Young Adults’ Views on Telemedicine Consultations for Sexual Health in Australia

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ABSTRACT

Background

Young people have high rates of sexually transmissible infections and face barriers to accessing sexual health services. It had been suggested that telemedicine could overcome these barriers.

Method

Two investigations were conducted:

SHOUT: Young people’s (aged 16-24) pre-use views on telemedicine consultations for sexual health were investigated through a national online questionnaire in Australia.

TESTme: Clients’ and key informants’ views on a year-long piloted telemedicine sexual health service, which offered telephone and webcam consultations, were examined through a questionnaire and interviews.

Results

SHOUT: 662 questionnaires were completed. If living close to a doctor, most young people prefer to have a sexual health consultation in person. If distance is a barrier, the majority prefer a telephone consultation. 23% were willing to have a webcam consultation with a known doctor (unknown doctor: 21%). If a genital examination was necessary, an in-person consultation was preferred. Men were more willing than women to have a webcam sexual health consultation.

The main concerns about webcam consultations in the free text responses involved privacy and security, relating to the possibility of webcam consultations being recorded, saved, and potentially searchable and retrievable by others online. Reasons for and implications of these concerns for digital medical consultations are discussed, drawing on the theories of Boyd, Meyrowitz, and Nissenbaum.

TESTme: Client numbers were much lower than expected: 25 rural youth aged 15-24 used the service. 18 returned the questionnaire, 4 were interviewed. All chose telephone consultations, giving as their main reasons: not owning a webcam, familiarity of the
telephone, convenience, and finding video confronting. Reasons for using the TESTme service instead of visiting a clinic were: access to a female nurse, convenience, confidentiality concerns, and cost.

The eight key informants who designed and ran the service were interviewed. Their nominated reasons for low client numbers were lack of discussion with the service’s target audience, barriers to optimal promotion of the service, and young people’s inaccurate perception of risk. There was evidence that the clinicians’ “expert authority” underpinned the design of the service.

**Conclusion**

This is the first study to examine young adults’ views on telemedicine consultations for sexual health care, providing evidence to inform service development in an important area of public health. The results reveal that telephone consultations were a welcomed addition to in-person care. While only a subset of respondents was willing to have a webcam consultation, the service may benefit youth who might not otherwise access sexual health services. Rather than using the results to dismiss the use of webcam consultations, they are better understood as indicating the value of offering a variety of services to cater to heterogeneous needs. Webcam consultations may become more acceptable if privacy and security concerns are minimised.
DECLARATION

This is to certify that:

(i) the thesis comprises only my original work towards the PhD except where indicated in the Preface,

(ii) due acknowledgement has been made in the text to all other material used,

(iii) the thesis is fewer than 100,000 words in length, exclusive of tables, maps, bibliographies and appendices.

_________________________________________________

Cameryn C. Garrett
I woke up one morning in January 2008 feeling unwell. After an unsatisfactory diagnosis from a doctor in Melbourne, I decided to contact my family doctor in America. My doctor in the States knew me and my health history, and I trusted his medical expertise. I emailed him about my symptoms, describing my sore throat and deteriorating energy. In his email reply, he asked me to send him a digital photograph of my tonsils so he could better assess the situation. I sat at my desk in front of my laptop with its built-in webcam and experimented with how to photograph my symptoms. Finally, I angled the webcam and light so my tonsils were clearly visible and sent him the photograph, along with another picture taken by my webcam of the swollen glands in my neck. After examining the photographs, my doctor suspected I had glandular fever. His diagnosis was confirmed later that week after a blood test in Melbourne.

Both my American doctor and I were impressed with how emails and digital photographs had sufficed for a consultation. While recovering, I continued to consult my doctor in America online for matters such as Ibuprofen dosage. It was comforting being able to speak to my family doctor, despite being thousands of kilometres away. While far from fancy, I had just participated in my first telemedicine consultation and I was intrigued by the possibilities.

I have been interested in how the Internet can improve people’s health and wellbeing for several years. For my Master of Women’s Health dissertation, I examined the role played by an online support group in the lives of women with Androgen Insensitivity Syndrome, a type of intersex condition. The Internet has the potential to not only connect patients with doctors, but also to connect people with others who share similar medical conditions.

Later in 2008, an opportunity arose to conduct research for my PhD about the use of telemedicine (specifically webcam and telephone consultations) to increase access to sexual health services. This project resonated with me both because of my personal favourable experience with telemedicine and because of my previous research on the Internet and health. A third factor influencing my interest in this project was that I was an international student. Living in Australia, on the other side of the world from my country of birth, I was acutely aware of the convenience the Internet allowed for communicating with people in different
locations. Not only could I write an email to my family and friends in America that was sent nearly instantly to them, I could also use webcams to see their faces and feel closer to them. I wake up most mornings with an email from my mom asking me about my day and informing me of my family’s activities back at home. I use Skype to have webcam conversations with my family and friends frequently. Talking with my family and friends through webcams feels a lot more like talking to them in person than speaking with them by telephone. They can see me and I can see them. For example, when I move into a new apartment, I can take them around, room to room, on a virtual tour of my new place. They can comment on the furniture and the wall colouring. In a lot of ways it is like they are there with me.

In my personal life, I had experienced how the Internet had profoundly changed the means by which people communicate with family and friends, and witnessed the ability for webcam to bring together people who are physically separated in a way never before possible. For my PhD research I was interested in investigating how similar technology could be used to alter and enhance the way we communicate with healthcare professionals.

This thesis is composed of two research studies. The main study, titled SHOUT, was a national online questionnaire examining young people’s views on telemedicine consultations for sexual health. The second study investigated clients’ and key informants’ views on TESTme, a piloted telemedicine sexual health service in rural Victoria run by the Melbourne Sexual Health Centre. Chapter 1 is a literature review. In the chapter, I examine the barriers young people face to accessing sexual health services, explore the possibilities of online health, and provide an introduction to telemedicine. The whole TESTme study is described in Chapter 2. The methods of the SHOUT study are outlined in Chapter 3 and the results in Chapter 4. In Chapter 5, I examine why the acceptability of webcam consultations was low by drawing on the theories of electronic media and social behaviour, networked publics, and contextual integrity. In Chapter 6, I describe participants’ willingness to have webcam and telephone consultations by different key factors and explore whether there is a place for telemedicine in sexually transmissible infection (STI) care. Finally, in Chapter 7, I reflect on the findings from the research studies, draw together the threads woven throughout this thesis, and suggest implications for future research, policy, and practice.
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PUBLICATIONS ARISING FROM THIS THESIS


Garrett, C. C., & Kirkman, M. (Under review). Despite the best intentions: A case study of the failure to use evidence-based practice in piloting a telemedicine sexual health service.


Conference Presentations


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1 INTRODUCTION

In this chapter, I begin with a discussion of young people and sexually transmissible infections, followed by an examination of barriers to accessing sexual health care. Next, I review online sexual health resources and young people’s use of the Internet. Afterwards, I examine the utilisation of telemedicine as a possible solution to increasing access to service. I conclude this chapter by introducing the research studies undertaken for examination.

1.1 YOUNG PEOPLE AND SEXUALLY TRANSMISSIBLE INFECTIONS

Sexually transmissible infections (STIs) are a global public health concern. The term STIs encompasses a broad range of infections including chlamydia, gonorrhoea, syphilis, genital herpes and genital warts. Young people are disproportionately affected by STIs in many Western countries. In Australia in 2010, for example, 63% of the notified chlamydia cases and 45% of the reported gonorrhoea cases were in people under the age of 25 (e.g. Department of Health and Ageing, 2011c, 2011d). Similar trends are present in the United States and the United Kingdom (Table 1.1).

<table>
<thead>
<tr>
<th>Percentage of All Reported STI Cases in People &lt; 25 Years Old</th>
<th>Australia (2010) 1,2</th>
<th>USA (2009) 3,4</th>
<th>UK (2010) 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chlamydia cases</td>
<td>63%</td>
<td>72%</td>
<td>66%</td>
</tr>
<tr>
<td>Gonorrhoea cases</td>
<td>45%</td>
<td>63%</td>
<td>51%</td>
</tr>
</tbody>
</table>

1 (Department of Health and Ageing, 2011c)  
2 (Department of Health and Ageing, 2011d)  
3 (Centers for Disease Control and Prevention, 2010a)  
4 (Centers for Disease Control and Prevention, 2010b)  
5 (Health Protection Agency, 2011)
The high rates of STIs in young people are alarming because STIs can result in serious physical and psychological harm (Holmes et al., 1999; Nack, 2008). Left untreated, STIs can cause infertility, pelvic inflammatory disease, and ectopic pregnancy in women and urethritis and intestinal infections in men, as well as leaving both sexes more susceptible to HIV infection (Holmes, et al., 1999). Psychologically, an STI diagnosis can result in feeling of anxiety, guilt, and stigmatisation (Darroch, Myers, & Cassell, 2003; McCaffery, Waller, Nazroo, & Wardle, 2006).

In order to develop approaches to minimise STI rates in young people, it is necessary to first understand which factors influence the rate of STI transmission. This can be determined by examining the basic reproductive rate of an infection, $R_0$. The basic reproductive rate is defined as “the average number of secondary infections that arise when an infected individual is introduced into a wholly susceptible community at time zero” (Fairley, 2005, p. 415). If the reproductive rate is greater than one, the infection will spread. If the number is less than one, the infection will not multiply beyond a minimal number of secondary cases. The basic reproductive rate ($R_0$) is governed by three factors:

1. “The probability that an infection is transmitted per sexual partner ” ($\beta$)

2. “A measure of the rate of sexual partner change in the community” ($c$)

3. “The average duration of the infection” ($D$) (Fairley, 2005, p. 416)

As such, $R_0 = \beta D c$. As a result, any intervention that decreases the transmission coefficient ($\beta$), the infectious period ($D$), or the rate of new sexual partner acquisition ($c$) will decrease STI rates (Anderson, 1999). In this way proper access to sexual health services can play a critical role in STI rates by limiting the infectious period ($D$) of an STI (St. Louis & Holmes, 1999). In fact, Fairley (2005) posits that access to health care is the most salient factor in decreasing rates of STIs.

Access to testing and treatment can have a dramatic impact on rates of STIs. For example, people treated for gonorrhoea become non-infectious in 2 days, compared with 160 days if left untreated (Fairley 2005). Fairley (2005) illustrates the impact of access to services on STI rates by examining rates of gonorrhoea in women from different geographic and cultural groups (Figure 1.1). In 2002, a rate of 3 cases of gonorrhoea per 100,000 in Victoria was reported compared with 875 cases per 100,000 in the Northern Territory. In the United States
in the same time period, while the rate of gonorrhoea among white Americans was 32 per 100,000 women, the rate among African American women was 731. Fairley (2005) argues that the differences in rates arose not from inherent differences in these groups’ sexual activity, but rather from limited access to health services leading to a longer infectious period.\footnote{This was demonstrated in the Australian context by a study conducted by Fairley et al. (1997) comparing prevalence of gonorrhoea and human papillomavirus in two Australian populations: Aboriginal and Torres Strait Islander (ATSI) women in rural communities and urban non-ATSI women. The authors noted that, while the rates of gonorrhoea should vary depending on access to care because it is a curable STI, prevalence of human papillomavirus, an incurable STI, is likely to indicate the rate of sexual partner change (Fairley et al., 1997). The study found that while gonorrhoea rates were higher in the ATSI group, the rates of human papillomavirus were lower than in the urban sample, suggesting low levels of sexual partner change among ATSI women in rural areas. The authors concluded that the higher rates of gonorrhoea in the rural ATSI group were likely due to longer lengths of infection because of poor access to services and treatment. This example highlights how disparities in access can affect STI rates.}

Figure 1.1 Rates of gonorrhoea per 100,000 among women in Australia and the United States (Table created from data from Fairley 2005)
1.2 **BARRIERS TO ACCESSING SEXUAL HEALTH SERVICES**

As most STIs are asymptomatic, periodic screening for certain STIs, such as chlamydia, is recommended (Gaydos et al., 1998); this requires adequate access to sexual health services. Young people in Australia face barriers to accessing sexual health services, including concerns over confidentiality and privacy, cost, limited transport, long waiting times, and too few medical providers (Booth et al., 2004; Hillier & Harrison, 1999; Quine et al., 2003; Stewart & Rosenthal, 1997). These factors may vary in their degree according to geographic location, gender, and sexual orientation. For example, the number of doctors dramatically decreases the farther one moves from a major city. In 2006 there were 204.9 general practitioners per 100,000 persons in major metropolitan areas in comparison with only 64.5 per 100,000 persons in very remote areas (Australian Bureau of Statistics, 2006a). A result of the low number of doctors in rural locations is that young people have limited choices for their medical care. There may be no available sexual health specialist or no choice of a female doctor, a factor that women report as important (Quine, et al., 2003; Stewart & Rosenthal, 1997). It may also be the case that the only doctor in town is a neighbour or a relative and people may feel uncomfortable speaking to that doctor about a sexual health concern. Youth in rural areas may also have less access to bulk billing, in which the whole cost of the consultation is covered by Australia’s universal healthcare program (Quine, et al., 2003).

A paramount barrier to accessing sexual health services cited in both Australian and international research is the stigma associated with STIs (Balfe & Brugha, 2011; Browne & Minichiello, 1998; Cunningham, Tschann, Gurvey, Fortenberry, & Ellen, 2002; Fortenberry et al., 2002; Goldenberg, Shoveller, Koehoorn, & Ostry, 2008; Scoular, Duncan, & Hart, 2001; van Reemst, 2010). Stigma can be defined as “an attribute or label that sets a person apart from others and links that labelled person to undesirable characteristics” (Fortenberry, et al., 2002, p. 378). STI stigma stems from the link between STIs and sexual activity, and associations with traditionally perceived morally deviant behaviors like sex before marriage, multiple sexual partners, infidelity, and promiscuity (Balfe & Brugha, 2011; Hood & Friedman, 2011; Scoular, et al., 2001). As a result, STIs are often culturally perceived as “symbols of immoral or irresponsible behaviour” (Hood & Friedman, 2011, p. 161).
STI stigma impedes STI testing. Australian and international research has found that STI stigma is associated with a reduced willingness to have an STI test (e.g. Cunningham, et al., 2002; Fortenberry, et al., 2002; van Reemst, 2010). Young people have reported being reluctant to enter a clinic for STI testing for fear of being judged by reception staff, other patients in the waiting room, and even the doctors themselves (Balfe & Brugha, 2011; Goldenberg, et al., 2008; Hood & Friedman, 2011; Scoular, et al., 2001). A study in Ireland, for example, found that young people were reluctant to access sexual health services due to the concern of being labelled by others in the waiting room as someone with an STI, a label which was viewed as discrediting their reputation (Balfe & Brugha, 2011). Respondents in this study were particularly anxious about potentially seeing someone they knew because then information about their “deviant identity” could spread to others in their social circle. Such concerns are often augmented in rural areas where adolescents report high levels of surveillance (Balfe & Brugha, 2011; Stewart & Rosenthal, 1997).

A review of STI related stigma found evidence to suggest that women are more likely than men to experience STI stigma (Hood & Friedman, 2011). This was attributed to a double standard where women’s sexual activity is often constructed as having a more damaging impact on their reputation than those of men. Traits associated with a person with an STI (e.g. immoral, promiscuous) are discordant with traditional perceptions of what characterises a “good” woman (Nack, 2002). As Nack (2002) notes, “Cultural scripts of femininity structure a tribal dichotomy that defines what it means to be a sexual woman. Deviation from the ‘good girl’ script threatens demotion to an unsavory social class” (p. 480). STI diagnosis can demote women to this second class.

This is not to say, however, that STI stigma does not affect men. Focus group discussions with American adolescent males revealed that many young men reported being embarrassed and fearful of the stigma associated with being seen at a sexual health clinic (Lindberg, Lewis-Spruill, & Crownover, 2006). Participants noted that gaining a reputation of having an STI could make them less desirable as sexual partners. Additionally, Balfe and Brugha (2011), in discussions with Irish youth, found that men and women expressed similar levels of concern about STI related stigma.

A paper published by the Ministerial Advisory Committee on Gay and Lesbian Health in Victoria reported that same-sex attracted youth may face additional barriers to accessing
health services because of the potential discrimination due to heterosexism² (Ministerial Advisory Committee on Gay and Lesbian Health, 2002). This may be particularly the case in rural areas where perceived higher levels of homophobia may result in youth being less willing to discuss their sexual activity with their medical providers.

It is evident from the literature already described that young people represent a disproportionately high percentage of STI cases in Australia. STI rates can be reduced by providing good access to sexual health services. Unfortunately, young people face barriers to accessing services including confidentiality concerns, few choices for medical providers, cost, limited transportation, and fear of stigma. Accessing care through the Internet or telephone offers a possible solution to minimising these barriers.

1.3 YOUTH, THE INTERNET, AND HEALTH

The Internet offers an almost endless supply of health information and young people are turning to it to find answers to their health concerns. In 2001, for example, the Kaiser Family Foundation’s nationally representative American survey found that 75% of Internet users aged 15-24 had utilised the Internet to gain health information (Rideout, 2001). A decade later, the Pew Research Center’s study found similar results, with 71% of the 3,000 Americans surveyed (aged 18-29) reporting that they had used the Internet to access health information (Fox, 2011).

In contrast to America, little is known about Australian youth’s use of the Internet to access health information. Reinfield-Kirkman, Kalucy and Roeger (2010) reported that 35% of South Australians aged 15-24 had used the Internet to gain health information. It is unclear why this percentage was so much lower than in the American studies, and whether this data is representative for the whole country or just residents of South Australia. Regardless, it is apparent that a sizable portion of young people are logging on to access health information.

Using the Internet to gain health information holds a number of advantages. People can quickly and easily access a wide range of information at their own convenience, 24 hours a

---

² Heterosexism is defined as “the cultural ideology that perpetuates sexual stigma by denying and denigrating any nonheterosexual form of behavior, identity, relationship, or community” (Herek, 2004, p. p. 16).
day (Gray, Klein, Noyce, Sesselberg, & Cantrill, 2005; Skinner, Biscope, Poland, & Goldberg, 2003). The Internet also provides anonymity, allowing people to gain knowledge on health matters they may be embarrassed to discuss in person (Gray, et al., 2005; Kanuga & Rosenfeld, 2004; Skinner, et al., 2003). As well, in comparison to books and pamphlets, the Internet provides the most current information, from a variety of perspectives (Gray, et al., 2005). One can also read about the experiences of peers with similar concerns and experiences (Gray, et al., 2005; Kanuga & Rosenfeld, 2004). However, a wide range of health websites exists, with varying levels of credibility and quality, and it may be difficult for people to determine which websites provide accurate information (Estcourt & Saunders, 2011; Kanuga & Rosenfeld, 2004).

1.3.1 Sexual health resources online

The Internet can be an ideal place for people to investigate sensitive health matters such as sexual health (Pascoe, 2011). Focus groups with adolescents (aged 11-19) from the United Kingdom and the United States revealed that young people often use the Internet to access health information that they may feel uncomfortable or embarrassed asking about in person (Gray, et al., 2005). Borzekowski and Rickert (2001), in their study with American year 10 students, reported that the primary health topic searched online was sex (defined as sexual activity, contraception, and pregnancy), with 42% having searched this topic (Borzekowski & Rickert, 2001). After fitness and exercise, the third most frequently reported topic examined was sexually transmitted disease (37%). The Kaiser Family Foundation survey in the same year also found that sexual health was a common search topic, with 44% of the online youth in the study reporting that they had used the Internet to look up information about sex, such as pregnancy, contraception, and STIs (Rideout, 2001).

A wide range of sexual health resources is available online from sex education websites, partner notification services, and sexual health risk assessment tools. A recent systematic review of interventions for young people in Australia to reduce HIV/STIs, for example, found four studies discussing online sexual health interventions (Kang, Skinner, & Usherwood, 2010). These interventions included the use of websites, email interaction, and chat room discussions. The online delivery of sexual health information has been shown to be both feasible and acceptable (Swendeman & Rotheram-Borus, 2010). In this section, I provide examples of different types of sexual health resources available online.
1.3.1.1 Sex education

Sex education websites abound online. A good example is Sex, Etc., an American sex education website written by and targeting teenagers (www.sexetc.org) (Figure 1.2). On the website, users can gain information on a range of topics including, but not limited to, relationships, LGBTQ (Lesbian, Gay, Bisexual, Transgender, Queer), birth control, STIs, pregnancy, abortion, and violence. People can learn where to access STI testing, gain answers to frequently asked questions about sex, read comics, take quizzes, learn about different sex terms through the glossary, read and participate in online forums, watch videos, and browse the website’s blog. Comics on the website depict, for example, a girl’s mission to lose her virginity, videos represent people’s coming out stories, and forums enable young people to discuss their feelings about being diagnosed with an STI. At a click of a button, people can easily and quickly find answers to questions about penis size, how to masturbate, whether to swallow after ejaculation during oral sex, pain after intercourse, and what to tell one’s partner after being diagnosed with an STI. The website reports that 5 million young people visit their site each year (Answer, 2011).
Figure 1.2 Comic on the website Sex, Etc. about a girl’s mission to lose her virginity

A different type of sexual health website is I Stay Safe (http://www.health.qld.gov.au/istaysafe/index.aspx). It is a more formal, less dynamic sex education website produced by the Queensland Government. The website provides information on safe sex, contraception, and STIs through static text pages and animated movies (Figure 1.3).
Sex education is also provided through videos. Midwest Teen Sex Show (www.midwestteensexshow.com) is a teen sexuality online video show that is educational, funny, and entertaining. One video episode is released every month. The videos cover everything from anal sex and abstinence to fetishes and syphilis. Each episode receives about 125,000 views (Martell, 2008).

In addition to sexual health websites, online education information can also be provided by email and chat room discussions. Hallet, Brown, Maycock, and Langdon (2007) report on a case study of chat room sexual (and mental) health promotion. Volunteers in Western Australia visited chat rooms for same-sex attached youth and provided chat room users with sexual health information. Lim et al. (2011) describe a randomised controlled trial examining the effectiveness of sending emails and text messages with sexual health information to
young people (aged 16-29) in Australia. In total, 994 participants were recruited. Participants were placed in either the experimental arm of the study and received sexual health information through text messaging and emails for 12 months, or were placed in the control arm. At the end of the year, both men and women in the intervention group had higher levels of STI knowledge than the control group. Women in the intervention group also had increased odds of having an STI test compared with those in the control group.

A second sexual health intervention by email also reported favourable results (Kang et al., 2009). Young people recruited on a sexual health website were randomised into two groups. Participants in the intervention group were sent personal emails by healthcare professionals inviting them to engage in email conversations about chlamydia testing. In contrast, participants in the control group were sent impersonal emails. Participants in the intervention group who exchanged emails with healthcare professionals were more likely to have had a chlamydia test in the following 6 months than participants in the control group.

1.3.1.2 Partner notification

Online resources can also assist people in informing their sexual partners about being exposed to an STI. InSPOT, the first e-card partner notification service of its kind, started in San Francisco in the United States of America in 2004 (www.inspot.org). The website receives over 750 visits daily (Levine, Woodruff, Mocello, Lebrija, & Klausner, 2008). A 2008 evaluation reported that, since the service’s conception, over 30,000 people had sent e-cards to nearly 50,000 sexual partners (Levine, et al., 2008). The service has expanded to multiple cities in America as well as to Canada and some American territories (ISIS, 2011). The e-cards include cheeky phrases such as “Got laid. Was happy. Got tested. Wasn’t Healthy” or “I got screwed while screwing, you might have too” (Figure 1.4). The website also provides information on where to get tested, STIs facts, and treatment information.
Figure 1.4 Examples of partner notification e-cards from inSPOT

A similar service to inSPOT is available in Australia. Let Them Know is a service developed by the Melbourne Sexual Health Centre (http://www.letthemknow.org.au). The website enables people to email or SMS their sexual partners. This can be done anonymously if desired. The website also provides resources such as drafted partner notification letters and sample conversations about how to talk to one’s partner(s) in person or by telephone (Figure 1.5) about the need to get tested. People can also download fact sheets about different STIs, read a discussion about one’s doctor assisting with partner notification, as well as a webpage for partners who have been informed that they may have contracted an STI. An evaluation of the service reported that the website had almost 6,500 visits from December 2008 to October 2009 (Bilardi et al., 2010). During this time period, the service was used to send 2,700 text messages and 100 emails (Bilardi, et al., 2010).
Another example of an online sexual health resource is the Australian website Check Your Risk which provides users with a tool to help determine their sexual risk (www.checkyourrisk.org.au). The short online quiz, developed by the Melbourne Sexual Health Centre, asks users about their sexual behaviour and takes about three minutes to complete. At the end of the quiz, a person receives a report noting which STIs they may be at risk of acquiring. The personalised report can then be taken to a doctor to begin a discussion.
about STI testing. During a 6-month evaluation period, almost 2,500 people completed the online quiz (Lee et al., 2009).

1.3.2 Enhancing online resources

A search of the Internet reveals that young people have access to a wide range of online sexual health resources. However, research has demonstrated that young people do not trust health information online to the same degree as speaking to a healthcare professional directly (Gray, et al., 2005; Rideout, 2001). For example, only 17% of participants in the Kaiser Family Foundation survey trusted the health information gained on the Internet “a lot”, compared to 85% trusting health information provided by a doctor (Rideout, 2001) (Figure 1.6). While the Internet is providing an alternative source of knowledge, it is not replacing healthcare professionals. Young people in the Kaiser Family Foundation study reported gaining the majority of their health information from doctors, nurses, and family (Rideout, 2001). This finding remained consistent 10 years later in the Pew Internet and American Life survey published in 2011 (Fox, 2011).

![Figure 1.6 Level of trust in different health sources (Image from Rideout, 2001)](image-url)
What is noticeably absent from current online STI resources is the ability to speak to a doctor directly. A telemedicine service through webcam consultations would allow a patient to converse with a doctor online, providing many of the benefits of digital sexual health resources without some of the disadvantages. People could quickly and easily access sexual health information in an environment of increased confidentiality. Young people would not have to physically set foot inside a clinic and could conveniently speak to an unknown doctor, if they prefer. The service could, however, be a more trustworthy resource than other online platforms because people could speak directly to healthcare professionals.

Young people may be an ideal target group for webcam STI consultations not only because they are currently using the Internet to access sexual health information, but also because many young people are avid users of online communication (Palfrey & Gasser, 2008). Today’s youth have been defined as the “Net Generation” or “Digital Natives”, differentiated from previous generations because they are the first group to grow up with computers and the Internet (Mesch, 2009). Palfrey and Gasser’s description of Digital Natives in their book, *Born Digital: Understanding the First Generation of Digital Natives*, embodies popular perceptions about youth and technology:

> “These kids are different … Major aspects of their lives—social interactions, friendships, civic activities—are mediated by digital technologies. And they’ve never known any other way of life … For these young people, new digital technologies- computers, cell phones, Sidekicks- are primary mediators of human-to-human communication. They have created a 24/7 network that blends the human with the technical to a degree we haven’t experienced before, and it is transforming human relationships in fundamental ways. They feel as comfortable in online spaces as they do in offline ones. They don’t think of their hybrid lives as anything remarkable” (Palfrey & Gasser, 2008, pp. 2-5).

This age group is often characterised as a generation comfortable with electronic communication and a group which “[shares] information openly and unabashedly online” (Choney, 2010). If many young people are familiar and comfortable with communicating and sharing information online, they may also be willing to speak to a doctor through the Internet about their health concerns.
1.4 **TELEMEDICINE**

In this chapter, I have described how young people represent a disproportionately large percentage of STI cases in Australia. One method to decrease STI rates is through enhanced access to STI services. However, young people in Australia face multiple barriers to accessing these services. Telemedicine (i.e. webcam and telephone consultations) offers a possible means to improve access. In the second half of this chapter, I review the field of telemedicine.

Telemedicine is defined as “using telecommunications technology for medical diagnosis and health care” (Currell, Urquhart, Wainwright, & Lewis, 2000, p. 2), allowing for communication between people at different geographic locations. Telemedicine itself falls into a broad category incorporating a range of technology from telephone and facsimile to email and webcam consultations over the computer. It is used for communications both between patients and medical professions and from one medical professional to another. It encompasses both consultations from a patient’s home and consultations between a patient and a healthcare provider in a medical office and a specialist at a distant clinic. As technological advances have resulted in cheaper equipment and clearer images, the popularity of telemedicine has increased (Mair & Whitten, 2000). Telemedicine today is divided into two main categories: asynchronous telemedicine, such as sending x-ray files to a specialist over a computer, and synchronous or “interactive” telemedicine, such as video consultations with webcams (Collins, Nicolson, & Bowns, 2000). For the purpose of the research reported in this thesis, telemedicine refers to a consultation between a healthcare provider and a patient (unless otherwise stated).

Whereas traditionally medical care involves face-to-face interaction, the advent of technology such as the telephone and radio in the late 1800s enabled the possibility of conducting a medical consultation without both parties being physically present. In 1879, for example, an article in the *British Medical Journal* discussed one of first medical telephone consultations, used to assist an ill child in the middle of the night when the doctor was unable to provide an in-person visit ("The telephone as a medium of consultation and medical diagnosis," 1879).

While today many telemedicine services involve webcam consultations, telephones still play a vital role in providing health care at a distance. In Australia, for example, the Royal Flying Doctor Service continues to provide medical assistance through telephone and radio to this
day, with over 85,000 consultations each year to both rural healthcare professionals and patients (Royal Flying Doctor Service, 2011). While the primary interest in this thesis was to examine the potential use of webcam consultations for STI care, it was also decided to examine people’s views on telephone consultations. This is because any service that provided only online care would, by its very nature, exclude those without access to the Internet. Although 98% of youth (aged 18-24) in Australia are online (Ewing & Thomas, 2010), the interests of the remaining 2% must be considered. In Australia, the unemployed, people with low family incomes, and Aboriginal and Torres Strait Islanders are less likely to have access to the Internet than the rest of the populations (Pink, 2009). This difference in access, dubbed the digital divide, has the potential to accentuate social inequality by further disadvantaging certain groups by barring them from accessing new healthcare services (Wyn, Cuervo, Woodman, & Stokes, 2005). In an attempt to minimise this potential, telephone consultations for STI care were also examined.

1.4.1 Telephone consultations

Today, telephone consultations are utilised in two main situations (McKinstry, Watson, Pinnock, Heaney, & Sheikh, 2009b). The first is in rural regions where geographic distance hinders in-person visits. The second is in urban areas where these consultations are used to compensate for the high demand for in-person appointments. Despite the convenience of the telephone, in-person consultations still remain the main method used to communicate with a doctor. In the following section, I explore both the perceived benefits and disadvantages of the medium.

1.4.1.1 Perceived benefits of telephone consultations

Telephone consultations hold benefits for patients including increased access to medical care, decreased travel time, continuity of care, and convenience (McKinstry, et al., 2009b; Payne, Shipman, & Dale, 2001). Rural patients are also reported as having used telephone consultations as a tool to determine whether an in-person consultation is necessary, potentially saving them the trouble of having to travel long distances to see a doctor in person (McKinstry, et al., 2009b). An evaluation of telephone consultations in one general practitioner (GP) clinic in the UK demonstrated the potential usefulness of telephone consultations (Nagle, McMahon, Barbour, & Allen, 1992). In a clinic with 14,000 patients, a telephone GP service was established. During the five-month study, 277 calls were made.
Women, married people, and those with young children were most likely to use the telephone service. The majority of callers lived within three kilometers of the clinic and already knew the doctor. There were an equal number of calls for new and recurring conditions. The majority reported being satisfied with the service and that they would not have preferred a face-to-face consultation. Quotations from two of the patients using the service exemplify the advantages of telephone consultations. One patient stated, “I think [the telephone consultation] is a good idea, some problems only need reassurances and this saves a journey” (Nagle, et al., 1992, p. 197). Another patient stated, “For me the surgery is a bus ride away, sometimes it can be very inconvenient with a small child to find your illness cannot be cured with medication. Advice over the phone saves time” (Nagle, et al., 1992, p. 197). Telephone consultations provided an additional option to communicate with a doctor and were viewed, at least by some patients, as more convenient and time-saving than a traditional consultation.

