiences from other teenagers. It was key that teenagers could relate to the videos and participants lost interest if the videos were outdated.

> *P11: Yeah the videos were good.*

> *P14: I liked the personal experiences.* (School 3, Health talk)

It was important that the websites contained some interactive features. Teenagers enjoyed quizzes and games as these added an element of humour that aided perspective and discussion around the topic. Participants quickly lost interest in information-only websites and preferred sites that contained some form of interaction or at the least a link to other services.

> *P4: It tells you like if you want to make appointments, and it like provides services instead of just like information. (*School 1, Brook)

They preferred websites and apps that contained bullet pointed information, rather than those containing blocks of complex information. A key difference between the websites and apps related to the depth and breadth of information participants' perceived them to contain. Compared to the websites the information on the apps was too basic, and further information would be beneficial. In general, participants preferred information that covered a wide range of sexual health topics including relationships and gender. They liked information that

contained positive language, clear advice and guidance on common problems. Websites and apps that used negative language or concentrated on abstinence or STI prevention were ignored.

> *P15: Yeah. But like it also says about abstinence. I don't like that.* (School 4, Sex etc.)

Teenagers had mixed perceptions of the interactive content of the apps. Some participants enjoyed a condom game (see Figure 7.3) on the Condom Craze app, and believed that it appealed to teenagers. Participants found it light-hearted and generated easy discussion around the topic.

> *P11: It's really funny that you can like design a condom, name it and laugh about it with your friends* (School 3, Condom Craze).

However, others thought the game was childish and lacked trustworthy information. Participants believed the game would be better if it allowed them to access further, practical information about condoms and where to obtain them. Therefore, a key issue with the apps was that they were either purely information based or purely interactive, whereas the teenagers expressed a preference for a combination of information and interactive elements.

> *P10: But it needs extra information too*. (School 3, condom craze)
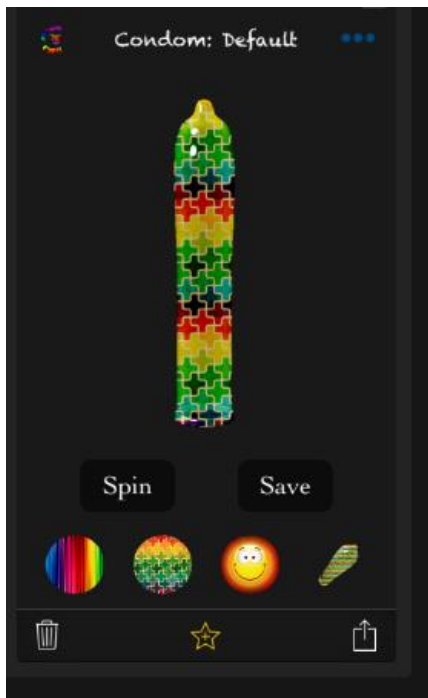
Figure 7.4 Condom Craze interactive game app

7.3.4 Trusting and using websites and apps

Teenagers were wary about trusting sexual health websites and apps. Participants enjoyed the interactive quizzes that were on the apps, yet because they were game based they did not believe the information that was displayed with the quiz. Participants mentioned that they did not trust the information on any of the websites they viewed with the exception of the NHS site. The NHS site was already familiar to them and although they had not accessed the sexual health content on that site before, the reputation and familiarity of the site acted as key trust indicators. Teenagers were happier to use websites developed by a provider that they knew of and trusted.

P4: yeah, like when you see the NHS logo, I would trust that. (School 1)

A key difference between apps and websites was the difficulty in determining who had developed the app or the organization behind it. Problems with identifying the source made it more difficult to trust the sexual health apps. Participants thought the apps that contained contact details were more trustworthy. In checking the credibility of the app participants suggested they would check the ratings and reviews on the app store. If an app had more positive ratings and reviews, then it would be deemed more trustworthy.

P11: It depends like what reviews and stuff they had (School 3, Girl empowered)

All participants agreed that in order to trust an unknown website it needed to be endorsed and promoted through a trusted source, for example, their school.

I: So what would make you trust something online?

P20: Advertised through the school (School 5)

In comparison, participants were not sure how to trust a sexual health app as they are not regularly advertised through their school. Also, it was easier for the participants to identify who the provider of the information was on the websites (for example, NHS or brook) however participants found it difficult to determine the information provider on the sexual health apps.

I: Ok, and compared to the websites did you trust them [apps] more or less than the websites?

P1: Less

I: Ok, any reasons for that?

P1: Erm, not sure who put the apps there

Finally, participants were asked to reflect on whether they would consider using a sexual health mobile app in the future. Participants valued the convenience of using apps and thought alongside the improvements they would like to see to their design, content and branding, this would drive them to use this kind of app in the future

I: Ok, and after having a look at them do you think you would ever use a sexual health app in the future?

P13: Yeah, if they had more information on I would

P12: If the NHS or someone wrote it

P11: It is easier on phones

7.3.5 Return to favourite website/app

In the second part of the focus group participants were asked to return to their favourite website and app. For websites, the majority of participants commented that they would return to the *Brook* website. This was because they believed it contained a lot of useful information especially about STIs. Participants believed that it explained what they could do in certain situations to provide them with the confidence to discuss STIs. It was also interactive and allowed participants to make appointments offline.

> *P3: I like it because: It lets you ask questions and shows you more information*
> *The information I find useful: it gives you confidence when talking about STI's*
> (School 1, Brook)

> *P10: It tells you how to make appointments, it contains a wide range of*
> *information and it explains what to do in several situations.* (School 3, Brook)

> *P12: It looks professional, it's clear a charity has provided the information*
> *(School 3;Brook)*

Participants would also recommend the Brook website to their peers, if they needed sexual health information, because of how useful they perceived the information to be. The other website that participants returned to was *health talk;* participants enjoyed the videos and believed the information was useful. Also, the colours and layout of the website appealed to their age group. Therefore, in terms of websites, participants were most likely to return to the website that contained the most relevant and useful information, but also those that were suitable for their age group.

> *P20: It gives you useful information and if you are struggling I would 100%*
> *advice[Sic] you look at this* (School 5, Brook).

> *P12: loved it, appeals to the young generation, Health talk, liked the videos,*
> *example info* (School 3, Health talk).

Similarly, participants returned to apps that contained the most relevant information. The majority of participants returned to *Girl Empowered.* This was because they believed it covered all areas of sexual health, and topics that they were interested in such as STIs. Even though in comparison to other apps, this one was not as colourful or as interactive, they were more likely to return to the app that had the most relevant information.

> *P9: Girl empowered because it has the most information and lots of different options about everything you would need to know and how to keep yourself safe against things like diseases and what to do If you have one.* (school 4)

Participants also returned to *My Teen Mind*, as with *Girl Empowered*, they liked that this app had a lot of information; participants also believed that the information was reliable and easy to understand. None of the participants returned to *Condom Craze,* even though they enjoyed the gaming aspect. They returned to apps that had reliable information.

> *P5: My teen mind because it has more information and looks reliable and easier to understand* (School 2, My Teen Mind)

Table 7.4: Table detailing the frequency and (percentages) of teenagers who returned to each website and app

	Frequency and (percentage)
Websites	
Brook	7 (30.43%)
Girls health	4 (17.39%)
Young lovers guide	0 (-%)
Sex etc	2 (8.69%)
NHS	4 (17.39%)
Health talk	6 (26.08%)
Mobile apps	
Condom Craze	3 (13.04)
My teen mind	12 (52.17)
Girl empowered	8 (34.78)

7.4 Discussion

The findings of this study illustrate a number of similarities and differences between teenagers' perceptions of sexual health information delivered through web based and mobile app platforms. First, the study confirmed previous findings with respect to the design qualities of successful websites (McCarthy et al., 2012; Selkie & Benson, 2011). Whilst it is not surprising that teenagers also demand the same level quality in mobile apps there are new issues here for designers to consider. The privacy afforded by mobile devices is in danger of being undermined by poorly designed icons and inappropriate names for sexual health apps. As the app name and

icon are displayed on the home screen of the phone, it was important that it was not embarrassing or too overt an indicator of sexual health content. Therefore, it is important that app names and icons are discreet. A key finding, consistent across both platforms was that participants highlighted the importance of videos and images that they can identify with. According to social learning theory, modelling by significant others can be highly influential to teenagers in behaviour change (Bandura & Walters, 1977). Models that have shown to be effective in other health related domains are peers whose behaviour they see as being rewarded and who are of the same age or slightly older (Laureati, Bergamaschi, & Pagliarini, 2014) . Therefore, if other teenagers are employed as models on apps or websites they should be a similar age or older than the recipient in order to increase the likelihood of the teenager relating to and using the information on the website.

Secondly, teenagers felt that the sexual health information provided on apps, in contrast to websites, lacked breadth and depth. Whilst this narrower focus may be intentional on the part of the developer, the teenage target audience of these apps reported that they expect much richer information from sexual health apps. This supports general reviews of sexual health apps that have found they tend to take a one-size-fits all approach to sexual health (Singh, Gibbs, Estcourt, & Sonnenberg, 2017). Trust cues are also less well understood in the app format. By contrast, teenagers understand that they can trust known websites, for example, the NHS site when promoted by their school. However, there was no such guidance in regard to apps. Once they step outside of this comfort zone of known providers their confidence in being able to distinguish between trustworthy and untrustworthy sources diminishes rapidly. Related literature looking at health apps more broadly suggests that people are willing to use other peoples' experiences of the app as a trust indicator and rely on the apps' ratings and reviews especially where 'paid for' apps are concerned (Sillence, Briggs, & Harris, 2017).

Finally, despite the high level of mobile phone use in female teenagers, none of the participants in our sample had previously used a sexual health app. Our findings suggest that a redesign of content alongside careful design of icons and names will be important in terms of increasing uptake but that designers will also need to be creative in terms of thinking through their advertising and marketing campaigns. For this age group at least, trust transference is going to be important with content endorsed by familiar, well-known 'brands' and a campaign strategy that sees schools lending their support to the use of such apps. Based on the findings of this study some guidelines are presented for the development of future sexual health websites and mobile apps (see Table 7.4 below).

Table 7.5 Recommendations for future websites and mobile apps aimed at teenagers

	Websites	Mobile apps
Design	Easy to use, simple clear layout, bold vibrant colours and age appropriate images.	Appropriate app icon/name, Easy to use, simple clear layout, bold vibrant colours and age appropriate images.
Content	Short videos featuring 'people like me', interactive quizzes and games, external links. Bullet pointed and age appropriate information that covers all sexual health topics.	Appropriate interactive game or quiz combined with accurate sexual health information that covers all topics. References to sources of information – link to known sources.
Trust	Professional design and advertised through a known source.	Professional design, advertised through a known source, positive reviews and ratings and contains external contact details.

7.5 Limitations

There were some limitations with the current study. During the 'free search' participants were only asked to visit a website or app they had previously used in the study. It was beyond the scope of this investigation to consider sexual health websites or apps which teenagers would choose themselves. Allowing students to search freely was not possible within the constraints of a school based study because of the number of websites and apps blocked on school computers. It would have been of interest to investigate the types of websites and apps teenagers encounter when searching by themselves.

Participants discussed that they perceive their phones as more private when searching for sexual health information than on a computer, however the mobile apps were shown to teenagers on iPads. Research has shown individuals perceive smaller screens as more private than larger screens (Little & Briggs, 2006), therefore it would be interesting to compare teenagers' initial views of the apps if they were shown on a smaller screen. Teenagers believed that the condom game was not discreet and believed the name displayed on a phone would be embarrassing, however teenagers may have perceived this game as more private if it was displayed on a smaller screen. This should be taken into account in future research investigating mobile apps.

7.5.1 Implications

Teenagers currently use websites to seek sexual health information, yet, they prefer to use their phones to find this information. Teenagers would prefer to use a sexual health app for information because of the privacy and convenience that they associate with a mobile app. However, current mobile apps are not well advertised to teenagers and do not comprise sufficient interactive features and helpful information. If teenagers are going to continue to search for sexual health information online, then it is vital that the future development of sexual health websites and mobile apps consider incorporating quality information, exciting features and identifiable trust cues.

7.6 Chapter summary

This chapter has presented a qualitative study investigating female teenagers' views of current sexual health websites and mobile apps. Participants either viewed six existing sexual health websites or three existing sexual health mobile apps chosen to be representative of the range and variety currently available. Participants then took part in focus groups evaluating each of the websites and mobile apps. The findings indicate that teenagers currently use their phones to access sexual health information due to ease of access and privacy. However, teenagers were not aware of sexual health apps. Participants believed apps should have similar design features to websites but apps should contain an appropriate interactive element paired with accurate sexual health information. At the moment, female teenagers are not using sexual health mobile apps, they believe they are more convenient and private compared to websites, yet they trust sexual health websites more than mobile apps.

The following study (in Chapter 8) presents a sexual health intervention program incorporating the findings from the four previous studies. Self-affirmation techniques are used due to the importance of self-esteem found from Study 1 and Study 3 (Chapter 3 and 5). The intervention program incorporates appropriate sexual health information aimed at improving knowledge found important in Study 2 and Study 3 (Chapter 2 and 5). Due to the findings of this study, the sexual health information in Chapter 8 (study 5) was delivered via a sexual health website, as currently teenagers are not familiar with sexual health apps and trust sexual health websites more than sexual health apps. The website that was chosen was the Brook website, this was because teenagers indicated that they found it easy to use and the majority of teenagers (30%) returned to this website in the second half of the study. The Brook website has easy to read information, separated into short sections (see figure 7.2) which covers all areas of sexual

health, and teenagers indicated that it was important that websites contain comprehensive sexual health information on all topics. In comparison, the other websites that participants returned to (for example, health talk) only focused on certain aspects of sexual health (for example, peer pressure) and did not provide a well-rounded picture. Also, teenagers would only trust information if it was advertised through a known source, therefore Brook was appropriate, as teenagers believed that the Brook charity was professional and reliable.

Chapter 8: Evaluating a brief online sexual health and self-affirmation intervention for female teenagers (Study 5)

8.1 Introduction

Self-esteem has been identified throughout the PhD qualitatively by sexual health professionals (Chapter 3, Study 1) and quantitatively by female teenagers (Chapter 5, Study 3) as a highly important predictor of risky sexual behaviours for low SES female teenagers. However, self-esteem is difficult to increase (Dalgas-Pelish, 2006; LeCroy, 2005). Most self-esteem programs are long-lasting (six weeks or longer) with two 60 minutes sessions per week, these programs use a range of tasks including talks and working through self-esteem worksheets (Dalgas-Pelish, 2006). Also, these programs have mixed results and may not be effective for all teenagers (LeCroy, 2005). Another way self-esteem can be enhanced is through self-affirmation. Self-esteem is often studied in conjunction with self-affirmation, self-affirmation techniques may boost self-esteem which in turn may facilitate adaptive message processing (Schuz, Cooke, Schuz, & Koningsbruggen, 2017). Those with low self-esteem may also gain more from self-affirmation techniques on attitudes and intentions than those with high self-esteem (Düring & Jessop, 2015). Therefore, there are clear links between self-esteem and self-affirmation techniques, and self-affirmation can be used as a shorter-term and easier way to increase self-esteem levels.

Self-affirmation theory (Steele, 1988) proposes that people respond in a defensive manner to material that they find threatening (Epton & Harris, 2008). This is because people are motivated to protect the view of themselves as being morally adequate. From the perspective of this theory, researchers have portrayed messages that downplay the personal relevance to the individual (Croyle, Sun, & Hart, 1997). However according to self-affirmation theory, in response to self-defence, people are primarily concerned about their global sense of self-worth (Steele, 1988). Therefore, when an individual self-affirms in one domain that is important to them (for example, kindness) they will be more open to potentially threatening information about another source (for example, risky sexual behaviours).

Self-affirmation techniques have been used with a wide range of health behaviours including; alcohol consumption (Armitage, Harris, & Arden, 2011), caffeine consumption (Reed &

Aspinwall, 1998), smoking (Armitage, Harris, & Hepton, 2008; Memish, Schüz, & Frandsen, 2016), physical activity (Charlson, Wells, & Peterson, 2014; Falk, O'Donnell, & Cascio, 2015), diet (Fielden, Sillence, Little & Harris, 2016; Pietersma & Dijkstra, 2011), sun protection (Jessop, Simmonds, & Sparks, 2009; Schüz, Schüz, & Eid, 2013) diagnostic tests (Klein, Lipkus, & Scholl, 2010; Koningsbruggen & Das, 2009) and self-management tests (Logel & Cohen, 2012; Wileman, Farrington, & Chilcot, 2014). However, there is limited research on self-affirmation and safe sex/risky sexual behaviours.

Sherman and Nelson, (2000) recruited sexually active undergraduate students who were randomly allocated to a self-affirmation or control condition and watched an AIDS educational video. It was found that self-affirmed participants saw themselves at a greater risk for HIV and purchased more condoms than the non-affirmed group. In addition, Ko and Kim (2010) recruited both male and female undergraduate students and found that participants in the self-affirmed group picked up more STI brochures than the non-affirmed group. Blanton, Gerrard, and McClive-Reed (2013) also recruited male and female undergraduate students (Mean age: 19.9), and found that the self-affirmed group had increased intentions to use condoms compared to the non-affirmed group. Therefore, in undergraduate populations' self-affirmation techniques have improved intentions to use contraception and increased the likelihood of picking up STI brochures and condoms. However there have been no sexual health and self-affirmation interventions with younger teenage populations. It is also not known if self-affirmation techniques can increase sexual health knowledge, and we know from Study 3 that low sexual health knowledge is a predictor of early sexual initiation.

Hence, self-affirmation theory has been effective in promoting positive intentions and behaviours and attitudes (Epton & Harris, 2008; Harris & Napper, 2005; Schuz et al., 2017; Sherman & Nelson, 2000). Also, as identified in Study 2, it is important that female teenagers are seeking sexual health knowledge. In this context, it is noteworthy that self-affirmation can improve information seeking and knowledge (Demetriades & Walter, 2016). It is not known if this works in a sexual health context. Self-affirmation is suitable for a range of populations including low SES individuals (Armitage et al., 2008) and teenagers (Armitage, Rowe, & Arden, 2014; Good, Harris, & Jessop, 2015). Therefore, self-affirmation techniques were deemed a relevant and reliable technique to use in order to increase self-esteem levels.

As identified throughout the previous chapters, self-esteem has been robustly observed to influence earlier sexual initiation. In addition, low SES female teenagers are not being targeted

with reliable sexual health information or interventions, despite there being a range of sexual health interventions available. Therefore, there is the need for a reliable low-cost sexual health intervention that focuses both on self-esteem and sexual health knowledge. Thus, a brief intervention was delivered online due to the internet providing a basis for low cost, far-reaching and timely interventions making them suitable for low SES teenagers (Griffiths et al., 2006). The sexual health information was delivered through a sexual health website, due to the teenagers in the previous study (Study 4, Chapter 7) indicating that they were not familiar with sexual health apps and therefore were wary of trusting the information on mobile apps. Also, reviews of current sexual health apps have found that apps are lacking in detailed information and do not represent the breadth and depth of sexual health issues (Singh et al., 2017). Whereas, teenagers especially girls are more familiar with using websites for sexual health information (Wartella et al., 2016).

The current study, therefore, aimed to use online self-affirmation techniques in order to increase self-esteem levels. The study also aimed to increase safe sex intentions and sexual health knowledge. Overall, the research aimed to evaluate whether self-esteem, intentions and knowledge were increased post intervention and at a one-week follow up to evaluate the sustainability of these effects over a one-week period. Based on previous research three hypotheses were proposed:

Hypothesis 1: Female teenagers who have self-affirmed (self-affirmation group) will have significantly higher self-esteem post intervention than those who have not (control group).

Hypothesis 2: The self-affirmation group will have significantly higher intentions to have safe sex post intervention than the control group.

Hypothesis 3: The self-affirmation group will have significantly higher sexual health knowledge post intervention than the control group.

8.2 Method

8.2.1 Design

The study employed a 2 (condition) x 3 (time) experimental design. The between participants factor was condition with two levels: self-affirmation and control. The within participants factor was time with three levels: baseline, post-intervention and one week follow-up. The

dependent variables were self-esteem, sexual health knowledge, intentions to have sex in the next year and intention to have safe sex in the next year.

8.2.2 Participants

A purposive sample of 107 participants was recruited, comprising low SES female teenagers. Teenagers were recruited from five schools in the North East of England; teenagers were approached by their teacher and asked if they would like to take part in the research. Participants were categorised as low SES based on parental educational background and parental income. Participants were considered low SES, if their parent's highest educational attainment was primary school or secondary school, or if they were on were on free or reduced price school lunches, which meant their parents have an annual income of less than £16,190. Participants were also categorised as low SES if their parents were unemployed or had working class jobs. See table 8.1 for overview of participants' demographic background. Complete data was available for 102 participants, n=50 in the self-affirmation condition age range 13-16 years (Mean= 14.0, SD=.90) and n=52 in the control condition age range of 13-16 years (Mean=13.9, SD=.72). Two participants were identified as high SES, one participant failed to log complete data online and two participants dropped out before the seven-day follow up.

Table 8.1 Number and percentage (%) of participant demographic information between the self-affirmation and control group

		Self-affirmation N (%)	Control N (%)
	Free or reduced price lunches	20 (40%)	19 (36%)
Ethnicity	White British	46 (92%)	47 (94%)
	Asian or Asian British Pakistani	1 (2%)	2 (3.8%)
	Other mixed background	2 (4%)	1 (2%)
	Other white background	1 (2%)	
Living with parents	Living with mother	25 (50%)	24 (48%)
	Living with father	1 (2%)	2 (3.8%)
	Live with both parents	20 (40%)	12 (34%)
	Living in care	1 (2%)	1 (2%)
	Living with another relative	2 (6%)	5 (9.6%)
	Other		1 (2%)
Parents education background	Primary school	1 (2%)	4 (7.7%)
	Secondary school	19 (38%)	22 (42.3%)
	Sixth form or college	2 (4%)	2 (3.8%)
	University (undergraduate)	1 (2%)	1 (1.9%)
	Don't know	27 (54%)	23 (44.2%)

Participants' previous sexual behaviours were also examined. In the self-affirmation group, 21 participants reported that they were in a heterosexual romantic relationship, with one partner and had been with their partners between 1 and 12 months. All participants were the same age or within 3 years older than participants. Eight participants reported previously having sex with a condom under the age of 16 and six participants reported having sex without a condom under the age of 16. In the control group 13 participants reported that they were in a heterosexual romantic relationship, with one partner and had been with their partners between 2 and 11 months, all partners were the same age or 2 years older than participants were. Two participants reported previously having sex with condom under the age of 16 and three participants reported

having sex without a condom under the age of 16. A Chi-square test revealed that there were no significant differences between the self-affirmation and control group in terms of having sex before age 16 ($\chi(2) = 4.873$, p = .087). See table 8.2 for full overview of previous sexual behaviours.

Table 8.2 Number and percentage (%) of reported previous sexual behaviours for self-affirmation (SA) group and control (C) group.

Age	Haven't yet N (%)		Under 13 years N (%)		13 years N (%)		14 years N (%)		15 years N (%)	
	SA	C	SA	C	SA	C	SA	C	SA	C
Kissing	5 (10)	9 (17)	32 (64)	39 (75)	7 (14)	3 (5.8)	6 (12)	1 (1.9)	-	-
Touching a partners genitals	41 (82)	43 (82.7)	1 (2)	1 (1.9)	1 (2)	5 (9.6)	6 (12)	3 (5.8)	1 (2)	-
Being touched on genitals	39 (78)	39 (76.5)	2 (4)	2 (3.8)	-	7 (13.5)	7 (14)	3 (5.8)	2 (4)	-
Giving oral sex	38 (76)	44 (84.6)	4 (8)	-	-	6 (11.5)	3 (6)	2 (3.8)	5 (10)	-
Receiving oral sex	43 (86)	47 (90.4)	2 (4)	-	-	3 (5.8)	2 (4)	2 (3.8)	3 (6)	-
Sex with a condom	41 (82)	50 (96.2)	4 (8)	-	-	-	3 (6)	2 (3.8)	2 (4)	-
Sex without a condom	44 (88)	49 (94.2)	2 (4)	-	-	1 (1.9)	3 (6)	2 (3.8)	1 (2)	-

8.2.3 Materials

An online questionnaire through Qualtrics was designed to deliver the measures and study information to the participants.

8.2.3.1 Baseline measures

Three questionnaires measuring self-esteem, previous sexual behaviours and intentions to have sex that were previously used in Chapter 5 (Study 3) were utilised. These questionnaires were used as they were deemed age appropriate and reliable from Study 3.

Self-esteem was measured using the amended 10-item self-esteem scale (Rosenberg, 1965), for example, *"I take a positive attitude toward myself."* Items are scored from *Strongly Disagree*

(0) to *Strongly Agree* (3), five questions are reversed scored. The scale ranges from 0-30, higher scores indicate higher self-esteem.

Previous sexual behaviours were measured using the Raine previous sexual behaviours scale (Skinner et al., 2015). Four questions measured relationship status, partner gender, age and length of relationship. Early sex before 16 was measured using two self-developed questions. Participants were asked what age measured from *Haven't yet* to *16 years* they had vaginal sex with and without a condom.

Intentions to have sex was measured using three questions. For example, "*During the next year I expect to have sex." Intentions to have safe sex was measured using three questions. For example, "During the next year if I have sex it is likely I will use contraception." Items are scored from Strongly Disagree* (0) to *Strongly Agree* (7). The scale ranges from 0-21, higher scores indicate higher intentions to have sex and higher intentions to have safe sex.

8.2.3.2   Brief intervention

In the self-affirmation condition participants were asked to write a 5-minute essay about an event in their life they are proud of, as this has previously been identified as an appropriate self-affirmation task for young teenagers (Klein, Blier, & Janze, 2001). Any self-reflective writing can lead to participants self-affirming, therefore, in the control task participants were asked to list everything they had eaten or drank in the past 48 hours (Harvey & Oswald, 2000). Both groups were asked to spend 5-minutes on this task. Qualtrics timed the page and participants could not move onto the next stage until they had spent at least 5-minutes on the essay. These essays were checked to ensure that all participants had engaged appropriately with the task. During the task participants in the self-affirmation group completed essays on times they had won awards, been on holiday, their pets or received good grades. Within the control group all participants provided a list of food and drinks they had consumed in the past 48 hours. Examples of these tasks can be found in Appendix 10.11.

8.2.3.3 Sexual health website

As identified in Chapter 6 (Study 4) teenagers are more likely to trust sexual health information displayed on a website compared to a mobile app. The website that teenagers preferred the information on was https://www.brook.org.uk/ (*Brook*). This was identified in Study 4 as the website that teenagers were most likely to return to. Therefore, the Brook website was used for this study to deliver the sexual health information. This website covered all areas of sexual health including contraception, STIs, relationships, sex, gender, sexuality, pregnancy, health and wellbeing, abuse and violence, staying safe online, bodies and pornography. All information was bullet pointed and age appropriate. It included a range of information services as well as interactive tools, videos and games, which were identified in Study 4 (Chapter 7) as important to female teenagers. It also had a bright, bold and clear layout, therefore it was easy to use and navigate. The website had a professional design and was linked to known UK charities which was identified by teenagers as an important trust cue. See figure 8.1 for an example.
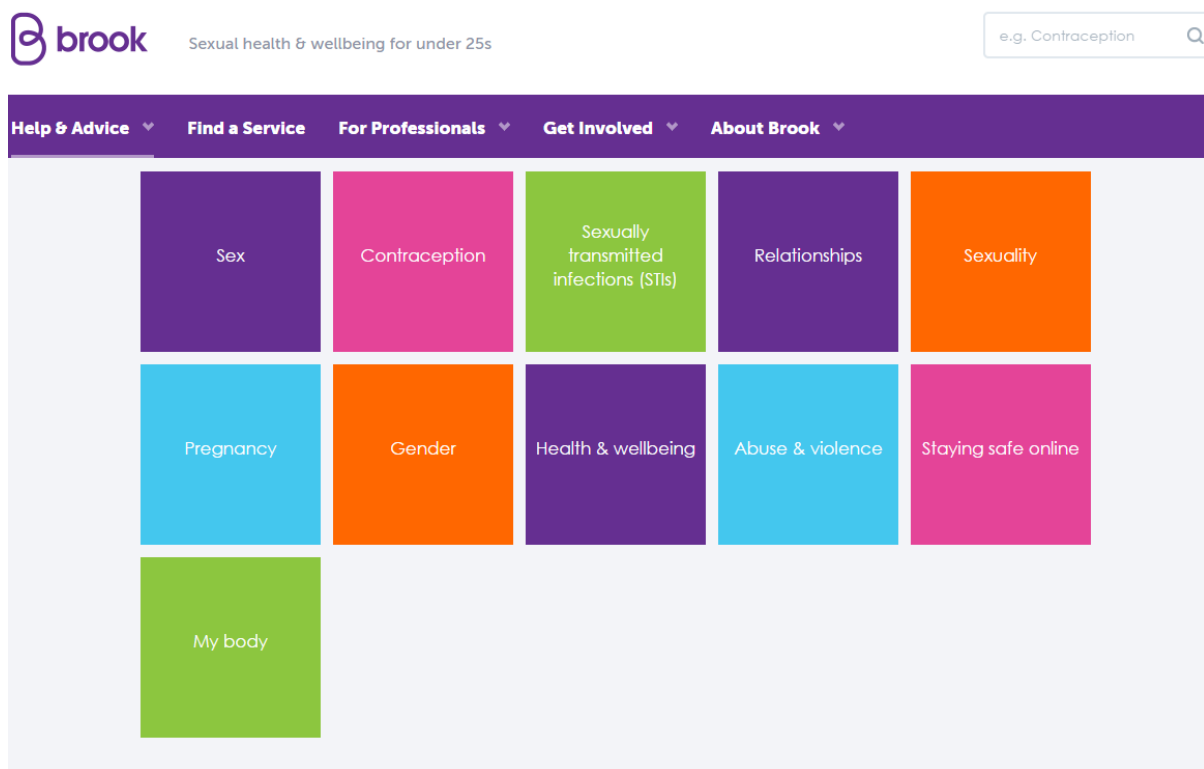

Figure 8.1 Screenshot of the brook website, showing a bright, clear and bold layout

8.2.3.4   Post manipulation measures

Three questions were utilised after teenagers had viewed the sexual health website, to ensure they had trusted and believed the information. These were; *"I trusted the sexual health information on the website"*; *"I believed the sexual health information on the website"* and *"I learnt something about sexual health from the website."* These were scored from *Strongly Agree* (5) to *Strongly Disagree* (1). These questions ensured that the sexual health website used to deliver the information was perceived as trustworthy, credible and appropriate. Questions were also utilised to measure post self-esteem and post intentions to have sex and post intentions to have safe sex in the next year.

8.2.4   Procedure

All the testing took place within school settings. Prior to the study day, participants took part in a 30-minute session where the study procedure and ethical considerations were verbally explained. It was emphasised to participants that the study was voluntary and they did not have to take part if they did not want to. Participants were also given paper-based information sheets. Any teenager who was interested in taking part in the study informed their teacher that week (in private, if they wanted) and parental letters and opt-out consent forms were posted home to their parents.

8.2.4.1   Session 1:

The study day took place two weeks after the last parental consent form had been posted home. On the study day, teenagers were given another paper-based information sheet and the researcher verbally explained the study and again emphasised that the study was voluntary to ensure that each participant was happy to take part. Written consent was then sought from participants. Participants were randomised to either the self-affirmation or control condition. Two separate links were given out on pieces of paper for the self-affirmation and control task. These were randomly passed to participants and they were allocated to condition based on the link they received. Participants were asked to create a 5 character code word and enter this into Qualtrics. Participants were asked to remember this code for the second session one week later. They were then told to write this code down and keep it safe, if they needed to.

Participants then started the study and completed the four online baseline questionnaires; self-esteem, sexual health knowledge, sexual intentions and previous sexual behaviours. They then took part in the 5-minute self-affirmation or control task. Participants were then asked to view a sexual health website for 15 minutes (https://www.brook.org.uk/). After 15 minutes, the self-

esteem questionnaire and a website quality questionnaire were then used as manipulation checks. Participants then completed a post manipulation sexual health knowledge and intentions questionnaire. This whole session lasted approximately 1 hour.

8.2.4.2 Session 2:

One-week later participants were asked to log back onto Qualtrics and enter their 5 character code word. Participants were then asked to complete the sexual behaviours, intentions, self-esteem and knowledge questionnaires. At the end of the session, participants were fully debriefed and thanked for their time. This second session lasted approximately 15 minutes. See figure 8.2 for overview of the study procedure.

```
        ┌─────────────────────┐
        │  Study Information  │
        │     & Consent       │
        │                     │
        │      N = 107        │
        └─────────────────────┘
                  │
        ┌─────────────────────┐
        │    Self-esteem      │
        │  Sexual Behaviours  │
        │Sexual Health Knowledge│
        │     Intentions      │
        └─────────────────────┘
         │                   │
┌───────────────┐    ┌─────────────────────┐
│  Control Task │    │ Self-affirmation task│
│    N = 52     │    │       N = 50         │
└───────────────┘    └─────────────────────┘
         │                   │
        ┌─────────────────────┐
        │   Brook Website     │
        └─────────────────────┘
                  │
        ┌─────────────────────┐
        │  Website Questions  │
        │    Self –esteem     │
        │Sexual Health Knowledge│
        │     Intentions      │
        └─────────────────────┘
                  │
┌─────────────┐  ┌─────────────────────┐
│   1 week    │  │    Self –esteem     │
│  follow up  │  │Sexual Health Knowledge│
│             │  │     Intentions      │
└─────────────┘  │  Sexual Behaviours  │
                 └─────────────────────┘
```

150
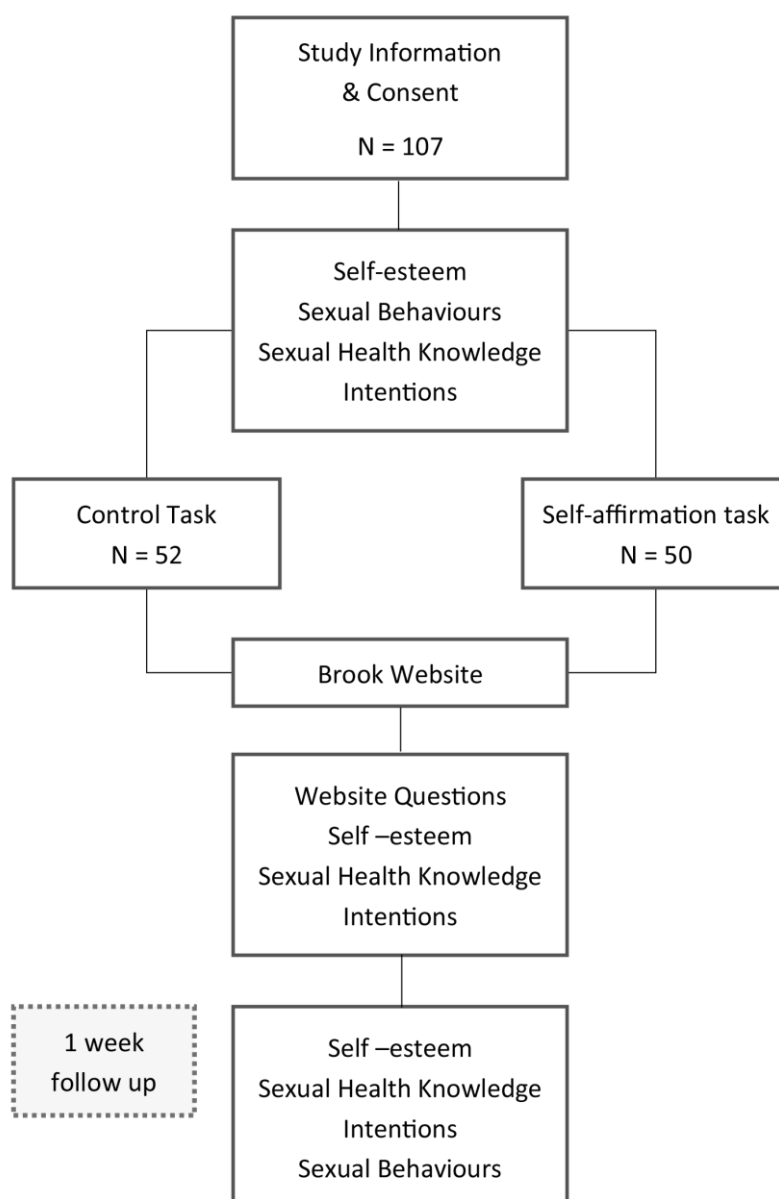
Figure 8.2 Overview of study procedure for Study 5

8.3 Results

8.3.1 Treatment of data

All questionnaires were scored and the data was entered into SPSS for analysis. Descriptive statistics were calculated including Means, standard deviations and Mean standard errors for each scale. T-tests were conducted to establish if there were any differences between groups at baseline. 2 x 3 ANOVAs were conducted to determine if there were any differences between the conditions for self-esteem and sexual health knowledge. Due to differences at baseline ANCOVAs were conducted for intentions to have sex and intentions to have safe sex. The full SPSS outputs can be found in Appendix 10.12.