1.4.1.2 Perceived disadvantages of telephone consultations

Patients and physicians have expressed some concerns about telephone consultations. A recent UK study reported that patients and physicians both described reservations about the confidentiality of telephone consultations due to the potential for others to overhear the conversation (McKinstry, Watson, Pinnock, Heaney, & Sheikh, 2009a). Payne, Shipman, and Dale (2001) interviewed patients in the UK after they had consulted a GP by telephone. Patients expressed concerns about being able to properly describe their symptoms by telephone and questioned the ability of a doctor to make an accurate diagnosis without being physically present. Similar concerns about the quality of the consultation and diagnosis by telephone were expressed by patients and physicians in a study conducted by McKinstry et al. (2009b). Participants’ views were gathered through both focus groups and a questionnaire (McKinstry, et al., 2009b). Over 70% of GPs in the questionnaire and 60% of patients indicated anxieties about the accuracy of the diagnosis. Participants in the focus group discussions reported, however, that these concerns could be minimised if the telephone consultation was conducted with established patients. In this situation, patients felt confident that the physician could make an appropriate recommendation due to already knowing their health histories and physicians felt more assured that their patients could provide the necessary information for a proper diagnosis. Concerns about telephone consultations were minimised further if the appointment was a follow-up consultation, to receive test results, or to discuss a health matter that had been previously discussed in person.
A study by Reese, Conoley, and Brossart (2006) suggested that despite the perceived disadvantages of telephone consultations, the acceptability of such consultations may increase after actually participating in a consultation. While only 44% of participants reported viewing telephone consultations as useful prior to using the service, after engaging in a telephone consultation, 96% said they would use the service again (Reese, Conoley, & Brossart, 2006).

1.4.1.3 **Literature review of telephone consultations for STI care**

A literature review was conducted in July 2009 to examine what was known on telephone consultations for STI care between patients and healthcare professionals.

1.4.1.3.1 **Searching strategies**

A computerised search of the peer-reviewed literature in English was performed in July 2009 via MEDLINE, Scopus, PsycINFO, Web of Science, PubMed, and Academic Search Premier. The keyword ‘telephone’ was connected by an AND to key words relating to sexual health. The following key words were searched for sexual health: sexually transmitted disease, sexually transmitted diseases, sexually transmitted infection, sexually transmitted infections, sexually transmissible infection, sexually transmissible infections, STI, STD, sexual behaviour, sexual behavior. The initial search yielded 1489 articles. As a result, the search was refined to replace the term ‘telephone’ with ‘telephone consultation’.

Studies were included if they investigated the use of telephone consultations for STI care between healthcare providers and patients. Studies not in English, studies reporting research only on the provision of HIV/AIDS care, and studies reporting research only on telephone consultations between healthcare providers were excluded.

1.4.1.3.2 **Results**

The search resulted in 14 articles. The abstracts of all the search results were read to determine which articles were relevant. References from the full text articles were examined and relevant articles were retrieved and read.

Only two retrieved articles referred to the use of telephone consultations for STI care (Kong, Hocking, Link, Chen, & Hellard, 2009; Kong, Hocking, Link, Chen, & Hellard, 2010). Both articles reported on an Australian study examining chlamydia screening in rural Victoria.
through local sporting clubs. Following testing at a sporting club, the 28 participants that tested positive for chlamydia received a telephone consultation with a specialist at a sexual health clinic in the capital city.

A review of interventions to decrease HIV and sexually transmissible infections for young people in Australia (Kang, et al., 2010) revealed instances in which the telephone was used as part of medical care for an STI, to pass on test results (Bowden, O’Keefe, Primrose, & Currie, 2005; Buhrer-Skinner et al., 2009; Gold, Hocking, & Hellard, 2007; Hocking et al., 2006; Martin et al., 2009; Wade, Hocking, & Hellard, 2007). The telephone was not used for the initial consultation.

1.4.1.4 Other examples of telephone sexual health consultations

Studies exist discussing telephone consultations for other areas in sexual health. Helplines, for example, offer people a way to access reliable sexual health information and counselling anonymously. An American emergency contraception telephone prescription service had nearly 8,000 people contact them in 29 months (Raymond et al., 2004). During this time, the service prescribed almost 10,000 orders of emergency contraception. In Sweden, a sexual dysfunction service received 27,000 calls over a five-year period (Fugl-Meyer et al., 2004). Both of these services had high utilisation rates.

Telephone consultations have also been used to assist HIV/AIDS patients. Nishigaki et al. (2007), for example, reported on a Japanese telephone service for HIV/AIDS patients. In a one month period, 175 consultations took place. This number was higher than the amount of in-person consultations at the clinic during the same time period (89 appointments). The main needs of patients reported during the telephone calls were either to discuss their symptoms and anxieties or to have a medical consultation. By comparison, the main reasons cited for patients contacting a telephone HIV/AIDS service in the United States were to discuss medication, seek results from laboratory tests, or to discuss symptoms (Dorko, Morrison, Steel, Arheart, & Sargent, 1995).

The search of the literature revealed that, while telephone consultations have been used for sexual health, there is very little known about the use of telephone consultations for STI care.
1.4.2 Webcam consultations

While the telephone offers a means to manage long distance care, webcams add an additional dimension to the consultation by enabling doctors and patients to see each other. This results in an experience more similar to an in-person consultation than the telephone can provide. The potential for online consultations to revolutionise health care has received media coverage in recent years. In 2007, the Australian Labor Party (ALP) announced their intention to build a National Broadband Network (NBN) (Rudd, Conroy, & Tanner, 2007). Among the main benefits of the proposed fibre optic network listed by the Labor Party was the improved capacity for and access to online health. In 2008, the Australian Health Ministers’ Conference published a National E-Health Strategy. The report concluded that “e-health will enable a safer, higher quality, more equitable and sustainable health system for all Australians by transforming the way information is used to plan, manage and deliver health care services” (Australian Health Ministers’ Conference, 2008, p. 5). In 2009, the Government announced the formation of a company to build and operate the NBN (Rudd, Swan, Tanner, & Conroy, 2009). Through the NBN, the government promised to connect 90% of Australian houses and businesses to high speed Internet access at rates of 100 megabits per second, a speed 100 times quicker than standard Internet in the country in 2009 (Prime Minister, Treasurer, Minister for Finance, & Minister for Broadband, 2009). The NBN would make high-quality webcam consultations in rural and remote areas a viable option. Government support for telemedicine continued in 2010 when Prime Minister Julia Gillard made the campaign pledge to offer government Medicare rebates for online (webcam) consultations from July 2011 (Gillard, 2010).

During the same time period, overseas, medical webcam consultation services such as American Well and Hello Health began appearing in the American landscape. Dr. Roy Schoenberg, the CEO of American Well Systems, described why he set up his service:

“Consumers were not going to flock into those [health] websites because at the end of the day they only provided information. And the perception of care when you talk about health care, what you really see in your mind, is really a physician talking to you. So it really didn’t matter if there was an interactive movie or an interactive and colourful article, it was always perceived as a second-rate service, not the ‘real thing’. And essentially the step forward from that was to say, why not bring the real thing in front of consumers? This is
what they want. This is how they consider health care to be what they need.
Why don’t we just get the providers in front of them?” - Dr. Roy Schoenberg
(American Well, 2011)

Schoenberg argued that online consultations meet patients’ needs by enabling them to speak to doctors directly online.

Others have described online consultations as a natural progression in a global trend of services becoming digitalised. As Meredith Ressi at Manhattan Research stated, “because of the Internet, we bank differently than we used to, and we plan our trips differently, and we buy real estate differently. But we still see our doctor the same way our grandparents did. I think we're about to see big changes in this area” (Cohen, 2009). The time has come for health care to embrace the digital revolution.

It was in this environment of excitement and promise that this research project was devised.

1.4.2.1 An examination of the literature

Webcam consultations defy traditional notions of medical encounters by enabling the doctor and patient to communicate without being physically in the same room. This alteration offers advantages, but also raises some concerns.

Common fields of telemedicine include telepsychiatry, teleradiology, telecardiology, and teledermatology (Bashshur & Shannon, 2009; Roine, Ohinmaa, & Hailey, 2001). In this review, I focus mainly on telepsychiatry, with some discussion of teledermatology. The reasoning for this is that these fields hold similarities to sexual health. Telepsychiatry involves consultations about another frequently taboo subject, mental health. Additionally, an STI diagnosis can cause psychological distress (Darroch, et al., 2003; McCaffery, et al., 2006), and counselling may be a component of a sexual health consultation. Teledermatology has also been included because it is a field that traditionally involves a physical examination. This section begins with a discussion of patients’ views.

1.4.2.1.1 Patients’ views: Support for webcam consultations

The literature on webcam consultations (also referred to as video consultations or videoconferencing) reveals a range of advantages. These include increased access to services, lessened travel and waiting time to see a doctor, lowered cost, increased social
presence compared to telephone consultations, and even excitement about the novelty of using a new medium for medical communication (Mair & Whitten, 2000; Pesamaa et al., 2004; Urness, Wass, Gordon, Tian, & Bulger, 2006; Whitten & Mair, 2000). Online consultations may be particularly beneficial for young people who may have limited access to transportation due to not having a licence or a car. In addition, speaking to a specialist without having to set foot inside a clinic may be advantageous for those concerned about confidentiality and the perceived stigma surrounding the use of sexual health services.

Multiple studies have evaluated the economic benefits of telemedicine services for patients. Jacklin et al. (2003), for example, examined the cost of a telemedicine versus in-person service in the United Kingdom. Over 2,000 patients were allocated to either the telemedicine or the standard care arm. In the telemedicine arm, the patient and local general practitioner connected virtually with a specialist who was located at the hospital. In the standard care arm, patients travelled to the specialist. Patients receiving telemedicine care incurred less loss of pay, lower childcare costs, lower transport costs, and needed to take less time off from work. Over the six-month study, the mean difference in cost for patients between the traditional and telemedicine arm was £99.

Another telemedicine study reported similar benefits for patients (Oakley et al., 2000). People who participated in a teledermatology consultation travelled an average distance of 12 km to their normal healthcare provider’s offices for the appointment. By comparison, participants receiving standard care travelled an average of 271 km to a dermatologist. Patients receiving traditional care had to spend more time away from work, taking 4.3 hours out of their day for an appointment (including travel time, appointment time, and wait time) compared to 51 minutes for the telemedicine service. Telemedicine saved patients both time and money.

Teledermatology services have also reported high levels of patient satisfaction. For example, an American study had participants (n=139) complete two dermatology appointments (Lowitt et al., 1998). One appointment was conducted in person, the other by video. In total, 97%-100% of the patients rated the video consultations as positive, compared to 99%-100% for the in-person consultation. The majority of participants reported preferring to have a teledermatology appointment rather than travel a distance for a standard appointment.
Similar levels of satisfaction have also been reported in telepsychiatry studies. A child and adolescent telepsychiatry service in rural New South Wales, for example, examined the views of patients and their parents during a year-long study (Kopel, Nunn, & Dossetor, 2001). Seventy-nine of the 136 patients completed a questionnaire. Of the 79 patients, 90% agreed that they obtained the same quality of care as during an in-person visit. Over 90% reported that the sound and visual quality of the video consultations were either good or excellent and the majority (97%) reported that they were neither anxious nor embarrassed about using the telemedicine equipment. Additionally, 97% stated that they wanted such a service to exist and that they would recommend it to others.

A Canadian study compared patient outcomes for a telepsychiatry visit compared to an in-person appointment (Urness, et al., 2006). Forty-eight patients completed the follow-up survey (28 telemedicine patients and 20 in-person patients). Patients who participated in a telemedicine consultation reported significantly improved health status after one month as measured by the SF-12 Quality of Life Survey. In contrast, no difference was reported in the in-person group. Patients in the virtual consultation reported being satisfied and comfortable with the medium. Patients also reported finding video consultations more convenient. However, it is worth noting that one fourth of the telemedicine patients stated feeling unsatisfied with the amount of emotional support given to them by the virtual doctors.

Hyler, Gangure, and Batchelder (2005) conducted a review and meta-analysis of how telepsychiatry compared to standard in-person care. After searching the literature, the authors found 380 articles, 14 of which directly compared telepsychiatry to in-person appointments and had a sample size greater than 10. The authors found that there was no difference in patient satisfaction between the two modes of consulting. Despite the similar levels of satisfaction, most patients reported a preference for in-person care if given the option between the two. The authors did conclude, however, that telepsychiatry can still be a valuable alternative when patients face barriers to accessing in-person care.

Two randomised control trials comparing telepsychiatry and in-person consultations conducted after the review by Hyler, Gangure, and Batchelder (2005) reported compelling evidence for the effectiveness of telepsychiatry (De Las Cuevas, Arredondo, Cabrera, Hubert, & Ulrich, 2006; O’Reilly et al., 2007). The first study, conducted in the Canary Islands, randomised 140 patients to receive either traditional face-to-face care or a video consultation.
(De Las Cuevas, et al., 2006). All participants received 8 consultations during a 24-month period. Both the in-person and virtual appointments were conducted with the same psychiatrist. Significant improvements in health outcomes were reported for both groups, with no significant differences in the efficacy between the two delivery modes. A larger randomised trial, with a total of 495 patients, was conducted in Canada (O'Reilly, et al., 2007). Both groups reported comparable clinical outcomes and levels of patient satisfaction. The authors concluded that video consultations were an effective form of service delivery.

### 1.4.2.1.1 A note on patient satisfaction

Throughout the literature, overall, patients report high levels of satisfaction with telemedicine consultations, with these ratings ranging from 70% to 97% (Brown-Connolly, 2002; Bulik, 2008; Collins et al., 2004; Greenwood et al., 2004; Kopel, 2001; Liu, 2007; Lowitt, 1998). These findings should, however, be interpreted with some caution. First, people tend to report high levels of satisfaction with health care in general (Carrhill, 1992; Whitten & Love, 2005). Second, the term satisfaction is rarely defined in studies, leaving ambiguity as to what the appraisal of “satisfied” actually means (Collins, et al., 2000; Mair & Whitten, 2000; Whitten & Love, 2005). Paraphrasing Mair and Whitten (2000), this results in the reader being unable to determine whether participants in the studies were satisfied because the consultation didn’t kill them, that it was adequate, or if they were satisfied because it was a fantastic service. Thirdly, there is no standard, validated questionnaire for telemedicine (Whitten & Love, 2005; Williams, May, & Esmail, 2001). Fourthly, the majority of telemedicine studies are small projects or pilots with small sample sizes and little or no long-term evaluation (Hailey, Roine, & Ohinmaa, 2002; Mair & Whitten, 2000; Williams, et al., 2001). These methodological shortcomings limit the generalisability of the telemedicine literature.

### 1.4.2.1.2 Patient views: Concerns about webcam consultations

While webcam consultations offer advantages, the literature also discusses concerns. One concern about webcam consultations is whether they hamper doctor-patient communication. The online medium may affect patients’ ability to properly express their symptoms or emotions to a doctor as well as the doctor’s ability to develop a rapport with a patient and display empathy (Demiris, Edison, & Vijaykumar, 2005; Miller, 2003). Consultations may also be viewed as more impersonal, though this may conversely be
assessed as an advantage if the patient is discussing a sensitive health matter (Miller, 2003). A review of child and adolescence video telepsychiatry revealed that patients in some studies reported feeling uneasy in front of the camera, and that they disliked the decreased eye contact and the impaired non-verbal communication compared with in-person visits (Pesamaa, et al., 2004). Patients also reported having to occasionally repeat their answers because the doctor either could not interpret their facial expression or hear them clearly. It is worth noting, however, that, despite these challenges, most patients reported that they would still rather have a telemedicine consultation than travel a distance to have an appointment with a psychiatrist in person. After reviewing the literature, there is no strong evidence as to whether telemedicine enhances, inhibits, or does not alter doctor-patient communication (Demiris, et al., 2005; Miller, 2003).

Other concerns with webcam consultations include anxiety about using unfamiliar technology and uncertainty about privacy and confidentiality (Miller, 2001; Whitten & Love, 2005; Whitten & Mair, 2000). Webcam consultations have the potential to be easily recorded (Miller, 2001), although recording is also possible during an in-person visit. Additionally, during webcam consultations, ‘frame tension’ can occur (Allen & March, 2002), where a person is unsure about who may be in the room during the consultation, but beyond the “frame” of the camera.

The Cochrane Collaboration in their review of telemedicine compared with face-to-face care found that, while telemedicine did not have any negative effects, neither did it offer any clear clinical benefits (Currell, et al., 2000). The authors conclude that there was not yet sufficient evidence to determine whether telemedicine was effective, safe, or provided the same quality of care, at decreased cost, as in-person consultations. The report states:

“Even if the same health outcomes can be achieved through telemedicine as with conventional care, there may be differences in costs to patients and to the health services, there may be differences in its acceptability for staff and for patients in different settings.” (Currell, et al., 2000, p. 2)

While studies have determined that telemedicine services are feasible, there remain many questions about the benefits and concerns about this type of service delivery that have yet to be answered. Additional research is needed.
1.4.2.1.3 Healthcare professionals’ views

This introduction to telemedicine has focused on patients’ perceptions, and not healthcare professionals’ views, because this thesis is investigating potential patients’ views on telemedicine. As a result, I will only briefly touch on providers’ views.

Studies frequently report that healthcare professionals are less satisfied with telemedicine than patients (Campbell, Harris, & Hodge, 2001; Liu, 2007; Sinha, 2000). This may be because patients have more to gain from this technology, with telemedicine increasing their choice in doctors and decreasing travel time (Whitten & Love, 2005). In contrast, the main alteration for doctors is that they must learn a new form of service delivery.

Like the apprehension raised by patients, some healthcare professionals have questioned whether telemedicine impairs doctor-patient communication by changing the well-established medium for interacting with patients (Liu et al., 2007; Sinha, 2000). Patients’ body language and emotions may be difficult to interpret online (Swinton, Robinson, & Bischoff, 2009). The medium may also feel impersonal, making it difficult to foster a meaningful doctor-patient relationship (Swinton, et al., 2009). Other providers have stated reservations about the quality of images transferred onto the screen, the ability to conduct an examination without physical interaction, as well as concerns about an internet connection cutting out out in the middle of a consultation (Campbell, Harris, & Hodge, 2001; King, Richards, & Godden, 2007; Moffatt & Eley, 2011). Additional barriers include the cost and additional workload of setting up a new service, poor infrastructure in rural areas, and changes to healthcare professionals’ routines (Moffatt & Eley, 2011; Whitten & Love, 2005). Some healthcare providers preferred telephone for long distance care because it was quick to set up, reliable, and did not require additional training (Moffatt & Eley, 2011). Campbell, Harris, and Hodge (2001) conducted semi-structured interviews with rural healthcare providers and found that their views on telemedicine ranged from viewing it as a “chance to improve health care delivery”, to perceiving it as an unnecessary addition, to viewing it as a “threat” to their livelihood.

Advantages of telemedicine cited by healthcare professionals in the literature include saving time by limiting home visits, increasing treatment options in the local area, and facilitating collaboration with other providers (Menachemi, Burke, & Ayers, 2004; Swinton, et al., 2009). While telemedicine was viewed by many providers as less ideal than in-person
consultations, it was perceived as better than not providing any health service (Swinton, et al., 2009).

Some healthcare providers, like Dr. Peter Yellowlees, are passionate advocates of telemedicine. Dr. Yellowlees is a professor of clinical psychiatry and an eminent telemedicine researcher in the United States. In his 2008 book, *Your health in the information age: How you and your doctor can use the Internet to work together*, Yellowlees envisions a world in the near future where telemedicine is integrated into everyday health care. He states:

“Within ten years visiting most doctors over the Internet will be commonplace. Within the safety and convenience of our own homes we’ll be able to speak to health professionals, access information on our health and receive support from groups of people with similar problems. Wireless videophone will be commonplace” (Yellowlees, 2008, p. 6).

The Internet, Yellowlees argues, will improve health care in many ways. Doctors and patients can interact from anywhere in the world, allowing for continuity of care. Online health records will enable doctors and patients to access a person’s full health history, improving diagnosis by providing a complete picture of a patient’s overall wellbeing. The Internet also empowers patients with the ability to access a range of health information, without having to rely solely on healthcare providers for knowledge.

Yellowlees suggests that the initial resistance of many healthcare providers to telemedicine is comparable with the early concerns raised about telephone care. Doctors at first were concerned that telephone consultations would result in second-rate care and that this medium of consultation would raise privacy concerns because of the potential for eavesdropping. However, telephone consultations are today acceptable and a common component of many medical services. The same may become true for online care.

1.4.2.1.4 Attempted literature review of the use of webcam consultations for STI care

In order to determine what is currently known on the use of webcam consultations for STI care, I conducted a systematic search of the literature.
1.4.2.1.4.1 Searching strategies

A computerised search of the peer-reviewed literature in English was performed in July 2009 via MEDLINE, Scopus, PsycINFO, Web of Science, PubMed, and Academic Search Premier. Key words for webcam consultations were connected by AND to key words relating to sexual health. The following key words were searched for webcam consultations: telemedicine, ehealth, e-health, telehealth, web conferencing, webcam, webcam consultation, video consultation, videoconferencing, video conferencing, remote consultation. The following key words were searched for sexual health: sexually transmitted disease, sexually transmitted diseases, sexually transmitted infection, sexually transmitted infections, sexually transmissible infection, sexually transmissible infections, STI, STD, sexual behaviour, sexual behavior.

Studies were included if they investigated the use of real-time webcam (video) consultations for STI care between healthcare providers and patients. Studies not in English, studies reporting research only on the provision of HIV/AIDS care, and studies reporting research only on consultations between healthcare providers were excluded.

Abstracts of the retrieved papers were read. Full text articles were obtained and examined for all possibly relevant articles as well as articles without abstracts. References from the full text articles were examined and relevant articles were retrieved and read.

1.4.2.1.4.2 Literature search results

Ninety three articles were retrieved. Five were excluded because they were not in English. Six articles were identified as using webcam consultations between healthcare providers and patients for sexual health. However, all six discussed only HIV/AIDS care. Astonishingly, no articles were found fitting the inclusion criteria. (An updated literature search in January 2012 found only one article, my own. Garrett et al. (2011) described the findings of the SHOUT study.)

1.4.2.1.5 Other examples of webcam consultations in the field of sexual health

Since no articles were found using video consultations for STI care, the broader sexual health literature was examined. Video consultations have been used for other aspects of sexual health such as HIV/AIDS care. A case study by Kinsella (1998), for example, reported that the patient viewed the home video consultation as a positive experience and felt excitement about using the new technology. A second study by Becker (2002) briefly reported on a
successful HIV telemedicine service which offered two telemedicine appointments a week to 32 patients in their homes. A more in-depth study was conducted by Lillibridge and Hanna (2009). Six HIV/AIDS patients participated in home video consultations for a four month period. At the end of the four months, participants were interviewed to examine their views on the service. The overall perception of the service was positive. The equipment was viewed by patients as easy to use. Video consultations were perceived as superior to telephone care because they enabled face-to-face engagement with the nurse. While rating the service highly, participants noted that they missed not having the nurse physically present. Participants reported that in-person visits were more social and provided a better opportunity to develop a relationship of trust with the healthcare provider. The telemedicine consultation also inhibited the nurse’s ability to provide emotional support. Despite these limitations, all participants stated that they would be willing to receive care again through the home telemedicine service.

A small body of literature exists examining the use of telemedicine for child sexual abuse medical evaluations (e.g. Kellogg, Lamb, & Lukefahr, 2000; MacLeod, Boyle, Miyamoto, Marcin, & Rogers, 2007; MacLeod et al., 2009). However, these studies discuss the use of telemedicine for communication between one medical professional and another and were therefore not reviewed.

Another study discussed the potential use of telemedicine for sexual health care, but this article simply called for research in the field (Wootton & Bourne, 2001). The authors argue there is some evidence that routine sexual health consultations online may be feasible given that telemedicine has been used for HIV/AIDS consultations and telepsychiatry counselling services, as well as the successful use of digital photography of the cervix during colposcopies.

1.4.3 Home testing for STIs

The potential for telemedicine to improve sexual health is aided by recent technology which enables people to be tested for an STI without being at a clinic. Following a telephone or webcam consultation, patients can be posted an STI testing kit to their home, eliminating the need for a physical examination. These testing kits have been reported in the literature as reliable and acceptable STI screening tools with both high sensitivity and specificity (Gaydos et al., 2009; Morré et al., 1999; Peeling, 2006).
Studies around the world have piloted this approach to STI testing. However, none of these studies couple these STI kits with webcam consultations. The majority of the studies fall under two categories: people being directly invited to have a home STI test and people actively seeking home testing. Examples of both types of studies are discussed.

1.4.3.1 Direct invitation

Studies that contact people directly about receiving home STI testing kits have reported varied success. Cook et al. (2007), for example, conducted a randomised control trial with 403 American women who were at high risk for STIs. Participants were sent either a home testing kit or an invitation to visit a clinic for testing in person. Of the participants in the intervention arm (n=197), 71% completed at least one of the three home tests for chlamydia and gonorrhoea offered. The researchers reported that women in the intervention arm were more likely to complete an STI test then those who were asked to visit a clinic in person, suggesting the potential value of offering home STI testing kits.

A study with men in Sweden had a much lower return rate of kits. Novak, Edman, Jonsson, and Karlsson (2003) posted all men aged 22 living in a Swedish city (n=1074) a home testing kit for chlamydia. Only 39% returned their kits. In order to help determine why the response rate was low, the researchers sent all non-responders a questionnaire asking why they did not participate. The main reason cited for not returning the pack was that they viewed the testing as unnecessary, either because they did not believe they had chlamydia or because they were in a steady relationship.

Similar views were cited in a separate study with Swedish men (aged 20-24) when people were asked about their lack of interest in participating in the study (Domeika, Oscarsson, Hallen, Hjelm, & Sylvan, 2007). In contrast to the previous two studies, people in this study were sent an invitation to participate in a home STI testing kit study and then only those who responded with interest were sent a testing kit (instead of being sent a testing kit from the start). In total, 24% returned their kits. For those that decided not to participate, the main reason given was that they were “protected” from chlamydia because they had a steady partner. Given the low return of kits, the authors deemed such a service was not an effective method to test for chlamydia in this population.
1.4.3.2 Actively seeking testing

The most well known home STI testing service is “I Want The Kit” created by Johns Hopkins University in the United States (www.iwantthekit.org). This service aimed to harness the power of the Internet to increase STI testing. As one of the founders, Charlotte Gaydos, stated, "The highest prevalence [of STIs] is in young adults, and we knew we had to reach these kids … They were always on the Internet, and now, on their smart phones. They weren't going to ask their mothers to take them to a clinic” (Cohn, 2011). Since 2004, the service has been providing people with the ability to access STI testing without physically visiting a clinic (Johns Hopkins Public Health, 2008).

The service offers free chlamydia, gonorrhoea, and trichomoniasis testing to residents in select parts of the United States. In the first two years, the service was available only to women, but in 2006 men became eligible as well. People can request a test either through the I Want The Kit’s website or by texting or calling the service. After taking a vaginal, penile, and/or rectal swab at home (depending on the person’s sex and sexual preference), the person can post the kit back to the laboratory in a pre-paid envelope. People can receive their results one week later by telephone. If a person tests positive, he/she is informed about locations in the area where free treatment is available. On the service’s website, people can also educate themselves about chlamydia, read step-by-step instructions on how to take a home vaginal or rectal swab (including diagrams), learn about treatment, and complete a quiz to assess their STI risk.

In the first four years of service, over 3,700 women requested STI tests (Gaydos, et al., 2009). Of these women, 32% returned their requested kits to the laboratory. Most people ordered their test online on the I Want the Kit website (97%), with only 3% ordering the kit by telephone. The majority of women who utilised the service rated it easy to use, found self-collecting a sample acceptable and stated that they would use the service again. High satisfaction was also reported with male participants. Most men stated that self-collecting a sample was easy and acceptable and that they would utilise the service again (Gaydos, et al., 2009). Of the men requesting the home testing, 29% returned a sample.

Return rates in other studies vary. A Swedish service reported a high number of participants returning their requested kits from the service’s website (Novak & Karlsson, 2006). Of the 1450 tests mailed to participants, 62% posted their sample back to the laboratory.
Similar services have also been introduced in some states in Australia. The C-Project, for example, is available to young people in New South Wales (Martin, et al., 2009). People can request kits from the study’s website, by telephone, or in person at outreach events. Unlike the I Want the Kit service, people had to return the kits to a specific designated location (i.e. pharmacies, GPs, health centres) instead of through the post. Of the 413 kits requested during the year-long study, 47% were returned. Participants reported using the service because it was free and easy to access.

A home chlamydia testing service is also available in Queensland. Kits can be requested by telephone or email or be picked up directly at various locations in the community (Buhrer-Skinner, et al., 2009). Unlike the New South Wales program, kits are returned through the post. Figures on the percentage of people who requested kits, but did not return a sample were not available in the published paper describing the study.

Testing kits expand the versatility of a telemedicine service by allowing people to receive STI testing without having to physically visit a clinic.

1.5 NEED FOR FUTURE RESEARCH

My review of the telemedicine literature revealed that very little is known about the use of telephone and webcam consultations for STI care (between patients and healthcare providers). In addition, the review revealed that in Australia there is a paucity of information on young people’s views on online health services. This research project intends to begin to fill this void in the literature by examining people’s views on STI telemedicine services.

1.5.1 Research question and aim

My main research question was: What are young people’s views on using webcam and telephone consultations for sexual health in Australia?

The aim of this thesis was to examine the need, usability, and acceptability of conducting STI consultations for young people through telemedicine. The ultimate goal of the project was to increase access to sexual health care for young Australians.
1.5.2 Study design

This research project was a mixed methods project consisting ultimately of two studies. The original and main study, titled SHOUT (Sexual Health Online Using Telemedicine), was a national online questionnaire investigating young people’s pre-use views on telemedicine consultations for STI care. The knowledge generated from the study was intended to aid the Melbourne Sexual Health Centre in determining whether they should offer telemedicine consultations as part of their routine service. Before the results of the SHOUT study were available, the Melbourne Sexual Health Centre received funding to pilot a telemedicine service. As a result, a second, related project was added to this research. This secondary study evaluated the discussed piloted telemedicine service, titled TESTme, which offered webcam and telephone STI consultations to people in rural Victoria. The evaluation of the TESTme service involved a questionnaire and interviews with patients, as well as interviews with key informants.
Telemedicine has been proposed as a possible means to increase access to sexual health services. This chapter discusses a piloted telemedicine service for rural Victorians. As the TESTme study was a secondary component of my PhD, I discuss the whole study in one chapter. The chapter is divided into three sections. First, I describe the TESTme service, which was run by the Melbourne Sexual Health Centre. Next, I discuss my involvement with the TESTme service. Two TESTme studies were conducted. In Study 1, I examined clients’ views on the service. In Study 2, I investigated key informants’ views on the service.

A paper discussing the results of the TESTme study was published in the journal Sexual Health (Garrett et al., 2012).

2.1 THE TESTME SERVICE

The Melbourne Sexual Health Centre, a free-standing part of the Alfred Hospital, is the main specialist centre in Victoria for the diagnosis and treatment of STIs. In August 2009, the Melbourne Sexual Health Centre began a one-year pilot of webcam and telephone consultations for people living in rural Victoria. Like in-person consultations at the Melbourne Sexual Health Centre, TESTme consultations were available free of charge. The aim of TESTme was to provide increased access to sexual health services for rural Victorians with the ultimate goal of decreasing rates of STIs. The TESTme objectives were to: 1) test the acceptability of telephone and webcam consultations for people living in rural Victoria who were at high risk of contracting STIs and 2) evaluate the service through both quantitative and qualitative methods.

2.1.1 TESTme consultation: Step by step

The TESTme consultation involved six sequential steps: contacting the TESTme nurse, having the consultation, conducting the home STI test, sending the swabs to the laboratory, receiving the results, and receiving treatment. Each step is discussed below.

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3In this chapter, the term client, instead of patient, is used because this is the terminology used at the Melbourne Sexual Health Centre.
2.1.1.1  **Step 1: Contacting the TESTme service**
To set up an appointment, a client could email or call the TESTme nurse using a free-call number. To be eligible for the service, clients had to:

- Fall into one of the three groups considered by the Melbourne Sexual Health Centre to be at high risk for contracting an STI: young people under the age of 26, men who have sex with men (MSM) at any age, and Indigenous Australians at any age
- Live at least 150 kilometres from Melbourne
- Have no genital symptoms
- Have access to a telephone or webcam for the consultation
- Have a postal address where the home STI testing kit could be sent

People ineligible for the service were asked to visit a local clinic for testing. Those eligible for the service could choose between a webcam or telephone consultation. The nurse arranged a time for the appointment and later contacted the client at the prearranged time.

2.1.1.2  **Step 2: Consultation**
The client had a sexual health consultation with a TESTme nurse.

2.1.1.3  **Step 3: Home STI testing**
An STI testing kit was sent to the client’s nominated address. The unidentified package contained the testing materials, information on how to collect samples, a questionnaire evaluating the service, a client information sheet about the evaluation, a condom, a TESTme business card, and a pre-paid envelope addressed to the laboratory (Figure 2.1).
Depending on the client’s gender and the type of sex he/she was having, the client was asked to take different swabs for chlamydia as follows:

- Heterosexual men: urine dip swab
- Men who have sex with men (MSM): urine dip swab, throat swab, and anal swab
- Women (of any sexual orientation): vaginal swab or urine dip swab, if preferred

Detailed instruction sheets with both words and images on how to take the samples were provided to each client. (See Figure 2.2 and Figure 2.3 for an example of the instruction sheets for taking a urine sample and returning the kit. [Appendix A provides examples of the
instruction sheets for vaginal, anal, and throat swabs. The testing kits met the Australia Post triple packing guidelines for sending swabs through the post.

Figure 2.2 Instruction sheet on how to take a urine sample for the home STI testing kit

Figure 2.3 Instruction sheet on how to pack and return an STI kit
2.1.1.4 **Step 4: Send swabs to laboratory**

The client was asked to place the sealed, self-collected swab sample(s) and the completed questionnaire in the reply-paid envelope and to post the package to the laboratory. The laboratory was located at the Department of Microbiology at the Royal Women’s Hospital in Carlton, Victoria.

2.1.1.5 **Step 5: Results**

The client’s results were available two weeks after the swabs were mailed. The client was asked to call the Melbourne Sexual Health Centre to obtain his/her results.

2.1.1.6 **Step 6: Treatment**

If a client tested positive for chlamydia, a nurse or doctor called the client to discuss treatment for both the client and his/her partner(s). The treatment was then posted to the client’s nominated address.

2.1.2 **TESTme advertising**

The Melbourne Sexual Health Centre created TESTme flyers, A4 TESTme posters, and business cards that were sent out to a range of organisations and events including youth services, festivals for same-sex attracted people, school nurses, community nurses, and sporting clubs. TESTme wrist bands were also produced. Additional promotion included SMS advertising, Facebook advertising, and advertisements in regional newspapers and youth magazines. (For a detailed description of the TESTme advertising see Gamage et al. (2011).)

2.1.3 **Changes made to TESTme service**

The TESTme service continued to evolve throughout the year long pilot. It was hoped that these changes would help increase client numbers. In the beginning of 2010 the TESTme nurse met with the Advertising Department at the University of Melbourne to review the TESTme service. The Advertising Department provided a list of recommendations on how the TESTme website and service could be improved [Appendix B].
After the review process, three major changes were made to the TESTme service involving the website, webcam consultations, and information about contraception. Each change is discussed in turn below.

2.1.3.1 The TESTme website was redone

Before changes to the website were made, seven young people were asked to review the TESTme website and provide feedback. The following quotations are representative examples of young people’s statements.

- “Webcam consultations do not seem legitimate.”
- Sections of the website are “poorly worded” or “unclear”.
- “There should be more links/logos to the Melbourne Sexual Health Centre and the Alfred Hospital to establish the site as credible.”
- “Graphics were too cartoonish/amateurish, making the site not look like a professional medical website.”

Following the review by the Advertising Department and the group of young people, the TESTme website was redone. The updated website went live in May 2010.

2.1.3.1.1 Specific changes made to the website

Three changes were made to the website. The first change was in the design of the website. (Figure 2.4 and Figure 2.5 detail the original and revised TESTme website.) Effort was made to make the website look more professional and highlight the connection the TESTme service had to the Melbourne Sexual Health Centre and the Alfred Hospital. The content of the website was also altered to make the website clearer and easier to navigate. The new website was composed of seven sections: Home, The Kit, STI Info, Privacy, Links, About, and FAQ (Frequently Asked Questions). The website answered a range of questions about the service, listed contact details, and provided photos of the kit. Clients could view the contents of the kit, the detailed instruction sheets for the home STI testing, and the outside of the package to see that the package was discreet and did not mention STI testing. (The TESTme website can be viewed at www.testme.org.au.)
Figure 2.4 Original TESTme homepage

Figure 2.5 Revised homepage
The second change was that clients could email the TESTme nurse to request an appointment or ask the nurse a question. Previously clients could only contact the TESTme service by telephone. The third change was that clients no longer had to register their details online before a consultation. It was hoped that these two steps would increase client numbers by making the appointment process easier for the client.

2.1.3.2 **Webcam consultations stopped being offered as part of the TESTme service**

Webcam consultations were terminated in the beginning of 2010 because no client up to that date had used a webcam consultation. In addition, the University of Melbourne’s Advertising Department recommended removing the webcam option. The group of young people who reviewed the website also mentioned concerns about a consultation by this medium. The young people commented that the webcam consultations were a bit “suss” (meaning suspicious) and as a result left them questioning whether the TESTme website was “legitimate”.

2.1.3.3 **Contraception advice was added to the service**

People were informed on the website that they could call the TESTme nurse to speak about STI testing and contraception advice. It was hoped that adding information about contraception on the TESTme website would attract more people, particularly young women, to the service.

2.1.4 **TESTme client numbers**

The Melbourne Sexual Health Centre hoped that the TESTme service would attract high client numbers; however, during the year long pilot, only 29 young people used the service. All of the clients nominated to have a telephone consultation; no client chose to have a webcam consultation. Five clients did not return their kit. Of the 24 who returned their kits, four clients tested positive for chlamydia and were sent treatment in the mail.

2.2 **STUDY 1: INVESTIGATION OF CLIENTS’ VIEWS**

The aim of the investigation was to assess clients’ views on using telemedicine for routine sexual health consultations. The client investigation involved both a questionnaire and interviews. While the service was open to young people under 26, men who have sex with
men (MSM) at any age, and Indigenous Australians at any age, my investigation was limited to young people (aged 15-24). This group was chosen so the information from the TESTme component of my PhD would coincide with the age of the participants in the SHOUT study to allow for more direct comparisons.

2.2.1 Methods

2.2.1.1 Ethics

The research project was approved by the Alfred Ethics Committee (Project number 220/09).

A dependent relationship exists between clients and healthcare professionals at the Melbourne Sexual Health Centre. To address this concern, clients asked to participate in the research study were informed that their decision to participate was voluntary and would not influence their access to services.

Little personal risk was envisioned. Although the medical consultation was about sexual health, the study was asking participants not about their sexual health, but about their views on a new mode of consultation. Effort was made to minimise the time of the evaluation. The main risk was a breach of confidentiality. There was a possibility that someone other than the client might see the questionnaire or wonder about the topic of the phone interview. Thus the questionnaire did not mention the Melbourne Sexual Health Centre, instead using the word TESTme. As well, when I contacted a client for an interview, the topic of the interview was disclosed only to the client and not to anyone else who answered the phone. The Melbourne Sexual Health Centre has a well established data management system to ensure the confidentiality of clients and the research data were protected by this system.

For the questionnaire data, I received only coded client numbers and not client names. For the interviews, I was given only the client’s first name and telephone number so I could conduct the interviews. Pseudonyms were used during the analysis to protect the confidentiality of participants.

2.2.1.2 Recruitment

All clients aged 15 to 24 who used the TESTme service were invited to participate in the study. At the end of each consultation, the TESTme nurse informed clients about the study and invited them to participate. [See Appendix C for the transcript the nurse delivered to
clients. Clients were notified that another researcher, Cameryn Garrett, would conduct the interviews. The client participant information form [Appendix D] and the questionnaire [Appendix E] were sent to clients in the package with their STI testing kit. Clients were asked to return the questionnaire in the pre-paid return envelope with their STI swab(s). Consent was implied by the return of the questionnaire.

2.2.1.3 Questionnaire

The aim was to collect all the completed questionnaires six months into the service. However, due to low client numbers, it was decided to extend the data collection period until the year-long TESTme pilot finished at the end of June 2010.

The questions for the survey were drawn from the client satisfaction survey at the Melbourne Sexual Health Centre and the SHOUT questionnaire. The questionnaire was reviewed by colleagues and friends to ensure the wording was clear and the answer choices were appropriate.

The five section questionnaire took 10 to 15 minutes to complete. The questionnaire asked about clients’ general views on the telephone/webcam consultation, the client’s interaction with the TESTme nurse, access to health care, demographic information, and the client’s overall rating of the TESTme service. Clients were also invited to write comments in the free text response sections of the questionnaire. [Refer to Appendix E for a copy of the TEST client questionnaire.]

2.2.1.4 Interviews

At the end of a TESTme consultation, the nurse invited clients to participate in an interview. I called clients who consented to be contacted about an interview, giving clients more information about the interview [Appendix F] and obtaining their oral consent at this time. Their consent was recorded in the client interview database. Clients who participated in an interview were compensated for their time with a $25 voucher to Coles Group and Myer; there was no compensation for completing the questionnaire.

The structured interviews were audio-recorded and lasted no more than 10 minutes. The questions for the interviews were influenced by the information gained during the piloting of the SHOUT questionnaire and the initial responses to the SHOUT and TESTme questionnaires. In interview, the client was asked about his/her reasons for using TESTme,
the medium (telephone or webcam) he/she chose for the consultation, the advantages and
disadvantages of using TESTme over seeing his/her local doctor in person, and his/her views
on using home STI testing kits. The seven questions asked during the interview are listed
below:

1) Can you tell me why you decided to have a telephone/webcam consultation instead of
visiting your local clinic?

2) Why did you choose a telephone consultation instead of a webcam consultation (or vice
versa)?

3) What advantages do you think the telephone/webcam consultation has over speaking to a
nurse or doctor in-person?

4) What about disadvantages?

5) How did you find collecting your own samples and posting them back to the clinic?

6) Do you have any suggestions on how we can improve this service?

7) Is there anything else you would like to mention about the service?

I aimed for the interviews to be evenly distributed between males and females (4 females, 4
males). For each sex, I wanted to conduct half the interviews with people who had telephone
consultations and half with people who had webcam consultations.

2.2.1.5 Analysis

Descriptive statistics were calculated for the questionnaire data. There were too few
participants to perform hypothesis tests. The interviews were analysed thematically (Pope,
Ziebland, & Mays, 2000). Transcripts were read several times to achieve familiarity and to
identify potential themes. Themes were noted and hierarchy of themes developed. All
transcripts were re-read and themes were further refined with repeated reference to the
transcripts.

2.2.2 Results

Eighteen of the 25 TESTme clients aged between 15 and 24 returned the questionnaire.
Fourteen were female; four were males. None identified as being Aboriginal or Torres Strait
Islander. Not every question was answered by everyone. Seven people were invited to participate in an interview and all agreed; 4 eligible telephone interviews were conducted (2 female, 2 male). Further invitations to participate were reserved for clients opting for a webcam consultation; none had done so by the conclusion of the pilot.

2.2.2.1 Client questionnaire

2.2.2.1.1 Access to health care

Eleven of 18 respondents reported that it was difficult to get to a doctor with whom they would be willing to discuss a sexual health matter; among the explanations provided in the free text response were: being able to speak only to a male doctor at the local clinic, confidentiality concerns, limited transport, and long waiting times. Only 6 clients had had an STI test in the past (Table 2.1). Twelve of 18 agreed with the statement “I have had a sexual health concern in the past where I felt I should go to a doctor but didn’t.” The most common reasons given for not visiting a doctor were (multiple answers allowed): “concerned over confidentiality” (8) and “embarrassed” (7).

2.2.2.1.2 TESTme consultation

Respondents reported having the opportunity to ask questions during the TESTme consultation (14/16 respondents) and that the nurse treated them in a professional manner (16/16). Fourteen out of 15 said that the TESTme consultation was more comfortable than having the same consultation with their local doctor; the other respondent reported no difference in comfort level. The free text response identified the TESTme consultation as more comfortable because clients could speak to a female health care provider, the consultation was “less confrontational” [sic] (Male, aged 24), and clients could speak to a sexual health specialist. If TESTme was not available, only 6 of 18 respondents said they would have gone to their local doctor to discuss their sexual health concern. When asked why they used TESTme instead of visiting their local doctor, the most common reasons

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4 Due to a misunderstanding in the recruitment process, an additional female client, aged 15, was invited and agreed to participate in an interview. As the researcher conducting the interview was given only the client’s name and telephone number, the interview was unknowingly conducted with a client under the approved age. After seeking guidance from the Ethics Committee, the interview was deleted. One man who agreed to be interviewed could not be reached despite many telephone calls and another man was available only when the researcher was committed elsewhere.
nominated were “cost” (10), “concerned about confidentiality” (9), and “not wanting to speak to their usual doctor about a sexual health concern” (9).

Only one respondent agreed with the statement, “I feel I would get better care if I saw the doctor or nurse in person”, explaining in the free text section that this would allow an examination to occur. Clients who disagreed with the statement wrote in free text that, for example, “These kind of things are embarassing [sic] to talk about and I think it is much easier over the phone” (Female, aged 16), and that they felt more “able to ask questions or clafiy [sic] if needed just as much as being in person” (Female, aged 24). The main reason given for choosing a telephone consultation and not a webcam consultation was “did not own a webcam” (9/18); other answers included (multiple answers allowed) “didn’t matter which one I used (telephone or webcam)” (4) and “don’t have access to a computer” (3).

2.2.2.1.3 Overall rating of TESTme

The majority of participants (15/17) rated TESTme as better than seeing a doctor in person; the other two participants said there was no difference. Free text responses revealed that clients found the TESTme service “easier” (Female, aged 16), “less embarrassing” (Female, aged 16), “non-judgemental” (Female, aged 24), and “very professional and reassuring” (Female, aged 23). Clients’ overall satisfaction with TESTme was high: sixteen out of 17 reported being “very satisfied” and one reported being “satisfied”. In the free text, clients described the TESTme service as “easy and cool to use” (Female, 18), a “great idea for rural people” (Female, aged 24), and “a fantastic program that needs to be out there” (Female, aged 15). All (17/17) found collecting their own STI samples acceptable and most (16/17) said they would use the TESTme service again. One client reported she would not use the TESTme service again, but rated her overall satisfaction with the service as “very satisfied”, collecting her own sample as “very acceptable”, and identified the TESTme consultation as much better than seeing a doctor in person.
Table 2.1 Clients’ responses to questions about the TESTme study

<table>
<thead>
<tr>
<th>Question</th>
<th>Total*</th>
</tr>
</thead>
<tbody>
<tr>
<td>I have had a sexual health concern in the past where I felt I should go to a doctor but didn’t</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>12/18</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>1/18</td>
</tr>
<tr>
<td>Disagree</td>
<td>5/18</td>
</tr>
<tr>
<td>Have you ever had an STI test?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6/17</td>
</tr>
<tr>
<td>No</td>
<td>11/17</td>
</tr>
<tr>
<td>The TESTme consultation was more comfortable than having the same consultation with local doctor</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>14/15</td>
</tr>
<tr>
<td>Disagree</td>
<td>0/15</td>
</tr>
<tr>
<td>No difference</td>
<td>1/15</td>
</tr>
<tr>
<td>If this service was not available, would you have gone to your usual GP to discuss your sexual health concern?</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>6/18</td>
</tr>
<tr>
<td>No</td>
<td>7/18</td>
</tr>
<tr>
<td>Don’t know</td>
<td>5/18</td>
</tr>
<tr>
<td>I feel I would get better care if I saw the doctor or nurse in person</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>1/18</td>
</tr>
<tr>
<td>Neither agree or disagree</td>
<td>8/18</td>
</tr>
<tr>
<td>Disagree</td>
<td>9/18</td>
</tr>
<tr>
<td>TESTme was better than seeing a nurse or doctor in person</td>
<td></td>
</tr>
<tr>
<td>Agree</td>
<td>15/17</td>
</tr>
<tr>
<td>Disagree</td>
<td>0/17</td>
</tr>
<tr>
<td>No difference</td>
<td>2/17</td>
</tr>
<tr>
<td>Overall satisfaction with TESTme service</td>
<td></td>
</tr>
<tr>
<td>Very satisfied</td>
<td>16/17</td>
</tr>
<tr>
<td>Satisfied</td>
<td>1/17</td>
</tr>
<tr>
<td>Dissatisfied</td>
<td>0/17</td>
</tr>
<tr>
<td>I would use TESTme again</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>16/17</td>
</tr>
<tr>
<td>No</td>
<td>1/17</td>
</tr>
</tbody>
</table>

* Not every question was answered by all respondents.

### 2.2.2.2 Client interviews

Although there were seven interview questions, most participants paid the greatest attention to two questions: “Can you tell me why you decided to have a telephone/webcam consultation instead of visiting your local clinic?” and “Why did you choose a telephone consultation instead of a webcam consultation?” Their responses are detailed below.
2.2.2.2.1 Why clients chose to have a telephone consultation instead of a webcam consultation

The main reasons discussed by clients were: the familiarity of the telephone, convenience, and finding a webcam too confronting. Alison (Female, aged 23) said, “I suppose just talking on the phone is an everyday thing, where the webcam I don’t use regularly. If I used it regularly, I’d probably feel more comfortable using it.” Tom (Male, aged 20) found the idea of webcam consultations “too confronting” and too similar to an in-person consultation. Belinda (Female, aged 24) did not have a webcam but said even if she had one she was “happy with telephone”. Jeremy (Male, aged 24) found it “just easier to sit on the phone and talk” than set up a webcam.

2.2.2.2 Why clients chose a telephone consultation instead of visiting a local clinic

Clients explained their decision to use the TESTme service in relation to being able to speak to a female healthcare professional, convenience, privacy, and cost. Belinda reported several reasons, especially being able to consult a woman for a sexual health consultation:

“I’m thinking [TESTme] is a really good idea for rural people. It is difficult for us to get into the doctor’s, particularly in this area where there’s no female GPs, and a lot of girls don’t feel comfortable going to see male doctors” (Female, aged 24).

For Alison (Female, aged 23), TESTme was “just easier to fit in to my normal work day”; instead of having to set an hour aside to drive to a local clinic, she could speak to the TESTme nurse over the phone in a few minutes. Tom (Male, aged 20) decided to use TESTme because he found it “less confronting” than an in-person consultation. Both confidentiality and cost led Jeremy to use TESTme.

“It is such a great idea ... You don’t have to talk to the person face-to-face about something that is usually pretty private ... Lots of students don’t have much money. They go to a doctor that doesn’t bulk bill, or they have to pay for medication et cetera, and some of them can’t afford it, so a service like this, I reckon, would be ideal for uni students” (Male, aged 24).

Each client interviewed described TESTme as a means to decrease obstacles to accessing sexual health services.
2.2.3 Discussion

The clients who used the service reported being satisfied with TESTme and finding it acceptable to self-collect STI samples at home. Notably, the majority of clients (12/13) reported that the TESTme service was better than speaking to a doctor in-person. However, the positive appraisal of telephone consultations should be interpreted cautiously given the self-selecting nature of the service and low client numbers. Potentially, client numbers could have been higher if the service was offered after hours.

The low client numbers suggest that webcam consultations for sexual health may not yet be acceptable to rural youth. Despite the small numbers, four cases of chlamydia were identified and treated. In addition, 24 other clients were able to access a free, confidential sexual health service.

2.3 Study 2: Key Informants’ Views

Given the high expectations of the TESTme service and client satisfaction, the low client numbers were puzzling. It was therefore decided to interview key informants from the TESTme service in an attempt to find an explanation for this outcome.

2.3.1 Method

2.3.1.1 Ethics

This research project was approved by the Alfred Ethics Committee (Project number 220/09).

2.3.1.2 Data Collection

Eight key informants involved in designing and implementing the service were invited to participate in the study; all agreed to participate. The key informants included nurses, clinicians, rural health experts, an epidemiologist, and a senior policy officer. No further details, including specific numbers in each category, are provided, in order to give as much protection as possible to the individuals concerned. In addition, study numbers instead of names were used to maintain confidentiality. However, given the small number of informants and the fact that they represent a large proportion of staff at an identifiable clinic, it cannot be guaranteed that the complete anonymity of participants will be maintained.
The semi-structured interviews were conducted by telephone (n=5) or in person (n=3) and lasted about 20 minutes. The key informants were asked their views on the limited client uptake of the service and why no one chose a webcam consultation. Informants were asked the following eight questions:

1) What elements of the TESTme service do you think we got right?

2) What elements do you think didn’t work?

3) What about the advertising strategies? Which elements do you think worked and which did not?

4) Do you have any thoughts on why no one chose to have a webcam consultation?

5) How does the TESTme service compare to services where people can order home STI testing kits over the Internet?

6) If we started again from the beginning, what would you want to do differently?

7) Do you think there is a better approach to increasing STI testing among rural youth?

8) Is there anything else you would like to mention about TESTme?

2.3.2 Analysis

The audio-recorded interviews were transcribed and analysed thematically. Transcripts were analysed using the iterative hermeneutic techniques practised in qualitative research (Ezzy, 2002). Each transcript was read several times to achieve familiarity with its contents and to identify potential themes. Themes were noted and hierarchies of themes developed. All transcripts were read again in the light of identified themes and to discern thematic evidence in each transcript. Themes that appeared most strongly and pervasively were further refined with repeated reference to the transcripts. For clarity and ease of reading, some filler words (such as “um”) and repetitions were removed from the quotations in the section below.

2.3.3 Results and discussion

Informants presented their explanations for the clients’ refusal to choose webcam consultations and for the limited success of the service. A more in-depth analysis revealed a reliance on clinicians’ authority and experience in designing the service rather than turning to evidence-based practice. Each finding is described below.
2.3.3.1 Why were webcam consultations unsuccessful?

Four themes emerged as to why no client chose to have a webcam consultation: mistrust of online consultations, uncertainty about what the consultations would involve, perception of webcam consultations as unnecessary, and the technology being before its time.

2.3.3.1.1 Mistrust of online consultations

The theme of trust encompassed many comments by informants. Informants speculated that clients might have confidentiality and security concerns about webcam consultations because online consultations have the potential to be hacked. As well, informants speculated that potential clients might not trust that the person on the other end of the webcam was an actual doctor. Informants thought these concerns might make the service seem “dodgy” (Study ID 107) or “creepy” (Study ID 108). The TESTme service differed in two ways from other telemedicine services familiar to informants; these differences, informants thought, may have contributed to mistrust of the service. First, in most rural telemedicine consultations, a client visits a local clinic and, with the assistance of a local nurse or doctor, communicates with a specialist in the city. This differed from the TESTme service as clients were asked to contact the service “cold”. Some wondered if this might have influenced clients’ willingness to use the service. Without having a health professional present to confirm the legitimacy of the service, informants stated that people might be less willing to trust and, in turn, use the service. The element of trust was deemed particularly important when discussing a sexual health concern. TESTme also differed from most other telemedicine services by dealing with sexual health, an “incredibly personal and private” subject (Study ID 101). Informants noted that telemedicine had worked in other fields, suggesting that the sensitive nature of sexual health may make it inappropriate for telemedicine consultations, at least at this point in time.

2.3.3.1.2 Uncertainty about consultation

Despite the TESTme website stating that no genital examination would occur, informants reported that potential clients may have read the words “sexual health consultation” and “webcam” in the advertisements and assumed this meant the service would involve a genital examination over a webcam. As a result, potential clients may have decided not to use the service before reading more to learn that this would not occur.
2.3.3.1.3 **Perceiving webcam consultations as unnecessary**

Five informants said that young people may not view webcam consultations as advantageous over telephone or in-person consultations. The remaining three informants did not comment on this matter. One informant who had spoken to clients said, “I felt that would be really helpful for [clients] to see me on the other end but actually when I asked [clients their views on webcam consultations], [they responded], ‘why do I need to see you?’ That didn’t make them feel any safer anyway” (Study ID 103). Four of the five informants stated that webcam consultation might be viewed, in fact, as a disadvantage because clients would lose the anonymity they had over the telephone and because of confidentiality concerns. The fifth informant did not comment further than finding webcam unnecessary.

2.3.3.1.4 **Technology before its time**

Five informants said that one possible reason why webcam consultations were not popular was because the technology was unfamiliar and “before its time” (Study ID 108). Informants suggested that if videoconferencing were used more frequently for social and healthcare interactions, people might be “more accepting” of webcam consultation for sexual health. As one key informant commented, “I think telemedicine still is in its infancy in this country. Not many people have heard of it. It’s not done. Certainly in primary care it’s not very common. And so the whole concept is probably still quite out there” (Study ID 102). Currently, the novelty of the service may have deterred clients. In addition, informants noted that many rural youth may not yet have access to high speed broadband or own a webcam; demand for telemedicine consultations by webcam may increase when they do. Two informants did not comment on the topic, but the other informant disagreed with the view that the webcam consultation technology was simply before its time. Instead, this informant commented that in hindsight, “webcam was completely wrong” (Study ID 106) for sexual health consultations because, in the informant’s view, clients would prefer to remain anonymous instead of showing their face on webcam.

2.3.3.2 **Why were client numbers for the service low?**

Informants described being uncertain about why client numbers were low. The words of one informant represented the views of others:

“At the start of this we made an assumption, so we put two things together ...
Young people in rural areas can find it hard to access sexual health services; ...
we also had the view that telemedicine might be a way of tapping into that and reducing barriers. But it is notable that those two things didn’t translate, actually, in the end, to a lot of demand for the service, ... and I’m still a little bit unclear why that was the case” (Study ID 102).

Informants nominated three factors as contributing to low client numbers: not involving the target audience when designing the service, obstacles to effective promotion of the service, and young people’s underestimation of personal risk.

2.3.3.2.1 **Lack of discussion with rural youth**

Informants volunteered the opinion that there should have been advance discussions with rural youth about the service. Informants said, with hindsight, that the target audience could have provided valuable insights into the service’s design and promotion. Only four informants provided explanations for why rural youth were not involved. Two informants said the lack of discussion with rural youth was simply a mistake, but another argued that discussions with rural youth were “really beyond the scope and funding of this project” (Study ID 101). This informant and one other informant described the limitations of one-year funding, which were reported as making informants feel like they had to start the service as soon as possible, without doing any background research, so that there would be reportable results in a year’s time.

2.3.3.2.2 **Obstacles in the way of effective promotion**

One obstacle identified by informants was that they had heard that school nurses were restricted in promoting the TESTme service to students. As one informant stated: “[School nurses] were allowed to provide [TESTme] as an option if a young person asked or had concerns and was requiring a service like that, but they couldn’t actually promote the service when they’re doing health promotion working in classrooms” (Study ID 108). This limitation was reported as hearsay. While I investigated the matter further, I was unable to confirm it as officially mandated by the Department of Education, although I discovered sources outside the clinic who believed it to be at least a popular opinion among school nurses. The reported restrictions placed on the school nurses would have limited the amount of information students were given about the service. Informants’ opinions were that such a restriction limited the effective promotion of the service.
2.3.3.2.3 Young people’s underestimation of personal risk

Another obstacle identified by informants was that many young people do not consider themselves at risk for an STI. Even if people had heard about the service, they may not seek out testing.

2.3.3.3 Further reflections on low client numbers

It may be that another factor limited the success of the TESTme service. Hermeneutic analysis of the interviews revealed that clinicians’ authority and experience were most influential in the service design. As one of the informants stated, the service “was set up based on assumptions” (Study ID 102) about the kind of service clinicians thought rural youth needed. The validity of solely relying on clinical authority in making medical decisions has been challenged by the evidence-based medicine movement. Evidence-based medicine, a term coined by Gordon Guyatt in 1990, counters clinicians’ authority by emphasizing the importance of basing clinical decision-making on scientific evidence instead of relying solely on clinicians’ opinions (Daly, 2005).

Analysis suggests that the high value placed on the clinicians’ expert opinions meant that they were accepted as sufficient for designing and promoting the service. The informants thought they knew what type of service young people needed and believed that their approach would be successful in attracting high client numbers. This conclusion was based in part, on the number of successful services the informants had implemented in the past. However, the low client numbers suggest a dissonance between what the informants and potential clients viewed as an appropriate and necessary service. One informant, upon reflection, discussed how his clinical expertise had not resulted in designing the most appropriate service for rural youth: “The big lesson I’ve learned is that, despite thinking you’re right, you’re often not. With this project we needed more advice from what young people thought to have got it right” (Study ID 107).

Like the evidence-based medicine movement, the movement to involve potential clients in healthcare design challenges clinicians’ authority by positing that clients could provide valuable input into the design of services (Boote, Telford, & Cooper, 2002). While discussions with target audiences have been viewed in the published literature as improving the quality of health services, systematic reviews have found limited evidence to support this claim (Crawford et al., 2002; Nilsen, Myrhaug, Johansen, Oliver, & Oxman, 2006). This is
partially due to the small number of studies systematically evaluating the effects (Crawford, et al., 2002; Nilsen, et al., 2006). As this topic is largely unevaluated, the lack of evidence does not necessarily imply that there is no effect (Crawford, et al., 2002). Given the evidence, it can only be speculated that discussions with rural youth would have improved the TESTme service, and increased client numbers.

2.3.4 Discussion

With the best intentions, a new telemedicine service was set up in an attempt to decrease some of the barriers young people face when trying to access sexual health services. Few clients, however, used the service. While the low client numbers limit the generalisability of the study, the fact that no one chose to have a webcam consultation suggests that webcam consultations for routine sexual health matters may not yet be acceptable to young people. Key informants nominated three influences on the low client numbers: failure to involve the target audience in the design of the service, obstacles to effective promotion, and young people’s underestimation of personal risk. These factors suggested by the key informants, however, are only speculation. It was also clear that the service relied on clinicians’ experience and opinions rather than appropriate evidence.

The question of why webcam consultations were unsuccessful is difficult to answer. It is possible that the advantage of increased access to services through webcam did not outweigh the potential disadvantages of an online consultation. Communication theories (Lee, 2008) suggest that a new medium replaces an old medium when “(1) the new medium is more convenient, cheaper, and more accessible than the old media and (2) the new medium satisfies—to an equal or superior extent—the same needs for which people have relied on old media” (Lee, 2008, p. 452).