8.3.2 Baseline measures and manipulation check

Baseline measures were used to establish that there were no differences between the groups at baseline. T-tests revealed no significant difference between the conditions at baseline with respect to self-esteem levels or sexual health knowledge (See table 8.3). However, there were significant differences between the groups at baseline with respect to levels of intention to have sex and intention to have safe sex. The control group reported significantly higher intention to have sex and significantly higher intention to have safe sex than the self-affirmation group (See Table 8.3).

Table 8.3 Comparison of baseline measures between the conditions for each of the dependent variables

	Self-affirmation Mean (SD)	Control Mean (SD)	t (df)	p
Self-esteem	15.0 (4.42)	16.1 (4.20)	-1.256 (100)	.212
Sexual health knowledge	12.4 (5.24)	11.98 (3.47)	.568 (100)	.575
Intention to have sex	6.9 (3.82)	9.1 (4.66)	-2.625 (100)	.010*
Intention to have safe sex	15.8 (3.72)	17.7 (4.58)	-2.289 (100)	.024*

*Significant p-values at alpha level 0.05.

Therefore, randomisation to condition was only partially successful. Due to these differences at baseline, baseline intention to have sex and baseline intention to have safe sex were controlled statistically.

8.3.3 Self-esteem

Self-affirmation techniques were used to increase participant's self-esteem. Self-esteem was measured at baseline, post and one-week to evaluate if the manipulation had been successful. Due to there being no differences in self-esteem levels at baseline, a 2x3 ANOVA was conducted.

The ANOVA determined there was a significant main effect of time for self-esteem levels $F_{(1.6, 164)} = 11.401$, $p < .001$, $\eta p2 = .140$. Pairwise comparisons revealed there was a significant difference between baseline and post self-esteem levels ($p=.010$) and baseline and one-week self-esteem levels ($p<.001$). However, there was no significant differences between post and one-week self-esteem levels ($p=.114$).

There was a significant main effect of condition between the self-affirmation and control groups $F_{(1, 100)} = 7.337$, $p < .001$, $\eta p2 = .180$. The self-affirmation group (Mean=17.72) had significantly higher self-esteem levels than the control group (Mean=16.41).

There was also a significant interaction between time x condition $F_{(1.6, 164)} = 5.958$, $p=.006$, $\eta p2 = .077$. The self-affirmation group did not have significantly higher self-esteem post intervention ($p=.064$), but did have significantly higher self-esteem at the one-week ($p=.039$) follow up compared to the control group. The interaction shows that self-esteem levels continued to increase for the self-affirmed group, whereas self-esteem levels in the control group stayed the same (see figure 8.3).
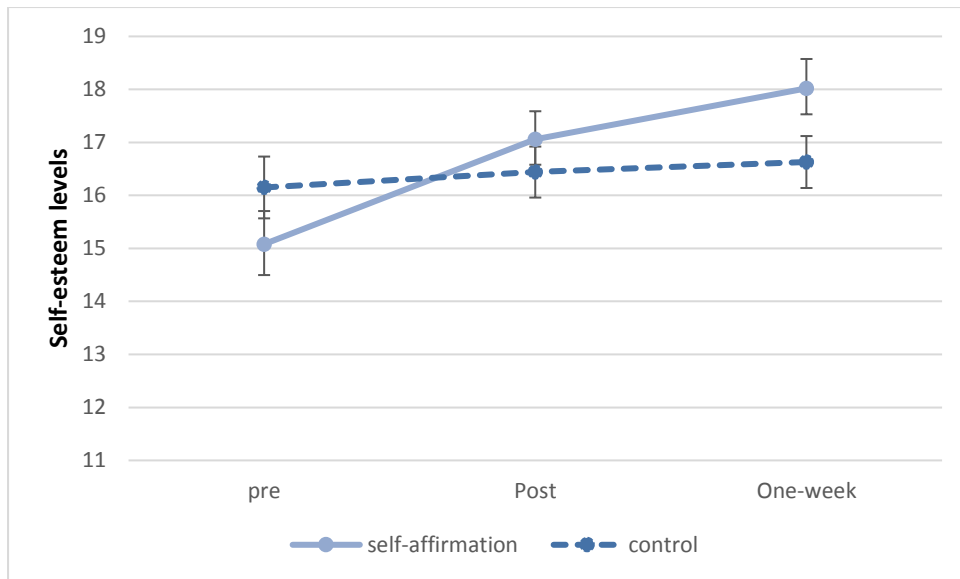
Figure 8.3 Mean Self-esteem scores at baseline, post intervention and one-week later. Error bars represent Standard error.

8.3.4 Website check

The sexual health website was checked to ensure participants trusted, believed and learned from the sexual health website. A one sample t-test against the neutral point (3) was conducted. The t-tests showed significant differences between participant responses and the neutral point (see table 8.4). Therefore, the website was successful as participants reported trusting, believing and learning from the sexual health website.

Table 8.4 Trust, learn and belief means and (SD) and t-tests between self-affirmation and control group.

	Mean (SD)	t (df)	p
Trust	4.09 (.07)	14.005 (101)	<.001*
Learn	3.83 (.08)	9.663 (101)	<.001*
Believe	3.87 (.09)	9.028 (101)	<.001*

*Significant p-values at alpha level 0.05.

8.3.5 Sexual health knowledge and intention to have sex

As there were no differences in sexual health knowledge at baseline, a 2x3 ANOVA was conducted to assess changes in knowledge over the course of the study. There were no significant main effects between the three time points (F (1.82, 200) = 1.580, p =.210 ηp2 =0.16) and no significant main effects of condition (F (1, 100) = 3.872, p =.0.52 ηp2 =0.37).

There was also no significant interaction effect between time x condition (F (1.82, 200) = 1.229, p =.293 ηp2 =0.12).

Table 8.5 Knowledge, intentions to have sex and intentions to have safe sex means and (SD) between self-affirmation and control group for baseline, post and one-week intervention.

		Self-affirmation	Control
		Mean (SD)	Mean (SD)
Knowledge	Baseline	12.5 (5.24)	11.9 (3.47)
	Post-manipulation	14.0 (3.59)	12.0 (2.67)
	One-week	13.4 (4.43)	12.5 (3.65)
Intentions to have sex	Baseline	6.9 (3.82)	9.1 (4.66)
	Post-manipulation	11.1 (5.50)	9.05 (4.16)
	One-week	8.5 (4.69)	9.0 (4.51)
Intentions to have safe sex	Baseline	15.8 (3.72)	17.7 (4.58)
	Post-manipulation	19.16 (3.59)	16.34 (3.67)
	One-week	18.80 (4.43)	16.76 (3.65)

Due to the baseline differences between the self-affirmation and control group on intention to have sex and intention to have safe sex, two Analyses of covariance (ANCOVAs) were conducted. Intention to have sex and intention to have safe sex at baseline were added as the covariates.

The homogeneity of regression assumption was tested. There were no significant differences between post intervention baseline sex intention x condition (F(1,98) = .269, p = .605) nor any differences one-week baseline sex intention x condition (F(1,98) =.000, p = .993). Therefore, it was assumed the homogeneity of regression assumption had not been violated and the ANCOVA was conducted.

There were no significant main effects of time between post and one week F(1,99) = <.001, p =.985 ηp2 = <.001. However, there was a significant main effect of condition F(1,99) = 4.551, p=.035, ηp2 =.016. The self-affirmation condition had higher intention to have sex (Mean=10.08) than the control condition (Mean=8.75).

There was a significant interaction between time x condition $F(1,99) = 6.802$, p=.011, $\eta p2$ =.064 (see figure 8.4). The self-affirmation group had significantly higher intentions to have sex post intervention than the control group $t(100)=2.120$, p=.036. There were no significant differences between the self-affirmation and control groups one week later $t(100)=.549$, p=.585.
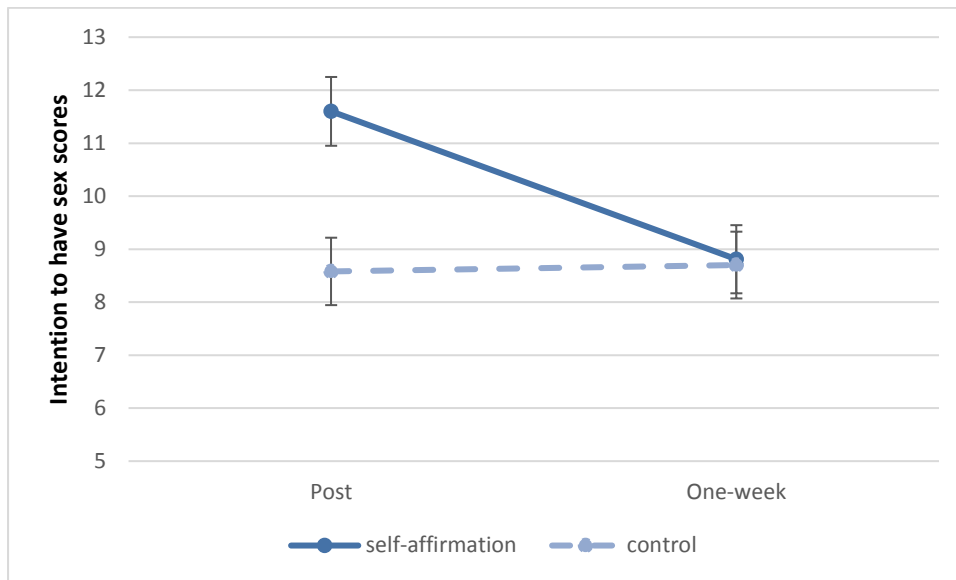
Figure 8.4 Marginal mean intention to have sex scores at baseline, post intervention and one-week later. Error bars represent Standard error.

A second ANCOVA was conducted, the dependant variables were intention to have safe sex post intervention and one-week post intervention and the covariate was baseline intention to have safe sex. The homogeneity of regression assumption was tested. There were no significant differences between post baseline intention x condition ($F(1,98) = .053$, p = .819) nor any differences one-week baseline intention x condition ($F(1,98) =.683$, p = .411). Therefore, it was assumed the homogeneity of regression assumption had not been violated and the ANCOVA was conducted.

There were no significant main effects of time $F(1,99) = .322$ p =.572 $\eta p2$ =.003. There was a significant main effect of condition $F(1,99) = 26.160$, p=<.001, $\eta p2$ =.209. The self-affirmation group (Mean=19.00) had significantly higher intentions to have safe sex than the control group (Mean=16.53). There were no significant interaction effects between time x condition $F(1,99) = .842$, p=.361, $\eta p2$ =.008. See figure 8.5.
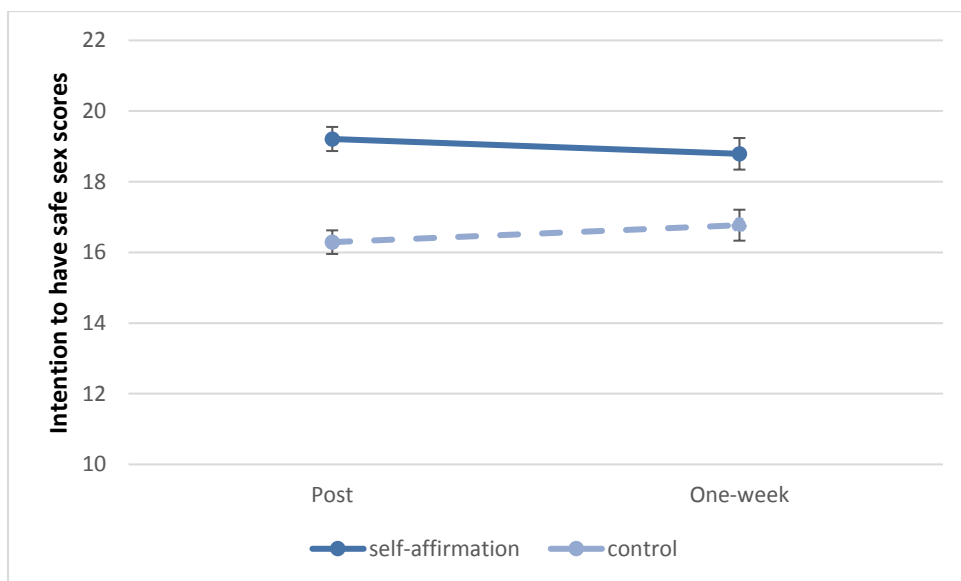
Figure 8.5 Marginal mean intention to have safe sex scores at baseline, post intervention and one-week later. Error bars represent Standard error.

8.4 Discussion

The self-affirmation manipulation was successful, as the self-affirmation group had significantly higher self-esteem post at one-week after the intervention than the control group. Therefore, hypothesis 1 as stated in the introduction was supported. This supports previous research findings that there are links between self-affirmation techniques and self-esteem (Schuz et al., 2017). Hypothesis 2 was also supported as the self-affirmation group had significantly higher intentions to have safe sex post intervention and at a one-week follow up than the control group. The self-affirmation group also had significantly higher intention to have sex than the control group post intervention; however there were no significant differences one-week later. Hypothesis 3 was not supported, as there were no significant differences post intervention or at a one-week follow up in sexual health knowledge between the self-affirmation and control group.

The findings support previous research that has found self-affirmation techniques paired with sexual health information can increase intentions to have safe sex (Blanton et al., 2013). However, Blanton et al.'s (2013) research was conducted with undergraduate populations (Mean age= 19.9) therefore this current study has extended these findings and showed that safe sex intentions are also increased in a younger teenage population (Mean age =14.0). Safe sex intentions were also significantly higher in the self-affirmation group at a one-week follow up than the control group, showing that intentions to have safe sex are sustainable over a one-

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week period. Also, intentions to have sex were significantly higher in the self-affirmation group compared to the control group post intervention, yet there were no significant differences at a one-week follow up. It is known from previous literature and Study 3 that peer pressure significantly increases intention to have sex (Gillmore et al., 2002). As this brief intervention was conducted in a group classroom setting it may have facilitated the higher intentions to have sex, therefore it is not known if there would be different trends in intention to have sex if the intervention was conducted in an individual setting.

The self-affirmation and sexual health website had no significant effect on sexual health knowledge. This is contrast to Demetriades and Walter (2016) who found that self-affirmation techniques could increase information seeking behaviours and knowledge. However, this may be due to the way that adolescents use the internet to search for information. Adolescents process information differently on the internet compared to traditional reading. Sutherland-Smith, (2002) and Gilbert (2017) proposed that teenagers are instantly gratified by rapid search and just adopt a 'snatch and grab' approach to information on the internet, without evaluating and reading the information. This then leads to shallow and passive interactions with the text and does not facilitate learning (Coiro, 2003). In this study participants were instructed to read the website rather than perform a specific task, for example, find information on how to use a condom. In addition, as identified in Study 4, videos were highly important for teenagers to interact with the information on websites, therefore teenagers could have been guided to watch the videos and search for specific information. This might have encouraged teenagers to actively search and read the sexual health information. As this was not measured in the study, it is not known whether teenagers actively engaged with all areas of sexual health information that was needed for the sexual health knowledge questionnaire. However, if teenagers were guided to perform specific tasks of which information to seek, this would not have facilitated naturalistic searching and evaluation of information.

8.4.1 Strengths and Limitations

Due to the restrictions in conducting a school-based study, it was not possible to measure behavioural outcomes. We know from previous research with undergraduate students that self-affirmed participants are more likely to take condoms and HIV brochures (Ko & Kim, 2010; Sherman & Nelson, 2000). It is not known whether self-affirmation has a positive effect on behavioural outcomes for younger teenagers. In addition, due to only having a one-week follow up it was not possible to longitudinally measure sexual behaviours and early sexual initiation.

Research has demonstrated that self-affirmation manipulations may have effects over longer periods in other health domains. For example, in relation to fruit and vegetable consumption, effects have been demonstrated at 3 month and 6 months follow ups (Wileman et al., 2014). Therefore, it is important to continue to investigate longer follow up periods to establish self-affirmation effects on longer-term behaviour change. Self-affirmation may only heighten self-esteem temporarily as well, as other self-esteem programs last a minimum of 6 weeks (Dalgas-pelish, 2006). Consequently, it is important to investigate the amount of self-affirmation sessions needed to have longer-term heightened self-esteem.

A methodological strength of conducting research in the schools is the consistent controlled environment. Participants had the same controlled procedure and conditions, with all participants completing the intervention in a quiet classroom setting. The researcher was present in case any issues arose. It was also possible to ensure that all teenagers actively engaged with the tasks, for example by completing their self-affirmation and control essays.

8.4.2 Implications

This is a novel study and one of the first to investigate a brief self-affirmation and sexual health intervention for low SES female teenagers. Self-affirmation techniques paired with reliable sexual health information can successfully increase safe sex intentions in low SES female teenagers. These safe sex intentions are sustainable over a one-week period. However, self-affirmation has no significant effects on sexual health knowledge, this may be due to issues in the way that teenagers interact with digital and online information. We know from Study 3 that sexual health knowledge is a significant predictor of early sexual behaviours. This study has highlighted how important it is that websites incorporate design features that actively encourage teenagers to engage with the information. This study could have far-reaching potential implications for sexual health education, using an online self-affirmation task with online sexual health information is an easy, low-cost way to deliver a sexual health intervention. It could potentially be used in classrooms to deliver sexual health education. However, research around online self-affirmation and sexual health interventions is still at an early stage, this study has highlighted the value of administrating a low-cost online intervention to bolster self-esteem and promote safe sex intentions in low SES female teenagers.

8.5 Chapter summary

This chapter described a brief self-affirmation and sexual health intervention for low SES female teenagers aged 13-16 years. A self-affirmation intervention was chosen because of its

links with self-esteem, and self-esteem has been found to be a highly important predictor of early sexual initiation in both Study 1 and Study 3. A sexual health website was used to deliver the sexual health information due to the Brook website being perceived as reliable and liked by teenagers in Study 4. The website included information about all areas of sexual health including peer pressure and pornography identified as important in Study 2 and 3. It was found that the brief self-affirmation intervention significantly increased self-esteem for the self-affirmed group compared to the non-affirmed group. Also, the self-affirmed group has significantly higher intentions to have safe sex post intervention and at a one week follow up compared to the non-affirmed group. However, there were no significant differences in sexual health knowledge between the self-affirmed and non-affirmed groups.

The final chapter moves onto a general discussion of the PhD work. It provides a summary and conclusion based on each of the five studies presented throughout the thesis and an overview of the PhD strengths and limitations. Finally, future research ideas and design implications for moving forward with online self-esteem and sexual health intervention programs are discussed.

Chapter 9: General discussion

This discussion considers the findings from the five research chapters reported in this thesis, and highlights the main contribution of each, in terms of the development and testing of a brief online self-esteem and sexual health intervention. The chapter is separated into five sections. The first section provides an overview of the thesis research aims and research questions. The second and third sections reflect on the five research studies in relation to the literature discussed in Chapters 2 and 6, and considers how the work presented in this thesis has contributed to existing knowledge. The implications of these findings are also discussed both in terms of using an online self-esteem intervention and within a broader context. The fourth and fifth sections provide an overview of limitations of this research and suggestions for future work.

9.1 Research aims

The aim of this thesis was to explore the predictors of risky sexual behaviours for low SES female teenagers and to develop a brief sexual health intervention program, which addresses some key predictors. This involved working with the target audience and key stakeholders so their views could be incorporated into the design of the intervention. Two research questions were explored using a mixed-methods approach across five studies.

Two main research questions were:

1) What predictors are most important in explaining risky sexual behaviours in low SES female teenagers?

2) Is a brief online sexual health intervention program effective in promoting safe sex intentions and improving sexual health knowledge?

9.1.1 Research objectives

As discussed in the introduction (Chapter 1) the thesis had seven specific research objectives, in order to answer the two research questions. These research objectives were explored both with sexual health professionals (Study 1) and low SES female teenagers (Studies 2-5). The research objectives were to:

1. Examine the predictors of risky sexual behaviours from the perspective of sexual health professionals (Study 1)

2. Identify the barriers to female teenagers accessing current sexual health intervention programs (Study 1)

3. Explore teenagers' existing sexual health knowledge (Study 2)

4. Investigate teenagers' existing experiences of sexual health intervention programs (Study 2)

5. Quantitatively explore the high risk predictors of risky sexual behaviours for low SES female teenagers (Study 3)

6. Investigate teenagers' views of current online sexual health interventions through websites and mobile apps (Study 4)

7. Develop and assess a brief online sexual health intervention program based on the high risk predictors identified in study 1, 2 and 3 (Study 5)

The first research question was explored by building on the previous research that has identified an extensive list of predictors of risky sexual behaviours. This was investigated in terms of the predictors most important for low SES female teenagers. Risky sexual behaviour was identified in Chapter 2 as early sexual initiation before age 16, because it leads to other sexual risk taking behaviours (Heywood et al., 2015). This is particularly relevant because low SES female teenagers are more likely to feel pressure to engage in earlier sexual intercourse (Nahom et al., 2001). In particular, the North East of England still has the highest rates of teen pregnancy in Western Europe (ONS, 2015). Previous systematic reviews have found a widespread list of predictors of risky sexual behaviours for teenagers (Buhi & Goodson, 2007). However, these were investigated in both male and female teenagers and used different definitions of risky sexual behaviour. Therefore, this research aimed to confirm the predictors of risky sexual behaviours for low SES female teenagers. The purpose of understanding this was to inform the tailoring of a brief sexual health intervention program so it would be appropriate to this group.

The second research question concerned the design and evaluation of a brief online sexual health intervention program. This brief intervention program was based on the findings of the first three research studies and delivered online based on the recommendations of the fourth research study. Online health interventions offer a low-cost and confidential solution to sexual health making it a suitable method for low SES teenagers (Bailey et al., 2015; Madden et al., 2013). Whilst there have been further developments of online sexual health sources and teenagers have reported being enthusiastic about digital technology enhancing sexual health education (Selkie, Benson & Moreno, 2011), it was not known if current online sexual health

sources were meeting teenagers' sexual health needs and if teenagers were currently using them. Therefore, this research question concerned the design and evaluation of a brief online sexual health intervention program, based on the views of low SES female teenagers and key stakeholders to increase sexual health knowledge and promote safe sex intentions.

A summary of how the two research questions were addressed through the five studies presented in the thesis, and how the specific seven objectives were incorporated into the studies is discussed in sections 9.2 and 9.3 below.

9.2 What predictors are most important in explaining risky sexual behaviours in low SES female teenagers?

The first research question aimed to understand the predictors of risky sexual behaviours for low SES female teenagers. This was investigated through an extensive literature review of the predictors of risky sexual behaviours and three research studies, using both a qualitative and quantitative approach. A summary of each of the studies is presented below, followed by a discussion of the combined implications that led to the second research question.

Study 1 was a qualitative study that aimed to explore sexual health professionals' views of female teenagers' sexual health information seeking practices through the use of interviews. Sexual health professionals' views were explored because they are key stakeholders in implementing sexual health interventions, yet their views are largely absent from the literature, which mainly focuses on parents and teenagers' views. The study also re-examined the sexual health predictors identified in previous literature. The barriers identified were *"society and media", "environment and family", "peer influences"* and *"the self".* In terms of the sexual health predictors, sexual health professionals ranked 33 of the 57 identified predictors as highly important, agreeing with previous research. Some of the barriers identified were consistent with previous research whilst others were particularly novel. Interestingly, sexual health professionals identified self-esteem as a highly important factor influencing teenagers' likelihood to seek sexual health information, whilst also being an important predictor of risky sexual behaviours.

Study 2 also employed a qualitative methodology and investigated low SES female teenagers' existing sexual health knowledge and information sources. It is difficult to examine teenagers' sexual health knowledge and information seeking practises as they do not like talking about sexual health. Therefore, a diary approach was utilised and participants completed the diary

once a day for four weeks. Participants wrote down their sexual health thoughts and detailed their access to information. The diaries were analysed using thematic analysis and data presented around three themes *(1) Can I ask you a question?; (2) The social consequences of sex; (3) Information sources.* The first two themes explored teenagers lack of knowledge and misunderstandings around the biological and social experiences of sexual health. The final theme explored the limited ways in which teenagers encounter sexual health information currently despite their desire to understand more. The findings of this study highlight the juxtaposition between teenagers' lack of understanding about the biological and social aspects of sex and at the same time their curiosity and thirst for knowledge. This point was emphasised in the teenagers' use of the diaries as a confidential way of seeking sexual health information.

Study 3 then explored these predictors quantitatively in a large questionnaire study. The findings of self-esteem, peer pressure, family, media, sexual health knowledge and information sources with further predictors identified from previous literature were combined into the questionnaire. This online questionnaire was administered to 318 low SES female teenagers. The analysis showed that higher sensation seeking and more high quality sexual health information, lower self-esteem, lower delayed gratification and lower sexual health knowledge significantly predicts early sex before age 16. Further, the analysis showed that higher peer pressure and higher pornography use, significantly predicts intention to have sex in the next year. However, none of the predictors were significantly associated with intention to have safe sex in the next year. This further provided evidence that self-esteem is an important predictor of risky sexual behaviours and that peer-pressure is a highly important predictor of intention to have sex.

This novel mixed methods approach combines both qualitative and quantitative findings with two research populations. Previous literature has investigated either professionals', parents' or teenager's views of risky sexual behaviour predictors (Buhi & Goodson, 2007; Hyde et al., 2013; Pearson, Child & Carmon, 2011). However, in this thesis both professionals' and teenagers' views have been combined to provide a more comprehensive picture of the predictors of risky sexual behaviours. This was a particularly novel approach as previously sexual health professionals' views have been limited in the literature. Therefore, this has contributed to existing literature, as it is important to know that sexual health professionals who are implementing interventions also perceive the factors identified by teenagers as important. Consequently, this exploration of factors confirms that these high importance factors should be taken into consideration during intervention programs. The qualitative findings in this thesis

were then strengthened by adding a large quantitative study that confirmed the predictors with a large number of low SES female teenagers from the North East of England. This provided a strong evidence base that self-esteem is an important statistically significant predictor of risky sexual behaviour for low SES female teenagers, with the interplay of sensation seeking, delayed gratification, sexual health knowledge, and sexual health information. This is an important finding as previously the literature in relation to self-esteem as a predictor of risky sexual behaviours provided a mixed picture, yet was identified as highly important by sexual health professionals.

Peer pressure and social norms were found qualitatively in both Study 1 and *2* as important in shaping teenagers' views of sexual health. Sexual health professionals identified that peers are a major influence on teenagers' sexual health understanding as they are more likely to speak to peers about sex than anyone else. This was confirmed by teenagers in Study 2, as they reported often speaking with their friends about sex, but feeling confused by shaming that occurs when speaking to their friends. Study 3 found that while peer pressure is associated with intention to have sex in the next year, peer pressure does not significantly predict earlier sexual initiation. This is consistent with Gillmore et al. (2002) who found that social norms and peer pressure are important, as believing peers have had sex is associated with intention to have sex. This is in line with the theory of planned behaviour, discussed in Chapter 2, which suggests that intentions are determined by three constructs, *attitudes, subjective norms and perceived behavioural control* (Ajzen, 1991). *Attitudes* are a person's beliefs about the expected costs or rewards of a particular behaviour in a global positive or negative evaluation of behaviour. *Subjective norms* are a person's beliefs about the social pressure they feel from their social group. *Perceived behavioural control* is a global summary of specific beliefs about the ease or difficulty of performing a behaviour. Consequently, people intend to engage in behaviours that they evaluate positively (*attitude*), observe within their social group (*subjective norm*), and believe it is achievable (*perceived behavioural control*). The findings of this thesis found that teenagers feel pressure from their social group (*subjective norms*), mixed with feelings of confusion over being shamed (*perceived behavioural control*), but peers are highly important in teenagers shaping their own sexual attitudes (*attitudes*). Therefore, cognitive processes underlie teenagers' decisions to have sex, subjective norms and attitudes influence teenagers' sexual intentions (Gillmore et al., 2002; Morrison et al., 1998). Therefore, peer pressure may facilitate teenagers to have higher intentions to have sex, yet other predictors (self-esteem,

sensation seeking, delayed gratification, sexual health knowledge) may be more important in determining actual behaviour.

The findings also support the problem behaviours theory (Donovan, Jessor & Costa, 1988), discussed in Chapter 2, which proposes that self-regulatory deficits often manifest themselves in a cluster of problem behaviours, linking with higher engagement in risky sex. This is regulated by three interlinked systems of personality, perceived environment and behavioural factors. These three current studies discussed in this thesis have shown that self-esteem, sensation seeking, delayed gratification (*personality*), peer pressure, exposure to pornography and access to sexual health information and knowledge (*perceived environment*) cluster together to predict earlier sexual initiation and intention to have sex for low SES female teenagers.

The findings of these three research studies lead to Studies 4 and 5. Specifically, in Study 1, professionals identified that teenagers do not like speaking about sexual health or seeking sexual health information because of the taboo in society of discussing sexual health. In study 2, female teenagers identified that they wanted confidential ways of seeking sexual health information. Study 3, highlighted that it is important for low SES female teenagers to have access to reliable sexual health information, as lower sexual health knowledge is a statistically significant predictor of early sex before age 16. Also, as teenagers do not actively seek sexual health information, sources need to be easy to locate. It was concluded that teenagers need to be targeted with easy to access and confidential sexual health information. Taken together, self-esteem, sexual health knowledge, sexual health information including pornography and peer pressure were targeted with this intervention because of these predictors being found to be highly important in the first three studies. A brief online sexual health intervention was designed and evaluated to see if an online intervention could be effective in increasing sexual health knowledge and promoting safe sex intentions.

9.3 Is a brief online sexual health intervention program effective in promoting safe sex intentions and improving sexual health knowledge?

The second research question aimed to investigate if a brief online sexual health intervention program would be effective in promoting safe sex intentions and improving sexual health knowledge. Two research studies investigated this question, using both qualitative and

quantitative methodology. An overview of the existing online sexual health interventions was first explored in Chapter 6, which identified that online interventions are effective for low SES teenagers (Madden et al., 2013). Four platforms for hosting the interventions were identified; sexual health websites (Buhi et al., 2010), Social Networking Sites (Gold & Pedrana, 2011), text messaging (Selkie & Benson, 2011) and mobile apps (Muessig et al., 2013). Due to constraints with social networking sites and text messaging services, female teenagers' views of online interventions through websites and mobile apps were explored in Study 4. A summary of Study 4 and Study 5 is presented below, the implications of the intervention program are then discussed in section 9.4.

Study 4 used a qualitative methodology, focus groups with female teenagers. The research aimed to explore whether internet-based sexual health resources via websites and mobiles apps are meeting teenagers' sexual health needs and to explore for the first time teenagers' perceptions of the design features of sexual health mobile apps. Twenty-three female participants aged 13-16 years either viewed six existing sexual health websites or three existing sexual health mobile apps chosen to be representative of the range and variety that were available in July 2016. Participants used each of the websites and apps for 5 minutes and then took part in focus groups evaluating each of the websites and mobile apps. The findings indicated that while teenagers currently use their phones to access sexual health information due to ease of access and privacy, none of the teenagers were aware of sexual health apps. Participants believed apps should have similar design features to websites but apps should contain an appropriate interactive element paired with accurate sexual health information. Female teenagers are not currently using sexual health mobile apps, they believe they are more convenient and private compared to websites, yet they trust sexual health information on websites more than mobile apps.

Study 5, aimed to evaluate a brief online intervention that would heighten self-esteem and deliver sexual health information. Heightened self-esteem was achieved through self-affirmation techniques, due to self-affirmation being an easy and appropriate way to heighten self-esteem. Due to the findings of the previous study the sexual health information was delivered through an existing sexual health website, the website that teenagers had rated as their favourite website in Study 4. The website included information about all areas of sexual health including peer pressure and pornography identified as important in Study 1, 2 and 3. It was found that the brief self-affirmation intervention significantly increased self-esteem for the

self-affirmed group compared to the non-affirmed group. In addition, the self-affirmed group had significantly higher intentions to have safe sex post intervention and at a one week follow up compared to the non-affirmed group. However, there were no significant differences in sexual health knowledge between the self-affirmed and non-affirmed groups.

Therefore, this brief online intervention could significantly increase self-esteem and teenagers safe sex intentions for the self-affirmed group. It is important however that online interventions are evaluated with all components at a distance, without the researcher present (Webb, Joseph, & Yardley, 2010). This is to ensure that online interventions can work as a standalone intervention. There are several constraints with using this type of intervention that may make it less effective to work at a distance. Firstly, teenagers prefer to use the internet to be instantly gratified and adopt a 'snatch and grab' technique (Gilbert, 2017; Sutherland-Smith, 2002). Because of this, it is likely that teenagers would be unwilling to commit to writing a self-affirmation essay before accessing the information. Secondly, even though teenagers were happy to use the sexual health website during the study, Study 4 highlighted that that teenagers would be unlikely to use a website or app unless it had been verified through a known source. One of the reasons teenagers may have been happy to use this website during the study could be because an external person had instructed them to use the website, verifying its credibility. In addition, the study took place in a classroom setting, further highlighting the trustworthiness of the website. However, as a standalone intervention, these trust and credibility cues may be lost. Therefore, based on the findings of Study 4, it may not be feasible that this intervention would work as a standalone website. Yet it does have potential to be implemented in a classroom setting. The implications of using an online self-affirmation and sexual health website with low SES female teenagers in a classroom setting are discussed in section 9.4 below.