In reference to the first criterion, while webcam consultations may be more convenient and accessible than in-person consultations for people living in rural areas, this may not be true when comparing a webcam consultation with a telephone consultation. Clients who used the TESTme service reported choosing telephone because of the familiarity and ease of using it compared to a webcam. In addition, half of the clients reported not owning a webcam, limiting the accessibility of this option.

Addressing the second criterion, key informants speculated that webcam consultations may not satisfy the same needs as the old medium. Key informants noted that webcam
consultations do not provide the same anonymity as the telephone. Furthermore, online consultations were deemed by key informants to be potentially less trustworthy than in-person or telephone consultations.

By drawing on e-commerce theories, the potential mistrust of online consultations may help to explain why webcam consultations were not used by rural youth. A medical webcam consultation can be viewed as an electronic business transaction because the clinic is offering an online service to a client. David Gefen (2000), building on the theories of Niklas Luhman (1979), posits that trust and familiarity with an online business are crucial determinants in whether consumers enquire about and purchase online goods. Expanding on conceptions of trust online, the web trust model (McKnight, Choudhury, & Kacmar, 2002) defines e-commerce trust as consisting of four interrelated constructs: “disposition to trust, institution-based trust, trusting beliefs, and trusting intentions” (McKnight, et al., 2002). Disposition to trust relates to the degree to which a person is disposed to trust others. Institution-based trust is defined as a person’s views of the environment of the Internet, such as whether the environment is secure. Trusting beliefs relate to whether the person believes the web vendor is honest, capable, and good-willed. Finally, trusting intentions relate to whether the person plans to participate in a potentially risky interaction with the vendor, such as providing personal information or purchasing goods. For the TESTme consultation, as the informants noted, clients were asked to contact the clinic “cold”, without any prior trust of or familiarity with the clinic or the service, which may have led to mistrust of the service: Was it secure? Was the service legitimate? Did it have honest and benevolent intentions? Lack of trust and familiarity with the TESTme service may help to explain why few clients contacted and used the service.

Returning to the two criteria listed above (Lee, 2008), it seems that that the advantages of webcam medical consultations for sexual health did not outweigh those of more traditional media. This may help to explain the low client numbers and the lack of interest in webcam consultations.

The study had limitations. The limitations for the client study are low participant numbers and the self-selecting nature of the study. In the key informants study, results were only speculation on the part of the participants. Discussion with rural youth who had heard of the
service, but chose not to use it would have provided further insight as to why the client uptake for the service was so low.

Despite the limited success of the service, the informants involved in TESTme had the passion and desire to design a service that they thought would increase the access of rural youth to sexual health services. They drew on limited evidence and their own experience in an endeavour to provide rural youth with the best possible care. The commitment of the key informants to providing excellent health care is evident in their determination to respond to the needs of diverse clients. It is hoped that not only will the lessons learned from the limited success of this service be useful to those involved and to others planning similar health services, but that further research will be conducted to ensure that clinicians have adequate evidence with which to develop effective services in the future.
3 SHOUT METHODS AND METHODOLOGY

The SHOUT (Sexual Health Online Using Telemedicine) study investigated young adults’ pre-use views on telemedicine consultations for sexual health through an online questionnaire. The results of the study were published in the journal *BMC Infectious Diseases* (Garrett, Hocking, Chen, Fairley, & Kirkman, 2011).

The SHOUT study had seven main steps: 1) developing the SHOUT questionnaire, 2) seeking ethics approval, 3) refining and piloting the questionnaire, 4) designing the website, 5) data collection, 6) advertising the study, and 7) analysing the data. Each step is discussed in turn.

3.1 SHOUT QUESTIONNAIRE DEVELOPMENT

The cross-sectional SHOUT questionnaire was composed of five sections: “Information about you”, “Your access to health care”, “Discussing your sexual health with a doctor”, “IT information”, and “Some questions about your sexual behaviour”. [See Appendix G for a copy of the SHOUT questionnaire.] The questionnaire first asked about people’s willingness generally to have a sexual health consultation by different media. This was followed by questions asking people’s views specifically on genital examinations. The questionnaire was designed specifically for the study. When appropriate, questions from other published questionnaires were used or provided a model for questions in the SHOUT questionnaire. Questions from the “Some questions about your sexual behaviour” section were based on the Lim, Hellard, Atiken, and Hocking (2007) sexual health questionnaire titled “Sex, Drugs, and Rock’n’Roll”. For the telemedicine questions, there was no appropriate published questionnaire to use as a guide. One of the methodological weaknesses of published telemedicine studies to date is the lack of a standardized questionnaire. It was clear from the published literature that only two telemedicine questionnaires were tested for their validity and reliability: Demiris, Speedie, and Finkelstein’s (2000) untitled home telecare questionnaire and Yip, Chang, Chan, and Mackenzie’s (2003) Telemedicine Satisfaction Questionnaire. These two questionnaires, however, did not meet the needs of the current study because they were designed to examine patients’ opinions of telemedicine after they...
had participated in a telemedicine consultation. In addition, neither of the questionnaires evaluated telemedicine for sexual health. Thus the questionnaires served only as a model for the SHOUT questionnaire.

As the study examined the relationship between health care and the Internet, it was deemed appropriate to examine people’s views on the topic through an online questionnaire. Once the questionnaire was designed, it was put online by an information and communication technology analyst at the Melbourne Sexual Health Centre and was hosted on the Melbourne Sexual Health Centre’s server. It was hoped that hosting the questionnaire on the Melbourne Sexual Health Centre’s server would increase the creditability of the questionnaire.

3.1.1 Online research methodology

Before describing my research methods, I examine the weaknesses and advantages of online research and the methods I employed to minimise the potential disadvantages.

3.1.1.1 Advantages of online research

Online research offers advantages over more traditional mediums. The Internet provides the opportunity to reach a large and diverse group of people (Birnbaum, 2004; Pittenger, 2003). Not only does the Internet break down geographic barriers, but it also allows people to retain their anonymity. This factor is particularly advantageous when researching sensitive topics such as sexual health, as the anonymity may help people respond more honestly.

Conducting research online can also save time and money. With an online questionnaire, participants can quickly return a survey at their own convenience without having to remember to place the completed questionnaire in the mail. Researchers can save time by not having to physically recruit participants or manually enter data into a database. Online questionnaires also save money by eliminating the need to print and post questionnaires (Birnbaum, 2004; Mustanski, 2001).

3.1.1.2 Methodological weaknesses

The methodological weaknesses of online research include the potential for multiple submissions, the possibility of receiving false information, equipment problems, and sampling concerns. Each disadvantage will be described in turn. It should be noted that many of the disadvantages of online research also occur in telephone and mail surveys.
Online surveys have the potential for multiple submissions. While this may affect the internal validity of the data, the current literature on online methodology suggests that multiple submissions for online questionnaires are rare (Birnbaum, 2000; Birnbaum, 2004; Mustanski, 2001). While it is not possible to prevent people from submitting the questionnaire more than once, a method to detect such submissions is to run a check of date, birth year, gender, and postcode of the data as a means for assessing possible duplicate submissions. I employed this tactic in my research. On the four occasions when I found a multiple submission, I retained the newest dataset and discarded the older submission as suggested by Birnbaum (2004). In an attempt to limit multiple submissions, no incentive for completing the questionnaire was offered (Birnbaum, 2004). While the concern about people completing the questionnaire more than once could have been managed in this research project by asking each participant to log in with their e-mail address, it was decided that maintaining the anonymity of participants was the paramount concern.

Online, respondents can mislead researchers about their identity (Beddows, 2008). One’s location, gender, and age can all be altered at the press of a button. Literature in the field, however, suggests that there is little advantage for people to lie about themselves in survey research (Walther, 2002). The inability to confirm the truthfulness of the identity of participants is a concern not unique to online research but can equally occur in mail or telephone surveys (Beddows, 2008).

The aesthetics of the survey may vary depending on the computer software (Couper, 2000; Mustanski, 2001). For example, those using a Mac or Windows operating system or Google Chrome instead of Mozilla Firefox web browsers may receive different visual stimuli. To address this, the questionnaire was tested for consistency on a variety of operating systems and browsers before it went live.

Online research also raises some concerns about sampling. One issue is not being able to determine response rates as one cannot collect information on the number of people who received word about the study and then decided not visit the website, or those who went to the website and then decided not to complete the questionnaire (Couper, 2000; Rhodes, Bowie, & Hergenrather, 2003). As well, the number of people who were unable to participate in the study because they did not have access to the Internet or were not comfortable using a computer to fill in a questionnaire online cannot be determined. Online
research has the disadvantage of excluding those who do not have access to the Internet. While this factor was considered when deciding what type of questionnaire to use, the population of interest for this study was people with access to the Internet as the survey was investigating views on an online service.

For the SHOUT questionnaire, the advantages of an online study outweighed the possible disadvantages.

### 3.2 Seeking Ethics Approval

The SHOUT study received ethics approval from the University of Melbourne Human Research Ethics Committee (Project number 0931507). Ethical considerations guided the entire research project. Discussing one’s sexual health involves sharing very personal, intimate details about one’s life and an appreciation of the sensitivity of the topic informed the research design. While it is a health matter that affects everyone, the discussion of this topic is still considered largely taboo. In order to ensure confidentiality, participants did not provide their names or contact details when filling in the questionnaire.

#### 3.2.1 Minimising risk

Given the sensitive nature of the topic, participating in the project could arouse anxiety or concern. The SHOUT website had contact details for sexual health services throughout Australia where people could go to seek assistance for sexual health matters. These details were also given to participants involved in the pilot of the questionnaire.

The psychological risks posed by participating in the pilot of the questionnaire were minimized by not asking participants to provide any personal information when filling in the questionnaire, but instead using the provided health details of a hypothetical character [See Appendix H]. The hypothetical character’s health history included information about the characters’ sexual history, access to health services, and demographic information.

### 3.3 Refining and Piloting the Questionnaire

There were four main phases in finalising the SHOUT questionnaire:
1) Friends and colleagues were invited to read and discuss the questionnaire.

2) The questionnaire was piloted through consultation with a small group of students, aged between 16-24 years, at the University of Melbourne.

3) The questionnaire was piloted through consultation with a small group of young people, aged between 16-24 years, in the rural town of Moe, Victoria.

4) Once the questionnaire was finalised, the data management system was tested. As suggested by Birnbaum (2004), the testing included checking how the data were coded, testing the data inputting system to make sure that every button and answer field was correctly working and making sure the questionnaire worked on different types of operating systems and Internet browsers. The questionnaire worked correctly and appeared in the same format on different operating systems and Internet browsers.

The University of Melbourne and Moe pilots are discussed in detail.

3.3.1 University of Melbourne pilot

University of Melbourne students were recruited through an advertisement on the electronic notice board on the University’s student portal [Appendix I]. The advertisement invited people aged 16 to 24 to participate in a pilot of an online questionnaire assessing young people’s access to sexual health services. People were informed that the questionnaire was a component of a PhD thesis and that they would receive a free lunch for attending.

As suggested by the University of Melbourne Ethics Committee, it was decided to hold two separate group discussions, one with women and one with men. I had aimed for five women and five men in total to attend each pilot. In total, eight women and six men responded to the advertisement. Due to scheduling conflicts with the people who responded to the advertisement only two women and two men were able to attend the discussions in August 2009. The female discussion was held with one first year and one third year medical student. The male group consisted of a third year commerce and law student and a physics PhD student. Both discussions were held at the Graduate Centre at the University of Melbourne. Lunch was provided to compensate people for their time.

While it was initially intended for each person to sit at their own computer and test the questionnaire online, a room with such facilities was not available on the day of the...
discussion. Thus, it was instead planned to show the online questionnaire on a projector screen. However, on the day of the pilot, none of the available staff were able to get the projector to work properly. As a result, the online questionnaire was printed out, page by page, and people went through the questionnaire on paper. A brief case study with a hypothetical character’s sexual history was given to each participant [Appendix H] and participants were asked to fill in the questionnaire as the hypothetical character. After individually filling in the questionnaire, the group went through the questionnaire together, question by question. For each question, I asked the group questions such as, “Does the question make sense? Are any answer choices missing?”

There were four categories of amendments made to the questionnaire after the two Melbourne University pilots:

1) Changes to make the questionnaire clearer:

- In the introduction to the questionnaire the words “and should take about 15 minutes to complete” were added.

- Words were added or changed to some questions to make the wording clearer. For example, changes were made to the question, “Imagine you live 2 hours from a doctor. Please rank your preferences (1 through 4) for each situation with 1 being your top preference.” The words “for speaking with a doctor” were added so the question then read “Imagine you live 2 hours from a doctor. Please rank your preferences for speaking with a doctor (1 through 4) for each situation with 1 being your top preference.” This change was also made for the similar question asking people’s views if they lived 20 minutes away from a doctor.

2) Changes made to possible answers:

- Answer choices were changed for the question, “Why is it difficult for you to get to a doctor with whom you would be willing to discuss a sexual health concern? Please tick all that apply.” The original answer choices were: “doctor far away”, “no public transit”, “no car”, “cost”, “other, please specify”. The following additional answer choices were added to the questionnaire: “long wait for an appointment at the local clinic”, “don’t feel comfortable talking to the local general practitioner about a sexual health concern”, “time
constraints”, and “no mode of transport”. The answers “no public transit” and “no car” were deleted and combined into the new answer choice of “no mode of transportation”.

- The question enquiring about the number of sexual partners was altered to include an option for people to tick “not applicable” for people who had not had vaginal or anal sex in the last 12 months.

3) Changes made to questions:

- The introduction to the webcam consultation questions were shortened because the group felt that what a webcam consultation would involve was already clear to most people. As a result, the following sentences were removed from the introduction: “Through this secure webcam consultation you can have a consultation with a doctor in a different location. The doctor's image is transferred online in real-time to the patient's computer screen; the doctor, in turn, can see a live image of the patient on his/her computer screen. The doctor would only be able to see your face in the video. No genital examination would occur.”

- Some questions were deleted: the question, “Do you have specific individual needs?” and the answer choices, “wheelchair”, “other” or “not applicable” were deleted. It was decided that if someone had an individual need, that person could discuss the matter when answering the question, “Why it is difficult for you to get to a doctor?”. The question, “How willing would you be to use this computer to have a secure webcam conversation with a doctor about sexual health matters?” was deleted because it was deemed too similar to a previous question.

- One question was added, “Is there another mode of communication you would prefer to use to speak to a doctor about a sexual health matter?” The answer choices given were “no”, “instant messaging on the computer”, “e-mail”, “SMS”, and “other, please specify”. The question was added because participants thought people might prefer a different mode of communication to speak to their doctor besides telephone and webcam.

4) Changes to questionnaire to include free text responses:

- Text boxes were added to five questions to allow people to explain their answers further. Above the text box were the words, “additional or explanatory comments”.
3.3.2 Moe pilot
A separate small group of people convened in Moe, Victoria to discuss the questionnaire. Moe, Victoria is a regional city located in the La Trobe Valley about 135 km east of Melbourne. It was hoped that the questionnaire would be strengthened by piloting the questionnaire with youth from different geographic locations and with people who were both at university and in the work force. People in Moe were informed about the pilot through word of mouth. Four men attended the pilot in September, 2009. Three of the four male participants were in the workforce. The fourth participant was in his fourth year at university. The participants were compensated for their time with refreshments.

There were two categories of amendments made to the questionnaire after the Moe pilot:

1) Changes to make the questionnaire clearer:
   - In the introduction to the questionnaire it was noted that it would be helpful to mention the names of the sections of the questionnaire again. This information was added.
   - Words were added to some questions to make them clearer. For the question “Imagine you live 20 minutes from a doctor. Please rank your preferences for speaking with a doctor (1 through 4) for each situation with 1 being your top preference: A) You have no genital symptoms, B) You have genital symptoms.” The words “and do not need a genital examination” were added to the end of part A and the words “and need a genital examination” were added to part B. The telephone answer choice was deleted from part B of this question because one cannot have a genital examination by telephone. These changes were also made to the question asking people’s views if they lived 2 hours away from a doctor.
   - A few sentences were changed so they were written as a question to correspond to the answer choices. For example, the sentence “I would be willing to have a doctor visually examine my genitals in person during a sexual health consultation” was changed to read, “If you were experiencing genital symptoms, how willing would you be to have a doctor visually examine your genitals in person during a sexual health consultation”.
   - Participants mentioned that the red asterisk that appeared on the webpage if one did not fully complete a question was small and not very noticeable. As a result, the red asterisk was enlarged.
2) Changes to make the questionnaire shorter:

- Sentences were deleted to make some questions shorter. For example, for the sentence “I would be willing to receive testing kits and/or treatments through the postal mail. The box would not be labelled with the clinic's name” the second sentence was deleted because the participants deemed that it was more detailed than was necessary.

3.4 DESIGNING THE WEBSITE

The SHOUT website was created by a graphic designer with money awarded by the Population Health Investing in Research Students’ Training (PHIRST) funding scheme. A professionally designed website was deemed important to attract not only young peoples’ attention, but also to gain their trust that it was a legitimate research project. It was hoped this would minimise concerns people might have had about providing their personal views and experiences about sexual health in an online questionnaire.

The SHOUT website was composed of four sections: homepage, survey, frequently asked questions, and a contact us section.

The homepage began with a description of rates of sexually transmissible infections in young people in Australia and described how the project aimed to improve access to sexual health services (Figure 3.1). The homepage also provided information on who was running the project and what taking part in the study involved. Following the links, people were directed to the survey.
Figure 3.1 SHOUT homepage

The survey page began with information about informed consent (Figure 3.2). Before participants could commence the survey they were asked to tick two boxes, first to confirm that they were between the ages of 16 and 24 and lived in Australia and second, that they had read and understood the information provided and given their consent to participant in the study. Participants could be directed straight to the survey by clicking the “Yes, I will do the survey now” button or they could first gain more information about the survey by visiting the frequently asked questions webpage.
On the frequently asked questions webpage, the following questions were answered: Why complete the survey?, Where is the research based?, What will I be asked to do?, What will happen to the information I provide?, How will my confidentiality be protected?, Do I have to take part in this research?, What are the possible risks and benefits of participating in this research project?, and Who can I contact if I have concerns about the research or require any further information? (Figure 3.3).
Figure 3.3 SHOUT frequently asked questions page

The contact us webpage provided contact information for all the researchers and also contact details for sexual health services across the country (Figure 3.4). The following sexual health services were listed on the website: Australian Capital Territory- Sexual Health and Family Planning ACT, New South Wales- Youth Health Services, Northern Territory- Family Planning Welfare Association of NT, South Australia- SHine SA, Tasmania- Family Planning Tasmania, Victoria- Melbourne Sexual Health Centre and The Action Centre, and Western Australia- Family Planning Western Australia.
3.5 DATA COLLECTION

After the questionnaire was piloted and refined, the website and questionnaire went live on September 21, 2009. Data collection for the questionnaire ended on May 31st, 2010.

3.5.1 Population

People between the ages of 16 and 24 living in Australia with access to the Internet were the target population for the SHOUT study. This age range was chosen because this group is at a particularly high risk of contracting a sexually transmissible infection. In the year the study

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Figure 3.4 SHOUT contact us page
was commenced (2009), for example, 63% of the 62,635 notified cases of chlamydia in Australia were in young people under the age of 25 (Department of Health and Ageing, 2010b). (This high proportion has been maintained, with 64% of chlamydia cases in 2010 being reported in people under the age of 25 (Department of Health and Ageing, 2011c).) Sixteen was chosen as the lower end because it is the median age of first sexual intercourse for men and women in Australia (Rissel, Richters, Grulich, de Visser, & Smith, 2003). While by definition this research project was limited to people with access to the Internet and people with adequate English, no one was excluded on the basis of sexual experience or inexperience.

The topic was considered whether to limit the study to rural youth as rural youth face more barriers towards accessing sexual health services than their urban counterparts. However, it was acknowledged that people living in the urban fringe may still have difficulty accessing services. As well, other factors besides distance may impact on people’s access to such services. As a result, it was decided not to limit participants by rurality.

3.5.1.1 Sample size
EpiCalc 2000 was used to calculate sample size. In order to estimate a population of 50% with a precision of +/- 5%, a sample size of 384 was required.

3.5.1.2 Ensuring compliance with inclusion criteria
While one cannot prevent people from submitting the questionnaire more than once, I ran a check of date, birth year, sex, and postcode of the data as a means for assessing possible duplicate submission of data.

3.6 ADVERTISING
For the online questionnaire, I aimed to reach a broad audience of young people from both rural and urban areas, at university and in the workforce. As the project assumed access to the Internet, advertising mainly drew on online facilities, allowing people to quickly and easily connect to the questionnaire without having to write down the research project’s web address.
The survey used convenience (non-probabilistic) sampling through contacting organizations and asking them to post the SHOUT website’s link on their website and/or e-newsletter. Advertising began on Monday September 21st 2009 when the website went live. Five different advertising approaches were used:

1) Emailing friends and colleagues

2) Emailing youth organisations

3) University advertising

4) Facebook advertising

5) Other forms of advertising

I will describe each form of advertising in turn.

3.6.1 Emailing friends and colleagues

I sent an email about the study to friends and colleagues asking them to complete the questionnaire (if they were in the age group) and to send the questionnaire on to others in the target age group [Appendix J].

3.6.2 Emailing youth organisations

I sent emails to 105 diverse youth organisations across Australia asking them to place information about the study on their website and/or newsletter. [See Appendix K for the list of organisations contacted.] The email described the SHOUT study and provided suggested text to use on the organisations’ websites and/or newsletters to advertise the study. [The email is provided in Appendix L.]

Organizations were contacted throughout the data collection period from September 2009 to May 2010. Of the 105 organisations contacted, 12 (11%) responded to my email. One organisation that replied declined advertising (Youth Beyond Blue), but the other 11 advertised the study. Government affiliated organisations and rural organisations were the most likely to respond to my email. [Appendix M describes how the organisation advertised the study, the web address of the organisation, and information about each organisation as taken directly from their website.] The following organisations advertised the study: Somazone, Western Australian Federation of Rural Youth, Headspace, Office of Youth
Western Australia, CountryBNS.com (Bachelor & Spinster Balls around Australia), Australian Youth Forum, YouthGAS, Youth Action & Policy Association (NSW) Inc (YAPA), Office for Youth South Australia, Gay and Lesbian Switchboard (Vic), and Twenty10. (See Figure 3.5 for an example of a SHOUT advertisement.)

![SHOUT advertisement posted on the Somazone website](image)

**Figure 3.5** SHOUT advertisement posted on the Somazone website

### 3.6.3 University advertising

#### 3.6.3.1 University of Melbourne advertising

The study was advertised at the University of Melbourne in four ways:

1) Two separate ads, separated by a month, were placed on the University of Melbourne Student Portal Notice Board [Appendix N]. The advertisement invited people to participate in a University of Melbourne online research project and share their views on telephone and webcam consultations for sexual health. The advertisement stated the inclusion criteria for the study, the study’s website address, and the amount of time it would take to complete the questionnaire.
2) I sent an email with the study’s website link to everyone who attended the piloting of the questionnaire as well as those who responded to the piloting advertisement on the student portal, but were unable to attend. The email gave participants more information about the study and invited them to participate in the study. The email also asked for people to send information about the study to others in the target age group. [The email is provided in Appendix O.]

3) I emailed University of Melbourne clubs to ask if they would be willing to send information about the study to their members. Twenty seven clubs were contacted, two clubs replied. The Melbourne Uni Secular Society wrote about the study in their newsletter and the Melbourne Uni Chess Club mentioned the study at one of their meetings.

4) Information about the study was posted on the Melbourne University Newsroom website. The article is available at http://newsroom.melbourne.edu/news/n-266.

3.6.3.2 Advertising at other universities

Originally, I had not intended to focus advertising on universities in an attempt to have a varied dataset with people for a range of age groups, education, and work experience. However, by April 2010 the majority of the respondents resided in Victoria. In an effort to diversify the sample, I attempted to contact all the universities and TAFEs (Technical and Further Education) in Australia outside of Victoria. My primary form of contact was email and this was at times followed up by phone calls. I contacted university and TAFE heads, department heads, as well as student union organisations. [The email I sent to universities and TAFEs is provided in Appendix P.]

Three universities agreed to advertise the study:

- Edith Cowan University in Western Australia said they would include information about the study in their Student News Feed webpage.
- University of Tasmania Student Union said they would include information about the study in their member e-newsletter.
- University of South Australia UniLife (student union) said they would include information about the study in their weekly email to students.
I also contacted 35 residential colleges at universities across Australia (including the University of Melbourne) about sending information about the study to their residents. No one replied to the emails.

### 3.6.4 Facebook advertising

The popularity of the social network website, Facebook (www.facebook.com), among people in the target age group, made Facebook an attractive place to advertise. Information about the study was advertised on Facebook in three different ways:

#### 3.6.4.1 SHOUT Facebook group

I created a SHOUT Facebook group with information about the study and a link to the questionnaire.

#### 3.6.4.2 Advertising on Facebook groups

I emailed 77 Facebook groups that young people in Australia would be likely to join about posting information about the study on their Facebook page. Sixteen groups (21%) wrote back saying that I could either post information on their Facebook group wall myself or that they would send information to group members either through sending a Facebook message or by posting information on their group wall themselves. The Facebook groups that responded were mainly groups for people in rural areas and groups for universities. Below are the groups that advertised the study. (The spelling and grammar of the groups’ names are written as directly quoted on Facebook.)

**Rural Youth Groups:**

- Keep Our BnS Ball's Going!! Group
- Kinglake / Whittlesea B & S "show of hands" Group
- Thank god for Bns balls How else will we keep repopulating rural Australia Group
- Ute Muster Appreciation Society
- Victorian Farmers Federation Young Agribusiness Professionals (YAPS) Group
- HEYWIRE! That damn fine VOICE OF REGIONAL YOUTH
- Future Farmers Network (FFN) Group
University Groups:

- Charles Darwin University, Casuarina Facebook Group
- Charles Sturt University, Wagga Wagga Facebook Group
- Australian National University Facebook Group
- University of Technology Sydney Facebook Group
- University of Southern Queensland- Australia Facebook Group
- Macquarie University Facebook Group

Other Groups:

- St John Ambulance Australia - Youth Members Group
- Street Justice- Townsville Youth - Oxfam Australia Group
- Bankstown Youth Development Service Group

The advertisement listed on the groups’ Facebook pages can be found at Appendix Q. The advertisement gave some information about the study, the inclusion criteria and the study’s website address.

Contacting the Facebook groups also resulted in three other advertising opportunities. Information about the study was placed in the Young St John members’ bi-monthly electronic newsletter (October 15th 2009 issue). An administrator from the University of New England, Australia Facebook group (NSW) posted information about the study on his student support website for the University (http://blog.une.edu.au/studentexperience). The national online producer of Heywire, Australia Broadcasting Corporation’s regional youth website, blogged about the study on the Heywire website (http://blogs.abc.net.au/heywire/2009/10/sex-may-be-good-your-health-but-health-is-best-for-your-sex.html). The blog was also linked with Twitter. Below is the blog post about the SHOUT study (Figure 3.6).
3.6.4.3 Paid Facebook advertising

The first two types of advertising on Facebook were free. The third type of advertising involved paying for an advertisement about the SHOUT study to appear on members’ Facebook accounts when they signed into the online platform. Despite high hopes that the paid Facebook advertisements would provide an ideal method to reach a heterogeneous group of youth in the target age group, advertising on Facebook was both a frustrating and unsuccessful venture. The ensuing saga is detailed below.

I will begin the section by briefly discussing the process of advertising on Facebook followed by an account of the SHOUT paid Facebook advertising.

3.6.4.3.1 Advertising on Facebook: Complying with the requirements of Facebook

Paid Facebook advertisements have three main components: a title, a body, and an image. The maximum number of characters for the title is 25 and 135 for the body. Clicking on the advertisement directs people to the advertiser’s website. Facebook allows people to target the
advertisement to certain audiences. One can specify by country, city, age, sex, sexual preference, relationship status, language, education and/or work, among other categories. People can pay for the advertisement either by impressions (how many times the advertisement appears on the website) or by clicks (the number of times people click on the advertisement). (See Table 3.1 for more information.) Once all the required information about the advertisement is provided, the advertisement is submitted for review. The advertisement is then either accepted or rejected by Facebook. A rejected advertisement must be edited before being resubmitted.

Table 3.1 Facebook methods of payment

<table>
<thead>
<tr>
<th>Pay for impressions (CMP)</th>
<th>Pay for Clicks (CPC)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facebook charges for every thousand impressions of the advertisement.</td>
<td>Advertisement displayed for free, but Facebook charges every time a person clicks on the advertisement.</td>
</tr>
<tr>
<td>Suggested bid is between 0.21-0.26 USD per impression.</td>
<td>Suggested bid is between 0.49 USD- 0.60 USD per click.</td>
</tr>
<tr>
<td>If one were spending $50 per day with a maximum bid of 0.23 USD for pay for impression, Facebook estimates that there will be 218,000 impressions of the advertisement per day.</td>
<td>If one spent $50 per day with a maximum bid of 0.53 USD, Facebook estimates that the advertisement will receive 95 clicks per day.</td>
</tr>
</tbody>
</table>

3.6.4.3.2 **SHOUT paid Facebook advertisement**

On November 6, 2009 a $2,000 Facebook advertising campaign for SHOUT began. The Facebook advertisement was funded by a Department of Human Services (DHS) Victoria grant awarded to the Melbourne Sexual Health Centre. The advertisement targeted people aged 16 to 24 living in any state in Australia except Victoria. Victorians were excluded as the majority of responses to date were from this area. The advertisement was charged by the “pay by clicks” method. Clicking on the advertisement directed the person to the SHOUT homepage.

The title of the SHOUT advertisement was “Access to Health Services” with the body text, “Make a difference to sexual health services: Add your views to an online survey from researchers at Melbourne Uni”. The SHOUT logo was included in the advertisement. The original title of “Webcam Dr. for Sex Health” was rejected by Facebook.
One cannot target the advertisement by state on Facebook, forcing one to input the location city by city. Two advertisements were produced, one for people living in towns starting with A-L and one for towns starting with M-Z, as an error prevented all the towns from being targeted in one advertisement. The advertisements were viewed by people aged 16-24, living outside of Victoria. The advertisement for people living in town starting with A-L ran from November 6 to November 13, 2009 (8 days). The advertisement for people living in cities M-Z ran from November 20 to November 24, 2009 (5 days).

In the 13 days of advertising, $694 was spent and 887 people clicked on the advertisement, however, only 24 people went on to complete the survey (2.7%). It was hypothesized that the low response rate might be due to people being unaware of the time commitment of the survey until they clicked on the advertisement. As a result, the body of the advertisement was changed slightly to include the words “15 minute”. The advertisement then read, “Make a difference to sexual health services: Add your views to a 15 minute online survey from researchers at Melbourne Uni.” This change, unfortunately, caused the advertisement to be rejected. Facebook reported that the advertisement was rejected because of its “adult theme” and that it “needs to be targeted to users of age 18 and older”. Their response contradicted their prior approval of the advertisement for 16- and 17-year-olds. This exclusion of 16- and 17-year-olds highlights the difficulty of recruiting younger adults in sexual health research, despite the fact that a high percentage of this age group is sexually active (Smith, Agius, Mitchell, Barrett, & Pitts, 2009).

In addition to the difficulties with Facebook, problems arose from another source within Melbourne University. A misunderstanding between a Melbourne Sexual Health Centre employee running the Facebook advertisements and the University’s Marketing and


6 People were targeted who lived within 80 kilometers of Mackay, Mandurah, Maryborough, Mount Gambier, Mount Isa, Muswellbrook, Nambour, Narrabri, Nelson Bay, Nerang, Newcastle, Nhulunbuy, Northam, Orange, Perth, Port Augusta, Port Hedland, Port Lincoln, Port Macquarie, Port Pirie, Queanbeyan, Rockhampton, Sawtell, Singleton, Sydney, Tamworth, Tennant Creek, Toowoomba, Torquay, Townsville, Tumut, Ulverstone, Wagga Wagga, Warwick, Whyalla, Wollongong, Yeppoon, and Young.
Communications division resulted in a separate suspension of the SHOUT advertisement. This was not resolved until February 2010. In March 2010 the Facebook advertisement was reinstated. During this round of advertising, it was decided to only target youth in non-metropolitan areas (outside of Victoria) due to the higher response rate from metropolitan residents in the SHOUT study thus far. The advertisement ran from March 8 to March 22, 2010 (20 days) and cost $1200. During this time period, 968 people clicked the advertisement, but no one went on to complete the survey (as determined by no one ticking the box in the survey saying that they heard about the study through a Facebook advertisement).

Through the entire Facebook advertising campaign, $1894 was spent. In total, 1855 people clicked on the advertisement and 24 went on to complete the questionnaire (1.3%) at a cost of $78.92 per questionnaire response. The low response rate had been surprising because it was anticipated that if people clicked on an advertisement asking them to complete a survey, they would most likely go on to complete the survey. The end result was an unsuccessful, expensive advertising campaign. Despite the potential for Facebook to reach a large and diverse number of potential participants, it was not an effective advertising approach for this study. It remains unclear why such a small proportion of those who clicked on the advertisement went on to complete the questionnaire.

3.6.5 Other forms of advertising

There were four additional forms of advertising:

1) ABC Ballarat conducted a radio interview with Prof Christopher Fairley about the SHOUT study. The show was broadcast on Statewide Drive, an ABC Ballarat radio program.

2) A lecturer at La Trobe University mentioned the SHOUT study in her lecture and posted information about the study on her Facebook page.

3) A link to the SHOUT study was placed on the Facebook page of CAN Victoria (Country Awareness Network Victoria). The study was also mentioned at a CAN Victoria same-sex attracted youth group meeting in regional Victoria.

4) The Centre for Excellence in Rural Sexual Health at the University of Melbourne placed information about the SHOUT study on their website and Facebook page.
3.7 **ANALYSIS OF DATA**

The data collected online from the SHOUT questionnaire were electronically downloaded into an Excel spreadsheet. The data were then entered into the software PASW Statistics 18 for analysis. A check was done to clean the data and to inspect for duplicate submissions.

Descriptive statistics were used to describe the study sample. Variables based on Likert scales were collapsed into binary outcomes. Chi-square tests were used to assess associations of categorical variables, and t-tests or Mann-Whitney U tests were used to assess associations between binary and continuous variables. Multinomial logistic regression was used to explore the association between the three-level outcome variables (first preference in person, telephone or webcam, and demographic and behavioural variables); odds ratios and 95% CI were calculated using in-person consultation as the reference category. Earlier modelling of odds ratios for the questions regarding to top preference for a sexual health consultation included gender and sexual orientation as coefficients. However, there was a significant interaction between gender and sexual orientation (p=<0.05) for five situations: own GP, no symptoms, 20 minutes; own GP, symptoms, 20 minutes; other GP, symptoms, 20 minutes; own GP, symptoms 2 hours; other GP, symptoms 2 hours. As a result, the data were stratified for male and female respondents.

The questionnaire included five free text responses where people were invited to include additional or explanatory comments. The free text comments were analysed thematically (Pope, et al., 2000).
4 SHOUT RESULTS

This chapter discusses the results for the SHOUT study, a national online questionnaire examining young adults’ views on using telemedicine for sexual health consultations. The results of the study were published in the journal *BMC Infectious Diseases* (Garrett, et al., 2011).

4.1 VISITS TO THE SHOUT WEBSITE

There were 2,541 visits to the study’s website. Most respondents accessed the website from a referring website (66%), 32% accessed the website through direct traffic, and 2% found the questionnaire through a search engine. The majority of the referrals came from the Facebook website. Most respondents (66%) reported hearing about the study through a website or an electronic newsletter/email.

4.2 PARTICIPANT NUMBERS

A total of 673 people completed the questionnaire. Eleven responses were excluded from data analysis for the following reasons: three responses were duplicate submissions, five responses had a reported age of over 25, two responses had a reported age under 16, and one response had the number “1” listed under age. In total, 662 responses were included. Forty four percent of respondents (n=289) wrote comments in the free text sections.

4.3 CHARACTERISTICS OF SAMPLE STUDIED

Seventy four percent (n=487) of the sample was female, 26% (n=173) was male, 0.2% (n=1) was intersex and 0.2% (n=1) was transgender. The mean age of the sample was 20.6 years (SD 2.1, range 16-24), with 68% (n=448) of the sample aged between 20 and 24. One percent (n=7) of the sample identified as being of Aboriginal or Torres Strait Islander origin.
Respondents reported residing in all Australian states and territories except the Northern Territory (Figure 4.1) with most (83%) living in a major city\(^7\) (Figure 4.2). The majority (88%) were either currently in tertiary education or held a bachelor's degree or higher (Figure 4.3).

\[\text{Figure 4.1 Respondents’ location by state and territory}\]

\[\text{Figure 4.2 Respondents’ location by remoteness}\]

\(^7\) Living in a major city was defined as living in region RA1 as classified by the Australian Standard Geographical Classification- Remoteness Areas (ASGC-RA) system (http://www.health.gov.au/internet/otd/Publishing.nsf/Content/RA-intro).
Most of the sample (78%, n=515) was born in Australia. People born overseas came from a total of 42 countries, with Malaysia being the most common overseas country represented (32 responses). Eighty one percent (n=537) of the sample resided in households where only English was spoken.

### 4.3.1 Sexual behaviour

Overall, 76% reported having penetrative (vaginal or anal) sex in the previous 12 months. Of the respondents who had sexual partners (n=505), 67% (n=339) reported having unprotected sex. The median number of reported sexual partners in that last year, for both women and men, was 1 (range: 0-28 and 0-19 respectively). A higher proportion of men reported same-sex partners (17% vs. 8%; p=<0.01).

---

**Figure 4.3 Respondents’ education levels**
4.3.2 Sample data compared to the general population

Respondents were more likely to be female, non-Aboriginal or Torres Strait Islander, and aged 20 to 24 years than the general population of same age (Australian Bureau of Statistics, 2006b), and males were more likely to report male-to-male sexual contact than similarly aged males in the general population (Grulich, de Visser, Smith, Rissel, & Richters, 2003a) (Table 4.1). Most respondents also had high levels of education.
Table 4.1 Demographic, health care access, and sexual behaviour characteristics of the sample

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>N (%)</th>
<th>CI (95%)</th>
<th>Reference Population¹</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 to 19</td>
<td>214 (32%)</td>
<td>(29%-36%)</td>
<td>44%</td>
</tr>
<tr>
<td>20 to 24</td>
<td>448 (68%)</td>
<td>(64%-71%)</td>
<td>56%</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>487 (74%)</td>
<td>(70%-77%)</td>
<td>49%</td>
</tr>
<tr>
<td>Male</td>
<td>173 (26%)</td>
<td>(23%-30%)</td>
<td>51%</td>
</tr>
<tr>
<td>** Aboriginal or Torres Strait Islander**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>7 (1%)</td>
<td>(0%-2%)</td>
<td>2%²</td>
</tr>
<tr>
<td>No</td>
<td>655 (99%)</td>
<td>(98%-100%)</td>
<td>98%</td>
</tr>
<tr>
<td><strong>Remoteness</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major city¹</td>
<td>548 (83%)</td>
<td>(80%-86%)</td>
<td>84%¹</td>
</tr>
<tr>
<td>Non-major city¹</td>
<td>111 (17%)</td>
<td>(14%-20%)</td>
<td>16%</td>
</tr>
<tr>
<td><strong>Country born</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Australia</td>
<td>515 (78%)</td>
<td>(75%-81%)</td>
<td>78%²</td>
</tr>
<tr>
<td>Other</td>
<td>147 (22%)</td>
<td>(19%-25%)</td>
<td>22%</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Did not complete high school</td>
<td>6 (1%)</td>
<td>(0%-2%)</td>
<td>---³</td>
</tr>
<tr>
<td>Still studying high school</td>
<td>23 (4%)</td>
<td>(2%-5%)</td>
<td>45%</td>
</tr>
<tr>
<td>Completed high school and not studying at TAFE or tertiary degree</td>
<td>24 (4%)</td>
<td>(2%-5%)</td>
<td>---+</td>
</tr>
<tr>
<td>Still studying or completed TAFE</td>
<td>27 (4%)</td>
<td>(3%-6%)</td>
<td>---+</td>
</tr>
<tr>
<td>Still studying tertiary or Bachelor's degree or higher</td>
<td>582 (88%)</td>
<td>(85%-90%)</td>
<td>20%</td>
</tr>
<tr>
<td><strong>Women: Any same-sex partners</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>38 (8%)</td>
<td>(5%-10%)</td>
<td>10% (16-19 yrs)⁶</td>
</tr>
<tr>
<td>No</td>
<td>449 (92%)</td>
<td>(90%-95%)</td>
<td>12% (20-29 yrs)⁶</td>
</tr>
<tr>
<td><strong>Men: Any same-sex partners</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>29 (17%)</td>
<td>(11%-22%)</td>
<td>2% (16-19 yrs)⁸</td>
</tr>
<tr>
<td>No</td>
<td>144 (83%)</td>
<td>(78%-89%)</td>
<td>7% (20-29 yrs)⁸</td>
</tr>
<tr>
<td><strong>Number sexual partners in prior 12 months</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Men with no same-sex partners</td>
<td>1.62 (mean)</td>
<td>1.22-2.02 (mean)</td>
<td>1.3 (mean, 16-19 yrs)⁷</td>
</tr>
<tr>
<td>Women with no same-sex partners</td>
<td>1.44 (mean)</td>
<td>1.28-1.60 (mean)</td>
<td>1.0 (mean, 16-19 yrs)⁷</td>
</tr>
<tr>
<td><strong>Women: Past STI diagnosis</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>38 (8%)</td>
<td>(5%-10%)</td>
<td>3% (aged 16-19)⁸</td>
</tr>
<tr>
<td>No</td>
<td>449 (92%)</td>
<td>(90%-95%)</td>
<td>12% (aged 20-29)⁸</td>
</tr>
<tr>
<td><strong>Men: Past STI diagnosis</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>4 (2%)</td>
<td>(0%-5%)</td>
<td>1% (aged 16-19)⁸</td>
</tr>
<tr>
<td>No</td>
<td>169 (98%)</td>
<td>(95%-100%)</td>
<td>11% (aged 20-29)⁸</td>
</tr>
</tbody>
</table>
Demographic data were compared to the Census data and the Australian Study of Health and Relationships data for similarly aged men and women.

1 Census data (Australian Bureau of Statistics, 2006b)

Remoteness defined in accordance with the Australian Standard Geographical Classification-Remoteness Area System in 2010. Major city in the study is defined as RA1; Non-major city is defined as RA2-RA5 (Department of Health and Ageing, 2010a)

4 Census data (Australian Bureau of Statistics, 2001)

6 Australian Study of Health and Relationships data (Grulich, et al., 2003a)

7 Median and range not available for the Australian Study of Health and Relationships data (de Visser, Smith, Rissel, Richters, & Grulich, 2003)

8 Australian Study of Health and Relationship data (Grulich, de Visser, Smith, Rissel, & Richters, 2003b)

5 Direct comparisons to data provided when available from Census data (Australian Bureau of Statistics, 2006b; Muir et al., 2009). *Symbol denotes comparable data are not available
4.3.3 Health care

Women were more likely to have consulted a doctor in the last 12 months, with a median of 4 visits compared with 2 for men (p=<0.01). Forty percent (n=192; 95% CI, 35% - 44%) of the female respondents had a pap test in the last two years. This is compared with the National Cervical Screening Program in 2006-2007 which found that 48% of women aged 20-24 who participated in the program had had a pap test (Australian Institute of Health and Welfare, 2009).

Thirty four percent had had an STI test in the past, with 19% (n=42) of this group reporting being diagnosed with an STI (Table 4.1). Fifteen percent (n=102) of respondents agreed with the statement “I feel I could be at risk for a sexually transmitted infection (STI)”.

Twenty eight percent (n=185) reported that they found it difficult to access a doctor with whom they would be willing to discuss a sexual health concern (Figure 4.4) and 85% (n=158) of these respondents said that the main reason was not feeling comfortable talking to their local doctor about a sexual health concern. There was no difference in difficulty accessing a doctor by remoteness (p=0.99) or gender (p=0.26) (Table 4.2). Respondents in their 20s (51% vs. 36%; p=<0.01) and those born in Australia (50% vs. 34%; p=<0.01) reported finding it easier to access a doctor than respondents in their teens and those born outside Australia (Table 4.2).

![Figure 4.4 Difficulty accessing a doctor with whom one would be willing to discuss a sexual health concern](image-url)
Table 4.2 Factors associated with reported personal difficulty in accessing a doctor for a sexual health matter

<table>
<thead>
<tr>
<th></th>
<th>Easy</th>
<th>Neither Easy Nor Difficult</th>
<th>Difficult</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>78 (45%)</td>
<td>52 (30%)</td>
<td>43 (25%)</td>
<td>0.26</td>
</tr>
<tr>
<td>Female</td>
<td>229 (47%)</td>
<td>117 (24%)</td>
<td>141 (29%)</td>
<td></td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>16 to 19</td>
<td>78 (36%)</td>
<td>67 (31%)</td>
<td>69 (32%)</td>
<td></td>
</tr>
<tr>
<td>20 to 24</td>
<td>230 (51%)</td>
<td>102 (23%)</td>
<td>116 (26%)</td>
<td></td>
</tr>
<tr>
<td><strong>Remoteness</strong></td>
<td></td>
<td></td>
<td></td>
<td>0.99</td>
</tr>
<tr>
<td>Major city</td>
<td>255 (47%)</td>
<td>140 (26%)</td>
<td>153 (28%)</td>
<td></td>
</tr>
<tr>
<td>Non major city</td>
<td>51 (46%)</td>
<td>29 (26%)</td>
<td>31 (28%)</td>
<td></td>
</tr>
<tr>
<td><strong>Country born</strong></td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Australia</td>
<td>258 (50%)</td>
<td>123 (24%)</td>
<td>134 (26%)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td>50 (34%)</td>
<td>46 (31%)</td>
<td>51 (35%)</td>
<td></td>
</tr>
<tr>
<td><strong>Men: Any same-sex partners</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>64 (44%)</td>
<td>48 (33%)</td>
<td>32 (22%)</td>
<td>0.06</td>
</tr>
<tr>
<td>Yes</td>
<td>14 (48%)</td>
<td>4 (14%)</td>
<td>11 (38%)</td>
<td></td>
</tr>
<tr>
<td><strong>Women: Any same-sex partners</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>209 (47%)</td>
<td>108 (24%)</td>
<td>132 (29%)</td>
<td>0.71</td>
</tr>
<tr>
<td>Yes</td>
<td>20 (53%)</td>
<td>9 (24%)</td>
<td>9 (24%)</td>
<td></td>
</tr>
<tr>
<td><strong>Partner total</strong></td>
<td></td>
<td></td>
<td></td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>0 partners</td>
<td>49 (31%)</td>
<td>55 (35%)</td>
<td>53 (34%)</td>
<td></td>
</tr>
<tr>
<td>1 or 2 partners</td>
<td>182 (49%)</td>
<td>84 (23%)</td>
<td>103 (28%)</td>
<td></td>
</tr>
<tr>
<td>3+ partners</td>
<td>77 (57%)</td>
<td>30 (22%)</td>
<td>29 (21%)</td>
<td></td>
</tr>
</tbody>
</table>

4.3.4 Webcam access

Respondents were asked if they had access to a webcam that they could use for a sexual health consultation. Sixty eight percent (n=453) of the sample reported having access. There was some evidence that people living in a major city were more likely to have access to a webcam (p=0.05) (Figure 4.5). Of those who did not own the device, only 13% (n=26) reported being willing to purchase a webcam for this purpose.
4.4 WILLINGNESS TO HAVE A SEXUAL HEALTH CONSULTATION BY DIFFERENT MEDIA

Respondents were asked about their views on in-person, telephone, and webcam consultations for sexual health. There were two main questions. The first question enquired about people’s willingness generally to have a sexual health consultation by these different media. Later, respondents were specifically asked about their willingness to have a genital examination through these media (in person and webcam). Respondents were asked about their willingness to have a consultation with their own general practitioner or clinic (own doctor) or a doctor they didn’t know (unknown doctor).

4.4.1 Views on discussing one’s sexual health with a doctor in person

Respondents’ views on in-person sexual health consultations were collected to serve as a comparison to respondents’ views on telephone and webcam consultations.

4.4.1.1 No genital symptoms

Respondents were asked their views on speaking to a doctor about their sexual health if they did not have any genital symptoms, but one of their past sexual partners informed them they may have been exposed to an STI. In this situation, 75% (n=493) of the respondents reported...
being willing to visit their own doctor, compared with 67% (n=442) for an unknown doctor (Table 4.3). Chi square analysis found that men with same-sex partners were less willing to speak to their own doctor (55% vs. 78%, p=<0.01) and more willing to speak to an unknown doctor in person (93% vs. 69% p=<0.01) about their sexual health than men without same-sex partners (Refer to Table 4.4).

### 4.4.1.2 Genital symptoms

If experiencing symptoms, 58% (n=383) of the sample reported being willing to visit their own doctor in person to discuss their sexual health, compared with 52% percent (n=346) for an unknown doctor (Table 4.3). It is notable that, if experiencing genital symptoms, almost 30% of respondents reported being unwilling to consult a doctor (Table 4.3). Male respondents (63% vs. 49%; p=<0.01) and men with same-sex partners (90% vs. 58%; p=<0.01) were more willing than women to speak to an unknown doctor in person about their sexual health than women, and men without same-sex partners (Table 4.5).

<table>
<thead>
<tr>
<th>Type of Doctor</th>
<th>Genital Symptoms</th>
<th>No Genital Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Willing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own doctor</td>
<td>383 (58%)</td>
<td>493 (75%)</td>
</tr>
<tr>
<td>Unknown doctor</td>
<td>345 (52%)</td>
<td>442 (67%)</td>
</tr>
<tr>
<td><strong>Neither willing nor unwilling</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own doctor</td>
<td>87 (13%)</td>
<td>74 (11%)</td>
</tr>
<tr>
<td>Unknown doctor</td>
<td>128 (19%)</td>
<td>107 (16%)</td>
</tr>
<tr>
<td><strong>Unwilling</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Own doctor</td>
<td>192 (29%)</td>
<td>95 (14%)</td>
</tr>
<tr>
<td>Unknown doctor</td>
<td>188 (28%)</td>
<td>113 (17%)</td>
</tr>
</tbody>
</table>

Table 4.3 Reported willingness to talk to a doctor about one’s sexual health in person.
Table 4.4 Factors associated with willingness to have an asymptomatic sexual health consultation in person

<table>
<thead>
<tr>
<th></th>
<th>Own Doctor</th>
<th>Unknown Doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Willing</td>
<td>Neither Willing Nor Unwilling</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>128 (74%)</td>
<td>22 (13%)</td>
</tr>
<tr>
<td>Female</td>
<td>363 (75%)</td>
<td>52 (11%)</td>
</tr>
<tr>
<td>Age 16 to 19</td>
<td>146 (68%)</td>
<td>29 (14%)</td>
</tr>
<tr>
<td>20 to 24</td>
<td>347 (78%)</td>
<td>45 (10%)</td>
</tr>
<tr>
<td>Remoteness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major city</td>
<td>416 (76%)</td>
<td>57 (10%)</td>
</tr>
<tr>
<td>Non major city</td>
<td>75 (68%)</td>
<td>16 (14%)</td>
</tr>
<tr>
<td>Had an STI test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>184 (83%)</td>
<td>21 (9%)</td>
</tr>
<tr>
<td>No</td>
<td>305 (70%)</td>
<td>52 (12%)</td>
</tr>
<tr>
<td>Men: Any same-sex partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>112 (78%)</td>
<td>15 (10%)</td>
</tr>
<tr>
<td>Yes</td>
<td>16 (55%)</td>
<td>7 (24%)</td>
</tr>
<tr>
<td>Women: Any same-sex partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>329 (73%)</td>
<td>50 (11%)</td>
</tr>
<tr>
<td>Yes</td>
<td>34 (90%)</td>
<td>2 (5%)</td>
</tr>
<tr>
<td>Partner total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 partners</td>
<td>111 (71%)</td>
<td>19 (12%)</td>
</tr>
<tr>
<td>1 or 2 partners</td>
<td>274 (74%)</td>
<td>40 (11%)</td>
</tr>
<tr>
<td>3+ partners</td>
<td>108 (79%)</td>
<td>15 (11%)</td>
</tr>
</tbody>
</table>
Table 4.5 Factors associated with willingness to have a symptomatic sexual health consultation in person

<table>
<thead>
<tr>
<th></th>
<th>Own Doctor</th>
<th>Unknown Doctor</th>
<th></th>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Willing</td>
<td>Neither Willing Nor Unwilling</td>
<td>Unwilling</td>
<td>P Value</td>
<td>Willing</td>
<td>Neither Willing Nor Unwilling</td>
<td>Unwilling</td>
<td>P Value</td>
</tr>
<tr>
<td>Gender</td>
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<td></td>
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<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>107 (62%)</td>
<td>26 (15%)</td>
<td>40 (23%)</td>
<td>0.12</td>
<td>109 (63%)</td>
<td>30 (17%)</td>
<td>34 (20%)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Female</td>
<td>274 (56%)</td>
<td>61 (13%)</td>
<td>152 (31%)</td>
<td></td>
<td>237 (49%)</td>
<td>98 (20%)</td>
<td>152 (31%)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 to 19</td>
<td>112 (52%)</td>
<td>25 (12%)</td>
<td>77 (36%)</td>
<td>0.02</td>
<td>96 (45%)</td>
<td>48 (22%)</td>
<td>70 (33%)</td>
<td>0.03</td>
</tr>
<tr>
<td>20 to 24</td>
<td>271 (61%)</td>
<td>62 (14%)</td>
<td>115 (26%)</td>
<td></td>
<td>250 (56%)</td>
<td>80 (18%)</td>
<td>118 (26%)</td>
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</tr>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major city</td>
<td>325 (59%)</td>
<td>75 (14%)</td>
<td>148 (26%)</td>
<td>0.05</td>
<td>285 (52%)</td>
<td>107 (20%)</td>
<td>156 (29%)</td>
<td>0.84</td>
</tr>
<tr>
<td>Non major city</td>
<td>56 (51%)</td>
<td>12 (11%)</td>
<td>43 (39%)</td>
<td></td>
<td>60 (54%)</td>
<td>19 (17%)</td>
<td>32 (29%)</td>
<td></td>
</tr>
<tr>
<td>Had an STI test</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>142 (64%)</td>
<td>23 (10%)</td>
<td>58 (26%)</td>
<td>0.09</td>
<td>143 (64%)</td>
<td>30 (14%)</td>
<td>50 (22%)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>No</td>
<td>239 (55%)</td>
<td>63 (15%)</td>
<td>131 (30%)</td>
<td></td>
<td>199 (46%)</td>
<td>98 (23%)</td>
<td>136 (31%)</td>
<td></td>
</tr>
<tr>
<td>Men: Any same-sex partners</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>93 (65%)</td>
<td>24 (17%)</td>
<td>27 (19%)</td>
<td>&lt;0.01</td>
<td>83 (58%)</td>
<td>30 (21%)</td>
<td>31 (22%)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Yes</td>
<td>14 (48%)</td>
<td>2 (7%)</td>
<td>13 (45%)</td>
<td></td>
<td>26 (90%)</td>
<td>0 (0%)</td>
<td>3 (10%)</td>
<td></td>
</tr>
<tr>
<td>Women: Any same-sex partners</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>248 (55%)</td>
<td>57 (13%)</td>
<td>144 (32%)</td>
<td>0.28</td>
<td>216 (48%)</td>
<td>90 (20%)</td>
<td>143 (32%)</td>
<td>0.57</td>
</tr>
<tr>
<td>Yes</td>
<td>26 (68%)</td>
<td>4 (11%)</td>
<td>8 (21%)</td>
<td></td>
<td>21 (55%)</td>
<td>8 (21%)</td>
<td>9 (24%)</td>
<td></td>
</tr>
<tr>
<td>Partner total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 partners</td>
<td>83 (53%)</td>
<td>25 (16%)</td>
<td>49 (31%)</td>
<td>0.07</td>
<td>67 (43%)</td>
<td>32 (20%)</td>
<td>58 (37%)</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>1 or 2 partners</td>
<td>207 (56%)</td>
<td>48 (13%)</td>
<td>114 (31%)</td>
<td></td>
<td>192 (52%)</td>
<td>73 (20%)</td>
<td>104 (28%)</td>
<td></td>
</tr>
<tr>
<td>3+ partners</td>
<td>93 (68%)</td>
<td>14 (10%)</td>
<td>29 (21%)</td>
<td></td>
<td>87 (64%)</td>
<td>23 (17%)</td>
<td>26 (19%)</td>
<td></td>
</tr>
</tbody>
</table>
4.4.2 Views on in-person genital examinations

Sixty seven percent (n=440) of the sample reported being willing to have a genital examination in person with their own doctor, compared with 60% (n=396) for an unknown doctor.

Respondents in their 20s were more willing to have a genital examination in-person than respondents in their teens, both with their own doctor (71% vs. 58%; p=<0.01) and with an unknown doctor (65% vs. 49%; p=<0.01) (Table 4.6). There was also a dose effect where the more sexual partners reported the more willing a respondent was to have an in-person genital examination, both with their own doctor (79% vs. 68%. 53%; p=<0.01) and with an unknown doctor (80% vs. 59% vs. 44%; p=<0.01). Additionally, male respondents (69% vs. 57%; p=<0.01) and men with same-sex partners (93% vs. 64%; p=<0.01) were more willing to have a genital examination in person with an unknown doctor than female respondents and men without same-sex partners.
Table 4.6 Factors associated with willingness to have a genital examination in person

<table>
<thead>
<tr>
<th></th>
<th>Own Doctor</th>
<th></th>
<th></th>
<th></th>
<th>Unknown Doctor</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Gender</td>
<td>Willing</td>
<td>Neither Willing</td>
<td>Unwilling</td>
<td>P Value</td>
<td>Willing</td>
<td>Neither Willing</td>
<td>Unwilling</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>121 (70%)</td>
<td>22 (13%)</td>
<td>30 (17%)</td>
<td>0.50</td>
<td>199 (69%)</td>
<td>34 (20%)</td>
<td>20 (12%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>317 (65%)</td>
<td>69 (14%)</td>
<td>101 (21%)</td>
<td>277 (57%)</td>
<td>100 (21%)</td>
<td>110 (23%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Age 16 to 19</td>
<td>123 (58%)</td>
<td>29 (14%)</td>
<td>62 (29%)</td>
<td>&lt;0.01</td>
<td>105 (49%)</td>
<td>54 (25%)</td>
<td>55 (26%)</td>
</tr>
<tr>
<td></td>
<td>20 to 24</td>
<td>317 (71%)</td>
<td>62 (14%)</td>
<td>69 (15%)</td>
<td>291 (65%)</td>
<td>81 (18%)</td>
<td>76 (17%)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Remoteness</td>
<td>Major city</td>
<td>373 (68%)</td>
<td>76 (14%)</td>
<td>99 (18%)</td>
<td>0.04</td>
<td>334 (61%)</td>
<td>111 (20%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Non major city</td>
<td>66 (60%)</td>
<td>13 (12%)</td>
<td>32 (29%)</td>
<td></td>
<td>61 (55%)</td>
<td>22 (20%)</td>
</tr>
<tr>
<td></td>
<td>Had an STI test</td>
<td>Yes</td>
<td>163 (73%)</td>
<td>26 (12%)</td>
<td>32 (15%)</td>
<td>0.03</td>
<td>164 (74%)</td>
<td>32 (14%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No</td>
<td>273 (63%)</td>
<td>64 (15%)</td>
<td>96 (22%)</td>
<td></td>
<td>227 (52%)</td>
<td>102 (24%)</td>
</tr>
<tr>
<td></td>
<td>Men: Any same-sex partners</td>
<td>No</td>
<td>103 (72%)</td>
<td>17 (12%)</td>
<td>24 (17%)</td>
<td>0.58</td>
<td>92 (64%)</td>
<td>33 (23%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>18 (62%)</td>
<td>5 (17%)</td>
<td>6 (21%)</td>
<td></td>
<td>27 (93%)</td>
<td>1 (3%)</td>
</tr>
<tr>
<td></td>
<td>Women: Any same-sex partners</td>
<td>No</td>
<td>288 (64%)</td>
<td>63 (14%)</td>
<td>98 (22%)</td>
<td>0.13</td>
<td>253 (56%)</td>
<td>91 (20%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Yes</td>
<td>29 (76%)</td>
<td>6 (16%)</td>
<td>3 (8%)</td>
<td></td>
<td>24 (63%)</td>
<td>9 (24%)</td>
</tr>
<tr>
<td></td>
<td>Partner total</td>
<td>0 partners</td>
<td>83 (53%)</td>
<td>30 (19%)</td>
<td>44 (28%)</td>
<td>&lt;0.01</td>
<td>69 (44%)</td>
<td>39 (25%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>1 or 2 partners</td>
<td>249 (68%)</td>
<td>42 (11%)</td>
<td>78 (21%)</td>
<td></td>
<td>218 (59%)</td>
<td>78 (21%)</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 or more partners</td>
<td>108 (79%)</td>
<td>19 (14%)</td>
<td>9 (7%)</td>
<td></td>
<td>109 (80%)</td>
<td>18 (13%)</td>
</tr>
</tbody>
</table>
4.4.3 Views on discussing one’s sexual health with a doctor by telephone

Next, respondents were asked their views on having a sexual health consultation by telephone (for example, to discuss the number of recent sexual partners or concern about an STI). Half of the respondents reported being willing to have a telephone consultation (Table 4.7). Similar to in-person consultations, men with same-sex partners were more willing to speak to an unknown doctor about a sexual health concern by telephone than men without same-sex partners (83% vs. 51%; p=<0.01) (Table 4.8).