9.4 Implications of using a brief online self-affirmation sexual health intervention

As discussed earlier in the thesis, currently Sex and Relationship Education (SRE) is only compulsory from ages 11 upwards for local authority maintained schools. Whereas academies and free schools do not have to teach this. This is because academies and free schools do not have to follow the National curriculum. This is concerning as only 31% of schools are local authority maintained (see figure 9.1 below), and therefore, the majority of schools in England have inconsistent sex education which is not regulated.
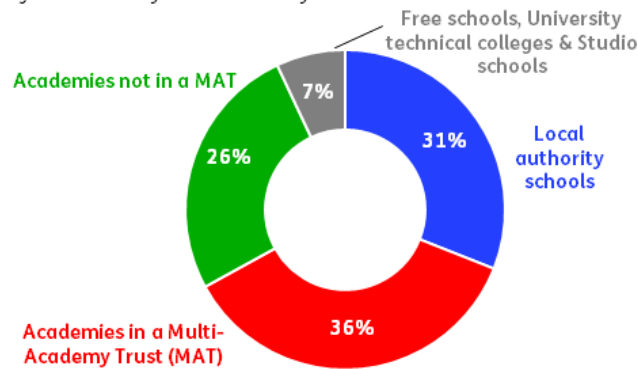
Figure 9.1 Types of schools in England from www.Fullfact.org

However, even though Sex and Relationship Education is compulsory in local authority maintained schools, it is not assessed and therefore, is also inconsistent in these schools. The only information that schools are required to teach is basic sex education such as puberty, reproduction, menstrual cycle and the reproductive system (UK Department of Education and Employment, 2000). This information does not reflect the complex and broad array of sexual health issues. There are guidelines on what schools should cover, however, as guidelines these are not compulsory to include. The current guidelines are*; to teach about responsibilities of parenthood as well as sexual intercourse, to focus on boys and girls, to build self-esteem, to discuss responsibility and consequences of ones actions in relation to sex and parenthood, to include information about different contraception methods, to use teenage mothers and fathers as educators, to provide a clear argument for delaying sex and resisting peer pressure, to link sex education with other risky behaviours such as; drugs, alcohol, smoking and lastly to ensure young people understand the law and consent* (UK Department of Education and Employment, 2000).

This is due to change in the 2019/2020 academic year and it has been proposed that all secondary schools, including academies and maintained schools will have to teach Relationships and Sex Education (RSE) (Gov UK Legislation, 2017). This will be age-appropriate information and will start with a focus on relationships in primary schools, and move to Relationships and Sex Education in secondary schools. The full guidelines of this

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proposed change are not fully confirmed, however, it is known that all schools will have to have a written policy on sex education and make this available to parents for free (Long, 2017). This will encourage parents to discuss sex education with their children as they will know what sexual health education their children are currently being taught. In addition, it will be compulsory to cover different types of relationships including: strangers, friends, intimate relationships, consent and healthy relationships, wellbeing and mental health, safety online, sex and sexuality, sexual health in the context of relationships, healthy bodies, healthy minds, self-esteem, mental health resilience and economic wellbeing (Long, 2017). There will also be a push for RSE in the modern world, which will include information on meeting strangers online and sexting (Gov UK, 2017). All schools will be inspected to ensure schools are providing the full statutory curriculum.

One of the issues identified with current Sex and Relationship Education is that teachers conducting these sessions do not usually have the correct training and have insufficient knowledge about STIs and emergency contraception to effectively deliver these sessions (Westwood & Mullan, 2007). Sexual health professionals are ideally placed to provide SRE but are not easily accessible in the eyes of teenagers and so are viewed in a less positive light than other potential sources of information (Westwood & Mullan, 2009). Even though some schools have a school nurse, most low SES schools are under-resourced and teenagers are not able to access the school nurse for sexual health questions (France, 2014). However, using the internet would be a cost-effective way to cover all areas of sexual health. Sexual health websites can be updated by sexual health professionals and can easily cover all areas in the new RSE guidelines. This would be an easy method for low resourced schools to add up-to-date and relevant sexual health information to their existing sexual health education programs, and sexual health websites could provide teachers with essential sexual health information. However, as there was no improvement in sexual health knowledge in study 5, it is important to ensure that teenagers engage with the information on the website. As previously discussed, this could have been because of teenagers adopting a 'snatch and grab' approach to online information (Gilbert, 2017). A way to ensure teenagers are reading the online information is through interactivity, by allowing users to have more engagement on the website (Greenhow, Robelia & Hughes 2009). This could be achieved by guiding teenagers to find information and then asking them to engage with interactive games and quizzes that test their knowledge and offer feedback. This would provide a more interactive task that allows teenagers to engage with the sexual health information and to receive immediate feedback.

The predictors of risky sexual behaviours and online sexual health interventions have been explored throughout this thesis. One important finding throughout the studies has been that self-esteem is an important predictor of risky sexual behaviours in low SES female teenagers. Therefore, it is highly important to include self-esteem in Sex and Relationship Education, especially as the new Relationships and Sex Education guidelines include building up self-esteem. However, in the literature review it was clear that self-esteem is difficult to increase for teenagers, and usually involves long training and development courses. Yet, self-affirmation techniques can be used to bolster self-esteem in a shorter time period. Self-affirmation tasks can also be centred around relationships, for example, writing essays on positive relationships such as friends and family. This type of task would provide guidance on positive relationships and bolster self-esteem, therefore, working on two of the recommended guidelines for Relationship and Sex Education. In addition, peer pressure was a strong theme found throughout the thesis, and peers are highly important in shaping teenagers sexual health views and attitudes. Therefore, it is important to provide information on peer pressure and include peer-sharing activities that are interactive and minimise misinformation spread by peers. A peer-sharing channel could be managed through an interactive sexual health website, especially as teenagers like the idea of using an interactive sexual health website for information.

As previously discussed, the current brief sexual health intervention described in Study 5 (Chapter 8) would be difficult to implement at a distance, because teenagers would be unlikely to complete a self-affirmation essay before reading sexual health information, but it could have potential in a classroom setting. It would be easy and low-cost to add an online self-affirmation task before showing sexual health information to teenagers. Self-affirmation tasks can be completed in a relatively short time; for example, a five-minute essay as used in Study 5. There are also a range of self-affirmation tasks available, so that teenagers do not become bored with the same tasks. For example, value scales, inserting values into sentence stems, value essays and positive feedback (McQueen & Klein, 2006). Thus, there are easy ways of heightening self-esteem online through self-affirmation techniques.

This type of online intervention would be appropriate in a classroom setting and would meet the new RSE guidelines. As previously discussed, it has been proposed that building self-esteem is likely to be on the new RSE curriculum (Long, 2017). Most self-esteem interventions

are long-term (six weeks or longer) and are difficult to administrate (Dalgas-Pelish, 2006; LeCroy, 2005), therefore, self-affirmation techniques would provide an easier and short-term way to increase self-esteem. Secondly, in Study 5 it was found that self-affirmation techniques paired with reliable sexual health information could improve intentions to have safe sex. Consequently, self-affirmation would be an appropriate technique to use to heighten self-esteem and improve intentions to have safe sex. The use of an existing and reliable sexual health website, would provide a clearer explanation of all areas of sexual health and ensure that schools are meeting the recommended guidelines for covering all areas of Relationships and Sex Education.

9.5 Broader implications of the findings of the overall thesis

The thesis has demonstrated how important it is to include key stakeholders' perceptions, experiences and beliefs before tailoring the intervention to the target group. Evidence to support self-esteem as a predictor of sexual risk taking is mixed, and larger systematic reviews have concluded self-esteem does not predict risky sexual behaviours in teenagers (Buhi & Goodson, 2007). However, in the first qualitative study it was identified by sexual health professionals as the most important predictor of risky sexual behaviour for female teenagers, and a barrier to teenagers seeking sexual health information. This was an important finding in incorporating self-esteem into the following studies, and self-esteem may not have been included in the questionnaire, without sexual health professionals identifying it as the most important factor, due to the inconsistencies in previous literature. This finding of self-esteem was then statistically identified as a predictor of risky sexual behaviours for female teenagers with the interplay of other factors. This finding highlights the importance of including key stakeholders in the early stages of intervention design, especially if they have extensive knowledge of the target group. One of the reasons for this non-concordant finding of self-esteem could be that is self-esteem development is known to interact with SES background, family and individual characteristics (Boden & Horwood, 2006). Self-esteem development occurs amongst a myriad of other intrapersonal characteristics, which can make its detection as a risk factor in quantitative studies difficult. However, throughout these studies other factors such as personality and family characteristics were considered. Therefore, self-esteem may be moderated by SES and SES may provide a reason why self-esteem was detected as a highly important factor in having sex before age 16 for low SES female teenagers.

Whilst this thesis has developed and evaluated an intervention program based on the individual, it is important to acknowledge that a broader societal role in sexual health was identified. Sexual health professionals highlighted that there is a taboo in society of discussing sexual health, which is a barrier to teenagers seeking sexual health information. In addition, the double standards of the mass media, that pornography is easily accessible, but safe sex is rarely displayed in the mass media, can cause confusion for teenagers of what they can discuss in relation to sexual health. This was then confirmed by teenagers, who reported that they speak to their friends about sex in Study 2, but are worried because there is a double standard of their friends shaming people who have had sex. This leads to confusion for teenagers, as they do not know what sexual health is acceptable to speak about, and worry that they might be shamed themselves. This is highlighted as barrier to teenagers seeking sexual health information, and even though teenagers want sexual health information they will not actively search for it. This may change with the 2019/2020 Relationships and Sex Education guidelines; as sexual health may become less of a taboo to discuss. However, currently due to the taboo in society, and teenagers' confusion over shaming when speaking about sexual health, teenagers will not actively seek sexual health information. In contrast to other countries, sex is much more openly talked about in the Netherlands, and sex education is taught at a much earlier age, incorporating a more holistic view of sex in general (Fine & McClelland, 2006). Also, The Netherlands have some of the lowest rates of STIs and teenage pregnancy and research suggests that teenagers are more likely to delay sexual initiation than those in the UK (Lewis & Knijn, 2003). Therefore, while the brief intervention discussed in this thesis focused solely on the individual, there is a need to address societal issues about the taboo of openly discussing sex before seeing wider changes. As discussed, we may see changes with the new 2019/2020 Relationships and Sex Education guidelines, as relationships will be taught in Primary schools as well as Secondary schools, however, this is not currently known.

Previous research has found that teenagers are enthusiastic about using newer and novel sources for sexual health information (Selkie, Benson, & Moreno, 2011) and teenagers report that they want confidential and private sources of health information. Consequently, because of these findings there has been further development of sexual health apps. However, there were previously no studies exploring teenagers' views on existing sexual health apps. Study 4 addressed this and found that even though there has been development of health apps, teenagers had not heard of any sexual health apps. Teenagers like using their phone, but they would not download a sexual health app as the current selection do not have reliable information paired

with practical interactive content, which is what teenagers want from a sexual health app. Also, teenagers do not trust the information on sexual health apps, and worry their parents may see the sexual health app on their phone. Without these findings an app could have been developed, based on previous literature, and teenagers may not have used the app. These findings have therefore led to the intervention being developed on a website. Highlighting how important it is to gain participants views before confirming the intended platform. Even though newer technology is embedded into lives of teenagers, for sensitive information, trust cues and confidentiality are very important. Teenagers will not be comfortable accessing health information through apps until they can fully understand trust cues on these platforms.

This thesis also highlighted the value of using a mixed-methods approach. Most previous health studies investigating the predictors of risky sexual behaviours for teenagers have either taken a quantitative approach (Buhi & Goodson, 2009), or a solely qualitative approach (Marston & King, 2006). While both of these approaches have contributed to the literature it is important to qualitatively explore the predictors with the target population and then expand the research by exploring the predictors with a larger sample of the same population. This extends previous literature, as the quantitative and qualitative studies have recruited different population samples. Therefore, qualitative research provides deeper insights and allowed participants' views on sexual health and the meanings they attach to them to be ascertained. This was particularly useful for the first research question in explaining what factors were important to understanding teenagers' risky sexual behaviours. However, qualitative research has limited potential generalisation due to small sample sizes. By contrast, quantitative research allows large amounts of data to be gathered from many participants. This was particularly useful for confirming the predictors of teenage sexual risk taking identified through the qualitative studies with a large number of female teenagers. Both approaches have different contributions to knowledge and theory development, and by combining these two methods, a stronger picture of the predictors to risky sexual behaviours, and why they are important has been developed. This novel approach added to the literature by identifying which factors health professionals and teenagers perceive as important and then confirming these factors with a large number of female teenagers.

9.6 Limitations

Whilst this thesis demonstrated a series of potentially useful and novel findings there are some limitations to be acknowledged. Firstly, this thesis has solely relied on self-report data. While

self-report measures are widely used they do come with limitations. With self-report measures, there is always the possibility that the effect of an experimental manipulation is evident in the reporting of the behaviour rather than the behaviour itself. For example, in Study 5, there is the possibility that self-affirmed participants became more aware of what they should be doing in terms of their behaviour, rather than causing an actual change in intentions. They may have had a desire to behave in a more socially desirable way, and so report what they think they should be doing. The only way to overcome this is by adding more objective measures of behaviour. Previous studies have measured how many students take condoms and pick up HIV brochures after a self-affirmation manipulation (Ko & Kim, 2010; Sherman & Nelson, 2000). However, these studies were with undergraduate students, and it is difficult to administer the same behavioural measures within the constraints of a school-based study. In sexual health research with young teenagers, it is problematic to find reliable objective measures that are also ethically suitable. Future research could seek to employ more ethically acceptable objective measures of behaviour, for example, the amount of hits on a sexual health website advertised to teenagers.

Secondly, with the exception of Study 3, this research was constrained to conducting studies in school settings. Whilst this provided controlled environments and allowed access to a large number of teenagers, there are a number of issues with conducting research in schools. The population recruited may not have been representative of the entire low SES, female teenage population. The research was advertised to female teenagers in certain year groups (within the 13-16 age range) and then pupils who were interested expressed interest to their teacher. It was in the teachers and school's discretion which parents they then posted parental consent forms to. Therefore, to some extent, the teachers and schools had overall control over the teenagers chosen to take part in the studies. In addition, in schools, online studies are limited because of constraints on the amount and type of websites that are blocked on school computers. Schools also have strict periods in which the research can be conducted, so that it does not disrupt the usual school day. Studies therefore had to be short and be able to fit into the usual school timetable. Even though there are these constraints of recruiting teenagers in schools, it did mean that there was greater control over ensuring that all participants were drawn from the target population. All studies were conducted with low SES female teenagers, aged 13-16 years, which is a hard-to-reach population. It was highly important to recruit participants from this age group, to ensure the intervention was tailored to them. This is particularly important

because reliable sexual health interventions are lacking for this age group (Copen, Dittus, & Leichliter, 2016).

9.7 Future research

Throughout this discussion, it has been emphasised that a sexual health website could work in a classroom setting, however, there is still the potential for the development of a sexual health app. In Study 4, teenagers emphasised that they prefer to use their phones to access sexual health information, because of the privacy phones afford. Whilst, as described above, a sexual health website would be more appropriate in a classroom setting, an app could be used for additional information away from the classroom. A sexual health app could be far-reaching and provide timely up-to-date information to teenagers. Teenagers need formal sexual health education in a classroom setting, where they can seek further face-to-face information, but a sexual health app could be appropriate to use at home complementary to Relationships and Sex Education. Currently teenagers are not familiar with sexual health apps, and when they used sexual health apps, they perceived these apps to be lacking in detail and were wary of trusting the information. Even though the apps were lacking in detail teenagers did believe they would be convenient compared to websites, and with the recommendations they described, teenagers would be likely to use a sexual health app in the future. Teenagers want sexual health apps that are easy to use, with a clear layout and age appropriate information and images. The content should include appropriate videos and interactive features as well information that covers all areas of sexual health. However, current sexual health apps are lacking identifiable trust cues, and teenagers are unsure how to identify a trustable app. Consequently, it is vital that future research investigates teenagers' perceived trust cues for apps and incorporates these trust cues into existing and newly developed health apps.

Previous research has identified that sexually active teenagers are more likely to seek sexual health information than non-sexually active teenagers (Jones & Biddlecom, 2011). Because participant details were anonymised in Study 2, the analysis did not allow comparison of sexually active and non-active teenagers in regard to their sexual health information seeking practises. Understanding this difference would provide insight into the most effective time and ways to target teenagers with sexual health information. It is important that teenagers seek information before they are sexually active, so that they can make an informed decision. However, it is not fully understood why this difference in information seeking exists. Future research could seek to understand if and why differences exist between sexually active and

non-active teenagers in information seeking practises. This could be incorporated into future intervention programs, so that teenagers feel comfortable accessing sexual health information.

Study 5 demonstrated that self-affirmation techniques can increase self-esteem and this is sustainable over a one-week period. However, it is not known if self-esteem can be heightened over a longer period through self-affirmation techniques. One session of self-affirmation may not be enough to heighten self-esteem for longer periods of time, however it is not known how many self-affirmation sessions are needed for longer-term changes. Self-esteem is complex to heighten, and most sessions are long-term, six weeks or longer, to see long-term effects of self-esteem enhancement (Dalgas-Pelish, 2006). It is not known from this current research how long the influence of self-affirmation on self-esteem persist, as it was only tested at a one-week period. Consequently, there is scope for future research to investigate further the effects of self-affirmation on sexual behaviours, as the frequency at which self-affirmation is needed to maintain and influence self-esteem in the longer term is currently unknown.

Previous research has demonstrated that it is important to tailor interventions to the target group (Kreuter, Lukwago, Bucholtz, Clark, & Sanders-Thompson, 2003). This thesis focused on low SES female teenagers from the North East of England, because previous research has identified particular factors in their lives that make it more likely for them to engage in earlier sexual intercourse (Kellam et al., 2014). Sexual health information earlier on can help prevent against earlier intercourse (Finer & Philbin, 2013). It was beyond the scope of this thesis to include both males and females. However, the guidelines for Relationship and Sex Education highlight that both males and females should be focused on equally. In addition, previous research has highlighted that it is important that males and females are both included in sexual health interventions, so that together they can share information and make informed decisions about sex (Harden, Brunton, Fletcher, & Oakley, 2009; Milburn, 1995). Therefore, more work is needed with teenage males to investigate if a similar self-esteem approach would be effective in promoting sexual health knowledge and safe sex intentions.

9.8 Final conclusion

The main aim of this thesis, which was to develop and evaluate a brief online sexual health intervention for low SES female teenagers, has been achieved. The predictors of risky sexual behaviours for low SES female teenagers have been identified and confirmed. This has expanded our current knowledge of the predictors of risky sexual behaviours by exploring these with low SES female teenagers aged 13-16 years and identifying which of the predictors are

most important in this age group for predicting early sex before age 16. The efficacy of online self-affirmation techniques, as a way of heightening self-esteem and increasing intentions to have safe sex, has been supported. Further, it has been demonstrated that this effect is sustainable over a one-week period. Overall, the findings from this thesis have highlighted the potential to use a low-cost, easily accessible brief online sexual health intervention for low SES female teenagers.

Chapter 10:   Appendices

10.1 Study 1 Example of health professional's information, consent and debrief forms

PARTICIPANT INFORMATION SHEET

The purpose of this information sheet is to provide you with sufficient information so that you can then give your informed consent. It is thus very important that you read this document carefully, and raise any issues that you do not understand with the investigator.

PARTICIPANT ID: _____

PROJECT TITLE: *Developing an appropriate online sexual health intervention program for teenagers*

RESEARCHER: Kerry Rulton

EMAIL: Kerry.rulton@northumbria.ac.uk

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1. What is the purpose of the project?

The purpose of this project is to explore the knowledge and perceptions of professionals who work with teenagers on sexual health issues to better understand the predictors of risky sexual behaviours' in teenagers aged 13 to 16 years.

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2. Why have I been selected to take part?

You have been selected to take part because you are aged over 18 years and you are a professional who currently works with teenagers, and you are familiar with adolescent sexual health issues.

---

3. What will I have to do?

You will be asked to give your informed consent if you are happy to take part. You will then complete a short demographic form (for example; your age and gender). You will then be asked to take part in an interview, discussing your knowledge of risky sexual behaviours for teenagers and current intervention programs. These discussions will be audio recorded and should last approximately 40 minutes. The interview will take place in a quiet, convenient location at your workplace and at a time that is best for you.

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4. What are the exclusion criteria (i.e. are there any reasons why I should not take part)?

If you are not a professional who works with teenagers or if you are not familiar with adolescent sexual health issues, then you should not take part.

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5. Will my participation involve any physical discomfort?

Your participation should not involve any physical discomfort.

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6. Will my participation involve any psychological discomfort or embarrassment?

Your participation should not involve any psychological discomfort, however if at any point you feel uncomfortable and would not like to continue, you are free to withdraw at any point by letting the researcher know.

7. How will confidentiality be assured?

All participants will be given a code that will be used to identify any data that is provided. Names and other personal details will not be connected to your data, for example, the consent form will be kept separate from your data and audio recordings. Only the research team will have access to any identifiable information (for example, the consent form); paper records will be stored in a locked filing cabinet and electronic information will be stored on a password-protected computer. This will be kept separate from any data and will be treated in accordance with the Data Protection Act.

8. Who will have access to the information that I provide?

Any information and data gathered during this research study will only be available to the research team identified in the information sheet. Should the research be presented or published in any form, then that information will be generalized (i.e. your individual responses will not be identifiable). Only the research team will have access to any identifiable information; paper records will be stored in a locked filing cabinet and electronic information will be stored on a password---protected computer. This will be kept separate from any data and will be treated in accordance with the Data Protection Act.

9. How will my information be stored / used in the future?

Consent forms gathered during this research will be stored in line with the Data Protection Act and will be destroyed 6 years following the conclusion of the study. During the study the data may be used by members of the research team only for purposes appropriate to the research question, but at no point will your personal information or data be revealed. The data may be published in a scientific journal (in the form of group averages) or presented at a conference. All information that you have provided will be generalized (i.e. your personal information or data will not be identifiable).

10. Has this investigation received appropriate ethical clearance?

Yes, the study and its protocol have received full ethical approval from the Northumbria University Faculty of Health and Life Sciences Ethics Committee

11. Will I receive any financial rewards / travel expenses for taking part?

No, you will not receive any financial rewards or travel expenses.

12. How can I withdraw from the project?

During the study itself, if you do decide that you do not wish to take any further part then please inform the researcher as soon as possible, and she will facilitate your withdrawal and discuss with you how you would like your data to be treated in the future. After you have completed the research you can still withdraw your data by contacting one of the research team (their contact details are provided in section 14). If, for any reason, you wish to withdraw your data please contact the researcher within a month of your participation. After this date, it may not be possible to withdraw your individual data as the results may already have been published. As all data are anonymised, your individual data will not be identifiable in any way.

13. If I require further information who should I contact and how?

If you require further information regarding the study, would like to withdraw your data you can contact the principal investigator Kerry Rulton (Kerry.rulton@northumbria.ac.uk) or the Principal Supervisor, Dr. Linda Little (l.little@northumbria.ac.uk).

If you would like to make a complaint about this study please contact the chair of ethics, Dr Nick Neave (nick.neave@northumbria.ac.uk).

INFORMED CONSENT FORM

PARTICIPANT ID: _____

PROJECT TITLE: *Developing an appropriate online sexual health intervention program for teenagers*

please tick or initial
where applicable

I have carefully read and understood the Participant Information Sheet.	☐
I have had an opportunity to ask questions and discuss this study and I have received satisfactory answers.	☐
I understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice.	☐
I agree to take part in this study.	☐
I would like to receive feedback on the overall results of the study at the email address given below. Email address……………………………………………………………	☐

Signature of participant... Date..........…………..

Name (in BLOCK letters)…………………………………………

Signature of researcher... Date..........…………..

Name (in BLOCK letters)…………………………………………

CONSENT FOR AUDIO RECORDINGS

PARTICIPANT ID: _____

PROJECT TITLE: *Developing an appropriate online sexual health intervention program for teenagers*

I hereby confirm that I give consent for the following recordings to be made:

Recording	Purpose	Consent
voice recordings	To discuss teenagers sexual health. Recordings will be transcribed and analysed by the researchers.	

Clause A: I understand that other individuals may be exposed to the recording(s) and be asked to provide ratings/judgments. The outcome of such ratings/judgments will not be conveyed to me. My name or other personal information will never be associated with the recording(s).

Tick or initial the box to indicate your consent to Clause A ☐

Clause B: I understand that the recording(s) may also be used for teaching/research purposes and may be presented to students/researchers in an educational/research context. My name or other personal information will never be associated with the recording(s).

Tick or initial the box to indicate your consent to Clause B ☐

Clause C: I understand that the recording(s) may be published in an appropriate journal/textbook or on an appropriate Northumbria University webpage. My name or other personal information will never be associated with the recording(s). I understand that I have the right to withdraw consent at any time prior to publication, but that once the recording(s) are in the public domain there may be no opportunity for the effective withdrawal of consent.

Tick or initial the box to indicate your consent to Clause C ☐

Signature of participant.. Date……………………

Signature of researcher.. Date……………………

PARTICIPANT DEBRIEF FORM

PARTICIPANT ID: _____
PROJECT TITLE: *Developing an appropriate online sexual health intervention program for teenagers*
RESEARCHER: Kerry Rulton
EMAIL: Kerry.rulton@northumbria.ac.uk

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1. What was the purpose of the project?

The purpose of this project was to explore professionals' knowledge and perceptions of teenage sexual health issues and predictors of risky sexual behaviours. Also, the study aimed to explore what current intervention programs are available for teenagers and what sexual health issues they deal with. The findings from this study will be used to develop a questionnaire and used in other future studies to investigate the predictors of risky sexual behaviours for female teenagers, aged 13 to 16 years.

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2. How will I find out about the results?

Approximately two months after taking part, a general summary of the results will be emailed to you, if you provided your email address.

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3. What will happen to the information I have provided?

You were given a code that will be used to identify any data that you have provided. Your name or other personal details will not be associated with your data, for example the consent form that you sign will be kept separate from your data.

Only the research team will have access to any identifiable information (for example, the consent form). Paper records will be stored in a locked filing cabinet and electronic information will be stored on a password-protected computer. This will be kept separate from any data and will be treated in accordance with the Data Protection Act.

All information and data gathered during this research will be stored in line with the Data Protection Act and will be destroyed after 6 years following the conclusion of the study. During that time the data may be used by members of the research team only for the purposes appropriate to the research question, but at no point will your personal information or data be revealed. All data, results and IPR (Intellectual Property Rights) arising from this work will be owned by Northumbria University.

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3. How will the results be disseminated?

Data may be published in a scientific journal or may be presented at a conference, but your personal information will not be identifiable.

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5. Have I been deceived in any way during the project?

No, you have not been deceived in any way during the project.

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6. If I change my mind and wish to withdraw the information I have provided, how do I do this?

If, for any reason, you wish to withdraw your data please contact the researcher within a month of your participation. After this date, it may not be possible to withdraw your individual data as the results may have been analysed and/or written up for publication. As all data are anonymised, your individual data will not be identifiable in any way.

If you have any concerns or worries concerning the way in which this research has been conducted, or if you have requested, but did not receive feedback from the principal investigator concerning the general outcomes of the study within 2 few weeks after the study has concluded, then please contact Dr Nick Neave via email at nick.neave@northumbria.ac.uk.

10.2 Study 1 Interview schedule

Interview topic guide

A topic guide will be used to guide the semi-structured discussion.

Topics will include:

- Discussion of what capacity they work with adolescents and sexual health issues.

Sexual health nurses
- What are the main sexual health issues for female teenagers?
- Are these the same for female/males?
- Any sexual health sessions available?
- Are these sessions used?
- What do these sessions/talks concentrate on?
- Any particular problems (unplanned pregnancies, STI's etc)
- Discussion of any factors that are associated with unplanned pregnancies/STIs
- Any high risk populations?

Family planning specialists
- Discussion of main sexual health issues for teenagers
- What are the main factors associated with unplanned teenage pregnancies?
- Any high risk populations?
- Any sessions/talks available?
- What do sessions/talks concentrate on?
- Are they well attended?
- Discussion of factors associated with unplanned pregnancies/STIs
  Pregnancies:
- Usually planned?
- Mutual partner decisions?
- Support during/after pregnancy for teenagers

Rank order task

- Could you talk me through your choices
- Most important factor(s) – why have you chosen that (those)
- Least important factor(s) – why have you chosen that (those)

10.3 Study 1 example interview and rank order task

Participant 4

R: Ok, so could you just talk me through what you do with teenagers and sexual health issues?

P: Well, teenagers come to here initially because they are pregnant, so that's how we get them through our doors, and then part of the consultation, we would discuss contraception, obviously teenagers it depends on how old they are because we have got child protection and stuff like that, safeguarding issues to deal with, and we have lots of different paper work to fill in and stuff, depending on how old they are. And then again it depends on how old they are to how much, we, everyone gets counselled about contraception no matter you are a teenager or whether you are 40 it doesn't matter, but I think it depends on how old they are as to how you go about it, so contraception is one of the things we do counsel quite a lot, and with teenagers you obviously need to be telling them that alright we are going to put you on the pill but it is not going to protect you against sexually transmitted infections, because they are young and they need a bit more knowledge.

R: Do you see them after they have decided what they are doing about their pregnancy? or do you just see them at this first instance?

P: Well, they would only really come to us because they are pregnant.

R: Right, yeah.

P: But because they are here, part of our role is to council them with contraception and any other sexual health issues. So we also screen them, Chlamydia, is something that we do on, all the time, it depends on funding, different contracts, we get different funding for different contracts. It's all a bit complicated the way it works with the NHS. But everyone gets offered Chlamydia screening, everyone that comes through the door. Most people take it up and some I think we have funding for gonnorea, but not all STI's. It's difficult, In Leeds they have the funding for HIV as well, but we don't here, so like I say everyone gets screened for Chlamydia, but not for the others, and then we would, after they have had the termination there is a post op check, but most of them, as long as there are no problems, we can just speak to them over the phone. But if there is a problem, we bring them back and we see them in the clinic.

R: Ok, and how do you think teenagers are with coming into a place like this, are they quite comfortable or?

P: I don't think they are at first, but usually once they get through our door...

R: Yeah, it is quite a nice environment.

P: to be honest, it's part of job satisfaction I think, this is a different job to do anyway.

R: Yeah, it must be.

P: Teenagers, particularly, feel really vulnerable coming in here. Because they don't know whether they are going to be judged and things. But they usually leave feeling much better.

R: Yeah, that's good, so they get quite a lot of support here.

P: Definitely, absolutely. Without a shadow.

R: And do you think there are any high risk populations for unplanned pregnancies?

P: It's funny, and I think there is a lot of stigma, and I think people do think we get a lot of young people, through here, using this as a contraception but we actually don't, it's such a varied, massive vary and again I wouldn't even say, it's a geographical thing either, I wouldn't even say it's an area thing. I mean we do get teenagers, but I think they mainly go to the NHS services rather than private.

R: Ok, so you mentioned when people come here they are offered the STI screening and is that something that is quite well used?
P: Yes, yes most people take it up. Most people do, we get the odd one that declines, but we get the odd one that declines.
R: So you think there are any factors that lead to unplanned pregnancies or any sort of risk taking behaviours?

P: Yeah, I think, especially in very young teenagers they think it's just not going to happen to them, they don't have contraception on board it's amazing, how many youngsters we talk to and they weren't using any contraception.

R: Right, so do they know there is contraception or?

P: No, I think they do know about it.

R: Ok, but they choose not to use it?
p: I think, it's always going to be teenagers are very wary because the parents don't know that they are having sex, so where are they going to get the contraception from? I do know but only because I have a teenage daughter that I know that, some teenagers do go to the school nurse because they know that it is confident, there's no breach of confidentiality, I think they worry about going to the GP.

R: So would a GP inform the parents?

P: Well they shouldn't, but I don't think youngsters realise that. And I think they are probably embarrassed going to the GP anyway to ask for it. So I think that is a massive factor.

R: That they can't actually get the contraception?

P: Yeah.

R: So do you think teenage pregnancies are always unplanned or are they sometimes planned? Or do you not really see that side from the perspective you work at?

P: Well I have done both sides, where I have taken people up to term and delivered their babies with me being a midwive, so we did get, some teenagers coming through who, but I wouldn't say particularly that they are planned, most, I mean I couldn't give you any statistics without looking but I think most are unplanned.

R: Most are unplanned. OK, and do you think the decision to go through with the pregnancy or not is their own decision or it is a mutual partner decision, or a family decision?

P: Yeah, A lot of the teenagers that come here come without their parents knowledge, they don't have to have their parents but they do have to have an adult with them, when they come for treatment but that adult doesn't have to be a parent. And we don't have to inform the parents.

R: Ok, so who do they usually come with?

P: It depends on how old they are, there are different categories that we have that comes in with safeguarding issues, so there is certain criteria's that we do have to, so somebody who is 12, unfortunately we would have to, that confidentiality would have to go out the window.

R: So is that anyone under 13?

P: Yeah, yeah. there's different categories, under 13 we are not allowed to have any confidentiality. So someone who is 14, 15 we wouldn't have to tell their parents but there does have to be an adult with them. So in answering your question. I think, a lot of the decision is themselves, whether they would choose it, because they don't want their parents to know, so it is the parents aren't having an input in what they are going to do with the end result, because the parents don't even know, most of the time.

R: Yeah, that makes sense. Do you think there is a lot of support for teenagers, when they do become pregnant, sort of at all stages of their pregnancies?

P: Yeah, yeah I do. I think there is, I mean certainly in this area, but also as my role as a midwife in the NHS there is, teenage pregnancy midwives, and now there is a new thing called family nurse which is brilliant, because they only work with teenage pregnancy, so yeah I think there is a lot of support.

R: And do you think they go out and find that support?

P: That's another thing isn't it, teenagers probably don't, I think it needs to be pointed out to them, written down for them they need to know where to get it don't they.

R: What about on the internet? do you think they search for it?

P: Yeah, possibly, a bit more confidential.

R: Ok that's all my questions on this *(Explaining task and setting it up)*

P: Some of these are very difficult, I don't think they are black and white, are they really? I suppose I will put it in the middle, if it is not quite black and white, do you know what I mean?

R: Yeah, yeah.
P: So least likely,

R: lone parents? no?

P: I don't think so. Yeah, no, I suppose what you are going to get, is some stuff that is just down to people own, like my, I don't think that it is but there will be people who think it does, won't there?

R: Yeah, yeah. it is interesting hearing different opinions.

P: Yeah I bet, and I suppose our views do come from experience as well.

R: Yeah.

P: Age of partner?

R: So if they have an older partner and they are younger, how does that affect it?

P: Possibly. Social norms, yeah.

R: Parental attitudes?

P: I don't think it will make a lot of difference, because I think they will do what they want to do anyway, so I will put that there. Role models? Yeah middle of the road. Parents in general? yeah again, in my opinion, I think kids a lot of the time, whatever their background is, they will just do whatever they want to do.

R: Yeah.

P: But you are going to get the ones like, some kids are searching for love, because they have never had any love,

R: Yeah.

P: So that is when it does come, younger parents?

R: Does that affect it or?

P: Middle of the road, I think it could and it couldn't. believing peers have had sex? definitely!

R: Yeah, so you think that is quite a big factor?

P: Yeah, yeah definitely. peer pressure, definitely, very high for all of the peer ones. Environment with little chance of social and economic advancement, age of first sexual intercourse, I think these are quite high, Yeah definitely. Age of puberty, yes definitely, that has a big impact actually.

R: Yeah ok.

P: Religion, no, I don't think so. Love of babies, I'm going to put that middles because I think there is some people, and I don't know if you are going to have it here, but there are some poeple who do it to keep their partner, and they think this is the best way to keep their partner

R: Right, no I don't have that one actually. If you think that is important though you can just write it on.

P: Where should I write it?

R: Wherever you think it should go on the list.

P: Keeping partner happy, also keeping hold of partner, does that make sense?

R: Is that just for teenagers?

P: Yeah, yeah the younger ones, lots of girls trap their boyfriends with pregnancy, it's amazing, how many girls we see here who do it. I lecture my son all the time about that, girls will tell boys they are using contraception and actually they are not, we have to delve deep to get them to admit it but they do admit it in the end. No direction? possibly, yeah I think that probably does come into it.

R: Fatalism?

P: No, Yeah, I'm not sure, maybe. Low aspirations? Yeah, I think all of these ones could. Self?

R: So just the self in general.
P: Yeah, I think it heavily relied on personality and self. Social support?
R: From family, friends...
P: Yeah, I think that is important. Depression?
R: Do you think that is important?
P: Yeah, and I think just general mental health. Intention or motivation to have sex yeah, beliefs and attitudes, yeah, these are all important. Self determination, low school aspirations and performance, yeah. I think these are quite important. Body image?
R: Do you think that has an impact?
P: Yeah, maybe, I think I will put it in the middle. situational factors?
R: Yeah so alcohol and drugs? things like that.
P: Probably. It could be, I'm not sure if its high up. I think the problem is that sex is seen as normal now, I mean when I was at school we might have a kiss, but we wouldn't dream of having sex, whereas at the minute it's the norm. It is normal for 14 year olds to have sex, it actually is, they come here and say it and it is awful to

think about it, but it happens now, and it's changed. When I was at school it was seen as bad to have a cigarette at dinner time but now they all know about drugs, and just everything is changing. It is yeah. Alcohol, definitely, that's a big factor, drug use, that is a factor, but I don't think the kids are in to drugs as much as they are alcohol from a young age, I think very young teenagers are more into alcohol. Drugs for older teenagers, but I think 13 to 16 year olds, it's more the alcohol.

R: Even at age 13?

P: Yeah, yeah we see it all the time, they say they were drunk when they got pregnant. They sort of use it as an excuse.

R: Sexual abuse?

P: Yeah, I think that would come into it, it definitely can do. I am going to put it in the middle. External factors?

R: Anything not to do with themselves.

P: Yeah. contraception awareness? I don't think it is an awareness, I think it's not being able to get hold of it easily when they are very young.

R: Do you want to write that on there.

P: Yeah, easy access, of contraception or teenagers, when parents are unaware, yeah does that make sense?

R: Yeah that makes sense.

P: So I think we will put that one, low awareness, because I think most teenagers know all the different contraception's, it's just where they can get it from. They could probably teach me a thing or two.

R:Yeah, so fatalism?

P: Yeah, I think it's that attitude that it's not going to happen to me, it is going to happen to someone else. yeah, and I think that is very high up. Lack of awareness, I think it's not lack of awareness because they know exactly.

R: What is going to happen?

P: Yeah, I think they just bury their heads, they know exactly how things happen, they know sperm comes out of a penis, they know, it's not that they don't know that, unless we are talking very, very young.

R: Yeah, yeah. so if we think like age 13, 14.

P: I think it's, I think it is being ignorant, rather than lack of awareness. I think its ignorance.

R: Yeah, so they know about it, but they don't do it. Do you want to write that on as well, where you think it should go?

P: Yeah, can I just out ignorance, will you know what I mean?

R: I will, I've got the recording as well.

P: It sounds a bit, I don't want it to sound like I am being rude, it sounds a bit awful doesn't it? I will put that in the middle.

R: Yeah, yeah that's ok, I know what you mean.

P: Knowledge?

R: Yeah, again I know we discussed that.

P: I will put that there.

R: That's excellent thank you. Could you just talk me through, briefly, what we put where, and why you think this.

P: So all of these, I have out are big important factors, leading to teenage pregnancy and sexual health issues, anything to do with sexual health issues really. I think these are probably, it's not just black and white, yes they could have an effect, but they don't have to. These I've but low because I don't feel they massively impact.

R: OK, so they might do but not a massive factor and there's nothing that you think shouldn't be on there at all?

P: No, no.

R: And is there anything else, you wrote those ones on, but are there any others that should be added that I haven't included?

P: No, I can't think of anything else, I think I have mentioned already what I thought was, I think they are quite important ones especially about trying to please their partner and the awareness, it's that they can't get contraception, because A they are embarrassed, and B they don't want their parents to know.

R: Yeah, yeah.

P: And I think that's important, the biggest thing we have here with them is that they are absolutely terrified that their parents are going to find out. That is the main thing they want to know, whether or not we will tell their parents.

R: Yeah, yeah. So do you talk to them about the confidentiality, and talking to their parents etc?

P: Yes, yes.

R: And does that make them feel more comfortable?

P: Yes, yeah. definitely.

R: And if a teenager did want to get contraception, how could they get that? can they get it from their schools?

P: I mean there is, there is places in town, there is, I can't think what it is called now.

R: Theres the c-card scheme.

P: Yeah, and there is a place, the teenagers all know about it, I know they do cause my daughter and all her friends know about it, it is specifically targeted for teenagers.

R: and that's in Middlesbrough?

P: Yeah, there probably is one here as well. I can't think what it is called. It is particularly, or god what is it called. It is particularly an organisation, teenagers can go there and get contraception. The girls might know, but I cannot store information, and I can't think what it is called.

R: And is that like a drop in?

P: Yes, yeah particularly for teenagers though.

R: Right, I haven't heard of that

P: so there is somewhere they can go, but even there, I still think teenagers just don't want to go and talk to an adult and tell them that they are having sex, regardless of who it is, when they get desperate, and they really want, or they know they are going to be having sex, then they start thinking or I am going to have to do something but I think a lot of the time they just bury their head in the ground because they don't want to actually have to actually go and have that conversation because it's embarrassing, and I think that is a massive, massive thing.

R: yeah, so the fact that they don't feel comfortable talking about it?

P: Yeah, yeah.

R: Do you think they talk about it to their peers though?

P: Yes, yes definitely.

R: But then maybe not get the right information?

P: Yes, yes definitely. That is definitely true, my daughter said to me, one of the girls at school was on about having the injection and she said but she has been told that it will stop her having children in the future if she has that. And this just goes to show you what they talk to each other, and how things are worded.

R: Yeah what gets passed around.

P: And I said no it's not true, but where they have got that from is the injection is the only contraception which actually delays your fertility, so it doesn't mean that it doesn't come back it just means that it delays it for a bit.

So if you want to have a family, it may take you 6 months or a year for your fertility to come back because it is still in their system, So you can see where the kids have got that from can't you, and they think or god I'm not having the injection because that means I can't have a child in the future when I want one.

R: Yeah, yeah, so wrong information from peers.

P: Yeah, and I do know that happens because my daughter has actually asked me.

R: Ok, and a few things other people have mentioned it about consent. So you think that comes into it?

P: Consent for.

R: for having sex, knowing what consent means?

P: I think a girl, I don't know whether they know the actual ins and outs of the law, whereby you know, if a boy is 16 and a girl is 14, even though she has given consent, he can still be, I don't know whether they know the ins and outs of the law but I think they understand if they have been raped or not, or if they have consented to having sex.

R: Ok, great, I think that's everything, is there anything else you wanted to say about this generally or anything else.

P: No I think that's all great, it was really interesting, I can't wait to see what your results are like.

① Most

Society - attitudes towards
Sex & relationship & sexuality
& Sexual Identity

② Important

How & when it taught
who teaches it - content
Should be on national Curriculum
Just as important as Maths &
English
LGBT should be included also information
on Abortion.

③ PORN ACCESS TO

6 Peer

7

8

Least   Important

Cards visible (approximate labels):

External factors
Time spent at home alone
Social norms
Parental influences
Parental attitudes
Peer pressure
Conforming to norms
Believing have had
Peers approval of sex
Knowl...
Sexual abuse
Alcohol
Coercion from sexual partners
Dru...
Poor self-regulating
Beliefs/Attitudes
Social support
Self determination
...talism
Self esteem
Age of partner
Early physical intimacy experiences
Age of first sexual intercourse
Low awareness of contraception
Low aspirations
Personality
Love of babies
Environment with little chance of social and economic advancement
Poverty
Lower socio-economic status
Lone parents
Younger parents
Education and social class of parent
Role models
Spontaneous sex
Age...

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10.4 Study 2 example of parental information, consent and debrief forms

Letter to parents and guardians of teenagers

Dear Parents / Guardians,

With support of *(Insert school name),* we are carrying out a research project entitled "Developing an appropriate online sexual health intervention program for teenagers *".* The overall aims of this research are to investigate teenagers' knowledge and understanding of sexual health and to inform the design of an online sexual health intervention program, which will aim to reduce the amount of teenage pregnancies and sexually transmitted infections in the teenage population.

This current study, aims to explore teenagers' beliefs, intentions and knowledge of sexual health and sexual health intervention programs. Your child will be asked to complete a short questionnaire, about their sexual experiences, which should take approximately 10 minutes, and will take place at your child school. Your child will then be asked to keep a diary for four weeks, where they will write any thoughts, beliefs and knowledge they have each day, about anything to do with a sexual nature.

I have enclosed an information sheet relating to the study. There is an opt out consent form enclosed; this is to complete if you <u>do not</u> want your child to take part in the research. Your child has also been provided with information about the study, and asked to sign consent forms if they would like to take part.

If you would like further information or have any questions, please contact the research team on the contact details below.

Yours sincerely,

Kerry Rulton

T:+44 (0)191 227 3716
E: Kerry.rulton@northumbria.ac.uk
PaCT Lab (NB153)
Northumberland Building
Faculty of Health and Life Sciences
Northumbria University
Newcastle upon Tyne
NE1 8ST

PARENT AND GUARDIAN INFORMATION SHEET

Researcher: Kerry Rulton

Email: Kerry.rulton@northumbria.ac.uk

Supervisor: Dr Linda Little

Project title: Developing an appropriate online sexual health intervention program for teenagers.

The purpose of this information sheet is to provide you with sufficient information so that you can then give your informed consent. It is thus very important that you read this document carefully, and raise any issues that you do not understand with the investigator.

1. What is the purpose of the project? The purpose of this project is to explore the knowledge, perceptions and beliefs of female teenagers on sexual health issues and sexual health intervention programs. In order to better understand the predictors of risky sexual behaviours in female teenagers, aged 13 to 16.

2. Why has my child been selected to take part?

Your child's school was asked to take part and your child is female aged between 13 and 16 years and has expressed an interest in taking part in the study.

3. What will my child have to do?

Your child will be asked to give their informed consent if they are happy to take part. They will then be asked to fill in a short demographic form (For example; their age and gender) and a short sexual health experiences questionnaire; this will be completed at your child's school. Your child will then be asked to keep a paper diary for four weeks. They will be asked to complete this diary once a day, and note down any thoughts, feelings and experiences they have had of anything to do with a sexual nature. This can include anything to do with sexual health, relationships, contraception or sexual health intervention programs. They will be asked to write as little or as much as they would like in the diary.

4. Will participation involve any physical discomfort?

Your child's participation does not involve any physical discomfort.

5. Will participation involve any psychological discomfort or embarrassment?

Participation should not involve any psychological discomfort. As the topic is of sensitive nature, your child could find completing the questionnaire or diary embarrassing. They will be reminded that the questionnaire and diary are both anonymous, and the answers they provide will be kept confidential. They will also be reminded that they can stop filling in the questionnaire and diary at anytime.

6. How will confidentiality be assured and who will have access to the information that my child provides?

All teenagers will be given a code that will always be used to identify any data that is provided. Names and other personal details will not be connected to their data, for example, the consent form will be kept separate from their data. Only the research team will have access to any identifiable information (for example, the consent form). The research team comprises Kerry Rulton, Dr Linda Little and Dr Michael Smith. Paper records will be stored in a locked filing cabinet and electronic information will be stored on a password-protected computer. This will be kept separate from any data and will be treated in accordance with the Data Protection Act.

7. How will information be stored / used in the future?

All information and data gathered during this research will be stored in line with the Data Protection Act and will be destroyed after 6 years following the conclusion of the study. During that time the data may be used by members of the research team only for the purposes appropriate to the research question, but at no point will teenagers' personal information or data be revealed. Insurance companies and employers will not be given any individual's information, samples, or test results, and nor will we allow access to the police, security services, social services, relatives or lawyers, unless forced to do so by the courts. All data, results and IPR (Intellectual Property Rights) arising from this work will be owned by Northumbria University.

8. Will participation involve receive any financial rewards / travel expenses for taking part?

No they will not receive any financial rewards or travel expenses.

9. How can my child withdraw from the project?

You are reminded that your child is free to withdraw from the study, without prejudice nor justification. During the study itself, if your child decides that they do not wish to take part then they should inform one of the research team as soon as possible and they will facilitate your child's withdrawal from the study. After your child has completed the research, you or your child can still withdraw their data by contacting one of the research team (contact details are provided in section 13), and giving them your child's participant number. If, for any reason, you or your child, wish to withdraw their data, please contact the researcher within a month of participation. After this date, it may not be possible to withdraw individual data as the results may have been analysed and/or written up for publication. As all data are anonymised, individual data will not be identifiable in any way.

13. If I require further information who should I contact and how?

If you require further information, ask further questions, to register a complaint or to withdraw your data, please contact: Kerry Rulton Kerry.rulton@northumbria.ac.uk or their principal supervisor: Dr Linda Little l.little@northumbria.ac.uk.

If you have any concerns or worries concerning the way in which this research has been conducted, or if you have requested, but did not receive feedback from the principal investigator concerning the general outcomes of the study within 2 few weeks after the study has concluded, then please contact Dr Nick Neave via email at nick.neave@northumbria.ac.uk.

OPT OUT FORM

Researcher: Kerry Rulton

Email: Kerry.rulton@northumbria.ac.uk

Project title: Developing an appropriate online sexual health intervention program for teenagers.

Participant Number:

I **do not** consent for (please insert the child's name)………………………………….to take part in the research. Please sign and return this letter to your child's school by ……………….

Signature of parent/guardian: —————————— Date: ——————————

Name: _____

Signature of researcher: —————————— Date: ——————————

Name: ———————————————————————

Debrief for parents and guardians

Researcher: Kerry Rulton
Email: Kerry.rulton@northumbria.ac.uk
Supervisor: Dr Linda Little
Project title: Developing an appropriate online sexual health intervention program for teenagers.

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1. What was the purpose of the project?

The purpose of this project was to explore teenagers' knowledge, beliefs and experiences of sexual health and sexual health intervention programs. In order to give an overview of the types of sexual health issues teenagers think about and believe are important. It also aimed to get an overview of any sexual health information or intervention programs that teenagers are aware of or use.

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2. What will happen to the information my child has provided?

Your child was given a code that will be used to identify any data that they have provided. Your child's name or other personal details will not be associated with your child's data, for example the consent form that you sign will be kept separate from your child's data. Only the research team will have access to any identifiable information (for example, the consent form). The research team comprises Kerry Rulton, Dr Linda and Dr Michael Smith. Paper records will be stored in a locked filing cabinet and electronic information will be stored on a password-protected computer. This will be kept separate from any data and will be treated in accordance with the Data Protection Act.All information and data gathered during this research will be stored in line with the Data Protection Act and will be destroyed after 6 years following the conclusion of the study. During that time the data may be used by members of the research team only for the purposes appropriate to the research question, but at no point will your personal information or data be revealed.All data, results and IPR (Intellectual Property Rights) arising from this work will be owned by Northumbria University.

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3. How will the results be disseminated?

Data may be published in a scientific journal and/or may be presented at a conference, but your child's personal information will not be identifiable.

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4. If I change my mind and wish to withdraw the information my child had provided, how do I do this?

You or your child can still withdraw their data by contacting one of the research team Kerry Rulton (Kerry.rulton@northumbria.ac.uk) and providing your child's participant number. If, for any reason, you or your child wishes to withdraw your child's data please contact the researcher within a month of your child's participation. After this date, it may not be possible to withdraw your child's individual data as the results may have been analysed and or written up for publication. As all data are anonymised, your child's individual data will not be identifiable in any way.

If you have any concerns or worries concerning the way in which this research has been conducted, or if you have requested, but did not receive feedback from the principal investigator concerning the general outcomes of the study within 2 few weeks after the study has concluded, then please contact Dr Nick Neave via email at nick.neave@northumbria.ac.uk.

10.5 Study 2 example of teenager information, consent and debrief forms

Teenager information sheet

You are invited to take part in a sexual health research study. This will involve you completing a short questionnaire and then keeping a diary, about your thoughts, beliefs and knowledge of sexual health and sexual health intervention programs. The diary should be completed **once a day for four weeks**. Don't worry if you cannot complete the diary every day, this is not a problem.

The answers you provide will be **completely anonymous**, and only the research team will have access to them. **Your name will not be on the diary** and you will be provided with a participant number, so you cannot be identified in anyway.

If you think you will find the questionnaire and diary embarrassing, you do not have to take part if you don't want to. If you start filling in the questionnaire and diary and then feel uncomfortable about answering the questions and want to drop out, that is no problem. Just let the researcher know.

So,

If all of this sounds OK to you and you want to take part then that's great. If you can't take part or you don't want to that is fine too.

Thank you, for reading this!

Kerry Rulton

Kerry.rulton@northumbria.ac.uk

PaCT Lab (NB153)
Northumberland Building
Faculty of Health and Life Sciences
Northumbria University
Newcastle upon Tyne
NE1 8ST

If you have any concerns or worries concerning the way in which this research has been conducted, or if you have requested, but did not receive feedback from the principal investigator concerning the general outcomes of the study within 2 few weeks after the study has concluded, then please contact Dr Nick Neave via email at nick.neave@northumbria.ac.uk.

TEENAGER CONSENT FORM

Researcher: Kerry McKellar

Email: Kerry.mckellar@northumbria.ac.uk

Supervisor: Dr Liz Sillence

please tick or initial
where applicable

I have carefully read and understood the Participant Information Sheet. ☐

I have had an opportunity to ask questions and discuss this study and I have received satisfactory answers. ☐

I understand I am free to withdraw from the study at any time, without having to give a reason for withdrawing, and without prejudice. ☐

I agree to take part in this study. ☐

Signature of participant.. Date...…………………..
(NAME IN BLOCK LETTERS)..…………………….

Signature of researcher.. Date...…………………..

(NAME IN BLOCK LETTERS)..…………………….

northumbria
UNIVERSITY NEWCASTLE
Faculty of Health & Life Sciences

DEBREIF FOR TEENAGERS

Thank you for taking part in this research and completing the questionnaire and four week sexual health diary. The purpose of this research is to gain knowledge of teenagers' beliefs, intentions and knowledge of sexual health and sexual health intervention programs.

Your school will be provided with a general summary of the results.

The information you have provided will only be available to the research team (Kerry Rulton, Dr Linda Little and Dr Michael Smith**). Your name or other personal details will not** be linked with your data, for example, the consent form that you signed will be kept separate from your data.

If at any point you decide you want to drop out of the research, that is no problem, please let me know.

If you have any sexual health questions or if you have been affected, or concerned by any of the questions in this study please contact
(Insert school sexual health nurse contact details)

Thank you, for reading this!

Kerry Rulton
Kerry.rulton@northumbria.ac.uk

PaCT Lab (NB153)
Northumberland Building
Faculty of Health and Life Sciences
Northumbria University
Newcastle upon Tyne
NE1 8ST

If you have any concerns or worries concerning the way in which this research has been conducted, or if you have requested, but did not receive feedback from the principal investigator concerning the general outcomes of the study within 2 few weeks after the study has concluded, then please contact Dr Nick Neave via email at nick.neave@northumbria.ac.uk.

10.6 Study 2 example diary

Participant number: ___68___
Date: _____

Any thoughts and feelings of anything to do with sexual health, you have had today. This could be anything to do with sexual health or sexual health intervention programs.

> If you have missed your period does it mean that your pregnant, even if your a virgin?

Any information you have had about sexual health or sexual health intervention programs. This could be anything to do with someone talking about sexual health or sexual health intervention programs. Or any information you have heard or seen about sexual health or sexual health intervention programs.

> I have never seen anything about sexual health.

Participant number: TKA66
Date: 17/4/15

Any thoughts and feelings of anything to do with sexual health, you have had today. This could be anything to do with sexual health or sexual health intervention programs.

one of my friends were wondering can you get pregnant while on youre period

Any information you have had about sexual health or sexual health intervention programs. This could be anything to do with someone talking about sexual health or sexual health intervention programs. Or any information you have heard or seen about sexual health or sexual health intervention programs.

I saw a condom poster in the chemist also if you give someone oral while you have a coldspot can they get an sti from it?

10.7 Study 3 Final questionnaire

Study 3

Introduction and welcome - Demographics

 Firstly, some questions about you.
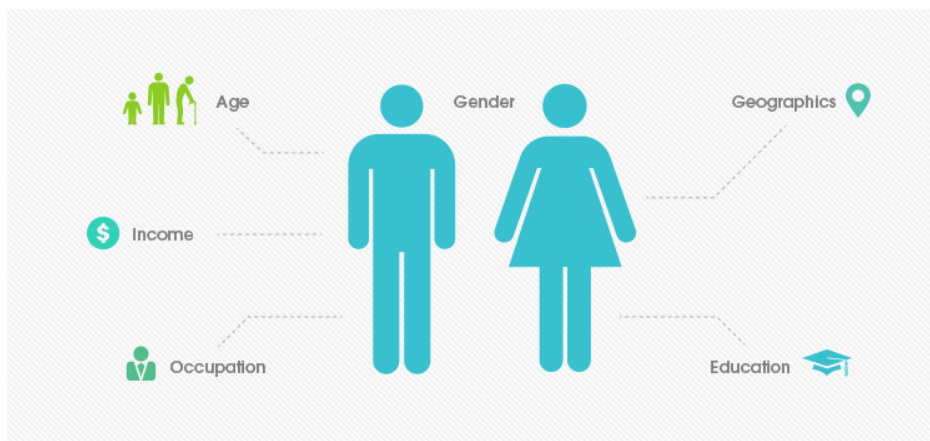
Q1 **Age**

13 14 15 16

Q2 **Do you receive free or reduced price school meals?**

Yes No

Q3 **Who do you live with?** *Please select your answer from the drop down list.*

Live with both parents

Live with mum

Live with dad

Living with another relative

Living in care

Living independently

Other

Q4 **My parents/carers are...** *Please select answer from the drop down list.*

White British

White Irish

Other White background

Black or Black British – Caribbean

Black or Black British – African

Other Black background

Asian or Asian British– Indian

Asian or Asian British– Pakistani

Asian or Asian British – Bangladeshi

Other Asian background

Mixed - White and Black African

Mixed - White and Black Caribbean

Other Mixed background

Other Ethnic background

Chinese

Q5 **My parents have gone too...** *Please select answer from the drop down list.*

Primary School

Secondary School

Sixth form/College

University (Undergraduate)

University (Postgraduate)

Don't know

Q6 **My mums job is...**

Q7 **My dads job is...**

Q8 **My carers job is...** *(Please leave blank if you have entered your mum or dads job)*

End of Block

Self-esteem

Select the answer that shows how much you agree or disagree with each statement. Please be as honest as you can, there are no right or wrong answers.

Q1 **On the whole, I am happy with myself.**

Strongly Disagree Disagree   Agree   Strongly Agree

Q2 **At times, I think I am no good at all.**

Strongly Disagree Disagree   Agree   Strongly Agree

Q3 **I feel that I have a number of good qualities.**

Strongly Disagree Disagree   Agree   Strongly Agree

Q4 **I am able to do things as well as most other people.**

Strongly Disagree Disagree   Agree   Strongly Agree

Q5 **I feel I do not have much to be proud of.**

Strongly Disagree Disagree   Agree   Strongly Agree

Q6 **I certainly feel useless at times.**

Strongly Disagree Disagree   Agree   Strongly Agree

Q7 **I feel that I'm a person of worth, at least equal with others.**

Strongly Disagree Disagree   Agree   Strongly Agree

Q8 **I wish I could have more respect for myself.**

Strongly Disagree Disagree   Agree   Strongly Agree

Q9**All in all, I tend to feel that I am a failure.**

Strongly Disagree Disagree   Agree   Strongly Agree

Q10 **I take a positive attitude toward myself.**

Strongly Disagree Disagree   Agree   Strongly Agree

Did you know… Cats make about 100 different sounds; dogs make only about 10

Self-efficacy

Select the answer that best shows how well you can do each of the following things. Please be as honest as you can, there are no right or wrong answers.

Q1 **How well can you tell a friend that you don't feel well?**

Very well　　　Well　　Pretty well　　　A little bit　　　Not at all

Q2 **How well do you succeed at cheering yourself up when an unpleasant event has happened?**

Very well　　　　Well　　Pretty well　　　A little bit　　　Not at all

Q3 **How well do you succeed in becoming calm again when you are very scared?**

Very well　　　　Well　　Pretty well　　　A little bit　　　Not at all

Q4 **How well can you prevent becoming nervous?**

Very well　　　　Well　　Pretty well　　　A little bit　　　Not at all

Q5 **How well can you control your feelings?**

Very well　　　　Well　　Pretty well　　　A little bit　　　Not at all

Q6 **How well can you give yourself a pep-talk when you feel low?**

Very well　　　　Well　　Pretty well　　　A little bit　　　Not at all

Q7 **How well do you succeed in not thinking unpleasant thoughts?**

Very well　　　　Well　　Pretty well　　　A little bit　　　Not at all

Q8 **How well do you succeed in not worrying about things that might happen?**

Very well   Well   Pretty well   A little bit   Not at all

Did you know.. Adult male ducks are called drakes.

End of Block

Sensation seeking

Please select the answer to which you agree or disagree with each item. There are no wrong or right answers, please be honest with your answers

Q1 **I would like to explore strange places**

Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree

Q2 **I would like to take a trip with no pre-planned routes or timetables**

Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree

Q3 **I get restless when I spend too much time at home**

Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree

Q4 **I prefer friends who are exciting and unpredictable**

Strongly agree Somewhat agree Neither agree nor disagree Somewhat disagree Strongly disagree

Q5 **I like to do frightening things**

Strongly agree   Somewhat agree   Neither agree nor disagree   Somewhat disagree   Strongly disagree

Q6 **I would like to try bungee jumping**

Strongly agree   Somewhat agree   Neither agree nor disagree   Somewhat disagree   Strongly disagree

Q7 **I like wild parties**

Strongly agree   Somewhat agree   Neither agree nor disagree   Somewhat disagree   Strongly disagree

Q8 **I would love to have new and exciting experiences, even if they are illegal**

Strongly agree   Somewhat agree   Neither agree nor disagree   Somewhat disagree   Strongly disagree

Did you know ...   Dogs have 42 teeth and cats have 30

End of Block

Delayed gratification

Below, you are presented with two choices, you can choose to receive ONE of the choices. Please read each choice carefully and drag your answer over to the box. There are no right or wrong answers, so please be honest in your answers.

Q1 **Please drag your response into the box: You can choose to have £10.00 today OR £15.00 in 3 weeks time**

Choice

_____ Today: £10.00

_____ 3 weeks later: £15.00

Q2 **Please drag your response into the box You can choose to have 1 magazine today OR 5 magazines in 3 weeks time**

Choice

_____ Today: A magazine

_____ 3 weeks later: 5 magazines

Q3 **Please drag your response into the box You can choose to have 1 free music download today OR 5 free music downloads in 3 weeks time**

Choice

_____ Today: 1 free music download

_____ 3 weeks later: 5 free music downloads

Q4 **Please drag your response into the box You can choose to have 1 chocolate bar today OR 1 box of chocolate bars in 3 weeks time**

Choice

_____ Today: 1 chocolate bar

_____ 3 weeks later: 1 box of chocolate bars

Q5 **Please drag your response into the box You can choose to have 1 new t-shirt today OR 5 new t-shirts in 3 weeks time**

Choice

_____ Today: 1 new t-shirt

_____ 3 weeks later: 5 new t-shirts

Did you know... On average, dogs have better eyesight than humans, but not as colourful

End of Block

Peer pressure

Below are a list of questions. There are no right or wrong answers, so please be honest in your answers.

Questions:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
My friends could push me into doing just about anything.	○	○	○	○	○
I give into peer pressure easily.	○	○	○	○	○
When at school, if a group of people asked me to do something, it would be hard to say no	○	○	○	○	○
At times, I've broken rules because others have made me	○	○	○	○	○
At times, I've done dangerous or foolish things because others dared me to.	○	○	○	○	○
I often feel pressured to do things I wouldn't normally do.	○	○	○	○	○
If my friends are drinking, it would be hard for me to resist having a drink.	○	○	○	○	○
I've skipped classes, when others have made me.	○	○	○	○	○
I've felt pressured to have sex, because a lot of people my own age have already had sex.	○	○	○	○	○
I've felt pressured to get drunk at parties	○	○	○	○	○
At times I've felt pressured to do drugs, because others have made me	○	○	○	○	○

End of Block

Peer support/communication

Friendships Below are a list of question, there are no right or wrong answers, please answer honestly

Please answer the questions below:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I have a close relationship with my friends	○	○	○	○	○
I feel that I can talk over personal problems with my friends	○	○	○	○	○
I depend a lot on my friends for advice and guidance	○	○	○	○	○
I receive a good deal of attention from my friends	○	○	○	○	○
If I'm feeling down I feel better after spending time with my friends	○	○	○	○	○

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I talk to my friends about sex	○	○	○	○	
I talk to my friends about contraception	○	○	○	○	
I talk to my friends about sexually transmitted infections	○	○	○	○	
I talk to my friends about dating	○	○	○	○	

I talk to my friends about pregnancy	○	○	○	○

Please answer the questions below:

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
My friends think It's okay for girls my age to have sex	○	○	○	○	○
My friends think it's okay to have sex in a relationship at my age	○	○	○	○	○
My friends believe contraception should be offered at school	○	○	○	○	○
My friends believe teenagers should be encouraged to stay virgins	○	○	○	○	○
My friends believe it is ok for me to 'date' people at my age	○	○	○	○	○

Did you know... Thigh bones are stronger than concrete!

End of Block

parental support/ communication

Below is a list of question, there are no right or wrong answers, please answer honestly

Please select the answer that most relates to you

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I have a close relationship with my parents/carers	◯	◯	◯	◯	◯
I feel that I can talk over personal problems with my parent/carers	◯	◯	◯	◯	◯
I depend a lot on my parents/carers for advice and guidance	◯	◯	◯	◯	◯
I receive a good deal of attention from my parents/carers.	◯	◯	◯	◯	◯
If I'm feeling down I feel better after spending time with my parents/carers	◯	◯	◯	◯	◯

Please select the answer that most relates to you

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
I talk to my parents/carer about sex	○	○	○	○	○
I talk to my parents/carer about contraception	○	○	○	○	○
I talk to my parents/carer about sexually transmitted infections	○	○	○	○	○
I talk to my parents/carer about dating	○	○	○	○	○
I talk to my parents/carer about pregnancy	○	○	○	○	○

Please select the answer that most relates to you

	Strongly Disagree	Disagree	Neither Agree nor Disagree	Agree	Strongly Agree
My parents/carers think It's okay for girls my age to have sex	○	○	○	○	○
My parents/carers think it's okay to have sex in a relationship at my age	○	○	○	○	○
My parents/carers believe contraception should be offered at school	○	○	○	○	○
My parents/carers believe teenagers should be encouraged to stay virgins	○	○	○	○	○
My parents/carers believe it is ok for me to 'date' people at my age	○	○	○	○	○

End of Block

School performance

Below are a list of questions. There are no right or wrong answers, so please be honest in your answers.

Q1 **I expect to do well in school this year**

Strongly Disagree Disagree   Neither agree nor disagree   Agree   Strongly Agree

Q2 **I enjoy school**

Strongly Disagree Disagree   Agree   Strongly Agree

Q3 **I do well when learning something new at school**

Strongly Disagree Disagree   Agree   Strongly Agree

Q4 **Some of the things I learn in school help me do things better outside of class**

Strongly Disagree Disagree   Agree   Strongly Agree

Did you know... A grasshopper can leap 20 times the length of its own body

End of Block

Sexual knowledge

Below are a list of statements please indicate how much you agree with each statement. Please be honest in your answers.

Q1 **You can get pregnant the first time you have sex**

Yes   Don't know   No

Q2 **You can get pregnant during a period**

Yes   Don't know   No

Q3 **Please write the sexually transmitted infections (STIs) have you heard of?** (Write all that you have heard of)

Q4 **If I had an STI there would always signs and symptoms**

Yes   Don't know   No

Q5 **Chlamydia can lead to infertility**

Yes   Don't know   No

Q6 **If I had an STI I would know where to go to get treatment?**

Yes   Don't know   No

Q7 **Which contraception methods have you heard of?** (Write all that you have heard of)

Q8 **I would know how to use a Condom**

Yes   Don't know   No

Q9 **Condoms can be used more than once**

Yes   Don't know   No

Q10 **I would know where to get a Condom**

Yes   Don't know   No

Q11 **I would know where to get emergency contraception**

Yes   Don't know   No

Q12 Young people under the age of 16 get contraception legally

Yes   Don't know   No

Q13 If a 15 year old girl goes to her GP for contraception, the GP would tell her parents/guardians about the request

Yes   Don't know   No

Q14 16 is the age of sexual consent in England

Yes   Don't know   No

Did you know…   Deer can't eat hay.

End of Block

Sexual information

Teens access sexual health information in a variety of ways, please type in the box where you have accessed sexual health information. If you have not accessed sexual health information, please write none

Here are a few examples of where you might
have accessed sexual health information:
- A poster
- Social media sites (Facebook etc.)
- The internet
- A sexual health talk
- A book or magazine
- Attending a sexual health clinic
- Spoke to someone (For e.g.
parent/teacher/friend)

Please type here...

End of Block

Sexual behaviours

Below are a list of questions. There are no right or wrong answers, so please be honest in your answers.

Q1 **Are you currently in a relationship?** A relationship is an emotional connection with another person. You may have relationships with your friends and family. For this relationship, we mean a romantic relationship with another person. This may also include a sexual relationship. You may have multiple romantic or sexual relationships, but for this question just think about if you are in a romantic relationship with ONE other person.

Yes   No

Q2 **My partner is...**

Male   Female

Q3 **How old is your partner?**

Q4 **How long have you been in this relationship?** *Please select your answer from the dropdown list*

○ Less than 3 months

○ 3 - 6 months

○ 6-9 months

○ 9-12 months

○ 1 year

○ 2 years

○ 3 years

○ Over 3 years

Q5 **In general, how happy are you with your relationship?**

Happiness rating	

Q6 **Have you, and how old were you when you had a first experience of?**

	Haven't yet	Under 13 Years	13 Years	14 Years	15 Years	16 Years
Kissing	○	○	○	○	○	○
Touching a partners genitals with your hands	○	○	○	○	○	○
Being touched on your genitals by a partner's hand?	○	○	○	○	○	○
Giving oral sex? (Using your mouth on a partners genitals or anus)	○	○	○	○	○	○
Receiving oral sex?	○	○	○	○	○	○
Vaginal sex with a condom - Vaginal sex means the penis goes into the vagina.	○	○	○	○	○	○
Vaginal sex without a condom - Vaginal sex means the penis goes into the vagina.	○	○	○	○	○	○

End of Block

Intentions

Below are three statements. There are no right or wrong answers, so please be honest in your answers.