<table>
<thead>
<tr>
<th></th>
<th>Own Doctor</th>
<th>Unknown Doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willing</td>
<td>325 (49%)</td>
<td>333 (50%)</td>
</tr>
<tr>
<td>Neither willing nor unwilling</td>
<td>128 (19%)</td>
<td>130 (20%)</td>
</tr>
<tr>
<td>Unwilling</td>
<td>209 (32%)</td>
<td>199 (30%)</td>
</tr>
</tbody>
</table>
Table 4.8 Factors associated with willingness to have a sexual health consultation by telephone

<table>
<thead>
<tr>
<th></th>
<th>Own Doctor</th>
<th></th>
<th></th>
<th></th>
<th>Unknown Doctor</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Willing</td>
<td>Neither Willing Nor Unwilling</td>
<td>Unwilling</td>
<td>P Value</td>
<td></td>
<td>Willing</td>
<td>Neither Willing Nor Unwilling</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>95 (55%)</td>
<td>32 (19%)</td>
<td>46 (27%)</td>
<td>0.17</td>
<td>98 (57%)</td>
<td>34 (20%)</td>
<td>41 (24%)</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>229 (47%)</td>
<td>95 (20%)</td>
<td>163 (34%)</td>
<td></td>
<td>234 (48%)</td>
<td>96 (20%)</td>
<td>157 (32%)</td>
</tr>
<tr>
<td>Age</td>
<td>16 to 19</td>
<td>111 (52%)</td>
<td>41 (19%)</td>
<td>62 (29%)</td>
<td>0.56</td>
<td>120 (56%)</td>
<td>38 (18%)</td>
<td>56 (26%)</td>
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<tr>
<td></td>
<td>20 to 24</td>
<td>214 (48%)</td>
<td>87 (19%)</td>
<td>147 (33%)</td>
<td></td>
<td>213 (48%)</td>
<td>92 (21%)</td>
<td>143 (32%)</td>
</tr>
<tr>
<td>Remoteness</td>
<td>Major city</td>
<td>275 (50%)</td>
<td>105 (19%)</td>
<td>168 (31%)</td>
<td>0.30</td>
<td>279 (51%)</td>
<td>104 (19%)</td>
<td>165 (30%)</td>
</tr>
<tr>
<td></td>
<td>Non major city</td>
<td>47 (42%)</td>
<td>23 (21%)</td>
<td>41 (37%)</td>
<td></td>
<td>52 (47%)</td>
<td>26 (23%)</td>
<td>33 (30%)</td>
</tr>
<tr>
<td>Had an STI test</td>
<td>Yes</td>
<td>113 (51%)</td>
<td>42 (19%)</td>
<td>68 (31%)</td>
<td>0.87</td>
<td>109 (49%)</td>
<td>47 (21%)</td>
<td>67 (30%)</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>210 (49%)</td>
<td>84 (19%)</td>
<td>139 (32%)</td>
<td></td>
<td>221 (51%)</td>
<td>82 (19%)</td>
<td>130 (30%)</td>
</tr>
<tr>
<td>Men: Any same-sex partners</td>
<td>No</td>
<td>80 (56%)</td>
<td>29 (20%)</td>
<td>35 (24%)</td>
<td>0.22</td>
<td>74 (51%)</td>
<td>32 (22%)</td>
<td>38 (26%)</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>15 (52%)</td>
<td>3 (10%)</td>
<td>11 (38%)</td>
<td></td>
<td>24 (83%)</td>
<td>2 (7%)</td>
<td>3 (10%)</td>
</tr>
<tr>
<td>Women: Any same-sex partners</td>
<td>No</td>
<td>208 (46%)</td>
<td>88 (20%)</td>
<td>153 (34%)</td>
<td>0.54</td>
<td>214 (48%)</td>
<td>85 (19%)</td>
<td>150 (33%)</td>
</tr>
<tr>
<td></td>
<td>Yes</td>
<td>21 (55%)</td>
<td>7 (18%)</td>
<td>10 (26%)</td>
<td></td>
<td>20 (53%)</td>
<td>11 (29%)</td>
<td>7 (18%)</td>
</tr>
<tr>
<td>Partner total</td>
<td>0 partners</td>
<td>68 (43%)</td>
<td>34 (22%)</td>
<td>55 (35%)</td>
<td>0.39</td>
<td>67 (43%)</td>
<td>33 (21%)</td>
<td>57 (36%)</td>
</tr>
<tr>
<td></td>
<td>1 or 2 partners</td>
<td>184 (50%)</td>
<td>67 (18%)</td>
<td>118 (32%)</td>
<td></td>
<td>191 (52%)</td>
<td>71 (19%)</td>
<td>107 (29%)</td>
</tr>
<tr>
<td></td>
<td>3 or more partners</td>
<td>73 (54%)</td>
<td>27 (20%)</td>
<td>36 (27%)</td>
<td></td>
<td>75 (55%)</td>
<td>26 (19%)</td>
<td>35 (26%)</td>
</tr>
</tbody>
</table>
4.4.4 Views on discussing one’s sexual health with a doctor by webcam

Respondents were first asked about their willingness, generally, to discuss sexual health matters with a doctor (for example, number of recent sexual partners, concern about an STI) by webcam over the Internet. Twenty three percent (n=150) reported being willing to have a webcam consultation with their own doctor, compared with 21% (n=137) for an unknown doctor (Table 4.9). Notably, willingness to speak to a doctor over the webcam was not influenced by access to a webcam (own doctor, p=0.21; unknown doctor, p=0.30).

<table>
<thead>
<tr>
<th></th>
<th>Own Doctor</th>
<th>Unknown Doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willing</td>
<td>150 (23%)</td>
<td>137 (21%)</td>
</tr>
<tr>
<td>Neither willing nor unwilling</td>
<td>130 (20%)</td>
<td>109 (17%)</td>
</tr>
<tr>
<td>Unwilling</td>
<td>382 (58%)</td>
<td>419 (63%)</td>
</tr>
</tbody>
</table>

Men were more willing than women to speak to a doctor by webcam, both with a known doctor (28% vs. 21%; p=0.01) and an unknown doctor (30% vs. 18%; p=<0.01) (Table 4.10). Additionally, men with same-sex partners were more willing to speak to an unknown doctor by webcam than men without any same-sex partners (48% vs. 26%; p=0.04). There was no difference in willingness by remoteness.
Table 4.10 Factors associated with willingness to have a sexual health consultation by webcam

<table>
<thead>
<tr>
<th></th>
<th>Own Doctor</th>
<th>Unknown Doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Willing</td>
<td>Neither Willing</td>
</tr>
<tr>
<td>Gender</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>48 (28%)</td>
<td>42 (24%)</td>
</tr>
<tr>
<td>Female</td>
<td>100 (21%)</td>
<td>88 (18%)</td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 to 19</td>
<td>47 (22%)</td>
<td>50 (23%)</td>
</tr>
<tr>
<td>20 to 24</td>
<td>103 (23%)</td>
<td>80 (18%)</td>
</tr>
<tr>
<td>Remoteness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major city</td>
<td>130 (24%)</td>
<td>104 (19%)</td>
</tr>
<tr>
<td>Non major city</td>
<td>19 (17%)</td>
<td>25 (23%)</td>
</tr>
<tr>
<td>Had an STI test</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>54 (24%)</td>
<td>45 (20%)</td>
</tr>
<tr>
<td>No</td>
<td>95 (22%)</td>
<td>83 (19%)</td>
</tr>
<tr>
<td>Men: Any same-sex partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>39 (27%)</td>
<td>36 (25%)</td>
</tr>
<tr>
<td>Yes</td>
<td>9 (31%)</td>
<td>6 (21%)</td>
</tr>
<tr>
<td>Women: Any same-sex partners</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>90 (20%)</td>
<td>81 (18%)</td>
</tr>
<tr>
<td>Yes</td>
<td>10 (26%)</td>
<td>7 (18%)</td>
</tr>
<tr>
<td>Partner total</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 partners</td>
<td>32 (20%)</td>
<td>29 (19%)</td>
</tr>
<tr>
<td>1 or 2 partners</td>
<td>78 (21%)</td>
<td>73 (20%)</td>
</tr>
<tr>
<td>3 or more partners</td>
<td>40 (29%)</td>
<td>28 (21%)</td>
</tr>
</tbody>
</table>
4.4.5 Comparing the media

A visual representation of respondents’ general willingness to have different types of consultations is provided below for comparison (Figure 4.6).

![Figure 4.6 Percentage of respondents willing to have a sexual health consultation by different media](image_url)

4.4.6 Views on genital examinations by webcam

Sixteen percent (n=105) of the sample reported being willing to have a genital examination by webcam with a known doctor; 14% (n=95) reported being willing to have such an examination with an unknown doctor. Table 4.11 compares respondents’ willingness to have a genital examination in person and by webcam.
Table 4.11 Reported willingness to have a genital examination by mode of consultation

<table>
<thead>
<tr>
<th>Mode of Consultation</th>
<th>Own Doctor</th>
<th>Unknown Doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Willing</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Webcam</td>
<td>105 (16%)</td>
<td>95 (14%)</td>
</tr>
<tr>
<td>In Person</td>
<td>440 (67%)</td>
<td>396 (60%)</td>
</tr>
<tr>
<td><strong>Neither willing nor unwilling</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Webcam</td>
<td>111 (17%)</td>
<td>88 (13%)</td>
</tr>
<tr>
<td>In Person</td>
<td>91 (14%)</td>
<td>135 (20%)</td>
</tr>
<tr>
<td><strong>Unwilling</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Webcam</td>
<td>446 (67%)</td>
<td>479 (72%)</td>
</tr>
<tr>
<td>In Person</td>
<td>131 (20%)</td>
<td>131 (20%)</td>
</tr>
</tbody>
</table>

Men were more willing than women to have a genital examination, both with a known doctor (29% vs. 11%; p<0.01) and an unknown doctor (30% vs. 9%; p<0.01) (Table 4.12). Respondents living in a major city (16% vs. 13%; p=0.01) and those with three or more sexual partners in the previous year (22% vs. 15% vs. 12%; p=0.02) were more willing to have a genital examination with their own doctor by webcam than respondents living in a non-major city and those with fewer or no sexual partners.
Table 4.12 Factors associated with willingness to have a genital examination by webcam

<table>
<thead>
<tr>
<th></th>
<th>Own Doctor</th>
<th>Unknown Doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Willing</td>
<td>Neither Willing</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>50 (29%)</td>
<td>40 (23%)</td>
</tr>
<tr>
<td>Female</td>
<td>54 (11%)</td>
<td>70 (14%)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 to 19</td>
<td>31 (15%)</td>
<td>33 (15%)</td>
</tr>
<tr>
<td>20 to 24</td>
<td>74 (17%)</td>
<td>78 (17%)</td>
</tr>
<tr>
<td><strong>Remoteness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major city</td>
<td>90 (16%)</td>
<td>81 (15%)</td>
</tr>
<tr>
<td>Non major city</td>
<td>14 (13%)</td>
<td>29 (26%)</td>
</tr>
<tr>
<td><strong>Had an STI test</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>29 (13%)</td>
<td>40 (18%)</td>
</tr>
<tr>
<td>No</td>
<td>74 (17%)</td>
<td>71 (16%)</td>
</tr>
<tr>
<td><strong>Men: Any same-sex partners</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>43 (30%)</td>
<td>37 (26%)</td>
</tr>
<tr>
<td>Yes</td>
<td>7 (24%)</td>
<td>3 (10%)</td>
</tr>
<tr>
<td><strong>Women: Any same-sex partners</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>51 (11%)</td>
<td>61 (14%)</td>
</tr>
<tr>
<td>Yes</td>
<td>3 (8%)</td>
<td>9 (24%)</td>
</tr>
<tr>
<td><strong>Partner total</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 partners</td>
<td>18 (12%)</td>
<td>22 (14%)</td>
</tr>
<tr>
<td>1 or 2 partners</td>
<td>57 (15%)</td>
<td>59 (16%)</td>
</tr>
<tr>
<td>3 or more partners</td>
<td>30 (22%)</td>
<td>30 (22%)</td>
</tr>
</tbody>
</table>
4.4.7 Free text responses

Free text responses provided further insight into young people’s views on telemedicine consultations. While the overall number of comments is provided (positive versus negative), the exact numbers for each type of comment is not given because it would give a false impression of representativeness.

4.4.7.1 Telephone free text responses

There were more negative than positive comments (56 versus 24) about telephone consultations.

4.4.7.1.1 Positive comments

Positive comments fell under three main themes: 1) telephone consultations allowed patients to remain anonymous; 2) telephone consultations were viewed as less embarrassing and easier than talking to a doctor in person; 3) telephone consultations were viewed as saving time by preventing people from having to travel to a clinic. Positive views are exemplified by the following quote:

“I would feel more comfortable discussing my sexual history with a doctor I don't know over the phone as this would enable me to remain anonymous”

(Female, aged 24).

4.4.7.1.2 Negative comments

Some respondents simply commented that they would not have a telephone consultation; others elaborated on their reasoning. Some people reported privacy and security concerns about being able to verify the doctor’s identity or that others might listen in on the conversation. As one respondent stated:

“Oh the phone is probably a less appealing option because you dont [sic] know who exactly you are talking to, or if others are listening in” (Male, aged 19).

Others reported that telephone consultations were impersonal and, as a result, adversely affected the doctor-patient relationship; that diagnosis would be difficult over the telephone without the doctor being able to assess the patient’s symptoms in person; and that patients might still have to visit a clinic to get tested.
4.4.7.1.3  **Depends on circumstances**

There were also comments from people who stated that, while they would prefer not to have a consultation over the telephone, they would use it if it was their only option. They also stated that telephone consultations could be beneficial for people living in rural areas with limited access to services.

4.4.7.2  **Webcam free text responses**

A total of 105 respondents chose to comment on their willingness to have a webcam consultation. There were far more negative (95) than positive comments (10).

4.4.7.2.1  **Positive comments**

Some respondents discussed webcam consultations as advantageous because they prevented people from having to travel to a clinic to receive medical care. As one respondent stated:

> “Great idea. Comfort [sic] of your own home, but you would be able to see that the doctor is in their office in a confidential environment” (Female, aged 21).

A few respondents stated that, while they preferred an in-person consultation, webcam consultations were an improvement over telephone because webcams enabled face-to-face engagement with the doctor.

4.4.7.2.2  **Negative comments**

Respondents reported several reasons why they found webcam consultations unacceptable (Box 1). Comments encompassed security and privacy concerns; finding webcam consultations “weird”, “creepy” or “awkward”; to viewing webcam consultations as unnecessary. A variety of security and privacy concerns were mentioned. First, as with telephone consultations, respondents reported some concern about consultations being overheard and not being able to confirm the identity of the doctor. The majority of security comments, however, related to concerns around the possibility of the video from the consultation being recorded, saved, and potentially searchable and retrievable online.

Many respondents commented that they found webcam consultations strange or uncomfortable. While most did not elaborate on their reasoning, some respondents provided explanations. A few stated that medical consultations should not be conducted online under any circumstance and that only an in-person consultation was acceptable. Some respondents
found webcam consultations too impersonal and believed that such consultations would adversely affect the doctor-patient relationship, while others reported that webcam consultations seemed too personal and preferred the anonymity telephone offered. Others viewed webcam consultations as unnecessary; some respondents reported that, if the consultation could occur at a distance, telephone should be adequate. If the doctor needed to examine the patient visually, then the person would need to see the doctor in person.

**Box 1: Negative comments about webcam consultations**

- “Unsafe in terms of information shared online being able to be saved and retrieved at a later date is an issue of privacy for me. Face to face contact is preferable” (Female, aged 22).
- “Doing things via webcam seems really creepy, we grow up being taught internet safety and how you should never do anything over the internet you don’t want other people to find out about. Using the internet [for a sexual health consultation] goes against everything we are taught about how to use it safely.” (Female, aged 20).
- “I don't see the point of using a webcam - if it's something that can be discussed at a distance, then the telephone should suffice. If it's something that needs to be done with visual interaction, surely it should be done in person” (Female, aged 23).
- “I think it would be better either to talk on the phone or go to see a doctor in person - the phone is less personal/embarrassing, and the appointment in person allows for the doctor to conduct tests if necessary. The webcam appointment seems to be an unnecessary in-between stage. But I am sure there would be people for whom this would be ideal, so I would say making it available is a good idea” (Female, aged 20).

**4.4.7.2.3 Depends on circumstances**

A few people commented that, while they would not want to have a webcam consultation, such a service could be beneficial for people living in remote areas if there were no other options for speaking to a doctor about a sexual health concern. As one respondent explained:

“There are too many negative connotations around webcams and sexual activity so talking about sexual activity over a webcam automatically has a weird feeling for me. But if I was living regionally or unable to physically go to a clinic I would be happy to do it” (Female, aged 20).
### 4.4.7.3 Webcam genital examination free text responses

There were 95 negative comments about using webcams for genital examination, compared with one comment about how webcam examinations could potentially be useful in rural areas where people had limited options for medical care. The reasons given against webcam genital examinations were similar to the comments about having a conversation with a doctor by webcam. Comments including security and privacy concerns as well as finding the idea of webcam genital examinations “uncomfortable”, “weird”, or “creepy” (Box 2). People also expressed concern about the quality of an examination, questioning the clarity of the image as well as whether doctors could make an accurate diagnosis without being able to use their other senses.

<table>
<thead>
<tr>
<th>Box 2: Negative comments about webcam genital examinations</th>
</tr>
</thead>
<tbody>
<tr>
<td>• “First, if he needs to examine my body I would not trust the internet connection to be secure enough. Second, if he discovers anything, chances are I will need to go to his office anyway. Third, if something is wrong I will be alone and at home once I hang up, whereas otherwise I will be in a professional environment and my home can remain my shelter of bad experiences outside the home” (Female, aged 22).</td>
</tr>
<tr>
<td>• “Although it would make it may make it [sic] easier for rural individuals, webcams do not provide excellent clarity, and images are often distorted. Therefore [sic] the diagnosis may be incorrect if based on this only. Likewise, infections have different characteristics such as smell, discharge, and feel. The doctor may ask the patient about these characteristics and what may be described by the lay person, may be misinterpreted by the doctor as they have a different perception of that word. As they are not able to assess, its [sic] a recipe for disaster” (Female, aged 19).</td>
</tr>
<tr>
<td>• “Webcam consultation for your genitals seems inappropriate and wrong” (Female, aged 23).</td>
</tr>
<tr>
<td>• “Genital examination via webcam is creepy” (Male, aged 22).</td>
</tr>
</tbody>
</table>

### 4.5 Preferred Mode of Speaking to a Doctor about a Sexual Health Concern

Respondents were also asked to rank their top preference for speaking to a doctor about a sexual health matter if given the option between an in-person, telephone, and webcam.
consultation. For the in-person option, respondents were able to choose between a consultation with a known doctor and an unknown doctor. To prevent the question from becoming too complicated, respondents were not asked to distinguish between a known and unknown doctor for the telephone and webcam option. Rather, this was asked in an earlier section of the questionnaire.

4.5.1 No genital examination
Respondents were first asked to rank their preference for speaking to a doctor if they did not have any genital symptoms and no genital examination was necessary (asymptomatic consultation). Respondents were asked to imagine two situations: if they lived 20 minutes away from a doctor or two hours away. (For ease of reading, all the odds ratios tables for the questions relating to respondents’ top preferences are provided at the end of Section 4.5.)

4.5.1.1 20 minutes from a doctor, no examination
The top preference reported for an asymptomatic consultation if imagining one lived 20 minutes from a doctor was an in-person consultation with one’s own doctor or clinic (73%; n=484) (Table 4.13).

Multivariate analysis revealed that men reporting same-sex partners had an increased odds of choosing an in-person consultation with an unknown doctor as their top preference (OR 4.68; 95% CI 1.43-15.32) and that men reporting three or more sexual partners were less likely to choose a telephone consultation as their top preference (OR 0.18; 95% CI 0.03-0.94) (Table 4.15 and Table 4.16). Multivariate analysis also found that women who had an STI test in the past were less likely to choose a telephone consultation as their top preference (OR 0.42; CI 0.23-0.77) (Table 4.17 and Table 4.18).

4.5.1.2 2 hours from a doctor, no examination
If imagining one lived two hours from a doctor, the top preference was a telephone consultation (51%; n=340) (Table 4.13). Men reporting same-sex partners were more likely to choose speaking to an unknown doctor in person as their top preference during multivariate analysis (OR 7.84; 95% CI 1.72-35.63) (Table 4.19 and Table 4.20), but no association was found for female respondents (Table 4.21 and Table 4.22).
### Table 4.13 Reported top preference for speaking to a doctor if no genital examination is needed

<table>
<thead>
<tr>
<th>Top Preference if No Genital Examination is Needed</th>
<th>20 Minutes From a Doctor</th>
<th>2 Hours From a Doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td>In person own doctor</td>
<td>73% (484)</td>
<td>34% (228)</td>
</tr>
<tr>
<td>In person unknown doctor</td>
<td>10% (63)</td>
<td>4% (27)</td>
</tr>
<tr>
<td>Telephone</td>
<td>15% (101)</td>
<td>51% (340)</td>
</tr>
<tr>
<td>Webcam</td>
<td>2% (14)</td>
<td>10% (67)</td>
</tr>
</tbody>
</table>

#### 4.5.2 Genital examination

Respondents were also asked to rank their preference for speaking to a doctor if they had genital symptoms and a genital examination was necessary (symptomatic consultation) (Table 4.14). Again, respondents were asked to imagine they lived 20 minutes and then two hours away from a doctor. A telephone consultation was removed from the response options as it would not be possible to have a genital examination by telephone.

##### 4.5.2.1 20 minutes, genital examination

The top preference reported if living 20 minutes away from a doctor and a genital examination was needed was an in-person consultation with one’s own doctor (68%; n=450).

Multivariate analysis revealed that men reporting same-sex partners were less likely to choose speaking to their own doctor in person as their top preference (OR 0.29; 95% CI 0.11-0.75) and more likely to choose speaking to an unknown doctor in person as their top preference (OR 4.57; 95% CI 1.76-11.90) if living 20 minutes from a doctor (Table 4.23 and Table 4.24). This finding remained consistent if living two hours from a doctor (Table 4.27, Table 4.28). No association was found for female respondents (Table 4.25; Table 4.26, Table 4.29, and Table 4.30).

##### 4.5.2.2 2 hours, genital examination

If living two hours away, respondents’ reported top preference was still an in-person consultation with a known doctor (62%; n=412).
Table 4.14 Reported top preference for speaking to a doctor if a genital examination is needed

<table>
<thead>
<tr>
<th>Top Preference if Genital Examination is Needed</th>
<th>20 Minutes From a Doctor % (n)</th>
<th>2 Hours From a Doctor % (n)</th>
</tr>
</thead>
<tbody>
<tr>
<td>In person own doctor</td>
<td>68% (450)</td>
<td>62% (412)</td>
</tr>
<tr>
<td>In person unknown doctor</td>
<td>28% (187)</td>
<td>22% (144)</td>
</tr>
<tr>
<td>Webcam</td>
<td>4% (25)</td>
<td>16% (106)</td>
</tr>
</tbody>
</table>
Table 4.15 Male respondents’ preferred medium for consulting a doctor if hypothetically living 20 minutes from a clinic and no genital examination is needed (Part 1 of 2)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (%)</th>
<th>Own Doctor</th>
<th>P Value</th>
<th>Adjusted OR</th>
<th>P Value</th>
<th>Unknown Doctor</th>
<th>P Value</th>
<th>Adjusted OR</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Unadjusted OR (95% CI)</td>
<td></td>
<td></td>
<td></td>
<td>Unadjusted OR (95% CI)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td>(95% CI)</td>
<td></td>
<td></td>
<td></td>
<td>(95% CI)</td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-19</td>
<td>55 (32%)</td>
<td>0.83 (0.42-1.64)</td>
<td>0.60</td>
<td>0.82 (0.40-1.70)</td>
<td>0.59</td>
<td>0.69 (0.24-2.00)</td>
<td>0.49</td>
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Table 4.16 Male respondents’ preferred medium for consulting a doctor if living 20 minutes from a clinic and no genital examination is needed (Part 2 of 2)

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<th>Adjusted OR (95% CI)</th>
<th>P Value</th>
<th>Telephone Unadjusted OR (95% CI)</th>
<th>P Value</th>
<th>Adjusted OR (95% CI)</th>
<th>P Value</th>
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<tr>
<td>16-19</td>
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<tr>
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Table 4.17 Female respondents’ preferred medium for consulting a doctor if hypothetically living 20 minutes from a clinic and no genital examination is needed (Part 1 of 2)

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<tr>
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<tr>
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<td>1 to 2</td>
<td>289 (59%)</td>
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Table 4.18 Female respondents’ preferred medium for consulting a doctor if hypothetically living 20 minutes from a clinic and no genital examination is needed (Part 2 of 2)
Table 4.19 Male respondents’ preferred medium for consulting a doctor if hypothetically living 2 hours from a clinic and no genital examination is needed (Part 1 of 2)

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115
Table 4.20 Male respondents’ preferred medium for consulting a doctor if hypothetically living 2 hours from a clinic and no genital examination is needed (Part 2 of 2)

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<th>P Value</th>
<th>Telephone Unadjusted OR (95% CI)</th>
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<tr>
<td>16-19</td>
<td>55 (32%)</td>
<td>1.25 (0.51-3.03)</td>
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<tr>
<td>Yes</td>
<td>29 (17%)</td>
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<td>0.84 (0.34-2.06)</td>
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Table 4.21 Female respondents’ preferred medium for consulting a doctor if hypothetically living 2 hours from a clinic and no genital examination is needed (Part 1 of 2)

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<th>Adjusted OR</th>
<th>P Value</th>
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<tr>
<td>16-19</td>
<td>159 (33%)</td>
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<tr>
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<tr>
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<td>88 (18%)</td>
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<td>1.67 (0.52-5.38)</td>
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<tr>
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<td>38 (8%)</td>
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Table 4.22 Female respondents’ preferred medium for consulting a doctor if hypothetically living 2 hours from a clinic and no genital examination is needed (Part 2 of 2)

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</tr>
<tr>
<td>Major city</td>
<td>397 (82%)</td>
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<tr>
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<td>187 (38%)</td>
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<td>Yes</td>
<td>38 (8%)</td>
<td>1.74 (0.64-4.73)</td>
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<td>289 (59%)</td>
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Table 4.23 Male respondents’ preferred medium for consulting a doctor if hypothetically living 20 minutes from a clinic and a genital examination is needed (Part 1 of 2)

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</tr>
<tr>
<td>16-19</td>
<td>55 (32%)</td>
<td>0.71 (0.37-1.38)</td>
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<td>0.70 (0.34-1.46)</td>
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<td>20-24</td>
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<tr>
<td>Major city</td>
<td>149 (86%)</td>
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<td>Yes</td>
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<tr>
<td>No</td>
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<tr>
<td>Yes</td>
<td>29 (17%)</td>
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<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>1 to 2</td>
<td>79 (46%)</td>
<td>0.68 (0.31-1.49)</td>
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<td>0.70 (0.29-1.66)</td>
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<td>0.68 (0.25-1.85)</td>
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Table 4.24 Male respondents’ preferred medium for consulting a doctor if hypothetically living 20 minutes from a clinic and a genital examination is needed (Part 2 of 2)

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<th>Webcam Adjusted OR (95% CI)</th>
<th>P Value</th>
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</tr>
<tr>
<td>16-19</td>
<td>55 (32%)</td>
<td>1.94 (0.62-6.08)</td>
<td>0.25</td>
<td>2.46 (0.70-8.71)</td>
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<td>20-24</td>
<td>118 (68%)</td>
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<tr>
<td>Remoteness</td>
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<td></td>
</tr>
<tr>
<td>Major city</td>
<td>149 (86%)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-major city</td>
<td>23 (13%)</td>
<td>2.09 (0.53-8.23)</td>
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<tr>
<td>Past STI test</td>
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</tr>
<tr>
<td>Yes</td>
<td>34 (20%)</td>
<td>0.79 (0.16-3.77)</td>
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</tr>
<tr>
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<tr>
<td>No</td>
<td>144 (83%)</td>
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<td>1.0</td>
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</tr>
<tr>
<td>Yes</td>
<td>29 (17%)</td>
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<td>0.36 (0.04-3.27)</td>
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<td>Partner total</td>
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<td>48 (28%)</td>
<td>1.0</td>
<td>1.0</td>
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</tr>
<tr>
<td>1 to 2</td>
<td>79 (46%)</td>
<td>1.69 (0.43-6.71)</td>
<td>0.46</td>
<td>3.04 (0.58-16.04)</td>
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</tr>
<tr>
<td>3+</td>
<td>46 (27%)</td>
<td>0.68 (0.11-4.28)</td>
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<td>1.20 (0.15-9.64)</td>
<td>0.87</td>
</tr>
<tr>
<td>Variable</td>
<td>N (%)</td>
<td>Own Doctor</td>
<td>P Value</td>
<td>Adjusted OR</td>
<td>P Value</td>
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<td><strong>Age</strong></td>
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</tr>
<tr>
<td>16-19</td>
<td>159 (33%)</td>
<td>0.73 (0.49-1.09)</td>
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<td>0.74 (0.49-1.13)</td>
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<td>328 (67%)</td>
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<tr>
<td><strong>Remoteness</strong></td>
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</tr>
<tr>
<td>Major city</td>
<td>397 (82%)</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Non-major city</td>
<td>88 (18%)</td>
<td>0.80 (0.49-1.30)</td>
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<td>0.80 (0.49-1.31)</td>
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<tr>
<td>Yes</td>
<td>187 (38%)</td>
<td>1.16 (0.78-1.73)</td>
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<td>1.08 (0.70-1.69)</td>
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</tr>
<tr>
<td>No</td>
<td>297 (61%)</td>
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<td>1.0</td>
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<tr>
<td><strong>Any same-sex partners</strong></td>
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</tr>
<tr>
<td>No</td>
<td>449 (92%)</td>
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<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
<td>Yes</td>
<td>38 (8%)</td>
<td>1.23 (0.61-2.74)</td>
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<td>1.30 (0.60-2.85)</td>
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<td>0</td>
<td>109 (22%)</td>
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</tr>
<tr>
<td>1 to 2</td>
<td>289 (59%)</td>
<td>0.95 (0.52-1.75)</td>
<td>0.87</td>
<td>0.85 (0.51-1.41)</td>
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<td>3+</td>
<td>89 (18%)</td>
<td>0.87 (0.52-1.46)</td>
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<td>087 (0.44-1.73)</td>
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Table 4.26 Female respondents’ preferred medium for consulting a doctor if hypothetically living 20 minutes from a clinic and a genital examination is needed (Part 2 of 2)

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<th>Adjusted OR (95% CI)</th>
<th>P Value</th>
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<tr>
<td>16-19</td>
<td>159 (33%)</td>
<td>0.68 (0.18-2.55)</td>
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<td>0.65 (0.17-2.57)</td>
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<tr>
<td>20-24</td>
<td>328 (67%)</td>
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<tr>
<td>Remoteness</td>
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<tr>
<td>Major city</td>
<td>397 (82%)</td>
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<td>1.0</td>
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<tr>
<td>Non-major city</td>
<td>88 (18%)</td>
<td>0.90 (0.19-4.18)</td>
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<tr>
<td>Yes</td>
<td>187 (38%)</td>
<td>0.79 (0.23-2.66)</td>
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<td>0.73 (0.20-2.65)</td>
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<tr>
<td>No</td>
<td>449 (92%)</td>
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<td>1.0</td>
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<tr>
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<td>38 (8%)</td>
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<tr>
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<td>109 (22%)</td>
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<td>1.0</td>
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<tr>
<td>1 to 2</td>
<td>289 (59%)</td>
<td>1.65 (0.15-18.44)</td>
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<td>1.86 (0.37-9.34)</td>
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<td>0.80 (0.06-10.06)</td>
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**Table 4.27 Male respondents’ preferred medium for consulting a doctor if hypothetically living 2 hours from a clinic and a genital examination is needed (Part 1 of 2)**

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</tr>
<tr>
<td>16-19</td>
<td>55 (32%)</td>
<td>0.69 (0.36-1.30)</td>
<td>0.25</td>
<td>0.68 (0.34-1.38)</td>
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<td>0.98 (0.44-2.18)</td>
<td>0.96</td>
<td>0.89 (0.36-2.20)</td>
</tr>
<tr>
<td>20-24</td>
<td>118 (68%)</td>
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<td>1.0</td>
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<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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</tr>
<tr>
<td>Major city</td>
<td>149 (86%)</td>
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<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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<tr>
<td>Non-major city</td>
<td>23 (13%)</td>
<td>1.41 (0.59-3.40)</td>
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<td>1.41 (0.52-3.83)</td>
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<td>No</td>
<td>136 (80%)</td>
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<td>1.0</td>
<td>1.0</td>
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</tr>
<tr>
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</tr>
<tr>
<td>No</td>
<td>144 (83%)</td>
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<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
</tr>
<tr>
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<td>29 (17%)</td>
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<tr>
<td>0</td>
<td>48 (28%)</td>
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<td>1.0</td>
<td>1.0</td>
<td>1.0</td>
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</tr>
<tr>
<td>1 to 2</td>
<td>79 (46%)</td>
<td>0.67 (0.33-1.29)</td>
<td>0.67</td>
<td>0.69 (0.31-1.52)</td>
<td>0.36</td>
<td>1.37 (0.52-3.65)</td>
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<tr>
<td>3+</td>
<td>46 (27%)</td>
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<td>1.24 (0.48-3.21)</td>
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<td>2.31 (0.83-6.44)</td>
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<td>1.29 (0.39-4.32)</td>
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123
Table 4.28 Male respondents’ preferred medium for consulting a doctor if hypothetically living 2 hours from a clinic and a genital examination is needed (Part 2 of 2)