Q1 **During the next year I will have sex**

Strongly agree Agree Somewhat agree Neither agree nor disagree Somewhat disagree Disagree Strongly disagree

Q2 **During the next year I expect to have sex**

Strongly agree Agree Somewhat agree Neither agree nor disagree Somewhat disagree Disagree Strongly disagree

Q3 **During the next year it is likely I will have sex**

Strongly agree Agree Somewhat agree Neither agree nor disagree Somewhat disagree Disagree Strongly disagree

Q1 **During the next year if I have sex I will use contraception**

Strongly agree Agree Somewhat agree Neither agree nor disagree Somewhat disagree Disagree Strongly disagree

Q2 **During the next year if I have sex I expect to use contraception**

Strongly agree Agree Somewhat agree Neither agree nor disagree Somewhat disagree Disagree Strongly disagree

Q3 **During the next year if I have sex it is likely I will use contraception**

Strongly agree Agree Somewhat agree Neither agree nor disagree Somewhat disagree Disagree Strongly disagree

End of Block

Porn

Q1**How often have you watched pornographic films or videos in the last six months?**

Never   Once or twice   About once a month   About once a week or more

Q2 **How often have you looked pornographic magazines or comics in the last six months?**

Never   Once or twice   About once a month   About once a week or more

Q1 **How often have you seen safe sex portrayed in magazines or comics in the last six months?**

Never   Once or twice   About once a month   About once a week or more

Q2 **How often have you seen safe sex portrayed in films or TV shows in the last six months?**

Never   Once or twice   About once a month   About once a week or more

End of Block

10.8 Study 3 SPSS main data tables

Early sex - logistic regression tables

Hosmer and Lemeshow Test

Step	Chi-square	df	Sig.
1	15.438	8	.051

Variables in the Equation

		B	S.E.	Wald	df	Sig.
Step 1[a]	Age	.495	.283	3.050	1	.081
	Self_Esteem	-.108	.047	5.272	1	.022
	Self_Efficacy	-.037	.038	.955	1	.328
	Sensation_Seeking	.116	.044	7.066	1	.008
	Delayed_Gratification	-.078	.038	4.344	1	.037
	Peer_Pressure	-.010	.023	.181	1	.671
	Peer_Support	-.077	.052	2.174	1	.140
	Peer_SexComm	.084	.055	2.339	1	.126
	Peer_SexAtt	.063	.071	.796	1	.372
	Parental_Support	-.056	.059	.884	1	.347
	Parental_SexCom	.032	.049	.446	1	.504
	Parental_SexAtt	.109	.071	2.322	1	.128
	Sex_Knowledge	-.075	.037	4.048	1	.044
	Safe_Sex	-.116	.194	.360	1	.549
	Porn	-.268	.245	1.196	1	.274
	Sex_Info			5.708	2	.058

Sex_Info(1)	.596	.711	.703	1	.402
Sex_Info(2)	1.556	.753	4.265	1	.039
School_Performance	.073	.085	.741	1	.389
Constant	-10.580	4.334	5.958	1	.015

Variables in the Equation

			95% C.I.for EXP(B)	
		Exp(B)	Lower	Upper
Step 1ª	Age	1.640	.941	2.857
	Self_Esteem	.898	.819	.984
	Self_Efficacy	.964	.895	1.038
	Sensation_Seeking	1.123	1.031	1.223
	Delayed_Gratification	.925	.859	.995
	Peer_Pressure	.990	.947	1.035
	Peer_Support	.926	.836	1.026
	Peer_SexComm	1.088	.977	1.211
	Peer_SexAtt	1.065	.927	1.225
	Parental_Support	.946	.842	1.062
	Parental_SexCom	1.033	.939	1.136
	Parental_SexAtt	1.115	.969	1.282
	Sex_Knowledge	.928	.863	.998
	Safe_Sex	.890	.608	1.302
	Porn	.765	.474	1.236
	Sex_Info			
	Sex_Info(1)	1.814	.451	7.306
	Sex_Info(2)	4.738	1.082	20.741

School_Performance	1.076	.910		1.272
Constant	.000			

Intention to have sex – Multiple regression tables

Model summary tables

Model Summary^c

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change
1	.073^a	.005	.002	5.980	.005	1.672
2	.379^b	.143	.095	5.695	.138	3.026

Model Summary^c

		Change Statistics		
Model	df1	df2	Sig. F Change	
1	1	316	.197	
2	16	300	.000	1.983

ANOVA table

ANOVA^a

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	59.786	1	59.786	1.672	.197^b
	Residual	11300.089	316	35.760		
	Total	11359.874	317			
2	Regression	1629.970	17	95.881	2.956	.000^c

	Residual	9729.905	300	32.433		
	Total	11359.874	317			

Correlation coefficients

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.610	5.531		.291	.771
	Age	.501	.387	.073	1.293	.197
2	(Constant)	-5.603	6.116		-.916	.360
	Age	.463	.438	.067	1.059	.291
	Porn	.627	.277	.147	2.262	.024
	School_Performance	.140	.111	.085	1.257	.210
	Self_Esteem	.120	.073	.108	1.648	.100
	Self_Efficacy	-.096	.059	-.109	-1.621	.106
	Sensation_Seeking	-.030	.061	-.029	-.497	.619
	Delayed_Gratification	.005	.056	.006	.097	.923
	Peer_Pressure	.159	.034	.261	4.610	.000
	Peer_Support	.110	.088	.091	1.246	.214
	Peer_SexComm	-.093	.082	-.091	-1.131	.259
	Peer_SexAtt	-.047	.104	-.036	-.453	.651
	Parental_Support	-.023	.088	-.021	-.258	.797
	Parental_SexCom	.035	.071	.032	.496	.620
	Parental_SexAtt	-.039	.110	-.023	-.356	.722
	Sex_Knowledge	.094	.055	.107	1.696	.091

		.503	.420	.065	1.197	.232
Sex_Info						
Safe_Sex		-.219	.240	-.058	-.914	.362

Intention to have safe sex – model summary ANOVA table

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	23.770	1	23.770	.445	.505[b]
	Residual	16885.151	316	53.434		
	Total	16908.921	317			
2	Regression	968.396	17	56.964	1.072	.381[c]
	Residual	15940.525	300	53.135		
	Total	16908.921	317			

10.9 Study 4 Screenshots of websites and apps

Brook Website
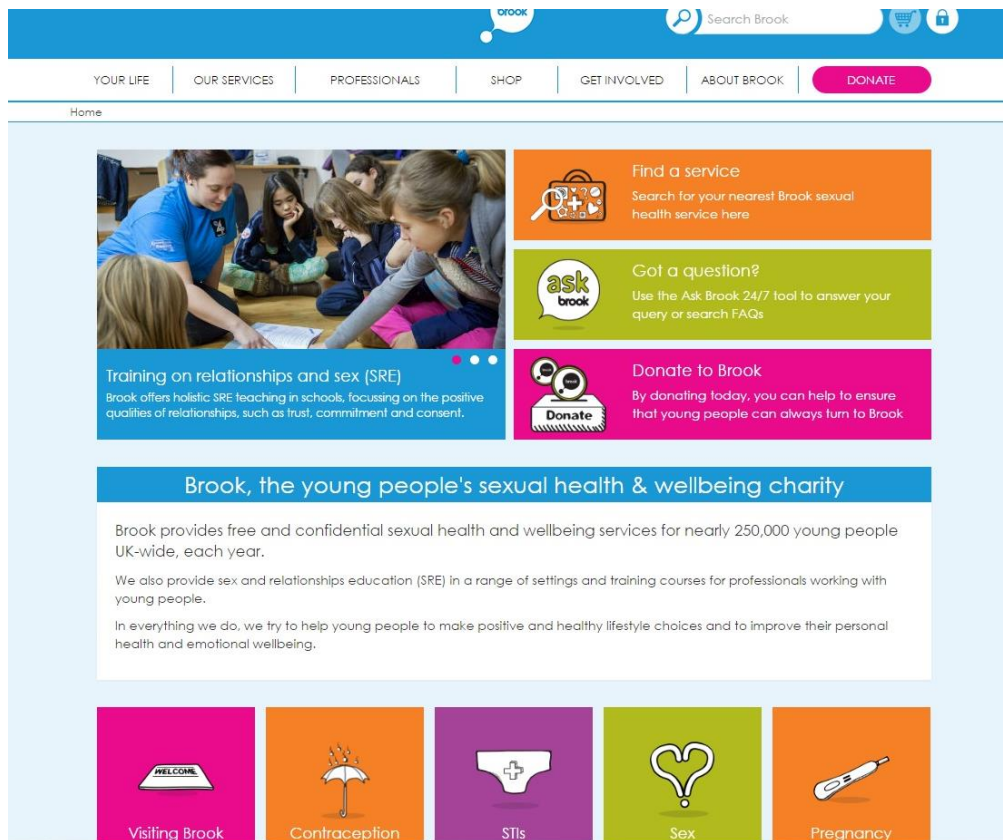
Girls health website

NHS choices website

Sex Etc website

Young Lovers Guide website
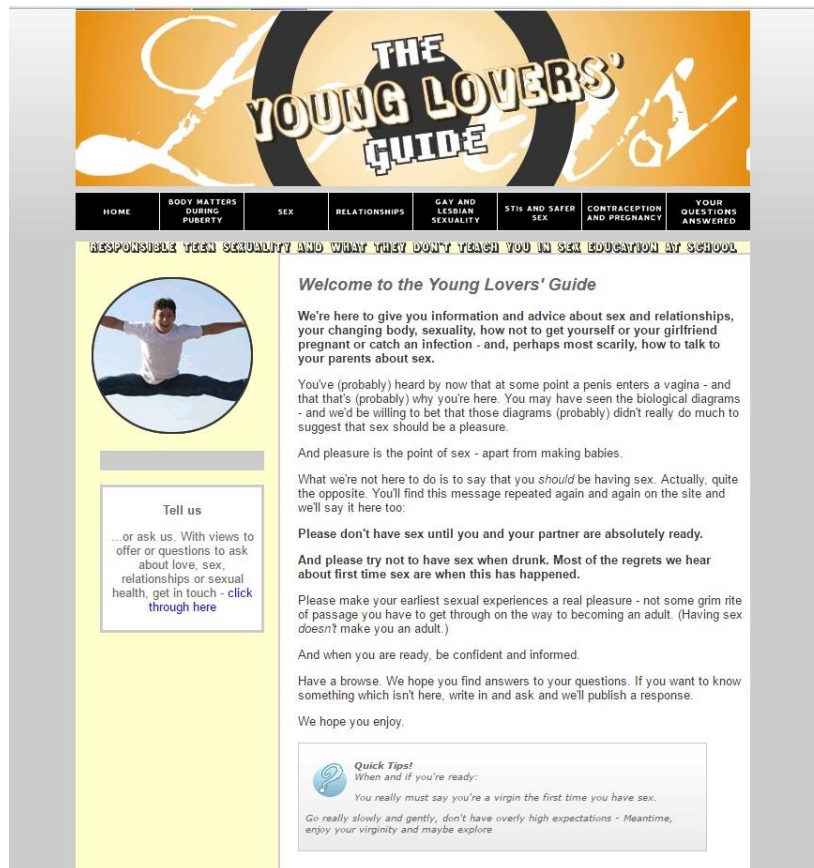
Health talk website
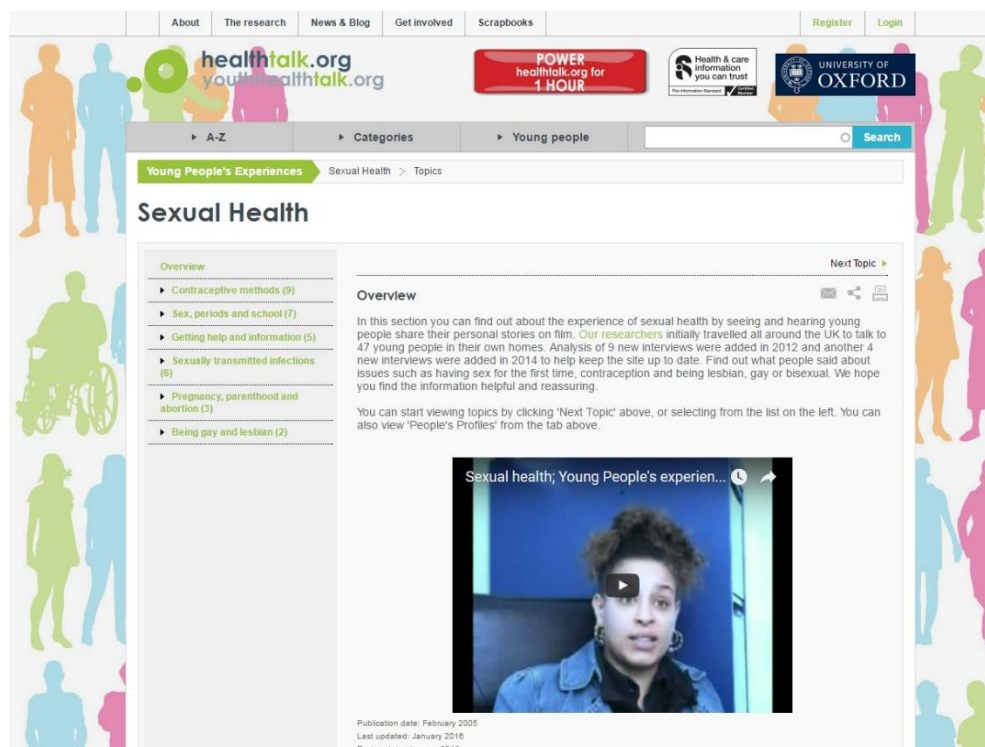
Condom craze game (mobile app)
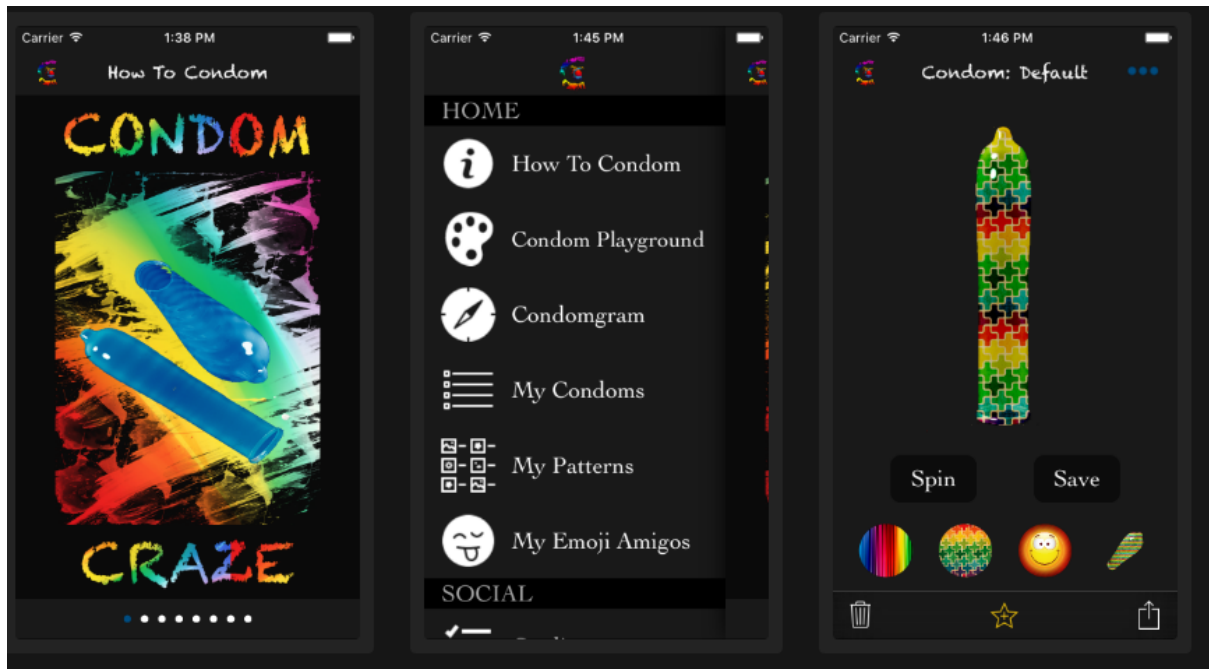
Girl empowered (mobile app)
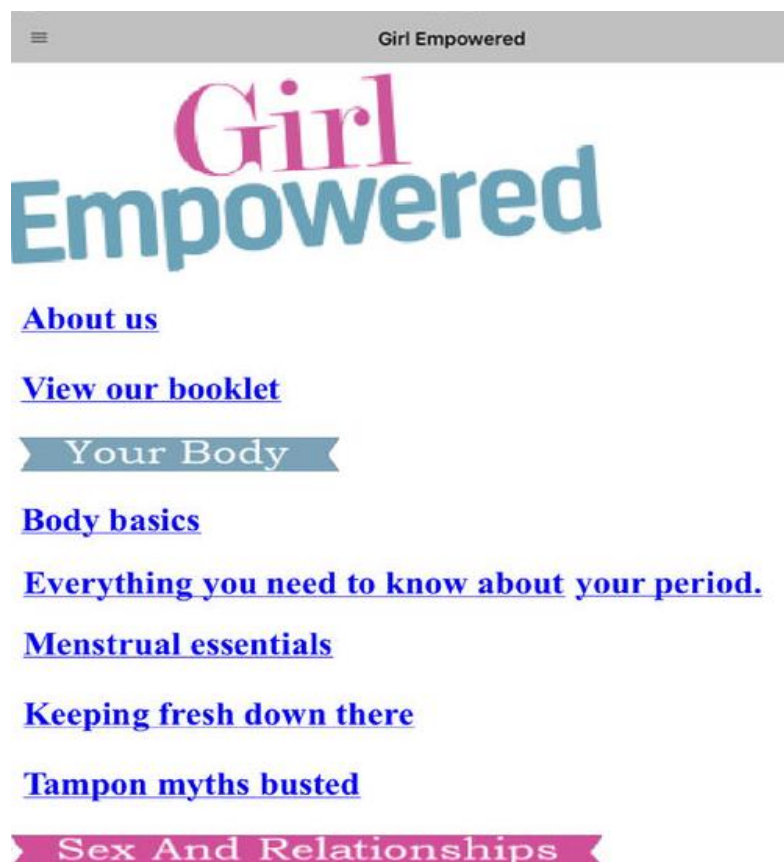
My Teen mind (mobile app)

10.10 Study 4 Example focus group

School 3 (AH) – websites

I: Okay, have you finished? (One participant finished – waiting for other participants to log off the computers)

P12: Yes

I: Great, did you find the websites useful?

P12: Yes

I: Fab, which was your favourite one?

P12: Girls health because it's got like really interesting quizzes and videos.

I: Great, did you have a go on some of the quizzes?

P12: Yeah

I: Were they good?

P13: Yeah

Another participant joined

I: Great, are you finished?

P13: Yeah

I: Good, and did you enjoy any website in particular?

P13: The girl's health one

I: The girl's health one? Yeah, great. Did you have a look at the videos and bits on there?

P13: Yeah

I: Great.

Last three participants join

I: All done?

P10-11-14: Yeah

I: Ok, so everyone has had a look through all of the websites, yeah?

All: Yeah

I: And provided comments?

All: Yeah

I: Ok, great. Ok, so we looked at six different websites, was there any in particular that stood out? I know some people have mentioned some already.

P10: Young lovers

I: Young lovers? Yeah, ok, so that's this one (Shows screenshot). Ok, we any others?

P11: I like the brook one

I: The brook one? Yeah. So that's this one (Shows screenshot)

P10: Girls health

I: Girls health, so this one here? Yeah. Ok so we will start with this girl's health one then. What was it that you liked about this website?

P13: It's aimed at like our gender

I: Yeah

P13: And like has on personal experiences, of like what other people have like experienced.

I: Ok, and did you have a chance to have a look at the other bits on there, like the quizzes and that

P13: No

I: ok, you did though (to -12), did you find them helpful?

P12: yeah, they were really good.

I: Great. And what about the layout and the colours, looking at it now what are your overall thoughts of this?

P11: It's better than some of them but it's not as like vibrant as others

I: Yeah, ok, and what about the information on the website, was that helpful?

P10: Yeah

I: Yeah? Did you think it covered everything?

P10: Covered most things

P14: for girls

I: OK, everyone agree with that?

All: Yeah

I: OK, great. Did it cover other things as well as just sexual health?

P11: Like smoking and alcohol as well

I: And was that quite helpful

P11: Yeah

I: OK, so I know some of you mentioned that you liked the videos on health talk, if this girl's health one had videos, would that be good?

P12: Yeah it would be better if it had videos

P11: Yeah the videos were good.

P14: I liked the personal experiences

I: Was that the videos from teenagers?

P14: Yeah

I: OK, so you liked the videos from other teenagers?

P14: Yeah

P13: Yeah more relatable

P10: Yeah, they were good

I: Great, ok, so moving to this website, what was it about the young lover's guide that you liked?

P13: It's like aimed at our age group and it's like answers like questions that people like our, like that they need to know.

I: OK. Anyone else?

P12: I didn't really like it, like the writing is too small and all together.

I: OK, so it was difficult to read?

P12: Yeah, I didn't really like it.

I: Ok, and did you trust the information on this website?

P13: No

P12: No

I: *No? everyone agree with that?*

All: Yeah

I: *Ok, any reasons why you didn't trust this website?*

P14: because it looks just like it's been made easily, like it's not got that much effort into it.

I: *OK, and trust in comparison to the other websites?*

P14: I trusted the NHS website

P12: yeah

P11: Yeah, I know that one

I: *OK, so the NHS website was a known source. What other reasons help you trust a website?*

P11: Using it at schools

P12: Yeah, then you know it's like reliable

I: *Ok, great. So moving onto the Brook website, it's at the end of your sheets* (Shows screenshot of brook)

P13: I've got that it doesn't feel like it's aimed at my age group.

I: *Ok, so did you think it was aimed at younger or older?*

P13: Younger, probably.

P11: Younger

P13: Well, it is because like it talks about sexual health and well-being but like it looks like with the children there, it's like for children.

P11: They look younger

P13: They look dead young

I: *Yeah, ok, so you think it is aimed at a younger group?*

P13: Yeah

I: *And would that put you off using this website?*

P13: Yeah

I: *And does everyone feel like that?*

All: yeah

I: *Ok, and what about the other bits on the website, did you have a look at the information on there?*

P12: Yeah I found the information on there helpful

P10: It covered quite a lot.

I: *Ok, so moving on to this website, what were your thoughts about this one (*Health talk)*?*

P14: I didn't really like it

I: *You didn't like it? Ok, any reason for that?*

P14: I didn't like the layout or the writing, like it's all just kind of small and in one block.

I: *OK, so it wasn't in sections like some of the other websites?*

P14: No, it wasn't as good.

I: *OK, and how about over here, what did you think to this one?*

P12: The video was like too blurry and like I don't know just not really like it.

I: *Ok, and going back to this information, did anyone have a read through the information?*

P10: I didn't

P11: No

I: *Ok, that's fine, and what about the video, did anyone watch it?*

P14: Yeah, I watched it and it was useful, but like it could have been longer.

I: *Longer? Ok, so did it not cover enough?*

P14: It covered like one topic.

I: *One topic, ok. So maybe a longer video or more videos would have been better?*

P14: Yeah

P11: Yeah, like a video for each topic, that would have been better.

I: *OK, and what about the overall design of this one?*

P14: It's like vibrant but plain at the same time, like the outside is like vibrant but the layout of like the writing is quite plain.

I: OK, and do you all think the same?

P11: yeah

P12: Yeah, quite plain

P13: Yeah

I: Ok, so next website, this is the sexetc one which is the first one that you looked at, no one mentioned at the start that this one was a favourite website, does anyone have any comments on this website?

P11: I couldn't access the information.

P10: Same, I couldn't get on the website, like only bits of it worked.

I: OK, did anyone manage to get on the website?

P12: Yeah

P13: Yeah

I: OK, so when you managed to get on the website, did you find it useful?

P12: No, I just think it's like based like around adults not like our age group, too complex information.

I: OK, so not suitable for your age group

P12: Yeah it's aimed at older

I: OK, and was that based on the information?

P12: And like the image as well, it's an adult

I: OK, so based on the image and the content it seems like it's more for adults

P12: Yeah

I: Ok, and this last website then, the NHS choices, what were your overall thoughts of this website?

P10: informative

P11: It's good

I: Ok, so it was informative, and what about the layout compared to the other ones?

P12: It's simple

P10: More clearer

P11: Easier to access and have a look at as well

I: Ok, and when you looked at the information did you find that quite helpful?

P12: Yeah because it like had some personal experiences on

P11: It's valid too

I: Ok, and when you looked at this information do you think you would trust it?

P12: Yeah

P11: Yeah

All: Yeah

P11: It's a known source

I: OK, and any other reasons why you trust it?

P10: It's well known

I: OK, and the information on there, did you find the sections helpful or did you think there was anything missing?

P11: No, it was all there

I: All there?

P10: It would have to be

P11: Yeah, it would have to be quite helpful because it's a hospital, so like people's health.

I: OK, and everybody agree with that?

All: yeah

I: OK, so we have a bit of time now, so as we discussed we will have a quick look through some sexual health apps. Has anyone seen a sexual health app before?

All: No

Researcher passing IPads around and explaining the task.

P12: Can you get many sexual health apps?

I: Not loads but there are a few

P12: I wouldn't even think to look

P11: No I wouldn't.

P12: This one is really good (My teen mind), did you say there are more to look at?

I: Yeah, when you are done with that one, if you go back to the homepage there's one called condom craze and one called girl empowered.

P13: Condom craze I like all the colours, I will go on that

I: Have a go on the playground bit, what do you think to that?

P12: It's good

P11: yeah, it's funny

I: Do you think you would use apps like this?

P12: yeah

P11: I would yeah, it's funny

P13: Wait, so you can actually design a condom?

I: Yeah using those buttons there

P13: That's hilarious.

P11: So can you like buy condoms off this? Or do you get them for free?

I: I don't think you get the condom after

P10: Really?

P11: That's annoying

P13: It just informs you on it

I: Yeah

P10: Girl empowered isn't very visual, I prefer the condom one

I: Yeah, apps are usually more interactive

P11: It makes me lose interest, too much reading.

P10: Yeah, I like the condom one, I'm going to design a condom now. I'm going to do a white one

P11: I don't like white, I'm going to put an emoji on mine

P10: (Laughing) Can you do that? Miss is it ok if we design a condom

I: *Yeah of course, go ahead*

P11: It's funny isn't it

P10: Yeah, I really like this one. But you can't have two colours.

I: *So what are your initial thoughts to the condom app?*

P14: This bit is funny but like the rest is like really like plain

I: *Yeah, so not as much on the other parts of it.*

P14: No. But it's definitely more interactive here.

I: *Ok so if this was paired up with better sexual health information, do you think you would use something like this?*

P13: yeah definitely

I: *All agree with that?*

All: yeah, I would.

P11: It doesn't like provide a lot of information, but like it appeals to young people.

I: *Yeah, great.*

P11: It's really funny that you can like design a condom, name it and laugh about it with your friends

P10: But it needs extra information too.

I: *OK. So do you think this is something that teenagers would use, if it was paired up with better information?*

P12: Yeah, definitely.

I: *Ok. And before these had you ever come across any sexual health apps?*

P12: I didn't know they existed.

P11: No, I just went on like safari

I: *Ok, and after having a look at them do you think you would ever use a sexual health app in the future?*

P11: Yeah

P13: Yeah, if I needed information I would.

I: Ok,

P12: Yeah, but I would probably say that I would go on the internet more.

I: Ok, and how would you go on the internet?

All: Phone

I: Phone? And any reasons for that?

P12: Yeah, cause its private

P11: And easier

P10: Yeah, I never use a computer unless I have to for like school.

I: Ok, so now that you have looked at all of the websites and the apps, what would you say was your favourite one overall?

P10: My teen mind

P13: The game on this one

P14: Yeah the game

P11: The first one

I: Do you prefer the apps over the websites?

P10: the websites are more informative

I: Yeah, and do you trust the information on these apps?

P11: It depends like what reviews and stuff they had

P12: Whether there was a link explaining where the information was from

I: Ok, that's a good point

P11: And like and ratings

I: Yeah

P10: And if you had spoken to like a nurse or a teacher or someone and they had recommended it

P11: Yeah I would trust it then

I: Ok, so it's important that someone recommends it?

All: yeah

Websites

Participant 10:

Sex etc:

- I like it because: It is colourful, it is good and linked to social networks
- The information I find useful: I found the information I read useful

Young lovers guide:

- I like it because: Lot of information
- I dislike it because: Needs more colours, quite small, not, many pictures
- The information I find useful: It was not that useful because it was small

NHS:

- I like it because: It has a lot of pictures and information about different sex issues
- I dislike it because: Different colours – there is a lot of white
- The information I find useful: I found a lot of the information useful
- Any other comments: It has different parts for different things

Healthtalk:

- I dislike it because: A lot of white, not much information
- Any other comments: Good ways of separating the text

Brook:

- I like it because: Good colours, good pictures
- I dislike it because: Not much information

Girls health:

- I like it because: Colourful, lots of information, looks good
- Useful information: I found the information quite useful

Free search:

Websites: NHS and girl's health

Comments: My favourite website has to be the last one (Girls health) because it has lots of information, good colours and a few pictures.

Participant 11:

Sex etc:

- I like it because: Stands out, colourful, covers most sex related problems etc.
- I dislike it because: Set out in a straight forward layout, not on separate pages in categories
- The information I find useful: Wasn't accessible, not useful.

Young lovers guide:

- I like it because: It provides plenty of information on sex and everything that a person needs to know.
- I dislike it because: Looks unreliable
- The information I find useful: Yes, but mostly writes puns to make reader laugh- humorous, goes off track a bit.

NHS:

- I like it because: Q&A from public/society
- I dislike it because: Only talks about ALL diseases that a person can get not a lot on sex, looks unreliable
- The information I find useful: Yes, but seems unreliable

Healthtalk:

- I like it because: Includes videos, lots of info
- I dislike it because: Looks unreliable
- The information I find useful: Yes

Brook:

- I like it because: Eye-catching. Applies to young people
- The information I find useful: Yes but very little info provided

Girls health:

- I like it because: provides colour – eye-catching, lots of info and real examples
- I dislike it because: Looks unreliable
- The information I find useful: Yes

Free search:

Websites: Girls health and Health talk

Comments: Girls health loved it, appeals to the young generation. Health talk liked the videos, example info

Participant 12:

Sex etc:

- I like it because: I like this website because the colours stand out, the photo if the hero makes you feel like you are part of something, any gender.

Young lovers guide:

- I dislike it because: I don't like the tabs as the writing is too small, writing doesn't go well with the colour.
- The information I find useful: Because it tells you information about how relationships work and what sex is all about. Tells you about girls and boys lifestyle.

NHS:

- I like it because: It's very good because it has useful photos and link to what one is about. Shows different links where to go about different information
- The information I find useful: It tells you what sexual health is about and how to get access to help what you want to know about.

Healthtalk:

- I dislike it because: Too much writing and too many pictures. Not presented very nice, too complex
- The information I find useful: The information is alright but work needs updated to it different things need to be added but less items.

Brook:

- I like it because: I like the white writing with different colour boxes
- I dislike it because: Bit boring, not much useful things going on, colours muddled up
- The information I find useful: I like the logos as its small and go well with the word

Girls health:

- I like it because: It shows feelings, about how girls feel and the way it looks it's nice and tells you what you can look for.
- The information I find useful: Because the three points are a positive thing: be healthy, be happy and be you beautiful.

Free search:

Websites: Brook and Girls health

Comments: I visited these websites because it's important to find out useful information on how sexual health works and why the information is important. My favourite website is girl's health because it has good quizzes and videos that are involved with how we feel and see other people.

Participant 13:

Sex etc:

- I like it because: It's colourful and appeals to the eye (eye catching) It has different parts to the website, bold.
- I dislike it because: It does not allow access to all components of the website
- The information I find useful: I did not find the information useful as I was not able to access the rest of the site.

Young lovers guide:

- I like it because: It is easy to access, it has different tabs and heading to learn about and it also answers questions people may think vibrant. It appeals to my age.
- I dislike it because: Has quite a bit of writing
- The information I find useful: Yes, I find the information useful

NHS:

- I like it because: The information is valid and informative different subheading
- I dislike it because: There is a lot of information to read and long words
- The information I find useful: Yes

Healthtalk:

- I like it because: Personal experience videos, had different categories
- I dislike it because: Quite bland
- The information I find useful: Yes

Brook:

- I like it because: Vibrant, bold, different categories
- I dislike it because: Doesn't feel like it is aimed at my age group
- The information I find useful: Not really

Girls health:

- I like it because: Aimed at my gender, lots of categories

Participant 14:

Brook:

- I like it because: I like the website because it is eye catching and not too long to read.
- I dislike it because: I dislike this website because it's not efficient and doesn't allow you to access it.
- The information I find useful: I didn't find the information useful as I was unable to access the information

10.11 Study 5 Example of questionnaire

Instructions

Please spend **5 minutes** completing the task below. There is a timer on the page that will let you know when 5 minutes are up.

Self-affirmation task

Please write an essay on a positive experience in your life.   For example, An event in your life that made you feel proud (Please be as detailed as you can, write the event, what happened and how you felt)

_____

_____

_____

_____

Control task

Please write everything you have eaten or drunk in the past 48 hours.

_____

Please go to this website... https://www.brook.org.uk/   Please spend **15 minutes** reading through the website, the researcher will let you know when it is time to move on.

10.12   Study 5 Main SPSS data tables

Independent samples t-test for baseline measures

Independent Samples Test

		t-test for Equality of Means		
		df	Sig. (2-tailed)	Mean Difference
PreSelfEsteem	Equal variances assumed	100	.212	-1.07385
	Equal variances not assumed	99.195	.212	-1.07385
PreIntentionSex	Equal variances assumed	100	.010	-2.21538
	Equal variances not assumed	97.606	.010	-2.21538
PreIntentionContraception	Equal variances assumed	100	.025	-1.89154
	Equal variances not assumed	97.345	.024	-1.89154
PreKnowledge	Equal variances assumed	100	.571	.49923
	Equal variances not assumed	84.610	.574	.49923

Self-esteem 2x3 ANOVA table

Tests of Within-Subjects Effects

Measure: Time

Source		Type III Sum of Squares	df	Mean Square	F
Time1	Sphericity Assumed	154.431	2	77.216	11.401
	Greenhouse-Geisser	154.431	1.647	93.755	11.401
	Huynh-Feldt	154.431	1.688	91.492	11.401
	Lower-bound	154.431	1.000	154.431	11.401
Time1 * Condition	Sphericity Assumed	80.706	2	40.353	5.958
	Greenhouse-Geisser	80.706	1.647	48.997	5.958

	Huynh-Feldt	80.706	1.688	47.814	5.958
	Lower-bound	80.706	1.000	80.706	5.958
Error(Time1)	Sphericity Assumed	1354.484	200	6.772	
	Greenhouse-Geisser	1354.484	164.717	8.223	
	Huynh-Feldt	1354.484	168.792	8.025	
	Lower-bound	1354.484	100.000	13.545	

Tests of Within-Subjects Effects

Measure: Time

Source		Sig.
Time1	Sphericity Assumed	.000
	Greenhouse-Geisser	.000
	Huynh-Feldt	.000
	Lower-bound	.001
Time1 * Condition	Sphericity Assumed	.003
	Greenhouse-Geisser	.006
	Huynh-Feldt	.005
	Lower-bound	.016

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	83935.180	1	83935.180	2624.081	.000
Condition	7.337	1	7.337	7.337	.000
Error	3198.650	100	31.987		

Website check: one samples t-test against the neutral point

One-Sample Test

Test Value = 3

	t	df	Sig. (2-tailed)	Mean Difference	95% Confidence Interval of the Difference	
					Lower	Upper
Trust	14.005	101	.000	1.08824	.9341	1.2424
Learn	9.663	101	.000	.82353	.6545	.9926
Believeinfo	9.028	101	.000	.86275	.6732	1.0523

Knowledge – 2x3 ANOVA table

Tests of Within-Subjects Effects

Measure: Time

Source		Type III Sum of Squares	df	Mean Square	F
Time1	Sphericity Assumed	38.795	2	19.398	1.580
	Greenhouse-Geisser	38.795	1.823	21.277	1.580
	Huynh-Feldt	38.795	1.874	20.702	1.580
	Lower-bound	38.795	1.000	38.795	1.580
Time1 * Condition	Sphericity Assumed	30.168	2	15.084	1.229
	Greenhouse-Geisser	30.168	1.823	16.545	1.229
	Huynh-Feldt	30.168	1.874	16.098	1.229
	Lower-bound	30.168	1.000	30.168	1.229
Error(Time1)	Sphericity Assumed	2454.669	200	12.273	
	Greenhouse-Geisser	2454.669	182.334	13.463	

		2454.669	187.397	13.099	
	Huynh-Feldt	2454.669	187.397	13.099	
	Lower-bound	2454.669	100.000	24.547	

Tests of Within-Subjects Effects

Source		Sig.
Time1	Sphericity Assumed	.208
	Greenhouse-Geisser	.210
	Huynh-Feldt	.210
	Lower-bound	.212
Time1 * Condition	Sphericity Assumed	.295
	Greenhouse-Geisser	.293
	Huynh-Feldt	.293
	Lower-bound	.270

Tests of Between-Subjects Effects

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	49594.086	1	49594.086	2000.767	.000
Condition	95.969	1	95.969	3.872	.052
Error	2478.754	100	24.788		

Intention to have sex – ANCOVA

Tests of Within-Subjects Effects

Source		Type III Sum of Squares	df	Mean Square
Time	Sphericity Assumed	.005	1	.005
	Greenhouse-Geisser	.005	1.000	.005
	Huynh-Feldt	.005	1.000	.005
	Lower-bound	.005	1.000	.005
Time * PreIntentionSex	Sphericity Assumed	24.373	1	24.373
	Greenhouse-Geisser	24.373	1.000	24.373
	Huynh-Feldt	24.373	1.000	24.373
	Lower-bound	24.373	1.000	24.373
Time * Condition	Sphericity Assumed	100.597	1	100.597
	Greenhouse-Geisser	100.597	1.000	100.597
	Huynh-Feldt	100.597	1.000	100.597
	Lower-bound	100.597	1.000	100.597
Error(Time)	Sphericity Assumed	1464.041	99	14.788
	Greenhouse-Geisser	1464.041	99.000	14.788
	Huynh-Feldt	1464.041	99.000	14.788
	Lower-bound	1464.041	99.000	14.788

Tests of Within-Subjects Effects

Measure: MEASURE_1

Source		F	Sig.	Partial Eta Squared
Time	Sphericity Assumed	.000	.985	.000
	Greenhouse-Geisser	.000	.985	.000

	Huynh-Feldt	.000	.985	.000
	Lower-bound	.000	.985	.000
Time * PreIntentionSex	Sphericity Assumed	1.648	.202	.016
	Greenhouse-Geisser	1.648	.202	.016
	Huynh-Feldt	1.648	.202	.016
	Lower-bound	1.648	.202	.016
Time * Condition	Sphericity Assumed	6.802	.011	.064
	Greenhouse-Geisser	6.802	.011	.064
	Huynh-Feldt	6.802	.011	.064
	Lower-bound	6.802	.011	.064

Tests of Between-Subjects Effects

Measure: MEASURE_1

Transformed Variable: Average

Source	Type III Sum of Squares	df	Mean Square	F	Sig.	Partial Eta Squared
Intercept	1920.036	1	1920.036	75.221	.000	.432
PreIntentionSex	464.397	1	464.397	18.193	.000	.155
Condition	116.176	1	116.176	4.551	.035	.044
Error	2527.017	99	25.525			

Intention to have safe sex ANCOVA

Safe sex intention time and time x condition interaction

Tests of Within-Subjects Effects

Source			Type III Sum of Squares	df	Mean Square
time		Sphericity Assumed	3.816	1	3.816
		Greenhouse-Geisser	3.816	1.000	3.816
		Huynh-Feldt	3.816	1.000	3.816
		Lower-bound	3.816	1.000	3.816
time PreIntentionContraception	*	Sphericity Assumed	3.829	1	3.829
		Greenhouse-Geisser	3.829	1.000	3.829
		Huynh-Feldt	3.829	1.000	3.829
		Lower-bound	3.829	1.000	3.829
time * Condition		Sphericity Assumed	9.990	1	9.990
		Greenhouse-Geisser	9.990	1.000	9.990
		Huynh-Feldt	9.990	1.000	9.990
		Lower-bound	9.990	1.000	9.990
Error(time)		Sphericity Assumed	1174.277	99	11.861
		Greenhouse-Geisser	1174.277	99.000	11.861
		Huynh-Feldt	1174.277	99.000	11.861
		Lower-bound	1174.277	99.000	11.861

Tests of Within-Subjects Effects

Source		F	Sig.	Partial Eta Squared
Time	Sphericity Assumed	.322	.572	.003

	Greenhouse-Geisser	.322	.572	.003
	Huynh-Feldt	.322	.572	.003
	Lower-bound	.322	.572	.003
time * PreIntentionContraception	Sphericity Assumed	.323	.571	.003
	Greenhouse-Geisser	.323	.571	.003
	Huynh-Feldt	.323	.571	.003
	Lower-bound	.323	.571	.003
time * Condition	Sphericity Assumed	.842	.361	.008
	Greenhouse-Geisser	.842	.361	.008
	Huynh-Feldt	.842	.361	.008
	Lower-bound	.842	.361	.008

Safe sex intention – condition

Tests of Between-Subjects Effects

Source	Type III Sum of Squares	df	Mean Square	F	Sig.
Intercept	3536.818	1	3536.818	312.815	.000
PreIntentionContraception	2.277	1	2.277	.201	.655
Condition	295.772	1	295.772	26.160	.000
Error	1119.337	99	11.306		

References

Abma, J., Driscoll, A., & Moore, K. (1998). Young women's degree of control over first intercourse: an exploratory analysis. *Family Planning Perspectives*. 12-18.

Abraham, C., & Michie, S. (2008). A taxonomy of behavior change techniques used in interventions. *Health Psychology*. 27(3), 379

Abrego, T. (2011). Sex Talk: Factors That Influence Parent-Child Communication about Sex. Eastern Michigan University.

Adler, J. R., & Livingstone, S. (2015). Porn statistics uk, (November), 1–34.

Aiken, K., & Boush, D. (2006). Trustmarks, objective-source ratings, and implied investments in advertising: investigating online trust and the context-specific nature of internet signals. *Journal of the Academy of Marketing* Science, 34(3), 308-323.

Ajilore, O. (2015). Identifying peer effects using spatial analysis: the role of peers on risky sexual behavior. *Review of Economics of the Household*, 13(3), 635-652

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision processes*. 50(2), 179-211.

Ajzen, I. (2006). Constructing a theory of planned behavior questionnaire. Retrieved from http://people.umass.edu/~aizen/pdf/tpb.measurement.pdf

Ajzen, I. (2011). The theory of planned behaviour: reactions and reflections. Retrieved from http://www.tandfonline.com/doi/abs/10.1080/08870446.2011.613995

Ajzen, I., & Fishbein, M. (1980). A theory of reasoned action—theoretical implications. *Attitudes and Predicting Social Behavior. Englewood*

Albarracín, D., Johnson, B. T., Fishbein, M., & Muellerleile, P. A. (2001). Theories of reasoned action and planned behavior as models of condom use: a meta-analysis. *Psychological Bulletin*, *127*(1), 142–61. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/11271752

Alexander, M., & Fisher, T. (2003). Truth and consequences: Using the bogus pipeline to examine sex differences in self- reported sexuality. *Journal of Sex Research*. Retrieved from http://www.tandfonline.com/doi/abs/10.1080/00224490309552164

Allen, J. P., Porter, M. R., & McFarland, F. C. (2006). Leaders and followers in adolescent close friendships: susceptibility to peer influence as a predictor of risky behavior, friendship instability, and depression. *Development and Psychopathology*, *18*(1), 155–172. https://doi.org/10.1017/S0954579406060093

Antheunis, M., & Schouten, A. (2016). The role of social networking sites in early adolescents' social lives. *Of Early Adolescence*. Retrieved from http://journals.sagepub.com/doi/abs/10.1177/0272431614564060

Apps, W., & Krebs, P. (2016). Hematology on the Move: How Are Mobile Health Apps Helping Patients? *Hematology*. Retrieved from https://scholar.google.co.uk/scholar?q=Hematology+on+the+Move%3A+How+Are+Mobile+Health+Apps+Helping+Patients%3F.&btnG=&hl=en&as_sdt=0%2C5

Armitage, C., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology*. Retrieved from http://onlinelibrary.wiley.com/doi/10.1348/014466601164939/full

Armitage, C., Harris, P., & Arden, M. (2011). Evidence that self-affirmation reduces alcohol consumption: randomized exploratory trial with a new, brief means of self-affirming. *Health Psychology*. Retrieved from http://psycnet.apa.org/journals/hea/30/5/633/

Armitage, C., Harris, P., & Hepton, G. (2008). Self-affirmation increases acceptance of health-risk information among UK adult smokers with low socioeconomic status. *Psychology of Addictive Behaviors,* 22(1), 88.

Armitage, C., Rowe, R., & Arden, M. (2014). A brief psychological intervention that reduces adolescent alcohol consumption. *Journal of Consulting and clinical psychology, 82(3), 546*

Armour, S., & Haynie, D. (2007). Adolescent sexual debut and later delinquency. *Journal of Youth and Adolescence.* , 36(2), 141-152.

Arnab, S., Brown, K., Clarke, S., Dunwell, I., Lim, T., Suttie, N., … de Freitas, S. (2013). The development approach of a pedagogically-driven serious game to support Relationship and Sex Education (RSE) within a classroom setting. *Computers & Education*, *69*, 15–30. https://doi.org/10.1016/j.compedu.2013.06.013

Aronowitz, T., & Rennells, R. (2005). Heterosocial behaviors in early adolescent African American girls: The role of mother-daughter relationships. *Journal of Family Nursing.* 11(2), 122-139.

Baams, L., Overbeek, G., & Bongardt, D. van de. (2015). Adolescents' and their friends' sexual behavior and intention: Selection effects of personality dimensions. *Journal of Research in Personality*, 54, 2-12.

Baele, J., Dusseldorp, E., & Maes, S. (2001). Condom use self-efficacy: effect on intended and actual condom use in adolescents. *Journal of Adolescent Health.* 28(5), 421-431.

Bailey, J., Mann, S., Wayal, S., Hunter, R., Free, C., Abraham, C., & Murray, E. (2015). Sexual health promotion for young people delivered via digital media: a scoping review. *Public Health Research*, *3*(13), 1–120.

Bandura, A., & Walters, R. (1977). Social learning theory. Retrieved from http://www.esludwig.com/uploads/2/6/1/0/26105457/bandura_sociallearningtheory.pdf

Barker, J., & Weller, S. (2009). International Journal of Sociology and Social Policy " Is it fun? " developing children centred research methods. *International Journal of Sociology and Social Policy 23*(12), 33–58. https://doi.org/10.1108/01443330310790435

Baumer, E., & South, S. (2001). Community effects on youth sexual activity. *Journal of Marriage and Family.* 63(2), 540-554.

Baxter, S., Blank, L., Guillaume, L., Squires, H., & Payne, N. (2011). Views of contraceptive service delivery to young people in the UK: a systematic review and thematic synthesis. *The Journal of Family Planning and Reproductive Health Care / Faculty of Family Planning & Reproductive Health Care, Royal College of Obstetricians & Gynaecologists*, *37*(2), 71–84. https://doi.org/10.1136/jfprhc.2010.0014

BBC. (2014). BBC Three survey reveals one in four young people first view porn at age 12 or under. Retrieved from http://www.bbc.co.uk/mediacentre/latestnews/2014/porn-whats-the-harm

Beadnell, B., Morrison, D. M., Wilsdon, A., Wells, E. a, Murowchick, E., Hoppe, M., … Nahom, D. (2005). Condom use, frequency of sex, and number of partners: multidimensional characterization of adolescent sexual risk-taking. *Journal of Sex Research*, *42*(3), 192–202. https://doi.org/10.1080/00224490509552274

Beldad, A., De Jong, M., & Steehouder, M. (2010). How shall i trust the faceless and the intangible? A literature review on the antecedents of online trust. *Computers in Human Behavior*, *26*(5), 857–869. https://doi.org/10.1016/j.chb.2010.03.013

Belgrave, F., & Marin, B. V. O. (2000). Culture, contextual, and intrapersonal predictors of risky sexual attitudes among urban African American girls in early adolescence. *Cultural Diversity and* ethnic minority psychology, 6(3), 309.

Bell, A. (2007). Designing and testing questionnaires for children. *Journal of Research in Nursing*, *12*(5), 461–469.

Benda, B., & Corwyn, R. (1996). Testing a theoretical model of adolescent sexual behavior among rural families in poverty. *Child and Adolescent Social Work Journal.* 13(6), 469-494.

Bingham, C., & Crockett, L. (1996). Longitudinal adjustment patterns of boys and girls experiencing early, middle, and late sexual intercourse. *Developmental Psychology*. 32(4), 647.

Birndorf, S., Ryan, S., Auinger, P., & Aten, M. (2005). High self-esteem among adolescents: Longitudinal trends, sex differences, and protective factors. *Journal of Adolescent Health*. 37(3), 194-201.

Bissell, M. (2000). Socio-economic outcomes of teen pregnancy and parenthood: A review of the literature. *The Canadian Journal of Human Sexuality*. 9(3), 191.

Blanton, H., Gerrard, M., & McClive-Reed, K. P. (2013). Threading the Needle in Health-Risk Communication: Increasing Vulnerability Salience While Promoting Self-Worth. *Journal of Health Communication*, *18*(11), 1279–1292. https://doi.org/10.1080/10810730.2013.778359

Bloom, M. (1990). The psychosocial constructs of social competency. Retrieved from http://psycnet.apa.org/psycinfo/1990-98493-001

Blume, L., & Durlauf, S. (2005). *Identifying social interactions: A review*. Retrieved from https://pdfs.semanticscholar.org/d08d/85fd27101fc9aa16480e93d5f3eeeaced5ea.pdf

Bobakova, D., Geckova, A. M., Klein, D., van Dijk, J. P., & Reijneveld, S. a. (2013). Protective and risk factors of early sexual initiation in youth subcultures. *The European Journal of Contraception & Reproductive Health Care : The Official Journal of the European Society of Contraception*, *18*(4), 242–50. https://doi.org/10.3109/13625187.2013.798408

Boden, J. M., & Horwood, L. J. (2006). Self-esteem, risky sexual behavior, and pregnancy in a New Zealand birth cohort. *Archives of Sexual Behavior*, *35*(5), 549–560. https://doi.org/10.1007/s10508-006-9060-4

Bogg, T., & Roberts, B. (2004). Conscientiousness and health-related behaviors: a meta-analysis of the leading behavioral contributors to mortality. *Psychological Bulletin*. 130(6), 887.

Boislard, M.-A., van de Bongardt, D., & Blais, M. (2016). Sexuality (and Lack Thereof) in Adolescence and Early Adulthood: A Review of the Literature. *Behavioral Sciences*, *6*(1), 8. https://doi.org/10.3390/bs6010008

Bongardt, D. Van de, & Reitz, E. (2015). A meta-analysis of the relations between three types of peer norms and adolescent sexual behavior. *Personality and Social Psychology Review, 19(3), 203-234.*

Booth-Kewley, S., Larson, G., & Miyoshi, D. (2007). Social desirability effects on computerized and paper-and-pencil questionnaires. *Computers in Human Behavior*. 23(1), 463-477.

Borzekowski, D., & Rickert, V. (2001). Adolescent cybersurfing for health information: a new resource that crosses barriers. *Archives of Pediatrics & Adolescent medicine*. 155(7), 813-817.

boyd, D. (2007). Why youth (heart) social network sites: The role of networked publics in teenage social life. *MacArthur Foundation Series on Digital learning–Youth, identity, and digital media volume,* 119-142.

Braun, V., & Clarke, V. (2006). Braun, V ., Clarke, V .Using thematic analysis in psychology., 3:2 (2006), 77-101. *Qualitative Research in Psychology*, *3*, 77–101. https://doi.org/10.1191/1478088706qp063oa

Braun-Courville, D., & Rojas, M. (2009). Exposure to sexually explicit web sites and adolescent sexual attitudes and behaviors. *Journal of Adolescent Health*. 45(2), 156-162.

Brawner, B. (2012). Attitudes and beliefs regarding Depression, hiv/aids, and hiv risk-related sexual behaviors among clinically depressed African American adolescent females. *Archives of psychiatric nursing, 26(6), 464-476.*

Brawner, B., Davis, Z., & Fannin, E. (2012). Clinical depression and condom use attitudes and beliefs among African American adolescent females. *Journal of the Association of Nurses in AIDS Care*, 23(3), 184-194.

Brechwald, W., & Prinstein, M. (2011). Beyond homophily: A decade of advances in understanding peer influence processes. *Journal of Research on Adolescence, 21(1), 166-179.*

Broadstock, M., & Michie, S. (2000). Processes of patient decision making: Theoretical and methodological issues. *Psychology and Health*,15(2), 191-204.

Brown, J., Burton, D., Nikolin, S., & Crooks, P. (2012). A qualitative approach using the integrative model of behaviour change to identify intervention strategies to increase optimal child restraint practices among culturally. *Injury*. injuryprev-2011.

Brown, J., & L'Engle, K. (2009). X-rated: Sexual attitudes and behaviors associated with US early adolescents' exposure to sexually explicit media. *Communication Research*, 36(1), 129-151.

Brown, J., L'Engle, K., Pardun, C., & Guo, G. (2006). Sexy media matter: exposure to sexual content in music, movies, television, and magazines predicts black and white adolescents' sexual behavior. *Pediatrics*, 117(4), 1018-1027

Brown, L. K., DiClemente, R. J., & Reynolds, L. A. (1991). HIV prevention for adolescents: Utility of the Health Belief Model. *AIDS Education and Prevention*. Retrieved from http://psycnet.apa.org/psycinfo/1991-24789-001

Brown, J. D., & Wissow, L. S. (2009). Discussion of sensitive health topics with youth during primary care visits: Relationship to youth perceptions of care. Journal of adolescent health. 44 (1), 48-54.

Buchanan, T., Paine, C., & Joinson, A. (2007). Development of measures of online privacy concern and protection for use on the Internet. *Journal of the Association for Information Science and Technology, 58(2), 157-165.*

Buckingham, D., & Bragg, S. (2004). *Young people, sex and the media. New York: Palgrave Macmillan.*

Buhi, E., Daley, E., Oberne, A., & Smith, S. (2010). Quality and accuracy of sexual health information web sites visited by young people. *Journal of adolescent health, 47(2), 206-208.*

Buhi, E., Klinkenberger, N., & Hughes, S. (2013). Teens' use of digital technologies and preferences for receiving STD prevention and sexual health promotion messages: implications for the next generation of. *Sexually transmitted diseases, 40(1), 52-54.*

Buhi, E. R., & Goodson, P. (2007a). Predictors of Adolescent Sexual Behavior and Intention: A Theory-Guided Systematic Review. *Journal of Adolescent Health*, *40*(1), 4–21. https://doi.org/10.1016/j.jadohealth.2006.09.027

Busse, P., Fishbein, M., Bleakley, A., & Hennessy, M. (2010). The Role of Communication With Friends in Sexual Initiation. *Communication Research*, *37*(2), 239–255. https://doi.org/10.1177/0093650209356393

Buzi, R. S., Smith, P. B., & Barrera, C. (2015). Talk With Tiff: Teen's inquiries to a sexual health website. *Journal of Sex & Marital Therapy*, *41*(2), H. https://doi.org/10.1080/0092623X.2013.857375

Byron, P., Albury, K., & Evers, C. (2013). "It would be weird to have that on Facebook": young people's use of social media and the risk of sharing sexual health information. *Reproductive Health Matters*, 21(41), 35-44. http://www.sciencedirect.com/science/article/pii/S0968808013416865

Caminis, A., Henrich, C., & Ruchkin, V. (2007). Psychosocial predictors of sexual initiation and high-risk sexual behaviors in early adolescence. *And Mental Health*, 1(1), 14.

Campbell, F., Ramey, C., & Pungello, E. (2002). Early childhood education: Young adult

outcomes from the Abecedarian Project. *Applied*. developmental science, 6(1), 42-57.

Campbell, M., Fitzpatrick, R., Haines, A., Kinmonth, A. L., Sandercock, P., Spiegelhalter, D., & Tyrer, P. (2000). Framework for design and evaluation of complex interventions to improve health. *Bmj*, *321*(7262), 694–696. https://doi.org/10.1136/bmj.321.7262.694

Capurro, D., Cole, K., Echavarría, M. I., Joe, J., Neogi, T., & Turner, A. M. (2014). The use of social networking sites for public health practice and research: a systematic review. *Journal of Medical Internet Research*, *16*(3), e79. https://doi.org/10.2196/jmir.2679

Carpenter, C. (2010). A meta-analysis of the effectiveness of health belief model variables in predicting behavior. *Health communication, 25(8), 661-669.*

Casey, E., & Beadnell, B. (2010). The structure of male adolescent peer networks and risk for intimate partner violence perpetration: Findings from a national sample. *Journal of Youth and Adolescence*. 39(6), 620-633.

Catalano, R., Berglund, M., & Ryan, J. (2004). Positive youth development in the United States: Research findings on evaluations of positive youth development programs. *The annals of the American academy of political and social science, 591(1), 98-124.*

Catania, J. a., Coates, T. J., Greenblatt, R. M., Dolcini, M. M., Kegeles, S. M., Puckett, S., … Miller, J. (1989). Predictors of condom use and multiple partnered sex among sexually-active adolescent women: Implications for aids- related health interventions. *Journal of Sex Research*, *26*(4), 514–524. https://doi.org/10.1080/00224498909551532

Cawley, J., & Ruhm, C. (2011). The economics of risky health behaviors. Retrieved from http://www.nber.org/papers/w17081

Charlson, M., Wells, M., & Peterson, J. (2014). Mediators and moderators of behavior change in patients with chronic cardiopulmonary disease: the impact of positive affect and self-affirmation. *Translational Behavioral* medicine, 4(1), 7-17

Chau, P., Hu, P., Lee, B., & Au, A. (2007). Examining customers' trust in online vendors and their dropout decisions: an empirical study. *Electronic Commerce Research and Applications, 6(2), 171-182.*

Chen, X.-K., Wen, S. W., Fleming, N., Demissie, K., Rhoads, G. G., & Walker, M. (2007). Teenage pregnancy and adverse birth outcomes: a large population based retrospective cohort study. *International Journal of Epidemiology*, *36*(2), 368–373.

Children and Social Work Act 2017. (2017). Retrieved from http://www.legislation.gov.uk/ukpga/2017/16/section/34/enacted

Clark, L., Miller, K., Nagy, S., Avery, J., & Roth, D. (2005). Adult identity mentoring: reducing sexual risk for African-American seventh grade students. *Journal of Adolescent Health, 37(4), 337-e1*

Claassen, L., Henneman, L., Timmermans, D., Nijpels, G., Dekker, J., & Marteau, T. (2011). Peer Reviewed: Causal Beliefs and Perceptions of Risk for Diabetes and Cardiovascular Disease, the Netherlands, 2007. *Preventing chronic disease*, *8*(6).

Clemons, E. K., & Wilson, J. S. (2015). Family Preferences Concerning Online Privacy, Data Mining, and Targeted Ads: Regulatory Implications. *Journal of Management Information Systems*, *32*(2), 40–70. https://doi.org/10.1080/07421222.2015.1063277

Coiro, J. (2003). Exploring literacy on the internet: Reading comprehension on the internet: Expanding our understanding of reading comprehension to encompass new literacies. *The Reading Teacher*. Retrieved from http://www.jstor.org/stable/20205224

Cole, F. (1997). The role of self-esteem in safer sexual practices. *Journal of the Association of Nurses in AIDS Care*, 8(6), 64-70.

Cole-Lewis, H., & Kershaw, T. (2010). Text messaging as a tool for behavior change in disease prevention and management. *Epidemiologic Reviews*. Retrieved from https://academic.oup.com/epirev/article-abstract/32/1/56/496582

Coley, R. L., Votruba-Drzal, E., & Schindler, H. S. (2009). Fathers' and Mothers' Parenting

Predicting and Responding to Adolescent Sexual Risk Behaviors. *Child Development*, *80*(3), 808–827. https://doi.org/10.1111/j.1467-8624.2009.01299.x

Conner, M., & Armitage, C. (1998). Extending the theory of planned behavior: A review and avenues for further research. Journal of applied social psychology, 28(15), 1429-1464.

Copen, C., Dittus, P., & Leichliter, J. (2016). Confidentiality Concerns and Sexual and Reproductive Health Care Among Adolescents and Young Adults Aged 15-25. *NCHS Data Brief*. (266), 1-8.

Cornelius, J., & Appiah, J. (2016). Using mobile technology to promote safe sex and sexual health in adolescents: current practices and future recommendations. *Adolescent Health, Medicine. 36*(2), 368–373.

Cranor, L., Durity, A., Marsh, A., & Ur, B. (2014). Parents' and teens' perspectives on privacy in a technology-filled world. *Proc. SOUPS*. Retrieved from https://www.usenix.org/system/files/conference/soups2014/soups14-paper-cranor.pdf

Crocker, J., & Park, L. (2004). The costly pursuit of self-esteem. *Psychological Bulletin*, 130(3), 392.

Crockett, L., Bingham, C. R., & Chopak, J. (1996). Timing of first sexual intercourse: The role of social control, social learning, and problem behavior. Journal of youth *and adolescence 25, no. 1 (1996): 89-111.*

Crockett, L. J., Raffaelli, M., & Shen, Y. (2006). Psychology Linking Self-Regulation and Risk Proneness to Risky Sexual Behavior : Pathways through Peer Pressure and Early Substance Use Linking Self-Regulation and Risk Proneness to Risky Sexual Behavior : Pathways through Peer Pressure and Early Substanc, *16*(4), 503–525.

Croyle, R., Sun, Y., & Hart, M. (1997). Processing risk factor information: Defensive biases in health-related judgments and memory. *Perceptions of Health and Illness. 37*(2), 12-17..

Crutzen, R. (2010). Adding effect sizes to a systematic review on interventions for promoting physical activity among European teenagers. *Journal of Behavioral Nutrition and physical activity, 7(1), 29.*

Dahinten, V. S., Shapka, J. D., & Willms, J. D. (2007). Adolescent Children of Adolescent Mothers: The Impact of Family Functioning on Trajectories of Development. *Journal of Youth and Adolescence*, *36*(2), 195–212. https://doi.org/10.1007/s10964-006-9140-8

Dalgas-Pelish, P. (2006). Effects of a self-esteem intervention program on school-age children. *Pediatric nursing, 32(4), 341.*

Davis, T. (2002). An examination of repeat pregnancies using Problem Behavior Theory: is it really problematic? *Journal of Youth Studies, 5(3), 337-351.*8

Day, R. (1992). The transition to first intercourse among racially and culturally diverse youth. *Journal of Marriage and the Family*. Retrieved from http://www.jstor.org/stable/353158

De Genna, N. M., Larkby, C., & Cornelius, M. D. (2011). Pubertal Timing and Early Sexual Intercourse in the Offspring of Teenage Mothers. *Journal of Youth and Adolescence*, *40*(10), 1315–1328. https://doi.org/10.1007/s10964-010-9609-3

Deardorff, J., Gonzales, N., & Christopher, F. (2005). Early puberty and adolescent pregnancy: the influence of alcohol use. *Pediatrics, 116(6), 1451-1456.*

Demetriades, S., & Walter, N. (2016). You Should Know Better: Can Self-Affirmation Facilitate Information-Seeking Behavior and Interpersonal Discussion? *Journal of Health Communication*. 21(11), 1131-1140.

Department of Health. (2013). A Framework for Sexual Health Improvement in England, (March), 1–56.

Deutsch, A. R., Slutske, W. S., Heath, A. C., Madden, P. A. F., & Martin, N. G. (2014). Substance Use and Sexual Intercourse Onsets in Adolescence: A Genetically Informative Discordant Twin Design. *Journal of Adolescent Health*, *54*(1), 114–116.

https://doi.org/10.1016/j.jadohealth.2013.07.013

Devine, S., Bull, S., Dreisbach, S., & Shlay, J. (2014). Enhancing a teen pregnancy prevention program with text messaging: engaging minority youth to develop TOP® Plus Text. *Journal of Adolescent Health*. 54(3), S78-S83.

Diamond, L. (2004). Emerging perspectives on distinctions between romantic love and sexual desire. *Current directions in psychological science, 13(3), 116-119.*

Diamond, L., & Lucas, S. (2004). Sexual-Minority and Heterosexual Youths' Peer Relationships: Experiences, Expectations, and Implications for Well-Being. *Journal of Research on Adolescence*. 14(3), 313-340.

DiClemente, C., Marinilli, A., & Singh, M. (2001). The role of feedback in the process of health behavior change. *American journal of health behavior, 25(3), 217-227.*

Dilorio, C., Dudley, W. N., Soet, J., Watkins, J., & Maibach, E. (2000). A social cognitive-based model for condom use among college students. *Nursing Research*, *49*(4), 208–214.

Dittus, P. J., & Jaccard, J. (2000). Adolescents' perceptions of maternal disapproval of sex: relationship to sexual outcomes. *The Journal of Adolescent Health : Official Publication of the Society for Adolescent Medicine*, *26*(4), 268–78. https://doi.org/10.1016/S1054-139X(99)00096-8

Divecha, Z., Divney, A., & Ickovics, J. (2012). Tweeting About Testing: Do Low-Income, Parenting Adolescents And Young Adults Use New Media Technologies To Communicate About Sexual Health? *Perspectives on sexual and reproductive health, 44(3), 176-183.*

Donnellan, M., & Trzesniewski, K. (2005). Low self-esteem is related to aggression, antisocial behavior, and delinquency. *Psychological* science, 16(4), 328-335

Donohew, L., Zimmerman, R., Cupp, P. S., Novak, S., Colon, S., & Abell, R. (2000). Sensation seeking, impulsive decision-making, and risky sex: implications for risk-taking and design of interventions. *Personality and Individual Differences*, *28*(6), 1079–1091. https://doi.org/10.1016/S0191-8869(99)00158-0

Donovan, J., Jessor, R., & Costa, F. (1991). Adolescent health behavior and conventionality-unconventionality: An extension of problem-behavior therapy. *Health Psychology, 10(1), 52.*

Downing, J., & Bellis, M. a. (2009). Early pubertal onset and its relationship with sexual risk taking, substance use and anti-social behaviour: a preliminary cross-sectional study. *BMC Public Health*, *9*, 446. https://doi.org/10.1186/1471-2458-9-446

Downing-Matibag, T. M., & Geisinger, B. (n.d.). Hooking Up and Sexual Risk Taking Among College Students: A Health Belief Model Perspective. https://doi.org/10.1177/1049732309344206

Dube, S., Anda, R., Whitfield, C., & Brown, D. (2005). Long-term consequences of childhood sexual abuse by gender of victim. *American Journal of*. Retrieved from http://www.sciencedirect.com/science/article/pii/S0749379705000784

Duncan, S. C., Duncan, T. E., Biglan, A., & Ary, D. (1998). Contributions of the social context to the development of adolescent substance use: A multivariate latent growth modeling approach. *Drug and Alcohol Dependence*. https://doi.org/10.1016/S0376-8716(98)00006-4

Düring, C., & Jessop, D. (2015). The moderating impact of self-esteem on self-affirmation effects. *British Journal of Health Psychology*. 20(2), 274-289.

East, P. L., Reyes, B. T., & Horn, E. J. (2007). Association between adolescent pregnancy and a family history of teenage births. *Perspectives on Sexual and Reproductive Health*, *2*(39), 108–115.

Eccles, J., & Gootman, J. (n.d.). Committee on Community-Level Programs for Youth,

National Research Council (US), Board on Children Youth and Families, and Institute of Medicine (. *Community Programs to Promote Youth Development.* Retrieved from https://scholar.google.co.uk/scholar?hl=en&as_sdt=0,5&q=Committee+on+Community-Level+Programs+for+Youth,+National+Research+Council+(US).+Board+on+Children, +Youth,+and+Families,+Institute+of+Medicine+(US).+Community+Programs+to+Pro mote+Youth+Development.+Washington,+DC%3A+National+Academies

Eisenberg, M., Bernat, D., & Bearinger, L. (2008). Support for comprehensive sexuality education: Perspectives from parents of school-age youth. *Journal of Adolescent Health, 42(4), 352-359*

Epton, T., & Harris, P. (2008). Self-affirmation promotes health behavior change. *Health Psychology* , 27(6), 746.

Eysenck, M. (1976). Arousal, learning, and memory. *Psychological Bulletin* , 83(3), 389.

Falk, E., O'Donnell, M., & Cascio, C. (2015). Self-affirmation alters the brain's response to health messages and subsequent behavior change. *Proceedings of the National Academy of Sciences,* 112(7), 1977-1982.

Farmer, M., & Meston, C. (2006). Predictors of condom use self-efficacy in an ethnically diverse university sample. *Archives of sexual behavior, 35(3), 313-326.*

Fedorowicz, A. R., Hellerstedt, W. L., Schreiner, P. J., & Bolland, J. M. (2014). Associations of adolescent hopelessness and self-worth with pregnancy attempts and pregnancy desire. *American Journal of Public Health*, *104*(8), e133–40. https://doi.org/10.2105/AJPH.2014.301914

Ferrer, R., Klein, W., & Persoskie, A. (2016). The Tripartite Model of Risk Perception (TRIRISK): Distinguishing Deliberative, Affective, and Experiential Components of Perceived Risk. *Annals of Behavioral*, 50(5), 653-663.http://link.springer.com/article/10.1007/s12160-016-9790-z

Fielden, A., Sillence, E., & Little, L. (2016). Online Self-Affirmation Increases Fruit and Vegetable Consumption in Groups at High Risk of Low Intake. Applied Psychology: Health and Well-Being, 8(1), 3-18.

Fine, M., & McClelland, S. (2006). Sexuality education and desire: Still missing after all these years. *Harvard Educational Review,* 76(3), 297-338.

Finer, L. B., & Philbin, J. M. (2013). Sexual initiation, contraceptive use, and pregnancy among young adolescents. *Pediatrics,* 131(5), 886-891.

Flavián, C., & Guinalíu, M. (2006). Consumer trust, perceived security and privacy policy: three basic elements of loyalty to a web site. *Industrial Management & Data System*s, 106(5), 601-620.

Flavián, C., Guinalíu, M., & Gurrea, R. (2006). The role played by perceived usability, satisfaction and consumer trust on website loyalty. *Information & Management*. 43(1), 1-14.

Flay, B., Graumlich, S., & Segawa, E. (2004). Effects of 2 prevention programs on high-risk behaviors among African American youth: A randomized trial. *Of Pediatrics & adolescent medicine, 158(4), 377-384.*

Fogg, B. J., Marshall, J., Laraki, O., Osipovich, A., Varma, C., Fang, N., ... & Treinen, M. (2001, March). What makes Web sites credible?: a report on a large quantitative study. In Proceedings of the SIGCHI conference on Human factors in computing systems (pp. 61-68). ACM.

Fox, S., & Jones, S. (2009). The Social Life of Health Information. Pew Internet & American Life Project; June 2009.

FPA. (2016). FPA responds to latest teenage pregnancy data for England and Wales - Press releases 2016 - FPA. Retrieved August 8, 2017, from http://www.fpa.org.uk/news/fpa-responds-latest-teenage-pregnancy-data-england-and-wales

France, J. (2014). Using texts to increase access to school nurses. Nursing times, 110(13), 18-19.

Freake, H., barley, V., Kent, G. (2006). Adolescents' views of helping professionals: A review of the literature. Journal of adolescent, 30 (4), 639-653.