<table>
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<th>Variable</th>
<th>N (%)</th>
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<th>P Value</th>
<th>Webcam Adjusted OR (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
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<tr>
<td>Age</td>
<td></td>
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</tr>
<tr>
<td>16-19</td>
<td>55 (32%)</td>
<td>1.66 (0.81-3.43)</td>
<td>0.17</td>
<td>1.73 (0.79-3.76)</td>
<td>0.17</td>
</tr>
<tr>
<td>20-24</td>
<td>118 (68%)</td>
<td>1.0</td>
<td>1.0</td>
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<tr>
<td>Remoteness</td>
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</tr>
<tr>
<td>Major city</td>
<td>149 (86%)</td>
<td>1.0</td>
<td>1.0</td>
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</tr>
<tr>
<td>Non-major city</td>
<td>23 (13%)</td>
<td>1.19 (0.41-3.43)</td>
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<td>0.93 (0.34-2.62)</td>
<td>0.90</td>
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</tr>
<tr>
<td>Yes</td>
<td>34 (20%)</td>
<td>0.81 (0.32-2.03)</td>
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<td>0.94 (0.34-2.62)</td>
<td>0.90</td>
</tr>
<tr>
<td>No</td>
<td>136 (80%)</td>
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<tr>
<td>Any same-sex partners</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>144 (83%)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>29 (17%)</td>
<td>0.78 (0.30-2.07)</td>
<td>0.62</td>
<td>1.02 (0.34-3.04)</td>
<td>0.97</td>
</tr>
<tr>
<td>Partner total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>48 (28%)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 to 2</td>
<td>79 (46%)</td>
<td>1.31 (0.58-2.94)</td>
<td>0.52</td>
<td>1.58 (0.65-3.84)</td>
<td>0.32</td>
</tr>
<tr>
<td>3+</td>
<td>46 (27%)</td>
<td>0.45 (0.15-1.32)</td>
<td>0.15</td>
<td>0.56 (0.17-1.83)</td>
<td>0.34</td>
</tr>
</tbody>
</table>
### Table 4.29 Female respondents’ preferred medium for consulting a doctor if hypothetically living 2 hours from a clinic and a genital examination is needed (Part 1 of 2)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (%)</th>
<th>Own Doctor</th>
<th></th>
<th></th>
<th></th>
<th>Unknown Doctor</th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td>Unadjusted OR (95% CI)</td>
<td>P Value</td>
<td>Adjusted OR (95% CI)</td>
<td>P Value</td>
<td>Unadjusted OR (95% CI)</td>
<td>P Value</td>
<td>Adjusted OR (95% CI)</td>
</tr>
<tr>
<td>16-19</td>
<td>159 (33%)</td>
<td>0.77 (0.52-1.14)</td>
<td>0.19</td>
<td>0.80 (0.53-1.20)</td>
<td>0.28</td>
<td>1.33 (0.85-2.07)</td>
<td>0.21</td>
<td>1.33 (0.83-2.13)</td>
<td>0.23</td>
</tr>
<tr>
<td>20-24</td>
<td>328 (67%)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remoteness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major city</td>
<td>397 (82%)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-major city</td>
<td>88 (18%)</td>
<td>0.85 (0.53-1.36)</td>
<td>0.49</td>
<td>0.85 (0.52-1.38)</td>
<td>0.85</td>
<td>1.30 (0.76-2.21)</td>
<td>0.34</td>
<td>1.32 (0.77-2.26)</td>
<td>0.32</td>
</tr>
<tr>
<td>Past STI test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>187 (38%)</td>
<td>1.30 (0.88-1.91)</td>
<td>0.18</td>
<td>1.27 (0.83-1.95)</td>
<td>0.28</td>
<td>0.95 (0.61-1.47)</td>
<td>0.95</td>
<td>1.07 (0.65-1.75)</td>
<td>0.80</td>
</tr>
<tr>
<td>No</td>
<td>297 (61%)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any same-sex partners</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>449 (92%)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>38 (8%)</td>
<td>1.39 (0.67-2.87)</td>
<td>0.38</td>
<td>1.35 (0.63-2.88)</td>
<td>0.45</td>
<td>0.63 (0.26-1.55)</td>
<td>0.31</td>
<td>0.61 (0.24-1.56)</td>
<td>0.31</td>
</tr>
<tr>
<td>Partner total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>109 (22%)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 to 2</td>
<td>289 (59%)</td>
<td>0.81 (0.51-1.30)</td>
<td>0.39</td>
<td>0.72 (0.44-1.18)</td>
<td>0.19</td>
<td>0.98 (0.58-1.65)</td>
<td>0.93</td>
<td>1.01 (0.57-1.77)</td>
<td>0.98</td>
</tr>
<tr>
<td>3+</td>
<td>89 (18%)</td>
<td>1.07 (0.59-1.96)</td>
<td>0.82</td>
<td>0.82 (0.42-1.61)</td>
<td>0.57</td>
<td>0.91 (0.46-1.79)</td>
<td>0.79</td>
<td>1.06 (0.49-2.27)</td>
<td>0.89</td>
</tr>
</tbody>
</table>
Table 4.30 Female respondents’ preferred medium for consulting a doctor if hypothetically living 2 hours from a clinic and a genital examination is needed (Part 2 of 2)

<table>
<thead>
<tr>
<th>Variable</th>
<th>N (%)</th>
<th>Webcam Unadjusted OR (95% CI)</th>
<th>P Value</th>
<th>Webcam Adjusted OR (95% CI)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16-19</td>
<td>159 (33%)</td>
<td>1.09 (0.63-1.90)</td>
<td>0.75</td>
<td>1.03 (0.58-1.84)</td>
<td>0.93</td>
</tr>
<tr>
<td>20-24</td>
<td>328 (67%)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Remoteness</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major city</td>
<td>397 (82%)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-major city</td>
<td>88 (18%)</td>
<td>0.93 (0.46-1.86)</td>
<td>0.93</td>
<td>0.90 (0.44-1.82)</td>
<td>0.76</td>
</tr>
<tr>
<td>Past STI test</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>187 (38%)</td>
<td>0.63 (0.36-1.12)</td>
<td>0.12</td>
<td>0.57 (0.31-1.05)</td>
<td>0.07</td>
</tr>
<tr>
<td>No</td>
<td>297 (61%)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Any same-sex partners</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>449 (92%)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>38 (8%)</td>
<td>1.00 (0.38-2.67)</td>
<td>1.00</td>
<td>1.11 (0.40-3.08)</td>
<td>0.85</td>
</tr>
<tr>
<td>Partner total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0</td>
<td>109 (22%)</td>
<td>1.0</td>
<td>1.0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1 to 2</td>
<td>289 (59%)</td>
<td>1.60 (0.79-3.23)</td>
<td>0.19</td>
<td>1.91 (0.92-3.99)</td>
<td>0.09</td>
</tr>
<tr>
<td>3+</td>
<td>89 (18%)</td>
<td>1.00 (0.40-2.54)</td>
<td>1.00</td>
<td>1.34 (0.49-3.70)</td>
<td>0.57</td>
</tr>
</tbody>
</table>
4.6 **Sending Digital Photographs to a Doctor**

Instead of having a genital examination, it may be possible to show one’s genital signs to a doctor by sending a digital photograph. Eighteen percent (n=120) of the sample reported being willing to e-mail a digital photograph of their genitals over a secure Internet connection to their own doctor; up to 19% (n=123) for an unknown doctor (Table 4.31).

**Table 4.31 Reported frequency of willingness to e-mail genital photographs to a doctor**

<table>
<thead>
<tr>
<th></th>
<th>Own Doctor</th>
<th>Unknown Doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Willing</td>
<td>120 (18%)</td>
<td>123 (19%)</td>
</tr>
<tr>
<td>Neither willing nor unwilling</td>
<td>92 (14%)</td>
<td>75 (11%)</td>
</tr>
<tr>
<td>Unwilling</td>
<td>450 (68%)</td>
<td>464 (70%)</td>
</tr>
</tbody>
</table>

Men were more willing than women to send a digital photograph to a doctor, both for a known doctor (25% vs. 15%; p=<0.01) and an unknown doctor (29% vs. 15%; p=<0.01). As well, respondents who had never had an STI test were more willing than respondents who had an STI test in the past to send a digital photograph to an unknown doctor (21% vs. 15%; p=0.02) (Table 4.32).
Table 4.32 Factors associated with willingness to send a digital photograph of one’s genitals to a doctor

<table>
<thead>
<tr>
<th></th>
<th>Own Doctor</th>
<th>Unknown Doctor</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Willing</td>
<td>Neither Willing Nor Unwilling</td>
</tr>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>44 (25%)</td>
<td>28 (16%)</td>
</tr>
<tr>
<td>Female</td>
<td>75 (15%)</td>
<td>63 (13%)</td>
</tr>
<tr>
<td><strong>Age</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>16 to 19</td>
<td>34 (16%)</td>
<td>28 (13%)</td>
</tr>
<tr>
<td>20 to 24</td>
<td>86 (19%)</td>
<td>64 (14%)</td>
</tr>
<tr>
<td><strong>Remoteness</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Major city</td>
<td>101 (18%)</td>
<td>71 (13%)</td>
</tr>
<tr>
<td>Non major city</td>
<td>18 (16%)</td>
<td>20 (18%)</td>
</tr>
<tr>
<td><strong>Had an STI test</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>33 (15%)</td>
<td>30 (14%)</td>
</tr>
<tr>
<td>No</td>
<td>85 (20%)</td>
<td>61 (14%)</td>
</tr>
<tr>
<td><strong>Men: Any same-sex partners</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>35 (24%)</td>
<td>26 (18%)</td>
</tr>
<tr>
<td>Yes</td>
<td>9 (31%)</td>
<td>2 (7%)</td>
</tr>
<tr>
<td><strong>Women: Any same-sex partners</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>70 (16%)</td>
<td>55 (12%)</td>
</tr>
<tr>
<td>Yes</td>
<td>5 (13%)</td>
<td>5 (13%)</td>
</tr>
<tr>
<td><strong>Partner total</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>0 partners</td>
<td>25 (16%)</td>
<td>28 (18%)</td>
</tr>
<tr>
<td>1 or 2 partners</td>
<td>68 (18%)</td>
<td>42 (11%)</td>
</tr>
<tr>
<td>3 or more partners</td>
<td>27 (20%)</td>
<td>22 (16%)</td>
</tr>
</tbody>
</table>
4.7 **OTHER MODES OF COMMUNICATING WITH A DOCTOR**

Respondents were asked if there was another mode of communication they preferred to use to speak to a doctor about a sexual health concern. Fifty percent (n=330) said no; 31% (n=202) said they preferred to speak to a doctor by email (Table 4.33).

<table>
<thead>
<tr>
<th>Mode of Communication</th>
<th>Frequency</th>
<th>Percentage*</th>
</tr>
</thead>
<tbody>
<tr>
<td>No</td>
<td>330</td>
<td>50%</td>
</tr>
<tr>
<td>Email</td>
<td>202</td>
<td>31%</td>
</tr>
<tr>
<td>Instant messaging</td>
<td>119</td>
<td>18%</td>
</tr>
<tr>
<td>SMS</td>
<td>5</td>
<td>1%</td>
</tr>
<tr>
<td>Other</td>
<td>6</td>
<td>1%</td>
</tr>
</tbody>
</table>

*Percentages were rounded

4.8 **HOME STI TESTING KITS**

STI testing kits offer a means for people to be tested for an STI without having to visit a clinic. After a telephone or webcam consultation, a clinic could mail patients a home STI testing kit. Eighty eight percent (n=580) of the sample reported being willing to receive testing kits and/or treatment through the postal mail (Table 4.34).

<table>
<thead>
<tr>
<th>Frequency</th>
<th>Percent*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Agree</td>
<td>580</td>
</tr>
<tr>
<td>Neither agree nor disagree</td>
<td>38</td>
</tr>
<tr>
<td>Disagree</td>
<td>44</td>
</tr>
</tbody>
</table>

*Percentages were rounded
As one participant stated, “I think STI testing kits is a great idea - if they were readily available people would be much more likely to be more diligent in looking after their own sexual health.” (Female, aged 21). Notably, the more sexual partners respondents reported, the more willing they were to receive testing kits and/or treatment in the mail (p=0.02) (Table 4.35).

| Table 4.35 Factors associated with willingness to receive testing kits and/or treatments through the post |
|-------------------------------------------------|--------|--------|--------|--------|
| Willing & Neither Willing nor Unwilling & Unwilling & P Value |
| Gender  & Male  | 148 (86%) & 13 (8%) & 12 (7%) & 0.50 |
|         & Female | 430 (88%) & 25 (5%) & 32 (7%) & |
| Age     & 16 to 19 | 188 (88%) & 16 (8%) & 10 (5%) & 0.17 |
|         & 20 to 24 | 392 (88%) & 22 (5%) & 34 (8%) & |
| Remoteness & Major city | 478 (87%) & 31 (6%) & 39 (7%) & 0.59 |
|          & Non major city | 99 (89%) & 7 (6%) & 5 (5%) & |
| Had an STI test & Yes | 199 (89%) & 9 (4%) & 15 (7%) & 0.44 |
|                   & No       | 376 (87%) & 28 (7%) & 29 (7) & |
| Men: Any same-sex partners & No | 122 (85%) & 12 (8%) & 10 (7%) & 0.66 |
|                    & Yes      | 26 (90%) & 1 (3%) & 2 (7%) & |
| Women: Any same-sex partners & No | 395 (88%) & 24 (5%) & 30 (7%) & 0.71 |
|                        & Yes     | 35 (82%) & 1 (3%) & 2 (5%) & |
| Partner total & 0 partners | 128 (82%) & 16 (10%) & 13 (8%) & 0.02 |
|                   & 1 or 2 partners | 330 (89%) & 13 (4%) & 26 (7%) & |
|                    & 3+ partners | 122 (90%) & 9 (7%) & 5 (4%) & |
4.9 SUMMARY

The results demonstrate the current low acceptability of webcam consultations for sexual health. However, a minority did express a more favourable view. For the majority of the 662 respondents, if given the option between an in-person, telephone, and webcam consultation, their preferred medium if living 20 minutes from a clinic was an in-person consultation. It is notable that in this situation most people preferred to speak to their own doctor instead of an unknown doctor.

The survey revealed that telephone consultations were respondents’ top preference for an asymptomatic consultation (no genital examination need) if living 2 hours from a clinic. This combined with the result that the overwhelming majority of respondents reported being willing to receive testing kits and treatment through the post, suggests that telephone consultations involving home STI testing kits for asymptomatic patients may be an acceptable way to increase access to services.
5 DISCUSSION: PART 1

5.1 PROLOGUE TO DISCUSSION

Despite hypothesising that webcam consultations could offer a number of advantages over traditional in-person medical consultations, few participants in the SHOUT study reported being willing to have a webcam consultation. This unexpected result raised new questions about why the acceptability of online health consultations for sexual health was so low. In Part 1 of this discussion chapter, I attempt to answer this question by drawing on theories of electronic media and social behaviour, networked publics, and contextual integrity. In Part 2 of the discussion chapter, I examine participants’ willingness to have webcam and telephone consultations by different key factors and explore whether there is a place for telemedicine in STI care.

5.2 WHY WAS THE ACCEPTABILITY OF WEBCAM CONSULTATIONS SO LOW?

The results of both the SHOUT and TESTme studies suggest that webcam consultations for sexual health are not yet acceptable to most youth in Australia. In order to understand the largely negative response to webcam consultations, I begin with a discussion of the differences between in-person and online consultations. I then discuss the three main concerns raised about webcam consultations in the SHOUT study: privacy and security concerns, the quality of the genital examination, and finding webcam consultations unnecessary. The main focus of Part 1 is on privacy and security matters because this was the paramount concern described in the free text responses. By drawing on theories of electronic media and social behaviour, networked publics, and contextual integrity, I articulate why for many participants the attributes of online consultations may have resulted in grave privacy and security concerns.
5.2.1 Differences between an in-person and online consultation

In order to answer the question of why the acceptability of webcam consultations was so low, it must first be understood how an online consultation differs from an in-person consultation (Table 5.1). When a patient attends a medical clinic for an appointment there are cues that signify that it is a legitimate medical business. For instance, there is a physical building, a receptionist, other patients, medical information on the walls, perhaps even a doctor’s qualification on display. Upon entering a doctor’s office a physical interaction can occur such as a handshake and/or a physical examination. Within the confines of the doctor’s office, patients are aware of exactly who they are sharing their medical information with; the four walls of the office allow patients to observe who can and cannot see and hear them as they discuss their medical concern. When the patient leaves the office only those in the medical clinic or people passing in the street know of the patient’s visit. No other traces of the patient’s visit will be recorded, unless the patient provided his/her health insurance card or paid by EFTPOS, cheque, or credit card. In comparison, during an online consultation the only cues the patient has to determine whether or not it is a legitimate business, or if the person the patient is talking to is a medical doctor, are the design and content of the website. No physical interaction is possible; the patient and the doctor must rely on visual and audio information alone. An electronic record will result from the patient’s visit. The visit to the clinic’s website will be logged on the patient’s computer and the webcam consultation has the potential to be recorded.
Table 5.1 Differences between in-person and webcam consultations

<table>
<thead>
<tr>
<th>In-Person Consultation</th>
<th>Webcam Consultation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many cues available that the clinic is a legitimate business (physical building, a receptionist, other patients, medical information on the walls)</td>
<td>Only cues to determine if it is a legitimate business are the design and content of website</td>
</tr>
<tr>
<td>Physical interaction can occur (handshake, physical examination)</td>
<td>No physical interaction. Must rely on audio and visual information alone</td>
</tr>
<tr>
<td>Can observe who can hear/view consultation</td>
<td>Others not present may view consultation footage</td>
</tr>
<tr>
<td>After appointment, only those in clinic or passing on street know of visit</td>
<td>Digital trace left from webcam consultation. If recorded, consultation footage could be disseminated to others</td>
</tr>
</tbody>
</table>

These differences help to explain why the acceptability of webcam consultations was low. Information from the free text responses provides insight into why most participants were unwilling to have a webcam consultation. The main concerns listed in the free text responses were around privacy and security. Of the 160 people who wrote negative comments about webcams, one third (55/160) discussed privacy and security concerns, far more than any other type of concern discussed. Some reported that a sexual health consultation should only be conducted in person, either because of concerns around the quality of the online examination and/or the doctor-patient relationship. Others simply found webcam consultations unnecessary. Each point will be addressed in turn in this chapter, starting with the paramount concern of privacy and security.

5.2.2 Privacy and security concerns

The contrasts between in-person and online consultations are highlighted by the privacy and security concerns raised in the free text responses. To properly address the privacy and security concerns, one must first understand what elements of the consultation are altered when the consultation is conducted online. To explain the changes that occur, I draw on theories of electronic media and social behaviour as well as networked publics. Joshua Meyrowitz’s (1985) theory on electronic media and social behaviour explores the changing social situations that are created by electronic media. While Meyrowitz, writing in the 1980s, refers mainly to television,
his theory on electronic media can usefully be applied to explain the alterations in social settings that occur when a medical consultation becomes electronic. Moving ahead three decades, Danah Boyd (2008) in her theory on networked publics (i.e. social network sites such as Facebook) discusses fundamental changes that occur when switching from an unmediated (in person) to mediated (online) environment. Understanding these alterations is central to conceptualizing how the changes in the attributes of information that occur when conducting a medical consultation online can result in serious privacy and security concerns.

### 5.2.2.1 Attributes of digital information

Meyrowitz’s (1985) theory on electronic media and social behaviour unites two separate theoretical views, situationism and medium theory. Situation theorists, such as Erving Goffman (e.g. Goffman, 1959), argue that one’s behaviour is influenced by one’s audience and environmental setting. For example, how one behaves among friends is different from how one might behave with a professor. Even among specific audiences, how one acts with friends in a bar is different from how one might act among friends at a funeral. The second theory discussed by Meyrowitz is medium theory which explores how new social environments are produced through media communication. Medium theorists, such as Marshall McLuhan (McLuhan, 1964), argue that changing social roles are the consequence of electronic media use. However, medium theory, Meyrowitz states, does not provide an explanation as to how and why the electronic medium results in social change. Meyrowitz brings these two theories together and argues that because an electronic medium alters the audience and environmental setting, it affects people’s behaviour.

By discussing how electronic media alters social situations and in turn, affects behaviour, Meyrowitz’s theory provides insight into changes that occur when a consultation becomes electronic. These changes are central to people’s concerns about webcam consultations. Meyrowitz discusses three factors that are altered in a mediated environment which are relevant to the discussion of webcam consultations. The first is that the audience is altered in an electronic environment. In person an individual is aware of exactly who and how many people can see or listen to the
conversation due to the physical boundaries of walls, windows, and doors. In a mediated environment the audience is not limited to people physically present, allowing for eavesdropping. Additionally, physical cues which help guide appropriate behaviour may be missing. Secondly, information and performances that once were limited to one social situation can now be broadcast to multiple environments allowing for people outside the intended audience to view the interaction. Finally, since the consultation is online and potentially recorded, people who are not present during the consultation may later view the footage. As a result, the patient could not deny the consultation occurred.

Adding to the alterations listed by Meyrowitz, I also draw on Boyd’s (2008) theory about networked publics. While Boyd’s theory relates to American teenagers’ use of social network sites such as Facebook and MySpace, her discussion on the characteristics of digital information in networked publics astutely articulates the alterations in information that occur when a medical consultation moves from an in-person to a digital consultation. These attributes of digital information are central to the privacy and security concerns discussed in the SHOUT study. The four key elements of digital information discussed by Boyd are:

- “Persistence: online expressions are automatically recorded and archived.
- Replicability: content made out of bits [referring to the basic computer units of 0 and 1] can be duplicated.
- Scalability: the potential visibility of content in networked publics is great.
- Searchability: content in networked publics can be accessed through search.”

(Boyd, 2008, p. 27)

How do the characteristics of electronic information and the alterations discussed by Meyrowitz and Boyd impact on a medical consultation? Imagine an in-person sexual health consultation. The patient is willing to disclose a possible STI infection to a doctor because he/she is speaking to a medical professional in a healthcare setting and can see that the doctor is the only person present in the room. Such information is appropriate to disclose given the environmental setting and the audience. Change one or both of these factors and the patient’s behaviour arguably would also change. One
would be unlikely to disclose an STI infection to the same doctor if one saw the
doctor in the supermarket or if the doctor’s office was also filled with all of one’s
work colleagues. When a consultation is conducted online, alterations to the audience
and environmental setting are possible.

Once digital, there is also the potential for the consultation to be easily recorded. If
this occurs, one or all of the following things can happen: the consultation could be
saved, duplicated, searchable, and viewed by an unlimited number of people online in
a different context from that originally intended. Once recorded, other people will be
able to view the consultation as if they were present. It is one thing to inform a friend
that you had an STI test, but quite another to let them into the consulting room with
you. As well, it is impossible to deny that one recently had an STI test if others can
view a recording of the online consultation. These changes, I argue, are central to
people’s privacy and security concerns around online sexual health consultations.

In the discussion about privacy and security concerns, I decided not to distinguish
between webcam consultations with and without genital examinations because the
privacy and security matters raised in the free text responses were the same for both
situations. It is worth noting, however, that (perhaps not surprisingly) despite raising
the same privacy and security issues, the level of concern was much greater for an
online genital examination because of the vulnerability of literally exposing one’s
private self.

5.2.2.2 Contextual integrity

The theory of contextual integrity (Nissenbaum, 2010) helps to further articulate
people’s privacy and security concerns about webcam consultations. Nissenbaum
posits that privacy concerns around digital media can be understood through the lens
of contextual integrity. She states:

“Contextual integrity is defined in terms of informational norms: it is
preserved when information norms are respected and violated when
informational norms are breached … Context-relative informational
norms are characterized by four key parameters: context, actors,
attributes, and transmission principles. Generally, they prescribe, for a given context, the types of information, the parties who are the subject of the information as well as those who are sending and receiving it, and the principles under which this information is transmitted” (Nissenbaum, 2010, pp. 140-141).

If one were to consider the parameters of an in-person sexual health consultation under the guidelines of context-relative informational norms, the context of the consultation is a healthcare setting. The actors are the patient and the doctor, the attribute is the information about the patient’s health, and the transmission principle is one of confidentiality, as the doctor is not supposed to share the patient’s health information with others. This raises the question whether or not having a sexual health consultation online violates the context-relative informational norms. Significantly, the answer depends first on whether the information is recorded and saved and, second, whether security measures are breached. If the information was not recorded or saved, it could be argued that no violation occurred. Online, the consultation still occurs in the healthcare context, the actors are still just the doctor and the patient, the attributes remain unchanged, and the transmission principles are not altered. However, if the consultation is recorded and saved, the transmission principles are changed because the information has the potential to be disseminated on a much wider scale and not limited only to the doctor who was present during the consultation.

If, instead, the consultation was recorded and saved and then security measures were breached or not properly in place, the recording could become widely accessible on the Internet without requiring any authorization to view the video. In this situation, the violation of contextual integrity would be very substantial. Returning to the context-relative norms discussed above, in this situation the healthcare context may be lost, the actors are altered greatly as the recipients change from one person (the doctor) to an unlimited number of people, and the transmission principles are equally modified. In other words, if an online consultation is hacked into, sensitive, personal information about one’s sexual health could be easily disseminated and widely available. In this situation there would be no guarantee of how many people might
Privacy and security concerns about online consultations listed in the free text responses of the SHOUT study relate to these potential changes in the flow of personal information that can occur if the consultations are recorded and security measures are breached, as is demonstrated by the following excerpts from patients’ written comments:

“The reason I would feel uncomfortable about using a webcam would be that I would fear someone could hack into my computer and access the chat between my GP and I. Obviously for confidentiality reasons this would be disastrous [sic]” (Female, aged 24).

“I would be concerned about the retention of webcam data. The Doctor would need to have a policy about this. Preferable [sic] the policy would be never keep any permanent record of any data ever. If enough of this data exists it is inevitable that some of it will be misplaced or stolen at some point” (Male, aged 23).

“I'd be worried about online security to tell the truth: once something is on the web, its [sic] unlikely to come down” (Female, aged 23).

“I couldn't be sure that the footage wasn't being recorded and could show up later in the hands of other people” (Female, aged 22).

As the comments demonstrate, people’s concerns about online consultations relate to the potential for a webcam consultation to violate the contextual integrity of a medical consultation. This violation is possible because of the properties of digital information: how data can easily be recorded, saved, distributed, and searched online, making it accessible to an unintended audience in different contexts from the original healthcare context. Removing information from its original context and audience leaves people vulnerable (Rosen, 2000).
5.2.2.3 Digital memory

Another concern about webcam consultations discussed in the free text responses related to privacy is that, once information is digital, it leaves a nearly permanent record. Caches, browser histories, and cookies accurately remember every website visited, every digital photograph downloaded, and every document written (Rosen, 2000). As Mayer-Schonberger (2009) notes, “committing information to digital memory has become the default, and forgetting the exception” (p.196). If a breach of security occurs and the video from the consultation becomes available online, the video will not disappear but will remain a lasting digital memory on the Internet.

Examples of the damage digital information can cause to people’s reputation when information is revealed in a different context to a different audience than originally intended continually fill the pages of newspapers. A recent story that made headlines in Australia involved a schoolgirl placing a naked photograph of the St. Kilda football team captain, Nick Riewoldt, on her Facebook account in December 2010 in an act of declared revenge (Spits, 2010). While the girl originally claimed the photograph was taken by her as the football player posed for the photograph, it was later revealed that the photograph was instead taken by Riewoldt’s teammate, Sam Gilbert, in the previous year while on holiday in Miami. Despite Riewoldt asking for the photograph to be deleted, his teammate did not delete the photograph from his computer and the photograph eventually fell into the hands of a schoolgirl with whom Riewoldt had no association. Through social media, at a click of a button, an unsuspecting Riewoldt had a naked photograph of him accessible for the world to see, allegedly taken in a different context from what had actually occurred in an attempt to harm his reputation.

Another often discussed story is the case of Stacy Synder. In 2006, Stacy Synder, a student at Millersville University School of Education in the United States, posted a photograph on her Myspace page of herself dressed as a pirate and drinking out of a cup (Mayer-Schonberger, 2009). The caption of the photograph read “Drunken Pirate”. The University discovered the photograph and expelled her, days before graduating, for what they deemed as unprofessional behaviour. Today, if you type “Stacy Snyder” into the Google search bar, you can still view the very photograph that
had Stacy expelled. As Mayer-Schonberger (2009) notes, “The Internet remembered what Stacy wanted to have forgotten” (p. 1).

What do these two stories tell us, and how do these stories relate to concerns about sexual health webcam consultations? The stories highlight how easy it is to alter the context of a digital image and the potential defaming that could occur as a consequence. As Mayer-Schonberger (2009) notes, “Digital remembering … [means] what is available for one purpose and one recipient may be accessible to somebody else and used for a very different purpose” (p. 109). If an online sexual health consultation is recorded and then hacked into, in the future such a consultation could be visible for the world to see simply by typing the person’s name into a search engine. This could potentially have a detrimental effect on that person’s reputation. Additionally, the image remains a permanent picture on the Internet; once an image is available online, deleting is not an option. Many young people are aware of the potentially lasting effects of digital information posted online. As one participant wrote, “any use of technology means a permanent record” (Female, aged 22).

The response of one participant to webcam consultations may explain the resistance of many to such an idea:

“Doing things via webcam seems really creepy, we grow up being taught Internet safety and how you should never do anything over the Internet you don’t want other people to find out about. Using the Internet [for a sexual health consultation] goes against everything we are taught about how to use it safely” (Female, aged 20).

Countless examples of the damage that can occur when information is posted online are available for young people from information in the media or even personal experience. The potential damage from a video of a sexual health consultation being ‘leaked’ on the Internet and leaving a permanent record may be too great a risk for many young people to take.
5.2.2.4 The potential for eavesdropping

An additional privacy and security concern raised in the free text responses was around the issue of eavesdropping. Participants reported being concerned that, if the consultation was conducted online, others outside the webcam’s view could be listening in on the conversation. Since patients would no longer be physically present in the doctor’s office, they would be unable to confirm for themselves how many people were present in the room.

5.2.2.5 Confirming a doctor’s identity

An additional security concern raised in the free text responses was whether or not patients could confirm that the person on the other side of the webcam was actually a doctor. Deception online can occur and with greater ease than when an interaction occurs in person (Whitty & Joinson, 2009). As discussed at the beginning of the chapter, it is difficult to determine whether an online doctor is actually a credible medical professional because many of the cues signifying the legitimacy of the doctor and the medical centre are missing- i.e. the physical address, the presence of other medical staff and patients, and the display of doctors’ qualifications.