Gardner, M., & Steinberg, L. (2005). Peer Influence on Risk Taking, Risk Preference, and Risky Decision Making in Adolescence and Adulthood: An Experimental Study. *Developmental Psychology*, *41*(4), 625–635. https://doi.org/10.1037/0012-1649.41.4.625

Garside, J. (2014). Ofcom: six-year-olds understand digital technology better than adults. *The Guardian*. Retrieved from http://grover.concordia.ca/resources/elm/shared/assets/YoungChildren.pdf

Gaskin, G., Bruce, J., & Anoshiravani, A. (2016). Understanding Parent Perspectives Concerning Adolescents' Online Access to Personal Health Information. *Journal of Participatory medicine,* 8.

Gavin, L. E., Catalano, R. F., David-Ferdon, C., Gloppen, K. M., & Markham, C. M. (2010). A Review of Positive Youth Development Programs That Promote Adolescent Sexual and Reproductive Health. *Journal of Adolescent Health*, *46*(3 SUPPL.), S75–S91. https://doi.org/10.1016/j.jadohealth.2009.11.215

Gerrard, M., Gibbons, F., & Bushman, B. (1996). Relation between perceived vulnerability to HIV and precautionary sexual behavior. *Psychological Bulletin*. 119(3), 390.

Gibbs, J., Gkatzidou, V., & Tickle, L. (2016). Can you recommend any good STI apps? *A* Review of Content, Accuracy an*d* and comprehensiveness of current mobile medical applications for STIs and related genital infections. *Sex Transm Infect*, 93(4), 234-235.

Gillen, M. M., Lefkowitz, E. S., & Shearer, C. L. (2006). Does Body Image Play a Role in Risky Sexual Behavior and Attitudes? 1. *Journal of Youth and Adolescence*, *35*(2), 243–255. https://doi.org/10.1007/s10964-005-9005-6

Gillmore, M. R., Archibald, M. E., Morrison, D. M., Wilsdon, A., Wells, E. a., Hoppe, M. J., … Murowchick, E. (2002). Teen sexual behavior: Applicability of the theory of reasoned action. *Journal of Marriage and Family,* 64(4), 885-897.

Godin, G., Bélanger-Gravel, A., & Vézina-Im, L. (2012). Question–behaviour effect: A randomised controlled trial of asking intention in the interrogative or declarative form. *Psychology & health, 27(9), 1086-1099.*

Godin, G., & Kok, G. (1996). The theory of planned behavior: a review of its applications to health-related behaviors. *American journal of health promotion, 11(2), 87-98.*

Gold, J., & Pedrana, A. (2011). A systematic examination of the use of online social networking sites for sexual health promotion. *BMC public health, 11(1), 583.*

Good, A., Harris, P., & Jessop, D. (2015). Open-mindedness can decrease persuasion amongst adolescents: The role of self-affirmation. *British journal of health psychology, 20(2), 228-242.*

Goodson, P., Buhi, E. R., & Dunsmore, S. C. (2006). Self-esteem and adolescent sexual behaviors, attitudes, and intentions: A systematic review. *The Journal of Adolescent Health*, *38*(3), 310–9. https://doi.org/10.1016/j.jadohealth.2005.05.026

Goodwin, N., Smith, J., Davies, A., & Perry, C. (2011). A report to the Department of Health and the NHS Future Forum. *Integrated Care for*. Retrieved from https://pcrs-uk.org/sites/pcrs-uk.org/files/files/nuffield_trust_kings_fund.pdf

Gott, M., Galena, E., Hinchliff, S., & Elford, H. (2004). "Opening a can of worms": GP and practice nurse barriers to talking about sexual health in primary care. *Family Practice*, *21*(5), 528–536. https://doi.org/10.1093/fampra/cmh509

Goyal, M., Witt, R., Gerber, J., Hayes, K., & Zaoutis, T. (2013). 131. Physician Adherence to Sexual Health and STI/HIV Screening Recommendations During Routine Adolescent Health Visits. *Journal of Adolescent Health*, *52*(2), S84.

https://doi.org/10.1016/j.jadohealth.2012.10.197

Gray, N., & Klein, J. (2006). Adolescents and the internet: health and sexuality information. *Current opinion in obstetrics and Gynecology, 18(5), 519-524*

Gray, N., Klein, J., Noyce, P., & Sesselberg, T. (2005). Health information-seeking behaviour in adolescence: the place of the internet. *Social Science &* medicine, 60(7), 1467-1478.

Greenberg, J., Magder, L., & Aral, S. (1992). Age at first coitus a marker for risky sexual behavior in women. *Sexually transmitted diseases, 19(6), 331-334.*

Griffiths, F., Lindenmeyer, A., & Powell, J. (2006). Why are health care interventions delivered over the internet? A systematic review of the published literature. *Journal of medical Internet research, 8(2).*

Guilamo-Ramos, V., Bouris, A., Lee, J., McCarthy, K., Michael, S. L., Pitt-Barnes, S., & Dittus, P. (2012). Paternal influences on adolescent sexual risk behaviors: A structured literature review. *Pediatrics, 130*(5), 1315–1325.

Guzmán, B., & Schlehofer-Sutton, M. (2003). Let's talk about sex: How comfortable discussions about sex impact teen sexual behavior. *Health Communication*, 8(6), 583-598.

Hagan, J., Shaw, J., & Duncan, P. (2007). *Bright futures: Guidelines for health supervision of infants, children, and adolescents*. Retrieved from http://ebooks.aappublications.org/content/bright-futures-3rd-edition

Hair, J., Anderson, R., Tatham, R., & Black, W. (2006). *Multivariate Data Analysis. 5th Ed*. (5th Edition, Ed.). Prentice Hall, Upper Saddle River.

Halpern, C. (2006). Integrating hormones and other biological factors into a developmental systems model of adolescent female sexuality. *New Directions for Child and Adolescent*. Retrieved from http://onlinelibrary.wiley.com/doi/10.1002/cd.159/full

Halpern, C. (2010). Reframing research on adolescent sexuality: Healthy sexual development as part of the life course. *Perspectives on Sexual and Reproductive Health*. Retrieved from http://onlinelibrary.wiley.com/doi/10.1363/4200610/full

Hammarlund, K., & Lundgren, I. (2008). In the heat of the night, it is difficult to get it right—teenagers' attitudes and values towards sexual risk-taking. *International Journal of qualitative studies on health and well-being, 3(2), 103-112.*

Hansen, D. L., Derry, H. A., Resnick, P. J., & Richardson, C. R. (2003). Adolescents searching for health information on the Internet: an observational study. Journal of medical Internet research, 5(4).

Harden, A., Brunton, G., Fletcher, A., & Oakley, A. (2009). Teenage pregnancy and social disadvantage: systematic review integrating controlled trials and qualitative studies. *Bmj*, 339, b4254.

Harris, K., Byrd, K., Engel, M., & Weeks, K. (2016). Internet-based information on long-acting reversible contraception for adolescents. *Journal of primary care & community health, 7(2), 76-80.*

Harris, P. R., & Napper, L. (2005). Self-affirmation and the biased processing of threatening health-risk information. *Personality and Social Psychology Bulletin,* 31(9), 1250-1263.

Harter, S., & Whitesell, N. (2003). Beyond the debate: Why some adolescents report stable self-worth over time and situation, whereas others report changes in self-worth. *Journal of Personality*, 31(7), 50-62

Harvey, R. D., & Oswald, D. L. (2000). Collective guilt and shame as motivation for White support of Black programs. *Journal of Applied Social Psychology,* 30(9), 1790-1811.

Hatherall, B., Ingham, R., Stone, N., & McEachran, J. (2007). How, not just if, condoms are used: the timing of condom application and removal during vaginal sex among young people in England. *Sexually Transmitted Infections*, *83*(1), 68–70. https://doi.org/10.1136/sti.2006.021410

Health Protection Agency. (2010). No Title. *"Number of Selected STI Diagnoses Made at Genitourinary Medicine Clinics by Gender, Sexual Orientation and Age-Group, UK, England and English SHAs: 2000 - 2009"*.

Health Protection Report. (2017). HPR volume 11 issue 28: news (11 August) - GOV.UK. Retrieved August 15, 2017, from https://www.gov.uk/government/publications/health-protection-report-volume-11-2017/hpr-volume-11-issue-28-news-11-august

Hendry, N., Brown, G., Dowsett, G., & Carman, M. (2017). Association between sexually transmissible infection testing, numbers of partners and talking to partners and friends about sexual health: survey of young adults. *Sexual Health (Online), 14*(4), 378.

Hensel, D. J., Nance, J., & Fortenberry, J. D. (2016). The Association Between Sexual Health and Physical, Mental, and Social Health in Adolescent Women. *Journal of Adolescent Health*. https://doi.org/10.1016/j.jadohealth.2016.06.003

Heywood, W., Patrick, K., Smith, A., & Pitts, M. (2015). Associations between early first sexual intercourse and later sexual and reproductive outcomes: a systematic review of population-based data. *Archives of Sexual Behavior. 1*(4), 44–62.

Hinkin, T. R. (1998). A Brief Tutorial on the Development of Measures for Use in Survey Questionnaires. *Organizational Research Methods*, *1*(1), 104–121. https://doi.org/10.1177/109442819800100106

Hipwell, A. E., Keenan, K., Loeber, R., & Battista, D. (2010). Early predictors of sexually intimate behaviors in an urban sample of young girls. *Developmental Psychology*, *46*(2), 366–78. https://doi.org/10.1037/a0018409

Hlavka, H. R. (2014). Normalizing Sexual Violence: Young Women Account for Harassment and Abuse. *Gender & Society*, *28*(3), 337–358. https://doi.org/10.1177/0891243214526468

Hochbaum, G., & Rosenstock, I. (1952). Health belief model. *United States Public Health*. Retrieved from http://www.infosihat.gov.my/infosihat/artikelHP/bahanrujukan/HE_DAN_TEORI/DOC/Health Belief Model.doc

Hoffman, S., & Maynard, R. (2008). *Kids having kids: Economic costs & social consequences of teen pregnancy*. Retrieved from https://books.google.co.uk/books?hl=en&lr=&id=gZyhQTwy4RsC&oi=fnd&pg=PR11&dq=consequences+of+teen+pregnancy&ots=Nc0_R3VMqX&sig=1UcUfvr9HMzq1TebUtUGF5rNDC0

Hoffman, S., O. & Sullivan, L. F., Harrison, A., Dolezal, C., & Monroe-Wise, A. (2006). HIV Risk Behaviors and the Context of Sexual Coercion in Young Adults: Sexual Interactions: Results From a Diary Study in Rural South Africa. *Sexually Transmitted Diseases*, *33*(1), 52–58.

Holland, O., Sastry, N., Ping, S., & Knopp, R. (2014). A series of trials in the UK as part of the Ofcom TV white spaces pilot. *(CCS), 2014 1st* Retrieved from http://ieeexplore.ieee.org/abstract/document/6933806/

Holstrom, A. (2015). Sexuality Education Goes Viral: What We Know About Online Sexual Health Information. *American Journal of Sexuality Education*. Retrieved from http://www.tandfonline.com/doi/abs/10.1080/15546128.2015.1040569

Hopkins, S., Lyons, F., Coleman, C., Courtney, G., Bergin, C., & Mulcahy, F. (2004). Resurgence in infectious syphilis in Ireland: an epidemiological study. *Sexually transmitted diseases*, 31(5), 317-321.

Horne, S., & Zimmer-Gembeck, M. J. (2005). Female sexual subjectivity and well-being: Comparing late adolescents with different sexual experiences. Sexuality Research and Social Policy, 2(3), 25-40.

Hoyle, R. H., Fejfar, M. C., & Miller, J. D. (2000). Personality and sexual risk taking: A

quantitative review. *Journal of Personality*, *68*(6), 1203–1231.

Hoyle, R. H., Stephenson, M. T., Palmgreen, P., Lorch, E. P., & Donohew, R. L. (2002). Reliability and validity of a brief measure of sensation seeking. Personality and individual differences, 32(3), 401-414.

Huang, R.-C., Mori, T. A., & Beilin, L. J. (2012). Early life programming of cardiometabolic disease in the Western Australian pregnancy cohort (Raine) study. *Clinical and Experimental Pharmacology and Physiology*, *39*(11), 973–978. https://doi.org/10.1111/j.1440-1681.2012.05746.x

Hutchinson, M., Jemmott, J., & Jemmott, L. (2003). The role of mother–daughter sexual risk communication in reducing sexual risk behaviors among urban adolescent females: a prospective study. *Journal of Adolescent*. Retrieved from http://www.sciencedirect.com/science/article/pii/S1054139X03001836

Hyde, A. ;, Drennan, J. ;, Butler, M. ;, Howlett, E., Hyde, A., Drennan, J., Lohan, M. (2013). Title Parents' constructions of communication with their children about safer sex Parents' constructions of communication with their children about safer sex. *Journal of Clinical Nursing*, *22*(22), 23–24. https://doi.org/10.1111/jocn.12367

Ingram, J., & Salmon, D. (2007). "No worries!" Young people's experiences of nurse-led drop-in sexual health services in South West England. *Journal of Research in Nursing*, *12*(4), 305–316. https://doi.org/10.1177/1744987107075583

Ingram, J., & Salmon, D. (2010). Young people's use and views of a school-based sexual health drop-in service in areas of high deprivation. *Health Education Journal*, *69*(3), 227–235. https://doi.org/10.1177/0017896910364566

Iyer, N. N., & Baxter-MacGregor, J. (2010). Ethical dilemmas for the school counselor: Balancing student confidentiality and parents' right to know.

Jaccard, J., Dodge, T., & Dittus, P. (2002). Parent-adolescent communication about sex and birth control: A conceptual framework. *New Directions for Child and*. Retrieved from http://onlinelibrary.wiley.com/doi/10.1002/cd.48/full

Jacobson, L., Richardson, G., Parry-langdon, N., & Donocan, C., (2001). How do teenagers and primary healthcare providers view each other? An overview of key themes. British journal of general practitioners.

Jackman, D. M., & MacPhee, D. (2017). Self-esteem and future orientation predict adolescents' risk engagement. *The Journal of Early Adolescence,* 37(3), 339-366.

Janz, N. K., & Becker, M. H. (1984). The health belief model: A decade later. *Health education quarterly*, 11(1), 1-47.

Jemmott, J. J., & Jemmott, L. (2000). HIV risk reduction behavioral interventions with heterosexual adolescents. *AIDS (London, England)*. Retrieved from http://europepmc.org/abstract/med/11061641

Jemmott,. J., Jemmott, L., & Hacker, C. (1991). Predicting intentions to use condoms among African-American adolescents: the theory of planned behavior as a model of HIV risk-associated behavior. *Ethnicity & Disease*. Retrieved from http://europepmc.org/abstract/med/1490134

Jennifer L. Brown, M. ., & Peter A. Vanable. (2007). Alcohol Use, Partner Type, and Risky Sexual Behavior Among College Students: Findings from an Event-Level Study. *Addict Behav*, *32*(12), 2940–2952.

Jessop, D., Simmonds, L., & Sparks, P. (2009). Motivational and behavioural consequences of self-affirmation interventions: A study of sunscreen use among women. *Psychology and Health*. Retrieved from http://www.tandfonline.com/doi/abs/10.1080/08870440801930320

Jessor, R. (1987). Problem-behavior theory, psychosocial development, and adolescent problem drinking. *Addiction*. Retrieved from

http://onlinelibrary.wiley.com/doi/10.1111/j.1360-0443.1987.tb01490.x/full

Jessor, R. (2001). Problem-behavior theory. *Risikoverhaltensweisen Jugendlicher*. Retrieved from http://link.springer.com/content/pdf/10.1007/978-3-663-11310-2_3.pdf

Johnson, A. M., Mercer, C. H., Erens, B., Copas, A. J., McManus, S., Wellings, K., ... & Purdon, S. (2001). Sexual behaviour in Britain: partnerships, practices, and HIV risk behaviours. The Lancet, 358(9296), 1835-1842.

Jolly, M. C., Sebire, N., Harris, J., Robinson, S., & Regan, L. (2000). Obstetric risks of pregnancy in women less than 18 years old. Obstetrics & Gynecology, 96(6), 962-966.

Jones, C. J., Smith, H., & Llewellyn, C. (2014). Evaluating the effectiveness of health belief model interventions in improving adherence: a systematic review. Health psychology review, 8(3), 253-269.

Jones, R. K Biddlecom, A. E. (2011). Is the internet filling the sexual health information gap for teens? An exploratory study. *Journal of Health Communication*, *15*(2), 112–123.

Kaestle, C. E., Halpern, C. T., Miller, W. C., & Ford, C. A. (2005). Young age at first sexual intercourse and sexually transmitted infections in adolescents and young adults. *American Journal of Epidemiology*, 161(8), 774-780.

Kanuga, M., & Rosenfeld, W. (2004). Adolescent sexuality and the internet: the good, the bad, and the URL. *Journal of Pediatric and Adolescent Gynecology* , 17(2), 117-124.

Karakiewicz, P. I., Bhojani, N., Neugut, A., Shariat, S. F., Jeldres, C., Graefen, M., & Kattan, M. W. (2008). The Effect of Comorbidity and Socioeconomic Status on Sexual and Urinary Function and on General Health-Related Quality of Life in Men Treated with Radical Prostatectomy for Localized Prostate Cancer. *The Journal of Sexual Medicine*, *5*(4), 919–927.

Keller, S. N., Labelle, H., Karimi, N., & Gupta, S. (2002). STD/HIV prevention for teenagers: A look at the Internet universe. Journal of health communication, 7(4), 341-353.

Kendall, V., & Funk, T. (2012). *Child exploitation and trafficking: Examining the global challenges and US responses*. Rowman & Littlefield.

Kiene, S. M., Barta, W. D., Tennen, H., & Armeli, S. (2009). Alcohol, helping young adults to have unprotected sex with casual partners: Findings from a daily diary study of alcohol use and sexual behavior. *The Journal of Adolescent Health*, *44*(1), 73–80. https://doi.org/10.1016/j.jadohealth.2008.05.008.

Kim, Y. (2016). Trust in health information websites: A systematic literature review on the antecedents of trust. *Health Informatics Journal*. Retrieved from http://journals.sagepub.com/doi/abs/10.1177/1460458214559432

Kinsman, S., Romer, D., & Furstenberg, F. (1998). Early sexual initiation: the role of peer norms. *Pediatrics*. 102(5), 1185-1192.

Kirby, D., & Laris, B. (2009). Effective curriculum-based sex and STD/HIV education programs for adolescents. *Child Development Perspectives*. 67(5), 85-92.

Klein, W., Blier, H., & Janze, A. (2001). Maintaining positive self-evaluations: Reducing attention to diagnostic but unfavorable social comparison information when general self-regard is salient. *Motivation and Emotion*. 75(5), 11-19.

Klein, W., Lipkus, I., & Scholl, S. (2010). Self-affirmation moderates effects of unrealistic optimism and pessimism on reactions to tailored risk feedback. *Psychology and*. Retrieved from http://www.tandfonline.com/doi/abs/10.1080/08870440903261970

Kline, P. (1999). *The handbook of psychological testing* (2nd ed.). London: Routledge. https://doi.org/10.4324/9781315812274

Ko, D. M., & Kim, H. S. (2010). Message framing and defensive processing: A cultural examination. Health communication, 25(1), 61-68.

Koningsbruggen, G. van, & Das, E. (2009). How self-affirmation reduces defensive

processing of threatening health information: evidence at the implicit level. *Health Psychology, 28(5), 563.*.

Kreuter, M. W., Lukwago, S. N., Bucholtz, D. C., Clark, E. M., & Sanders-Thompson, V. (n.d.). Perspective Achieving Cultural Appropriateness in Health Promotion Programs: Targeted and Tailored Approaches. https://doi.org/10.1177/1090198102251021

Kuortti, M., & Kosunen, E. (2009). Risk-taking behaviour is more frequent in teenage girls with multiple sexual partners. *Scandinavian Journal of Primary Health Care*, *27*(1), 47–52. https://doi.org/10.1080/02813430802691933

Kwan, A. C. M., Chu, S. K. W., Hong, A. W. L., Tam, F., Lee, G. M. Y., & Mellecker, R. (2015). Making Smart Choices: A Serious Game for Sex Education for Young Adolescents. *International Journal of Game-Based Learning*, *5*(1), 18–30. https://doi.org/10.4018/ijgbl.2015010102

Lader, D. (2009). Contraception and sexual health, 2008/09. *Contraception and Sexual Heath*, *2008/2009*.

Laflin, M., Wang, J., & Barry, M. (2008). A longitudinal study of adolescent transition from virgin to nonvirgin status. *Journal of Adolescent Health, 42(3), 228-236.*

Lagus, K. A., Bernat, D. H., Bearinger, L. H., Resnick, M. D., & Eisenberg, M. E. (2011). Parental Perspectives on Sources of Sex Information for Young People. *Journal of Adolescent Health*, *49*(1), 87–89. https://doi.org/10.1016/j.jadohealth.2010.10.007

Lammers, C., Ireland, M., Resnick, M., & Blum, R. (2000). Influences on adolescents' decision to postpone onset of sexual intercourse: A survival analysis of virginity among youths aged 13 to 18 years. Journal of Adolescent Health, 26(1), 42-48.

Langille, D. B., Hughes, J., Murphy, G. T., & Rigby, J. A. (2005). Socio-economic factors and adolescent sexual activity and behaviour in Nova Scotia. Canadian Journal of Public Health/Revue Canadienne de Sante'e Publique, 313-318.

Laraque, D., Mclean, D., & Brown-Peterside, P. (1997). Predictors of reported condom use in central Harlem youth as conceptualized by the health belief model. *Journal of Adolescent Health, 21(5), 318-327.*

Laureati, M., Bergamaschi, V., & Pagliarini, E. (2014). School-based intervention with children. Peer-modeling, reward and repeated exposure reduce food neophobia and increase liking of fruits and vegetables. Appetite, 83, 26-32.

Lawton, R., Conner, M., & McEachan, R. (2009). Desire or reason: predicting health behaviors from affective and cognitive attitudes. Health Psychology, 28(1), 56.

LeCroy, C. W. (2005). Building an Effective Primary Prevention Program for Adolescent Girls: Empirically Based Design and Evaluation. Brief Treatment & Crisis Intervention, 5(1).

Lenhart, A., Purcell, K., Smith, A., & Zickhur, K. (2010). Pew Internet & American Life Project: Social media & mobile Internet use among teens and young adults. Retrieved from https://scholar.google.co.uk/scholar?as_q=&as_epq=&as_oq=&as_eq=&as_occt=any&as_sauthors=Lenhart%2C+Purcell%2C+Smith%2C++Zickhur%2C+&as_publication=&as_ylo=2010&as_yhi=2010&hl=en&as_sdt=0%2C5

Lenhart, M. (2015). Teens, Social Media & Technology Overview 2015. Pew Research Centre.

Len-Ríos, M., Streit, C., & Killoren, S. (2016). US Latino adolescents' use of mass media and mediated communication in romantic relationships. *Journal of Children*. Retrieved from http://www.tandfonline.com/doi/abs/10.1080/17482798.2016.1144214

Levine, D. (2011). Using technology, new media, and mobile for sexual and reproductive health. *Sexuality Research and Social Policy*, 8(1), 18-26.

Lewis, J., & Knijn, T. (2003). Sex Education Materials in The Netherlands and in England

and Wales: a comparison of content, use and teaching practice. *Oxford Review of Education* , 29(1), 113-150.

Lief, H., Fullard, W., & Devlin, S. (1990). A new measure of adolescent sexuality: SKAT-A. *Journal of Sex Education and therapy,* 16(2), 79-91.

Lim, M. (2014). Sexual Health & Youth (SHY) SMS Project, (December).

Lim, M. S. C., Hocking, J. S., Hellard, M. E., & Aitken, C. K. (2008). SMS STI: a review of the uses of mobile phone text messaging in sexual health. *International Journal of STD & AIDS*, *19*(5), 287–290. https://doi.org/10.1258/ijsa.2007.007264

Lin, P., Simoni, J. M., & Zemon, V. (2005). The health belief model, sexual behaviors, and HIV risk among Taiwanese immigrants. AIDS Education & Prevention, 17(5), 469-483.

Lindberg, L. D., Maddow-Zimet, I., & Boonstra, H. (2016). Changes in adolescents' receipt of sex education, 2006–2013. *Journal of Adolescent Health*, 58(6), 621-627.

Little, L., & Briggs, P. (2006). Investigating privacy in an ambient world. *Workshop on Privacy and HCI, CHI*, *2006*(April), 24–27.

Little, L., & Briggs, P. (2009). Private whispers/public eyes: Is receiving highly personal information in a public place stressful? *Interacting with Computers*, *21*(4), 316–322.

Little, L., Briggs, P., & Coventry, L. (2005). Public space systems: Designing for privacy? *Int. J. Human-Computer Studies*, *63*, 254–268.

Liu, L., Huh, J., Neogi, T., Inkpen, K., & Pratt, W. (2013). Health vlogger-viewer interaction in chronic illness management. *Proceedings of the SIGCHI*. Retrieved from http://dl.acm.org/citation.cfm?id=2470663

Livingstone, S., Haddon, L., Görzig, A., & Ólafsson, K. (2010). Risks and safety on the internet: the perspective of European children: key findings from the EU Kids Online survey of 9-16 year olds and their parents in 25 countries.

Lo, V., & Wei, R. (2005). Exposure to Internet pornography and Taiwanese adolescents' sexual attitudes and behavior. *Journal of Broadcasting & Electronic Media, 49(2), 221-237.*

Logel, C., & Cohen, G. L. (2012). The role of the self in physical health: Testing the effect of a values-affirmation intervention on weight loss. Psychological Science, 23(1), 53-55.

Long, R. (n.d.). Sex and Relationship Education in Schools (England). Retrieved from http://researchbriefings.parliament.uk/ResearchBriefing/Summary/SN06103

Ludwig, K., & Pittman, J. (1999). Adolescent prosocial values and self-efficacy in relation to delinquency, risky sexual behavior, and drug use. *Youth & Society, 30(4), 461-482.*

Madden, M., Lenhart, A., Cortesi, S., Smith, A., & Beaton, M. (2013). Teens, Social Media, and Privacy.

Magar, E. C. E., Phillips, L. H., & Hosie, J. A. (2008). Self-regulation and risk-taking. *Personality and Individual Differences*, *45*(2), 153–159. https://doi.org/10.1016/j.paid.2008.03.014

Magnusson, B. M., Masho, S. W., & Lapane, K. L. (2012). Early Age at First Intercourse and Subsequent Gaps in Contraceptive Use. *Journal of Women's Health*, *21*(1), 73–79.

Manlove, J., Welti, K., Wildsmith, E., & Barry, M. (2014). Relationship types and contraceptive use within young adult dating relationships. *Perspectives on Sexual and Reproductive Health, 46*(1), 41–50.

Manning, D. (2000). Presumed consent in emergency neonatal research. *Journal of Medical Ethics*, 26(4), 249-253.

Manning, W. D., Longmore, M. a, & Giordano, P. C. (1995). The relationship context of contraceptive use at first intercourse. *Family Planning Perspectives*, *32*, 104–110.

Marino, J., Skinner, S., Doherty, D., & Rosenthal, S. (2013). Age at menarche and age at first sexual intercourse: a prospective cohort study. *Pediatrics*. Retrieved from http://pediatrics.aappublications.org/content/132/6/1028.short

Markham, C. M., Lormand, D., Gloppen, K. M., Peskin, M. F., Flores, B., Low, B., & House, L. D. (2010). Connectedness as a Predictor of Sexual and Reproductive Health Outcomes for Youth. *Journal of Adolescent Health*, *46*(3 SUPPL.), S23–S41.

Martellozzo, Elena, Andy Monaghan, Joanna R. Adler, Julia Davids, Miranda AH Horvath, and R. L. (2016). *An examination of the impact of online pornography on children and young people*: 15 June 2016.

Marson, C., & King, E. (2006). Factors that shape young people's sexual behaviour: a systematic review. The lancet, 9547 (368), 1581-1586.

Martino, S., Elliott, M., Corona, R., & Kanouse, D. (2008). Beyond the "big talk": The roles of breadth and repetition in parent-adolescent communication about sexual topics. *Pediatrics*. 121(3), e612-e618.

Mason, W. A., Hitch, J., & Kosterman, R. (2010). Growth in adolescent delinquency and alcohol use in relation to young adult crime, alcohol use disorders, and risky sex: a comparison of youth from low-versus. *Journal of Child Psychology and Psychiatry,* 51(12), 1377-1385.

Mazzaferro, K., Murray, P., Ness, R., & Bass, D. (2006). Depression, stress, and social support as predictors of high-risk sexual behaviors and STIs in young women. *Journal of Adolescent health, 39(4), 601-603.*

McBride, C., & Paikoff, R. (2003). Individual and familial influences on the onset of sexual intercourse among urban African American adolescents. *Journal of Consulting and clinical psychology*, 71(1), 159.

McCarthy, O., Carswell, K., Murray, E., & Free, C. (2012). What young people want from a sexual health website: design and development of Sexunzipped. *Journal of Medical Internet research, 14(5).

McClelland, S. I. (2012). Measuring Sexual Quality of Life. Handbook of health psychology, 247. Office for national statistics. (2014, July) Teenage pregnancies at record low: how does your local area compare?

McElderry, D. H., & Omar, H. A. (2003). Sex education in the schools: What role does it play? *International Journal of Adolescent Medicine and Health*, *15*(1), 3–9. 0038499538&partnerID=40&md5=ca7cd84e0d64a2c8118d86492b9bbae3

McGee, R., & Williams, S. (2000). Does low self-esteem predict health compromising behaviours among adolescents? *Journal of Adolescence*. 23(5), 569-582.

McQueen, A., & Klein, W. (2006). Experimental manipulations of self-affirmation: A systematic review. *Self and Identity*, 5(4), 289-354.

Meier, A. (2007). Adolescent first sex and subsequent mental health. *American Journal of Sociology*, 112(6), 1811-1847.

Melchior, A. (1998). National Evaluation of Learn and Serve America School and Community-Based Programs. Final Report. Retrieved from http://eric.ed.gov/?id=ED437575

Memish, K. E., Schüz, N., Frandsen, M., Ferguson, S. G., & Schüz, B. (2016). Using Self-affirmation to Increase the Effects of Emotive Health Warnings on Smoking: A Randomized Exploratory Trial. *Nicotine & Tobacco Research*, ntw167.

Mendes, Á., Abreu, L., Vilar-Correia, M. R., & Borlido-Santos, J. (2016). "That Should Be Left to Doctors, That's What They are There For!"—Exploring the Reflexivity and Trust of Young Adults When Seeking Health Information. *Health Communication*, *00*(00), 1–6. https://doi.org/10.1080/10410236.2016.1199081

Mercer, C. H., Tanton, C., Prah, P., Erens, B., Sonnenberg, P., Clifton, S., … Johnson, A. M. (2013). Changes in sexual attitudes and lifestyles in Britain through the life course and over time: Findings from the National Surveys of Sexual Attitudes and Lifestyles (Natsal). *The Lancet*, *382*(9907), 1781–1794.

Metzger, M. J., Flanagin, A. J., The, J. D., Macarthur, C. T., & Eysenbach, G. (2008). Credibility of Health Information and Digital Media: New Perspectives and Implications for Youth, 123–154.

Michael, M., & Cheuvront, C. (1998). Health communication on the Internet: an effective channel for health behavior change? *Journal of Health Communication*, 3(1), 71-79.

Milburn, K. (1995). A critical review of peer education with young people with special reference to sexual health. *Health Education Research*, 10(4), 407-420.

Miller, J. D., & Lynam, D. R. (2003). Psychopathy and the five-factor model of personality: A replication and extension. Journal of personality assessment, 81(2), 168-178.

Miller, J., Lynam, D., Zimmerman, R., & Logan, T. (2004). The utility of the Five Factor Model in understanding risky sexual behavior. *Personality and individual differences, 36(7), 1611-1626.*

Mitchell, A., Patrick, K., & Heywood, W. (2014). National survey of Australian secondary students and sexual health 2013. *In Sex Health and …*. Retrieved from https://members.youthcoalition.net/sites/default/files/articles-external/National Survey of Australian Secondary Students and Sexual Health.pdf

Mji, A. (2016). Promoting positive youth development: a school garden narrative. *Commonwealth Youth and Development,* 14(2), 135-150.

Montgomery, K. C. (2000). Children's media culture in the new millennium: Mapping the digital landscape. *The Future of Children*, 145-167.

Moore, K. (1995). Adolescent Sex, Contraception, and Childbearing: A Review of Recent Research. Retrieved from http://eric.ed.gov/?id=ED397357

Moore, S., Dahl, D., & Gorn, G. (2006). Coping with condom embarrassment. *Psychology, Health & Medicine, 11(1), 70-79.*

Moran, J. P. (2000). Teaching sex: The shaping of adolescence in the twentieth century. Cambridge, MA: Harvard University.

Moreno, M. A., & Kolb, J. (2012). Social networking sites and adolescent health. *Pediatric Clinics of North America*, 59(3), 601-612.

Moretti, R., Cremaschini, M., Brembilla, G., & Fenili, F. (2015). Is Facebook Effective in Preventing HIV/STDs in Scholarized Adolescents? A Cluster Rct. Austin J HIV. *AIDS Res*. 2(2), 1016.

Morrison, D. M., Baker, S. a, & Gillmore, M. R. (1998). Condom use among high-risk heterosexual teens: A longitudinal analysis using the theory of reasoned action. *Psychology and Health*, *13*(April), 207–222.

Morrison, D. M., Gillmore, M. R., Hoppe, M. J., Gaylord, J., Leigh, C., Rainey, D., … Rogers, M. (2009). c Adolescent Findings Drinking from a Daily and Diary Sex : Study. *Perspectives on Sexual and Reproductive Health*, *35*(4), 162–168.

Muench, F., Weiss, R., & Kuerbis, A. (2013). Developing a theory driven text messaging intervention for addiction care with user driven content. *Psychology of Addictive Behaviors, 27(1), 315.*

Muessig, K., Pike, E., & LeGrand, S. (2013). Mobile phone applications for the care and prevention of HIV and other sexually transmitted diseases: a review. *Journal of Medical internet research,* 15 (1).

Mulholland, E., & Wersch, A. Van. (2007). Stigma, sexually transmitted infections and attendance at the GUM Clinic: an exploratory study with implications for the theory of planned behaviour. *Journal of Health Psychology*. 12 (1). 17-31.

Muris, P. (2001). A brief questionnaire for measuring self-efficacy in youths. *Journal of Psychopathology and Behavioral Assessment,* 23(3), 145-149.

Nahom, D., Wells, E., Gillmore, M. R., Hoppe, M., Morrison, D. M., Archibald, M., & GRaham, L. (2001). Differences by gender and sexual experience in adolescent sexual

behavior: Implications for education and HIV prevention. *Journal of School Health*, *71*(4), 153–158.

Napolitano, M., Fotheringham, M., & Tate, D. (2003). Evaluation of an internet-based physical activity intervention: a preliminary investigation. *Annals of Behavioral Medicine, 25(2), 92-99.*

Negriff, S., Fung, M., & Trickett, P. (2008). Self-rated pubertal development, depressive symptoms and delinquency: Measurement issues and moderation by gender and maltreatment. *Journal of Youth and Adolescence*.37(6), 736-746.

Negriff, S., Susman, E. J., & Trickett, P. K. (2011). The developmental pathway from pubertal timing to delinquency and sexual activity from early to late adolescence. *Journal of Youth and Adolescence*, *40*(10), 1343–56.

Neppl, T. K., Dhalewadikar, J., & Lohman, B. J. (2015). Harsh Parenting, Deviant Peers, Adolescent Risky Behavior: Understanding the Meditational Effect of Attitudes and Intentions. *Journal of Research on Adolescence*, https://doi.org/10.1111/jora.12212

Nettleton, S., Burrows, R., & Malley, L. (2004). Health E-types? *Communication & Society*. 7 (4), 531-553.

Nguyen, P., Gold, J., Pedrana, A., Chang, S., Howard, S., Ilic, O., ... & Stoove, M. (2013). Sexual health promotion on social networking sites: a process evaluation of The FaceSpace Project. *Journal of Adolescent Health*, *53*(1), 98-104.

NHS Choices. (2012). NHS Choices. Retrieved from http://jpepsy.oxfordjournals.org/content/early/2011/02/19/jpepsy.jsr003.short

Noar, S. M., Clark, A., Cole, C., & Lustria, M. L. A. (2006). Review of interactive safer sex web sites: Practice and potential. *Health communication*, *20*(3), 233-241.

Noll, J. G., Haralson, K. J., Butler, E. M., & Shenk, C. E. (2011). Childhood maltreatment, psychological dysregulation, and risky sexual behaviors in female adolescents. *Journal of pediatric psychology*, *36*(7), 743-752.

Norman, E., & Turner, S. (1993). Adolescent substance abuse prevention programs: Theories, models, and research in the encouraging 80's. *The journal of primary prevention*, *14*(1), 3-20.

Norton, T. R., Bogart, L. M., Cecil, H., & Pinkerton, S. D. (2005). Primacy of Affect Over Cognition in Determining Adult Men's Condom–Use Behavior: A Review. *Journal of Applied Social Psychology*, *35*(12), 2493-2534.

Norman, C., Moffatt, S., & Rankin, J. (2016). Young parents' views and experiences of interactions with health professionals. The journal of family planning and reproductive health. 42 (3), 179.

OfCom. (2016). Ofcom Communications market report. Retrieved from https://www.ofcom.org.uk/__data/assets/pdf_file/0024/26826/cmr_uk_2016.pdf

OfSTED. (2002). *Office for Standards in Education: Sex and Relationships*.

Olesen, T. B., Jensen, K. E., Nygård, M., Tryggvadottir, L., Sparén, P., Hansen, B. T., ... & Kjær, S. K. (2011). Young age at first intercourse and risk-taking behaviours—a study of nearly 65 000 women in four Nordic countries. *The European Journal of Public Health*, *22*(2), 220-224.

ONS. (2017). Internet users in the UK - Office for National Statistics. Retrieved June 29, 2017, from https://www.ons.gov.uk/businessindustryandtrade/itandinternetindustry/bulletins/internetusers/2017

Oppenheim, A. N. (1992). Questionnaire design, interviewing and attitude measurement. *Continuum International Publishing Group*, *4*(5), 12–17.

Owens W., E., Behun J., R., Manning C., J., & Reid C., R. (2012). The Impact of Internet Pornography on Adolescents: A Review of the Research. *Sexual Addiction & Compulsivity*, *19*(1/2), 99–122.

Parkes, A., Henderson, M., Wight, D., & Nixon, C. (2011). Is parenting associated with teenagers' early sexual risk-taking, autonomy and relationship with sexual partners? *Perspectives on Sexual and Reproductive Health*, *43*(1), 30–40. https://doi.org/10.1363/4303011

Parsons, J. T., Halkitis, P. N., Bimbi, D., & Borkowski, T. (2000). Perceptions of the benefits and costs associated with condom use and unprotected sex among late adolescent college students. *Journal of adolescence*, *23*(4), 377-391.

Patton, G. C., Sawyer, S. M., Santelli, J. S., Ross, D. A., Afifi, R., Allen, N. B., & Kakuma, R. (2016). Our future: a Lancet commission on adolescent health and wellbeing. *The Lancet*, *387*(10036), 2423-2478.

Pearson, J. C., Child, J. T., & Carmon, A. F. (2011). Rituals in Dating Relationships: The Development and Validation of a Measure. *Communication Quarterly*, *59*(3), 359–379. https://doi.org/10.1080/01463373.2011.583502

Perrin, A. (2016). Social Media Usage: 2005-2015 | Pew Research Center. Retrieved July 10, 2017, from http://www.pewinternet.org/2015/10/08/social-networking-usage-2005-2015/

Perry, R., Braun, R., & Cantu, M. (2014). Associations among text messaging, academic performance, and sexual behaviors of adolescents. *Journal of school health*, *84*(1), 33-39.

Peter, J., & Valkenburg, P. M. (2016). ANNUAL REVIEW OF SEX RESEARCH SPECIAL ISSUE Adolescents and Pornography: A Review of 20 Years of Research. *The Journal of Sex Research*, *53*. https://doi.org/10.1080/00224499.2016.1143441

Petosa, R., & Jackson, K. (1991). Using the health belief model to predict safer sex intentions among adolescents. *Health Education Quarterly*, *18*(4), 463-476.

Philliber, S., Kaye, J. W., Herrling, S., & West, E. (2002). Preventing pregnancy and improving health care access among teenagers: An evaluation of the Children's Aid Society-Carrera Program. *Perspectives on sexual and reproductive health*, 244-251.

Pietersma, S., & Dijkstra, A. (2011). Do behavioural health intentions engender health behaviour change? A study on the moderating role of self-affirmation on actual fruit intake versus vegetable intake. *British journal of health psychology*, *16*(4), 815-827.

Piper, D. L., Moberg, D. P., & King, M. J. (2000). The healthy for life project: behavioral outcomes. *The Journal of Primary Prevention*, *21*(1), 47-73.

Policy statement: relationships education, relationships and sex education, and personal, social, health and economic education. (n.d.). Retrieved from https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/595828/170301_policy_statement_pshev2.pdf

Poduska, J. M., Kellam, S. G., Wang, W., Brown, C. H., Ialongo, N. S., & Toyinbo, P. (2008). Impact of the Good Behavior Game, a universal classroom-based behavior intervention, on young adult service use for problems with emotions, behavior, or drugs or alcohol. Drug and Alcohol Dependence, 95, S29-S44.

Potard, C., Courtois, R., & Rusch, E. (2008). The influence of peers on risky sexual behaviour during adolescence. *The European Journal of Contraception & Reproductive Health Care*, *13*(3), 264-270.

Presser, S., Couper, M. P., Lessler, J. T., Martin, E., Martin, J., Rothgeb, J. M., & Singer, E. (2004). Methods for testing and evaluating survey questions. *Public Opinion Quarterly*, *68*(1), 109–130.

Prinstein, M. J., Meade, C. S., & Cohen, G. L. (2003). Adolescent oral sex, peer popularity, and perceptions of best friends' sexual behavior. *Journal of Pediatric Psychology*, *28*(4), 243–249. https://doi.org/10.1093/jpepsy/jsg012

Quinn, P. D., & Fromme, K. (2010). Self-regulation as a protective factor against risky

drinking and sexual behavior. *Psychology of Addictive Behaviors : Journal of the Society of Psychologists in Addictive Behaviors*, *24*(3), 376–85. https://doi.org/10.1037/a0018547

Radloff, L. S. (1977). A Self-Report Depression Scale for Research in the General Population. *Appl. Psychol. Meas.*, *1*(3), 385–401. https://doi.org/10.1177/014662167700100306

Raffaelli, M., & Crockett, L. J. (2003). Sexual risk taking in adolescence: the role of self-regulation and attraction to risk. *Developmental Psychology*, *39*(6), 1036–46. https://doi.org/10.1037/0012-1649.39.6.1036

Rainie, L. (2012). Two-thirds of young adults and those with higher income are smartphone owners. *Race/ethnicity*, *65*(830), 11.

Rattray, J., & Jones, M. C. (2007). Essential elements of questionnaire design and development. *Journal of Clinical Nursing*, *16*(2), 234–243.

Raynor, D. A., & Levine, H. (2009). Associations between the five-factor model of personality and health behaviors among college students. *Journal of American College Health*, *58*(1), 73-82.

Recommended standards for sexual health services Published by: Medical Foundation for AIDS & Sexual Health* BMA House Tavistock Square London WC1H 9JP. (n.d.). Retrieved from http://www.medfash.org.uk/uploads/files/p17abl5efr149kqsu10811h21i3tt.pdf

Reed, D. L., Thompson, J. K., Brannick, M. T., & Sacco, W. P. (1991). Development and validation of the Physical Appearance State and Trait Anxiety Scale (PASTAS). *Journal of Anxiety Disorders*, *5*(4), 323–332. https://doi.org/10.1016/0887-6185(91)90032-O

Reed, M. B., & Aspinwall, L. G. (1998). Self-affirmation reduces biased processing of health-risk information. *Motivation and Emotion*, *22*(2), 99-132.

Report, T. W. H. (2006). for Health. *World Health*, *19*(3), 237. https://doi.org/10.1186/1471-2458-5-67

Resnicow, K., Braithwaite, R., Dilorio, C., Vaughan, R., Cohen, M. I., & Uhl, G. a. (2001). Preventing substance use in high risk youth: Evaluation challenges and solutions. *Journal of Primary Prevention*, *21*(3), 399–415. https://doi.org/10.1023/A:1007029910822

Reyna, V. F., & Wilhelms, E. A. (2017). The gist of delay of gratification: Understanding and predicting problem behaviors. *Journal of Behavioral Decision Making*, *30*(2), 610-625.

Rideout, V. J., Foehr, U. G., & Roberts, D. F. (2010). Generation M [superscript 2]: Media in the Lives of 8-to 18-Year-Olds. *Henry J. Kaiser Family Foundation*.

Ritchwood, T., Ford, H., DeCoster, J., & Sutton, M. (2015). Risky sexual behavior and substance use among adolescents: A meta-analysis. *Children and Youth*. Retrieved from http://www.sciencedirect.com/science/article/pii/S0190740915000882

Rivis, A., & Sheeran, P. (2003). Descriptive norms as an additional predictor in the theory of planned behaviour: A meta-analysis. *Current Psychology*, *22*(3), 218-233.

Robinson, L. D. (1998, June 11). Negative Consequences of Undergraduate Alcohol Usage: A Multivariate Gender Comparison. Retrieved from https://eric.ed.gov/?id=ED420246

Ronis, S. T., & O'Sullivan, L. F. (2011). A longitudinal analysis of predictors of male and female adolescents' transitions to intimate sexual behavior. *Journal of Adolescent Health*, *49*(3), 321–323. https://doi.org/10.1016/j.jadohealth.2010.12.010

Rosenberg, M. (1965). Rosenberg Self-Esteem Scale. *New York*, https://doi.org//S0034-98872009000600009

Rosenberg, M., Schooler, C., Schoenbach, C., & Rosenberg, F. (1995). Global self-esteem and specific self-esteem: Different concepts, different outcomes. *American sociological review*, 141-156.

Rosenstock, I., & Strecher, V. (1988). Social learning theory and the health belief model. *Health Education &*. Retrieved from http://heb.sagepub.com/content/15/2/175.short

Rothspan, S. Read, S. (1996). Present versus future time perspective and HIV risk among heterosexual college students. *Health Psychology*, *15*(2), 131–134.

Rousseau, D., Sitkin, S., & Burt, R. (1998). Not so different after all: A cross-discipline view of trust. *Academy of Management*. Retrieved from http://amr.aom.org/content/23/3/393.short

Rowley, J., Johnson, F., & Sbaffi, L. (2015). Students' trust judgements in online health information seeking. *Health informatics journal*, *21*(4), 316-327.

Russo, M. F., Stokes, G. S., Lahey, B. B., Christ, M. A. G., McBurnett, K., Loeber, R., ... & Green, S. M. (1993). A sensation seeking scale for children: Further refinement and psychometric development. *Journal of Psychopathology and Behavioral Assessment*, *15*(2), 69-86.

Safeguarding Teenage Intimate Relationships (STIR) Briefing Paper 2: Incidence Rates and Impact of Experiencing Interpersonal Violence and Abuse in Young People's Relationships Funded by DAPHNE III European Commission. (n.d.). Retrieved from http://stiritup.eu/wp-content/uploads/2015/06/STIR-Briefing-Paper-2-English-final.pdf

Salazar, L. F., Crosby, R. A., DiClemente, R. J., Wingood, G. M., Lescano, C. M., Brown, L. K., ... & Davies, S. (2005). Self-esteem and theoretical mediators of safer sex among African American female adolescents: Implications for sexual risk reduction interventions. *Health Education & Behavior*, *32*(3), 413-427.

Sanjose, S., Cortés, X., Méndez, C., Puig-Tintore, L., Torné, A., Roura, E., ... & Castellsague, X. (2008). Age at sexual initiation and number of sexual partners in the female Spanish population: Results from the AFRODITA survey. *European Journal of Obstetrics & Gynecology and Reproductive Biology*, *140*(2), 234-240.

Santelli, J. S., Lindberg, L. D., Finer, L. B., & Singh, S. (2007). Explaining recent declines in adolescent pregnancy in the United States: the contribution of abstinence and improved contraceptive use. *American journal of public health*, *97*(1), 150-156.

Santelli, J. S., Lowry, R., Brener, N. D., & Robin, L. (2000). The association of sexual behaviors with socioeconomic status, family structure, and race/ethnicity among US adolescents. *American journal of public health*, *90*(10), 1582.

Santelli, J. S., Abma, J., Ventura, S., Lindberg, L., Morrow, B., Anderson, J. E., … Hamilton, B. E. (2004). Can changes in sexual behaviors among high school students explain the decline in teen pregnancy rates in the 1990s? *Journal of Adolescent Health*, *35*, 80–90. https://doi.org/10.1016/j.jadohealth.2004.05.001

Santelli, J. S., Kaiser, J., Hirsch, L., Radosh, A., Simkin, L., & Middlestadt, S. (2004). Initiation of sexual intercourse among middle school adolescents: The influence of psychosocial factors. *Journal of Adolescent Health*, *34*(3), 200–208.

Santor, D. A., Messervey, D., & Kusumakar, V. (2000). Measuring Peer Pressure, Popularity, and Conformity in Adolescent Boys and Girls: Predicting School Performance, Sexual Attitudes, and Substance Abuse. *Journal of Youth and Adolescence*, *29*(2).

Satterwhite, C. L., Torrone, E., Meites, E., Dunne, E. F., Mahajan, R., Ocfemia, M. C. B., ... & Weinstock, H. (2013). Sexually transmitted infections among US women and men: prevalence and incidence estimates, 2008. *Sexually transmitted diseases*, *40*(3), 187-193.

Saucier, G. (1994). Mini-Markers: A brief version of Goldberg's unipolar Big-Five markers. *Journal of personality assessment*, *63*(3), 506-516.

Schaeffer, N. C. (2000). Asking questions about threatening topics: A selective overview. *The science of self-report: Implications for research and practice*, 105-121.

Scheff, T. (2013). The Repression of Shame. *Norbert Elias Foundation. Posted on December*. Retrieved from http://norberteliasfoundation.nl/blog/wp-

content/uploads/Thomas-Sheff-Shame.docx

Schmitt, D. P. (2004). The Big Five related to risky sexual behaviour across 10 world regions: Differential personality associations of sexual promiscuity and relationship infidelity. *European Journal of personality*, *18*(4), 301-319.

Schulkind, J., Hurst, S., Biggart, R., & Bowsher, G. (2015). Sex and relationship education should be statutory. *The Lancet*, *385*, 2042–2043.

Schulman, S., & Davies, T. (2007). Evidence of the impact of the 'youth development'model on outcomes for young people-A literature review. *Book Evidence of the impact of the 'youth development'model on outcomes for young people-A literature review*.

Schüz, B., Cooke, R., Schüz, N., & van Koningsbruggen, G. M. (2016). Self-Affirmation Interventions to Change Health Behaviors. *Behavior Change Research and Theory: Psychological and Technological Perspectives*, 87.

Schüz, N., Schüz, B., & Eid, M. (2013). When risk communication backfires: randomized controlled trial on self-affirmation and reactance to personalized risk feedback in high-risk individuals. *Health Psychology*, *32*(5), 561.

Schwartz, S. J., Phelps, E., Lerner, J. V., Huang, S., Brown, C. H., Lewin-Bizan, S., … Lerner, R. M. (2010). Promotion as prevention: Positive youth development as protective against tobacco, alcohol, illicit drug, and sex initiation. *Applied Developmental Science*, *14*(4), 197–211.

Selkie, E. M., Benson, M., & Moreno, M. (2011). Adolescents' Views Regarding Uses of Social Networking Websites and Text Messaging for Adolescent Sexual Health Education. *American Journal of Health EducationOnline) Journal American Journal of Health Education American Journal of Health Education — July Am J Health Educ*, *42442*(44), 1932–5037.

Sellgren, K. (2017). Sex education to be compulsory in England's schools.

Sherer, M., & Adams, C. H. (1983). Construct validation of the self-efficacy scale. *psychological reports*, *53*(3), 899–902.

Sherman, D. A., Nelson, L. D., & Steele, C. M. (2000). Do messages about health risks threaten the self? Increasing the acceptance of threatening health messages via self-affirmation. *Personality and Social Psychology Bulletin*, *26*(9), 1046-1058.

Siebenbruner, J., Zimmer-Gembeck, M. J., & Egeland, B. (2007). Sexual partners and contraceptive use: A 16-year prospective study predicting abstinence and risk behavior. *Journal of Research on Adolescence*, *17*(1), 179-206.

Sieverding, J. a, Adler, N., Witt, S., & Ellen, J. (2005). The influence of parental monitoring on adolescent sexual initiation. *Archives of Pediatrics & Adolescent Medicine*, *159*(8), 724–9. https://doi.org/10.1001/archpedi.159.8.724

Sieverding, J. A., Adler, N., Witt, S., & Ellen, J. (2005). The influence of parental monitoring on adolescent sexual initiation. *Archives of Pediatrics & Adolescent Medicine*, *159*(8), 724–729.

Sieving, R., Hellerstedt, W., McNeely, C., Fee, R., Snyder, J., & Resnick, M. (2005). Reliability of self-reported contraceptive use and sexual behaviors among adolescent girls. *Journal of Sex Research*, *42*(2), 159–166.

Sillence, E. (2010). Seeking out very like-minded others: exploring trust and advice issues in an online health support group. *International Journal of Web Based Communities*, *6*(4), 376-394.

Sillence, E., Briggs, P., Fishwick, L., & Harris, P. (2004). Trust and Mistrust of Online Health Sites. *Proceedings of the SIGCHI Conference on Human Factors in Computing Systems*, *6*(1), 663–670.

Sillence, E., Briggs, P., Harris, P., & Fishwick, L. (2007). Going online for health advice: Changes in usage and trust practices over the last five years. *Interacting with*

Computers, *19*(3), 397–406.

Sillence, E., Briggs, P., & Harris, P. R. (2017). Revisiting the Issue of Trust in E-Health. *Web-Based Behavioral Therapies for Mental Disorders*, 241.

Simmons, R. G., & Rosenberg, F. (1975). Sex, sex roles, and self-image. *Journal of youth and adolescence*, *4*(3), 229-258.

Simon, L., & Daneback, K. (2013). Adolescents' use of the internet for sex education: A thematic and critical review of the literature. *International Journal of Sexual Health*. Retrieved from http://www.tandfonline.com/doi/abs/10.1080/19317611.2013.823899

Singh, A., Gibbs, J., Estcourt, C., Sonnenberg, P., & Blandford, A. (2017, July). Are HIV smartphone apps and online interventions fit for purpose?. In *Proceedings of the 2017 International Conference on Digital Health* (pp. 6-15). ACM.

Sionéan, C., DiClemente, R. J., Wingood, G. M., Crosby, R., Cobb, B. K., Harrington, K., … Oh, M. K. (2002). Psychosocial and behavioral correlates of refusing unwanted sex among African-American adolescent females. *The Journal of Adolescent Health : Official Publication of the Society for Adolescent Medicine*, *30*(1), 55–63.

Skinner, H., Biscope, S., Poland, B., & Goldberg, E. (2003). How adolescents use technology for health information: implications for health professionals from focus group studies. *Journal of medical internet research*, *5*(4).

Skinner, S. R., Robinson, M., Smith, M. A., Chenoa, S., & Robbins, C. (2015). Childhood Behavior Problems and Age at First Sexual Intercourse : A Prospective Birth Cohort Study, *135*(February).

Skinner, S, R., Robinson, M., Smith, M. A., Chenoa Cooper Robbins, S., Mattes, E., Cannon, J., Doherty, D. A. (2015). Childhood Behavior Problems and Age at First Sexual Intercourse: A Prospective Birth Cohort Study. *Pediatrics*, *39*(6), 1036–46.

Skinner, S. R., Smith, J., Fenwick, J., Fyfe, S., & Hendriks, J. (2008). Perceptions and Experiences of First Sexual Intercourse in Australian Adolescent Females. *Journal of Adolescent Health*, *43*(6), 593–599. https://doi.org/10.1016/j.jadohealth.2008.04.017

Skinner, S. R., Smith, J., Fenwick, J., Hendriks, J., Fyfe, S., & Kendall, G. (2009). Pregnancy and protection: Perceptions, attitudes and experiences of Australian female adolescents. *Women and Birth*, *22*(2), 50–56.

Spencer, J. M., Zimet, G. D., Aalsma, M. C., & Orr, D. P. (2002). Self-esteem as a predictor of initiation of coitus in early adolescents. *Pediatrics*, *109*(4), 581-584.

Sr, G. F., & Nagy, S. (2000). Attitude toward sexual intercourse and relationship with peer and parental communication. *American Journal of Health Studies*, *16*(3), 156.

Stanton, B., Brown, L., Diclemente, R., & Salazar, L. (2013). Year Follow-up Results from Project iMPPACS, *103*(1), 134–140. https://doi.org/10.2105/AJPH.2012.300856.Safer

Starling, S., & Cheshire, C. (2016). Information Seeking and Evaluation of Online Sexual Health Resources among Late Adolescents. *Proceedings of the 2016 CHI Conference*. Retrieved from http://dl.acm.org/citation.cfm?id=2892528

Statistics, O. for N. (2015). Teenage pregnancies at record low: how does your local area compare?

Steele, C. M. (1988). The psychology of self-affirmation: Sustaining the integrity of the self. *Advances in experimental social psychology*, *21*, 261-302.

Steinberg, L. (2005). Cognitive and affective development in adolescence. *Trends in cognitive sciences*, *9*(2), 69-74.

Stone, N., & Ingham, R. (2002). Factors affecting British teenagers' contraceptive use at first intercourse: the importance of partner communication. *Perspectives on Sexual and Reproductive Health*, *34*(4), 191–197.

Stueve, A., & O'donnell, L. N. (2005). Early alcohol initiation and subsequent sexual and alcohol risk behaviors among urban youths. *American journal of public health*, *95*(5),

887-893.

Sutherland-Smith, W. (2002). Weaving the literacy Web: Changes in reading from page to screen. *The Reading Teacher*. Retrieved from http://www.jstor.org/stable/20205116

Suzuki, L. K., & Calzo, J. P. (2004). The search for peer advice in cyberspace: An examination of online teen bulletin boards about health and sexuality. *Journal of applied developmental psychology*, *25*(6), 685-698.

Syred, J., Naidoo, C., Woodhall, S. C., & Baraitser, P. (2014). Would you tell everyone this? Facebook conversations as health promotion interventions. *Journal of Medical Internet Research*, *16*(4).

Takhteyev, Y., Gruzd, A., & Wellman, B. (2012). Geography of Twitter networks. *Social networks*, *34*(1), 73-81.

Tapert, S. F., Aarons, G. A., Sedlar, G. R., & Brown, S. A. (2001). Adolescent substance use and sexual risk-taking behavior. *Journal of Adolescent Health*, *28*(3), 181-189.

Taylor, B. J. (2006). *Research in nursing and health care: Evidence for practice*. Cengage Learning Australia.

Tevendale, H. D., Lightfoot, M., & Slocum, S. L. (n.d.). Individual and Environmental Protective Factors for Risky Sexual Behavior among Homeless Youth: An Exploration of Gender Differences. https://doi.org/10.1007/s10461-008-9395-z

Thackeray, R., Neiger, B. L., Hanson, C. L., & Mckenzie, J. F. (2008). Enhancing Promotional Strategies Within Social Marketing Programs: Use of Web 2.0 Social Media. *Health Promotion Practice October*, *9*(4), 338–343.

The Office for Standards in Education Children's Services and Skills (Ofsted). (2013). Not yet good enough : personal , social , health and economic education in schools, *May*(130065), 1–34. https://doi.org/130065

Tietz, A., Davies, S. C., & Moran, J. S. (2004). Guide to sexually transmitted disease resources on the Internet. *Clinical infectious diseases*, *38*(9), 1304-1310.

Turnbull, T., van Wersch, A., & van Schaik, P. (2011). Parents as educators of sex and relationship education: The role for effective communication in British families. *Health Education Journal*, *70*(3), 240–248.

Turner, A. (2017). A Friendly Adolescent Care Environment for Utilization of a Pregnancy Prevention Program (FACE-UP): Providing Pregnancy Prevention Strategies for At-Risk Youth. Retrieved from http://scholarworks.umass.edu/nursing_dnp_capstone/85/

Turow, J. (2001). Family boundaries, commercialism, and the Internet: A framework for research. *Journal of Applied Developmental Psychology*, *22*(1), 73-86.

Turow, J. (2001b). Privacy Policies on Children's Websites: Do They Play by the Rules? Retrieved from http://repository.upenn.edu/cgi/viewcontent.cgi?article=1412&context=asc_papers

Turow, J., & Nir, L. (2000). The internet and the family: The view from parents, the view from kids. Retrieved from http://repository.upenn.edu/cgi/viewcontent.cgi?article=1409&context=asc_papers

Tyson, M., Covey, J., & Rosenthal, H. (2014). Theory of planned behavior interventions for reducing heterosexual risk behaviors: A meta-analysis. *Health Psychology*. Retrieved from http://psycnet.apa.org/psycinfo/2014-12173-001/

UK Department of Education and Employment. (2000). Sex and Relationship Education Guidance. *House of Commons Library*, (July), 1–34.

Valle, A.-K. K., Roysamb, E., Sundby, J., Klepp, K. I., Røysamb, E., Sundby, J., & Klepp, K. I. (2009). Parental Social Position, Body Image, and Other Psychosocial Determinants and First Sexual Intercourse among 15-and 16-Year Olds. *Adolescence*, *44*(174), 479–498.

Valois, R. F., Kammermann, S. K., & Drane, J. (1997b). Number of sexual intercourse

partners and associated risk behaviors among public high school adolescents. *Journal of Sex Education & Therapy*, 22(2), 13–22.

Vanoss Marín, B., Coyle, K. K., Gómez, C. a, Carvajal, S. C., Kirby, D. B., & Vanoss Marin Cyle, K.K., Gomez, C.A., Carvajal, S.C., & Kirby, D.B., B. (2000). Older boyfriends and girlfriends increase risk of sexual initiation in young adolescents. *Journal of Adolescent Health*, 27(6), 409–418.

Vasilenko, S., Kugler, K., & Rice, C. (2016). Timing of First Sexual Intercourse and Young Adult Health Outcomes. *Journal of Adolescent Health*. Retrieved from http://www.sciencedirect.com/science/article/pii/S1054139X16300489

Veinot, T. C., Campbell, T. R., Kruger, D., Grodzinski, A., & Franzen, S. (2011). Drama and danger: the opportunities and challenges of promoting youth sexual health through online social networks. *AMIA ... Annual Symposium Proceedings. AMIA Symposium*, *2011*, 1436–45. Retrieved from http://www.ncbi.nlm.nih.gov/pubmed/22195207

Velez, R. (2016). Influences of Peer Pressure and Relationship Knowledge on Sexual Behaviors of Hispanic / Latino Youth.

Ventola, C. L. (2014). Mobile devices and apps for health care professionals: uses and benefits. *Pharmacy and Therapeutics*, *39*(5), 356.

Viner, R., & Macfarlane, A. (2005). ABC of Adolescence: Health Promotion. *BMJ*, *330*(7490), 527–9.

Vyas, A. N., Landry, M., Schnider, M., Rojas, A. M., & Wood, S. F. (2012). Public health interventions: reaching Latino adolescents via short message service and social media. *Journal of Medical Internet Research*, *14*(4), e99.

Walker, J. (2001). A qualitative study of parents experiences of providing sex education for their children: The implications for health education. *Health Education Journal*, *60*(2), 132–146.

Wartella, E., Rideout, V., Montague, H., Beaudoin-Ryan, L., & Lauricella, A. (2016). Teens, health and technology: A national survey. *Media and communication*, *4*(3).

Watson, L. B., Matheny, K. B., Gagné, P., Brack, G., & Ancis, J. R. (2013). A model linking diverse women's child sexual abuse history with sexual risk taking. *Psychology of women quarterly*, *37*(1), 22-37.

Webb, T. L., Joseph, J., Yardley, L., & Michie, S. (2010). Using the internet to promote health behavior change: a systematic review and meta-analysis of the impact of theoretical basis, use of behavior change techniques, and mode of delivery on efficacy. *Journal of medical Internet research*, *12*(1).

Weinstein, R. B., Walsh, J. L., & Ward, L. M. (2008). Testing a New Measure of Sexual Health Knowledge and Its Connections to Students' Sex Education, Communication, Confidence, and Condom Use. *International Journal of Sexual Health*, *20*(3), 212–221.

Wellings, K., Wadsworth, J., & Johnson, A. (1994). Sexual diversity and homosexualbehaviour. Blackwell Scientific. Retrieved from http://discovery.ucl.ac.uk/86818/

Westwood, J., & Mullan, B. (2007). Knowledge and attitudes of secondary school teachers regarding sexual health education in England. *Sex Education*, *7*(2), 143–159.

Westwood, J., & Mullan, B. (2009). Teachers' and pupils' perceptions of the school nurse in relation to sexual health education. *Sex Education*, *9*(3), 293–306.

Wheeler, S. B. (2010a). Effects of Self-Esteem and Academic Performance on Adolescent Decision-Making: An Examination of Early Sexual Intercourse and Illegal Substance Use. *Journal of Adolescent Health*, *47*, 582–590.

Wheeler, S. B. (2010b). Effects of Self-Esteem and Academic Performance on Adolescent Decision-Making: An Examination of Early Sexual Intercourse and Illegal Substance Use. *Journal of Adolescent Health*, *47*, 582–590.

Whitaker, D. J., & Miller, K. S. (2000). Parent-adolescent discussions about sex and condoms: Impact on peer influences of sexual risk behavior. *Journal of Adolescent research*, *15*(2), 251-273.

Whitbeck, L., Yoder, K., Hoyt, D., & Conger, R. (1999). Early adolescent sexual activity: A developmental study. *Journal of Marriage and the*. Retrieved from http://www.jstor.org/stable/354014

Whitehead, E. (2001). Teenage pregnancy: on the road to social death. *International Journal of Nursing Studies*, *38*(4), 437–446. https://doi.org/10.1016/S0020-7489(00)00086-9

Widdicombe, S., & Wooffitt, R. (1995). *The language of youth subcultures: Social identity in action.*

Wight, D., & Fullerton, D. (2013). A review of interventions with parents to promote the sexual health of their children. *Journal of Adolescent Health*, *52*(1), 4–27. https://doi.org/10.1016/j.jadohealth.2012.04.014

Wileman, V., Farrington, K., Chilcot, J., Norton, S., Wellsted, D. M., Almond, M. K., ... & Armitage, C. J. (2014). Evidence that self-affirmation improves phosphate control in hemodialysis patients: A pilot cluster randomized controlled trial. *Annals of Behavioral Medicine*, *48*(2), 275-281.

Willoughby, J. F. (2015). Effectiveness of a social marketing campaign promoting use of a sexual health text service by teens. *Journal of health communication*, *20*(10), 1206-1213.

Willoughby, J. F., & Jackson Jr, K. (2013). 'Can you get pregnant when ur in the pool?': young people's information seeking from a sexual health text line. *Sex Education*, *13*(1), 96-106.

Wilson, H. W., & Widom, C. S. (2008). An examination of risky sexual behavior and HIV in victims of child abuse and neglect: a 30-year follow-up. *Health Psychology*, *27*(2), 149.

Wisniewski, P., Jia, H., Xu, H., Rosson, M. B., & Carroll, J. M. (2015, February). Preventative vs. reactive: How parental mediation influences teens' social media privacy behaviors. In *Proceedings of the 18th ACM Conference on Computer Supported Cooperative Work & Social Computing* (pp. 302-316). ACM.

Wood, M., Wood, G., & Balaam, M. (2017). Sex Talk: Designing for Sexual Health with Adolescents. Retrieved from http://nrl.northumbria.ac.uk/id/eprint/30738

Yager, A., & O'Keefe, C. (2012). Adolescent use of social networking to gain sexual health information. *The Journal for Nurse Practitioners*. Retrieved from http://www.sciencedirect.com/science/article/pii/S1555415512000372

Yan, M. (2005). How cultural awareness works: An empirical examination of the interaction between social workers and their clients. *Canadian Social Work Review/Revue Canadienne de*. Retrieved from http://www.jstor.org/stable/41669820

Ybarra, M. L., & Mitchell, K. J. (2005). Exposure to internet pornography among children and adolescents: a national survey. *Cyberpsychology & Behavior : The Impact of the Internet, Multimedia and Virtual Reality on Behavior and Society*, *8*(5), 473–486. https://doi.org/10.1089/cpb.2005.8.473

Yoost, J. L., Hertweck, S. P., & Barnett, S. N. (2014). The effect of an educational approach to pregnancy prevention among high-risk early and late adolescents. *Journal of Adolescent Health*, *55*(2), 222-227.

Youn, S. (2005). Teenagers' perceptions of online privacy and coping behaviors: a risk–benefit appraisal approach. *Journal of Broadcasting & Electronic Media*, *49*(1), 86-110.

Yun, H., Lian, W. M., Prema, V., Loke, W. M., Phoon, F. N., Fang, T. F., & Vijaya, K. (2012). Do Parents Talk to Their Adolescent Children about Sex?—Findings from a Community Survey in Singapore. Annals of the Academy of Medicine-Singapore, 41(6), 239.

Zayas, V., Mischel, W., & Pandey, G. (2014). Mind and brain in delay of gratification. Retrieved from http://psycnet.apa.org/books/14322/007

Zeng, X., & Parmanto, B. (2004). Web content accessibility of consumer health information web sites for people with disabilities: a cross sectional evaluation. *Journal of Medical Internet Research*. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1550595/

Zhang, Y. (2013). An Exploratory Study of Users' Preferences and Use of Sources for Seeking Health Information. *iConference 2013 Proceedings*, 38–49. https://doi.org/10.9776/13130

Zhao, S. (2009). Parental education and children's online health information seeking: Beyond the digital divide debate. *Social Science and Medicine*, *69*(10), 1501–1505. https://doi.org/10.1016/j.socscimed.2009.08.039

Zickuhr, K., & Smith, A. (2012). Digital differences. Pew Research Center's Internet & American Life Project. *Washington DC: Pew Research Center*.

Ziebland, S., & Wyke, S. (2012). Health and illness in a connected world: how might sharing experiences on the internet affect people's health? *The Milbank Quarterly*, *90*(2), 219–

Zimmer-Gembeck, M. J. (2011). Sexual debut. In *Encyclopedia of Adolescence* (pp. 2650-2657). Springer New York.

Zimmer-Gembeck, M. J., & Helfand, M. (2008). Ten years of longitudinal research on US adolescent sexual behavior: Developmental correlates of sexual intercourse, and the importance of age, gender and ethnic background. *Developmental Review*, *28*(2), 153-224.

Zuckerman, M., Buchsbaum, M. S., & Murphy, D. L. (1980). Sensation seeking and its biological correlates. *Psychological Bulletin*, *88*(1), 187.

Zytkoskee, A., Strickland, B. R., & Watson, J. (1971). Delay of gratification and internal versus external control among adolescents of low socioeconomic status. *Developmental Psychology*, *4*(1p1), 93.