Little has been written about how to determine whether or not an online doctor is legitimate because medical webcam consultations are still a relatively new and underutilised service. There is, however, information disseminated from government health organisations to help people determine whether or not a health website is legitimate. The questions people are asked to consider when determining whether a health website is trustworthy could also be applied to determining whether an online doctor is trustworthy and legitimate. The Better Health Channel (www.betterhealth.vic.gov.au), a Victorian Government health website, offers the following guidelines listed in Box 1.
Box 1: How to recognise a reputable medical website

- Who is responsible for the content? Check whether the website is owned or sponsored by a reputable organisation. Every affiliation should be clearly shown on the home page, or via a link from the home page.
- Look for credentials and qualifications. Be especially wary if the people responsible for the content are anonymous.
- Can you contact the owners of the website via email, telephone, fax, regular mail and street address? Be wary if the owners don't offer any means of communication.
- Are the sponsors directly influencing the content? Is the role of the sponsor(s) clearly outlined?
- Is the website trying to sell you products or services? If so, there may be a conflict of interest - for example, the website publishers could be biasing their content to encourage you to buy their product. Advertising should be clearly differentiated from information.
- Does the website have a disclaimer about protecting your personal health information and privacy?
- Is the health information consistent, or are there contradictions?
- Does the website provide information about both the benefits and risks of treatments or therapies? Do they discuss more than one option? Do they compare the costs and effectiveness of each treatment or therapy? Does each article include a list of references? Are the references from reputable organisations or publications?
- Is there a review process for the content? Are the clinical or scientific articles vetted regularly by professionals in the field who are not directly employed by the website owners? Is the review process explained?
- Is the information recent and regularly updated? Is each article dated? Is the editorial process explained?

Source: Better Health Channel (State Government of Victoria, 2010)

For people to be confident that they are really speaking to a qualified doctor, online consultation websites will need to provide cues to signify their legitimacy such as listing a physical address and phone number, posting credentials and qualifications on the website, and having a detailed privacy policy. However, while these features
would increase people’s confidence, they would not necessarily guarantee the legitimacy of the website.

5.2.3 The quality of the online examination

While people’s willingness to have a webcam consultation with a doctor about a sexual health matter was low (23% for one’s own doctor, 21% for an unknown doctor), participants’ willingness to have a genital examination over video was even lower (16% for one’s own doctor, 21% for an unknown doctor). This can partially be explained because the sensitive information revealed in this type of consultation would be much greater if videoing one’s genitals was involved. The potential harm that could be caused by someone hacking into the consultation would be much higher because of the more personal, sensitive nature of the data. Another concern mentioned in the free text responses was whether or not a genital examination over webcam would be feasible, particularly for females where a genital examination would involve an internal examination. There was also the concern about whether a doctor could make a proper diagnosis, given the quality of the footage and the lack of other senses such as smell and touch. As one participant explained,

“Web cams do not provide excellent clarity, and images are often distorted. Therefore [sic] the diagnosis may be incorrect if based on this only. Likewise, infections have different characteristics such as smell, discharge, and feel. The doctor may ask the patient about these characteristics and what may be described by the lay person, may be misinterpreted [sic] by the doctor as they have a different perception of that word. As they are not able to assess, its [sic] a recipe for disaster” (Female, aged 19).

The question of whether a medical professional could make a proper diagnosis by webcam is difficult to answer because little is known about remote genital examinations. Webcam consultations with symptomatic patients in their homes would be feasible now only in limited situations. Webcam consultations could potentially be used for the examination of external conditions such as genital herpes simplex and warts. There is some evidence to suggest that these conditions could be
diagnosed by webcam. Newell and Watson (2005) report on two case studies where video captured on a mobile phone assisted in the diagnosis of herpes simplex. Two patients, both independently unable to schedule appointments with a doctor until the following week, took videos of their genital symptoms using their mobile phones. The video images were reported by the authors to be “very clear” and as serving as a useful tool in diagnosis. Video images of genitals have also been taken to assist diagnosis during remote examinations of sexually abused children living in rural areas (e.g. MacLeod, et al., 2009). These examples provide some evidence that webcam consultations for STI care is feasible, at least for some conditions. More research is needed, however, to determine the validity and reliability of online genital examinations.

Even if genital examinations online are feasible and enable an accurate diagnosis, participants also expressed other concerns about genital examinations. For example, some participants reported that genital examinations seemed “creepy” (Male, aged 22) or “uncomfortable and odd” (Female, aged 20). One participant elaborated why she felt webcam consultations were a strange idea:

“There are too many negative connotations around webcams and sexual activity so talking about sexual activity over a webcam automatically has a weird feeling for me” (Female, aged 20).

Such connotations made webcam genital examinations distasteful to this participant. Overall, the results from the SHOUT questionnaire suggest that there would be strong resistance to a service that offered online genital examinations.

5.2.4 Finding webcam consultations unnecessary

A question raised from results was whether webcam consultations were necessary. As one participant in the SHOUT questionnaire wrote,

“I don't see the point of using a webcam - if it's something that can be discussed at a distance, then the telephone should suffice. If it's something that needs to be done with visual interaction, surely it should be done in person” (Female, aged 23).
Results from the SHOUT and TESTme studies suggest that asymptomatic young people living a long distance from a doctor may want nothing more than a telephone consultation. For example, in the SHOUT study, if living two hours from a doctor and no genital examination were needed, participants’ reported first preference was telephone. As well, the results from the TESTme study provide some evidence for people finding webcam consultations unnecessary. No TESTme client chose to have a webcam consultation; all clients had a telephone consultation. In addition, one of the key informants, who had spoken to the clients, discussed at interview how when clients were asked if they wanted to have a webcam consultation, they often replied, “Why do you need to see me anyway? … I don’t need to see you”. Webcam consultations, in fact, could be viewed as a disadvantage compared to telephone because they would not allow the client to remain anonymous. The TESTme clients’ responses suggest that, at least for this group of young people, visual interaction was not considered necessary for this type of consultation.

It may be that webcam consultations unnecessarily complicate matters by raising security and privacy concerns and by preventing anonymity when the more familiar technology of telephone is all that is necessary. This raises the point that, just because a more technologically advanced option is available (i.e. webcam consultations), does not mean it makes the most clinical sense to use it.

5.2.4.1 Historical example

“Just as the telephone has revolutionized human habits of communicating and made a major contribution to the quality of modern life, many of us at Bell Labs believe that Picturephone service, the service that lets people see as well as hear each other, offers potential benefits to mankind of the same magnitude.”- Irwin Dorros, Bell Laboratories, 1969 (Dorros, 1969, p. 138).

Historical examples also provide some support for the argument that people may find webcams unnecessary. The idea is not new that people would prefer not only to hear, but to see the person they are speaking to when communicating over a distance. In 1964, for example, Bell Laboratories, a department of AT&T, unveiled the
Picturephone at the New York World’s Fair, a two-way telephone with a video screen (Noll, 1992). Hailed as the way of the future, Bell Laboratories proclaimed that, by the end of the century, Picturephone would replace the telephone as the main means of communicating and make “many of today’s trips unnecessary” (Molnar, 1969, p. 135). Shopping excursions, distant business meetings, and social visits now could all be conducted by Picturephone. The inventors of Picturephone even predicted that the device would lead to a reduction in city traffic and eliminate congestion on the roads. Bell Laboratories promised consumers that Picturephone was not “just another means of communication”, but rather a device that would “solve many social problems” (Molnar, 1969, p. 135). It was to be a revolution. Being able to examine a person’s body language and facial expression on the other side of the telephone was expected to result in “better, warmer, and more nearly complete communications” ("Seeing by telephone ... the Picturephone story," 1964, p. 2) by simulating an experience more similar to an in-person visit than the telephone could offer. In addition to transmitting images of faces, the Picturephone could also display documents to distant parties. The Picturephone was originally targeted at businesses, but it was expected that it would gradually be introduced into the residential market (Lipartito, 2003).

Picturephone booths were placed initially in three cities in the United States: Chicago, New York, and Washington DC. Prices for a three-minute Picturephone call were between $16 and $27 in 1964 ("Seeing by telephone ... the Picturephone story," 1964). Despite high hopes, only 71 people placed a call in a Picturephone booth in their first six months of operation (Lipartito, 2003). In 1970, not one call was made. Picturephone sets could also be purchased for use in businesses and homes, but again, the numbers remained low. The maximum number of Picturephones in Chicago was in 1973 when 453 sets were in use (Lipartito, 2003). These numbers dwindled until the device became obsolete across the country.

A research study conducted by Bell Laboratories, published in 1975, provides some insight into people’s views about Picturephone at the time (Wish, 1975). The results, however, should be interpreted cautiously: the author of the study was employed by the company that manufactured the Picturephone and thus had a conflict of interest. In the study, Wish (1975) examined the views of both Bell System executives who
had experience using Picturephone and a random sample of businessmen in Chicago who had never used the device. At the start of the study, the Chicago group was given a ten minute demonstration on how to use the Picturephone. Additionally, some participants were interviewed by Picturephone.

Overall, both groups rated the Picturephone as a more effective mode of communication than telephone, but less effective compared to an in-person interaction. In general, participants in the Bell Systems groups rated the device slightly more favourably than the Chicago group. Within the Chicago groups, participants interviewed by Picturephone rated the Picturephone more positively than those interviewed in person. The author reported that these differences suggested that people’s perceptions of Picturephone improved after they were given the opportunity to use the device. Both the Bell Systems and Chicago groups reported that communicating by Picturephone was more prestigious than telephone and in-person communication. Communicating with the addition of visual input was also rated as more dynamic and personal than telephone.

Despite the advantages listed about Picturephone in the study, only 25% of the Chicago group reported that it was very important to be able to see the image of the person with whom they were communicating. The majority (52%) found this feature either “slightly important” or “not at all important”. Their responses differed from the Bell Systems group. In the Bell Systems group, 44% reported that it was very important to have the additional visual input Picturephone provided. It is unclear why there was a large difference between the two groups. It is possible that, after people familiarise themselves with the equipment, their perceived usefulness of the device increases. Alternatively, the employees working at Bell Systems, a division of the company that created the device, may have been biased in their views of a product which had been promoted by their company as a machine which would revolutionize communication.

Despite the hopes of Bell Laboratories, Picturephone never induced the sweeping change in communication that the company predicted. Various reasons are provided in the literature as to why the Picturephone was never widely adopted. It is possible
the high cost of both the device and the call rate inhibited its use. Noll (1992) reported that customers had little use for the machine. He argued that people judged the telephone as adequate for communication and found the addition of an image not to be an improvement but, on the contrary, both invasive and uncomfortable. Despite being able to see each other, people reported that conversing over the Picturephone still did not feel enough like being there in person; this mode of communication still had a low social presence. A separate article on Picturephone discusses a further hindrance to the Picturephone’s success. People were reluctant to purchase a device that few others owned; there was little use in purchasing a Picturephone if there was no one to call (Falk, 1973). Falk (1973), like Noll, noted that, despite the predictions, many people still preferred not to be on view when conversing on the telephone and that the Picturephone was assessed by many as an invasion of privacy. Falk (1973), however, noted in his 1970s report that, in time, people may become comfortable with this new form of communicating and he remained hopeful that the Picturephone, or a similar service, would eventually be adopted and “someday live up to its promise” (p.45).

Lipartito (2003) posits that Picturephone should not be assessed as a failure, but rather as an element in a technological narrative that lives on today about the future of technology and the inevitable addition of image to voice communication. Even at the turn of the twentieth century, people were predicting the addition of image to distant communication in the future, as this 1910 drawing depicting life in 2000 exemplifies (Figure 5.1).
After witnessing television largely replacing radio, Bell Laboratories anticipated that now was the time when visual and audio input would come to replace traditional telephones (Lipartito, 2003). Bell Laboratories believed, Lipartito (2003) argues, that Picturephone would succeed because it followed a popular narrative about the future of communication technology (Figure 5.2). In the minds of the creators, such a device was all but inevitable.
Lipartito (2003), writing in 2003, comments that, even after the death of Picturephone, the same narrative continues, largely unchanged, today. There is evidence to support his claim. In 2010, for example, Apple unveiled the iPhone 4 (and the iPad 2 in 2011) with cameras which allowed consumers to conduct video calls on their mobile devices (Figure 5.3). Dubbed “FaceTime”, the ability to communicate by video featured prominently on the advertisements for the products. On Apple’s webpage on FaceTime, the company confidently states, “Sure, it’s great to hear a voice. But it’s even better to see the face that goes with it” (Apple, 2011). This statement echoes the promises and hopes of the Picturephone.
It is notable that all the advertisements for FaceTime depict specific social situations relating to communication between family members or romantic partners. Absent in the advertisements is the use of this technology for business calls or doctors’ appointments. This may suggest that the advertisers perceived that people will be most interested in using the service for specific relationship contexts where sentimental reasons may incline parties to be more interested in seeing each other’s faces while communicating at a distance.

Little information is available about the current rate of adoption of video calls. Pew Internet and American Life Project reported in 2010 that 29% of young people aged 18-29 in America had made a video call on their computer or mobile (Rainie & Zickuhr, 2010). Male respondents and respondents living in urban areas were more likely to report that they had participated in a video call. I was unable to locate information on the number of video calls in Australia. During personal communication with Skype, I inquired about rates of video calls, but the company
replied that they “do not store this type of information” (Personal communication, 18 April 2011). Similarly, Apple did not provide any data on video call usage. Given the limited data, it is yet to be seen whether video calls through applications like Skype and FaceTime will be more successful than the Picturephone in altering how we communicate.

This same narrative of the future of technology that influenced the creation of the Picturephone and modern video calls also drives telemedicine projects, such as this research. With the low interest in webcam consultations for sexual health, the same question remains that troubled the creators of the Picturephone. Will the predictions of the future ever come true? Or do most people still deem the telephone adequate for many situations and assess video as not significantly enhancing the communication?

5.2.5 Doctor-patient communication

An additional anxiety listed by patients about webcam consultations related to the quality of doctor-patient communication over a computer. While this disadvantage was listed by only six participants, it is a concern that is frequently mentioned in the telemedicine literature (e.g. Bulik, 2004; Lim, Hellard, Atiken, & Hocking, 2007; Miller, 2003; Whitten & Mair, 2000). I therefore briefly discuss the topic below.

Whether telemedicine improves or detracts from the doctor-patient communication, and in turn the doctor-patient relationship, is a matter of debate in the published literature (Wootton & Darkins, 1997). A review of doctor-patient communication during telemedicine found that 80% of the studies reviewed reported positive findings about doctor-patient communication during the digital consultation (Miller, 2001).

Two negative concepts in the review were not being able to make physical contact with the doctor and the poor capturing of non-verbal behaviour (Miller, 2001). During a webcam consultation, non-verbal communication such as eye contact and body movements may not be adequately viewed or interpreted. This may be of concern because properly perceiving non-verbal cues is important for revealing information in the consultation such as the gravity of the diagnosis (Miller, 2002) as well as to help determine whether a doctor or patient is telling the truth (George, Hamilton, & Baker, 2009). Additionally, touch can be an important element of
emotional support by enabling physicians to provide patients with comfort and reassurance (King, et al., 2007). The absence of a reassuring touch is something patients have reported as missing during a telemedicine consultation. For example, a qualitative study investigating six HIV/AIDS patients’ views on using telemedicine in their home reported that participants preferred an in-person visit because healthcare professionals were able to provide patients with emotional support (Lillibridge & Hanna, 2009). One patient stated, “I couldn’t get a hug [when the consultation was online]” (Lillibridge & Hanna, 2009). A question that arises when considering telemedicine consultations is whether a lesser quality relationship is being promoted in return for greater convenience and access. However, one may also question whether in-person should necessarily be considered the gold standard.

Another difference in communication between traditional and telemedicine consultations is that in-person interactions have well-developed social norms of appropriate behaviour and interaction between doctors and patients (Miller, 2003). The same is not true of webcam consultations. As a new medium of interaction, there are no prescribed ways of acting, and as a result, people may feel uncomfortable or unsure about webcam consultations. Many of the physical cues of appropriate behaviour during a medical consultation are missing since the consultation is not occurring in a physical clinic. However, there is not yet sufficient evidence to determine whether the lack of traditional cues significantly alters behaviour in online consultations.

In summary, doctor-patient communication during a webcam consultation may vary from an in-person consultation in three main ways: touch is not possible, the perception of non-verbal cues is limited, and there are no established social norms of how to act during an online consultation. These alterations are important to consider because they may affect the outcome of health consultation by influencing patient satisfaction with the consultation, the level of trust between patient and providers, and patients’ compliance with treatment, as well as patients’ long term psychological and physical wellbeing (Miller, 2001). The altered reality that occurs when conducting a consultation online may help to explain why many people are uncomfortable with a virtual consultation.
5.3 **SIMILARITIES WITH OTHER FINDINGS**

The findings of the SHOUT study hold some similarities with other studies examining people’s preference for in-person versus telemedicine consultations. Rogers, Griffin, Wykle, and Fitzpatrick (2009) examined whether young adults favoured in-person or online therapy. Of the 328 respondents (aged 21-30), only 20% of respondents in the study preferred online therapy. This percentage is comparable with the percentage of young people in the SHOUT study willing to having a webcam consultation for sexual health.

Additionally, many of the concerns raised about webcam consultations in the SHOUT study were echoed in another study examining people’s pre-use views on webcam consultations. The similarities of the anxieties raised suggest that the apprehensions listed in the SHOUT study may not be specific to sexual health, but extend to other types of health consultations as well. George, Hamilton, and Baker (2009) conducted focus groups with low socioeconomic status African Americans and Latinos living in South Central Los Angeles. The participants, senior citizens and parents with children, were shown video footage of a patient receiving a telemedicine consultation for ear pain. The patient was in a clinic with a physician’s assistant conversing with a specialist over a webcam. After the video, participants were asked their views on using this medium to consult a doctor.

African Americans and Latinos in the focus groups expressed different types and degrees of concerns about telemedicine (George, et al., 2009). African Americans were more sceptical of webcam consultations and raised four main concerns: missing having a doctor physically present, questioning the qualifications of the doctor over the webcam, privacy and confidentiality concerns about personal information being shared over the Internet, and questioning the accuracy of diagnosis made over webcam. This group of participants reported that it would be difficult to determine the trustworthiness of an unfamiliar doctor without physical touch or eye contact. Like the SHOUT participants, African American participants in this study feared that, once the information was transmitted online, security measures could be breached and the footage could become accessible to anybody.
In contrast to the African American group, the Latino group did not share the same degree of apprehension about Internet security (George, et al., 2009). Overall, Latinos perceived receiving medical care over video as more acceptable. While this group expressed some concern about the quality of an online examination, Latinos noted that the diagnosis may instead be more precise online because of the accuracy of computer technology. The main concern about telemedicine for this group was whether the service would be available to people without health insurance. The study did not examine possible reasons for the differences between the cultural groups.

The varying opinions about telemedicine by different ethnic/cultural groups highlight the importance of viewing potential patients for a telemedicine service as heterogeneous. Different sections of the population may have different perceptions about using the new technology and, while some groups may have a strong aversion to telemedicine, others may prefer using this medium for consulting a doctor. As a result, it may be useful for clinics to offer a variety of options, including telemedicine consultations, to meet various patients’ needs. It is also possible that, once the early adopters begin using the service and informing others that the service is safe and easy to use, the perceptions of those initially unwilling to use webcam consultations will be altered and the overall acceptability of the service will increase.
6 DISCUSSION: PART 2

6.1 AN EXAMINATION OF POSITIVE VIEWS ON
TELEMEDICINE CONSULTATIONS

6.1.1 Webcam consultation

Despite the general disapproval of webcam consultations, a fourth of respondents in the SHOUT study were willing to have a webcam consultation and a minority (n=18) wrote approving comments about the advantages of webcams in the free text responses. For example, one respondent wrote, “by having a video link, confidentiality increases, not as good as visiting one on one, better than over the telephone” (Male, aged 23). At least some respondents thought webcam consultations were a “great idea”, a “fantastic idea”, and “a huge step forward”. Two key factors were significantly associated with respondents’ willingness to have a webcam consultation: respondents’ gender and whether respondents reported any same-sex partners. Possible explanations of these findings are suggested in the following sections.

6.1.1.1 Gender

Women in the SHOUT study were less willing than men to have a webcam consultation. To help theorise on why there was a gender difference, I draw on evidence about gendered experiences of sexual harassment online and the non-consensual release of sexually explicit photographs. Then, building on Fiona Stewart’s (1999) theory about “the technologies of young women’s reputation”, I posit that the risk of exposure from the transmission of sexual images online during a sexual health consultation is much greater for women than for men.

When discussing webcams, sex, and the Internet the image that comes to mind may not be a legitimate, confidential sexual health service, but rather a pornographic website. This association may deter, or at least make people wary of, medical
webcam consultations. Research has revealed that many young Australian women, but not men, assess conversing by webcam as a high risk activity (Australian Communication and Media Authority, 2009b). Young women in the Australian Communications and Media Authority report expressed two main concerns about webcams. The first fear was that the person on the other side of the webcam might act “in a lewd or indecent manner” (p. 34). The second was that the webcam footage might be sent to other people. These concerns were not just hypothetical, but were reported as based largely on experience. Young women also stated that it was not uncommon for strangers to request to speak to them by webcam for what the girls inferred was for sexual interaction. If many Australian girls and women have such perceptions of webcams for general use, associating them with indecent sexual encounters, it may be unsurprising that women reported being apprehensive about using webcams for sexual health consultations in the SHOUT study.

Gendered experience of sexting may also provide some insight into women’s heightened concerns around the security of webcam consultations. Sexting, a combination of the words “sex” and “texting”, describes the sending of sexually explicit messages. As the capabilities of mobile phones have advanced, the practice of sexting has expanded from sending sexual messages in text form to the transfer of naked or semi-naked images over mobile phones (Albury, Funnell, & Noonan, 2010). With smart phones’ capability to capture video, it is also possible for people to send naked videos of themselves to others. A sizeable minority of young people have either sent or received a sexually explicit image on their mobiles. A nationally representative telephone survey in America reported that 8% of 17-year-olds with mobiles had sent a “sexually suggestive image” and 30% of 17-year-olds had received a nude or semi-nude image on their mobile (Lenhart, 2009). While representative statistics on sexting in Australia were not available at the time of writing this thesis, a study conducted by the Australian magazine Girlfriend in 2007 revealed that 40% of respondents had been asked by others to send a naked or partially naked image of themselves ("Technology fuelling sexting craze: Study," 2009). Although sexting often involves the consensual transfer of explicit images between people (often those in a relationship), it is not uncommon for these images later to be shared with others.
without the person’s consent (Lenhart, 2009). The below quotations from young people in both Australia and America reveal that the potential damage caused by these photographs being sent to an unintended audience is gendered:

- **Example 1:** A boy and girl in a relationship sent nude photographs to each other. When they broke up, the boy sent the naked photograph of his ex-girlfriend around the school. In retaliation, the girl did the same with the naked photograph of her ex. The year 11 Australian girl said, while her ex was “embarrassed”, it was “no where near the same as what happened to me. They called me a slut and stuff. Pretty much everyone has seen it” (“Sexting- Case by case,” 2011).

- **Example 2:** In response to his views on sexting, one secondary school boy in America stated, “This is common only for girls with ‘slut’ reputations. They do it to attract attention” (Lenhart, 2009).

- **Example 3:** An American boy in secondary school recalled, “The girl sent pictures to her boyfriend ... Then they broke up and he sent them to his friends, who then sent them to like everyone in my school. Then she was supposed to come to my school because she got kicked out of school because it was a Catholic school ... it ruined high school for her” (Lenhart, 2009).

In these examples it is the girl who suffers most from the non-consensual release of sexually explicit photographs to people outside the intended party. To explain why this occurs, I draw on Fiona Stewart’s (1999) theory about “the technologies of young women’s reputations”. Stewart notes that her use of the term “technology” extends beyond Foucault’s and aligns with Gavey’s definition of “technology”. Gavey states,

> “Just as we understand technology as a set of applied knowledges and practices that develop and construct material objects in our physical world ... social “technologies” construct and reproduce practices in, and experiences and meanings of, our personal and social worlds” (Gavey, 1992, p. 329).

A powerful “technology of reputation” is the double standard by which men and women’s sexual activity is differentially constructed and judged (Stewart, 1999). Women are restricted by traditional norms of heterosexual femininity. While sexual
activity can improve a man’s reputation, it conversely negatively impacts on a woman’s reputation. This is exemplified by the public’s response to the distribution of images from sexting in the examples above. In these stories, it is the girls who are labelled “sluts” and their reputation damaged. In contrast, boys might be “embarrassed” about such revealing images of themselves being circulated, but little more suffering was reported. Indeed, in some cases, as in example 3, it may be the girl who receives the sole blame and suffers the consequence of sexting, while the boy who disseminated her photograph, without her consent, is absolved from blame. If many young women are familiar, either through personal experience or through friends, with the occurrence of sexual images taken for one purpose (e.g. sexting to one’s partner) later being disseminated without consent to a larger community online, it may be understandable that women and girls in the SHOUT study were apprehensive about the potential for a similar situation to occur with footage from a sexual health consultation.

Notably, Stewart asserts that a woman’s reputation does not need to be connected with actual sexual activity. Rather, it is the perception of a reputation which can influence a women’s behaviour and the construction of her as a “good girl” or a “bad girl” (i.e. slut). Stewart notes that young Australian women (aged 16-17) in focus group discussions reported engaging in multiple strategies to prevent a tarnished reputation. Participants, for example, reported remaining friendly, but minimising their interaction with the popular girls who determined which students received the label of “slut”. Another strategy was to limit, at least in public, the number of boyfriends one had. These examples demonstrate how “technologies of reputation” can play a powerful role in how young women present themselves and behave.

If, as Stewart asserts, young women often self-regulate their behaviour to maintain notions of heterosexual femininity, it is possible that this element of self-regulation and self-surveillance may explain why women were more wary than men of engaging in a webcam consultation. As it is likely that women’s “persistent guarding” of their reputation would occur not only during in-person interactions (Stewart, 1999), but during online interactions as well.
Supporting this hypothesis, research has revealed that women are more concerned about online privacy in general than men (Caverlee & Webb, 2008; Chai, Bagchi-Sen, Morrell, Rao, & Upadhyaya, 2009; Garbarino & Strahilevitz, 2004). A study analysing over 1.9 million Myspace profiles found that women were twice as likely as men to make their profiles private (Caverlee & Webb, 2008). Women also engage in more privacy protection behaviours online than men (for example, not providing personal information to unknown websites and not communicating with people online whom they do not know) and are more likely than men to view online transactions as a high-risk activity (Chai, et al., 2009; Garbarino & Strahilevitz, 2004).

Online consultations may also be perceived as riskier by women than men because women are more likely to be victims of sexual harassment online (Citron, 2009; Powell, 2010). Examples abound in the media of sexual images of women taken in one context later being disseminated in another context without consent. For example, in May 2011, The Age, a Melbourne-based newspaper, published a story online about a Facebook group called “The Brocial Network” (Irving, 2011). The Age reported that the Brocial Network group displayed images of women in swim suits and lingerie that had been acquired from group members’ Facebook friends’ online photograph albums. As a condition of entry into the group, men were required to post “revealing” pictures from the female friends’ Facebook profiles. Women who had put their photographs online in one context (sharing among their Facebook friends), and quite possibly with privacy setting in place, suddenly had their pictures, with their names attached, viewed by a collection of unknown men without the women’s consent. The main sentiment from the readers’ comments to the news article in The Age related to the disregard for online privacy of the girls in the photographs. Blame was placed not on the men who uploaded their photographs without consent, but on the women who took and shared these “revealing” photographs in the first place. One reader, for example, wrote in the comments section, “if you're dumb enough to put this type of stuff out for all the public to see, dont [sic] cry when it comes back to get you. 100% your fault. period” (Irving, 2011). One could imagine a potentially comparable public reaction if a similar situation occurred not with Facebook photographs, but with genital photographs or footage.
from a sexual health consultation, with the blame being laid on the women for their perceived morally questionable behaviour.

Gendered experiences of online sexual harassment, sexting, and reputation damage, partnered with women’s protective behaviours online, may all help to explain why women were less willing than men to have a webcam consultation. Women are unfairly judged due to double standards of appropriate behaviour. As a result, the potential damage caused by information about one’s sexual activity being leaked onto the Internet would be much greater for a woman’s reputation than a man’s, making webcam consultations a higher risk activity for women.

More research is needed to better understand gender differences in the acceptability of webcam consultations. A more sophisticated appreciation of the risks and benefits of webcam consultations for women and men would allow clinics to better target the service to the most appropriate audience. Additionally, it is important to recognise that women are not a homogeneous group and that differences among women, such as country of origin, age, sexual orientation, cultural background, and remoteness, may also influence women’s willingness to participate in webcam consultations (Kang, Skinner, & Foran, 2007; Letherby, 2003).

### 6.1.1.2 Gender of male respondents’ sexual partners

Many same-sex attracted Australian youth have not discussed their sexual orientation with their doctor or family. Hillier et al. (2010), in their national survey of Australian same-sex attracted youth (aged 14-21), found that less than 30% of the sample had disclosed their sexual orientation to their doctor and only half had shared this information with both parents. Youth may be afraid of their parents or doctors learning about their sexuality because of the perceived antagonism regarding homosexuality. Same-sex attracted youth have expressed concern in qualitative studies about losing emotional support, being thrown out of the home or being excommunicated from the family if their sexuality is revealed (Hillier & Harrison, 2004; Hillier et al., 2010). Unfortunately, these anxieties are not unfounded. A survey of Queensland same-sex attracted youth (aged 12-20) in 2008 found that family members were the most common reported source of emotional abuse and one
of the highest sources of physical abuse (Thorpy et al., 2008). Additionally, Hillier et al. (2010) reported that 61% of same-sex attracted youth in Australia had experienced verbal homophobic abuse and that 18% had been subject to physical abuse. Sixty nine percent stated they had also experienced other forms of homophobia such as humiliation and having rumours being spread about them.

Many same-sex attracted youth utilise the Internet to find support, a like-minded community, and acceptance (Hillier, et al., 2010; Paradis). Virtual communities are often easier spaces than in-person to find advice (including medical), friends, dates, and validation about one’s sexuality (Hillier, Kurdas, & Horsley, 2001). If the Internet is perceived as a friendly, safer, less judgmental environment to discuss one’s sexuality than in person (Hillier & Harrison, 2007; Hillier, et al., 2001), same-sex attracted youth may favour speaking to a doctor by this medium. Online, one is more emotionally and physically sheltered from a potentially adverse response to one’s sexuality. In this medium, a person can quickly disconnect from the Internet and be removed from an unfavourable situation, whereas this is not possible in person (Hillier, et al., 2001). Additionally, many same-sex attracted youth report that the Internet is their main source of sexual health information, citing an absence of same-sex specific sexual health information in school sexual education classes (Mustanski, Lyons, & Garcia, 2011). If this group of youth are already turning to the Internet to gain the majority of their sexual health knowledge, it may not be too a large step for them to interact with a doctor online to gain further information on the topic.

Concerns about homophobia and the advantages offered by online interactions may help to explain why men with same-sex partners in the SHOUT study were more willing to speak to an unknown doctor by webcam for a sexual health consultation than men without same-sex partners (48% vs. 26%). Notably, this trend of men with same-sex partners preferring an unknown doctor was also found in response to questions about in-person and telephone consultations, but no difference was observed with female respondents. The SHOUT study did not provide any evidence as to why this may be the case, highlighting the need for additional research on same-sex attracted youth’s views on telemedicine.
6.1.2 Telephone consultations

Telephone consultations were viewed as more acceptable than webcam consultations. Respondents in the SHOUT study nominated telephone as their first preference for an asymptomatic consultation if living two hours from a doctor. Additionally, all clients in the TESTme study chose to have a telephone consultation instead of a webcam consultation.

Like webcam consultations, telephone consultations save patients time and money by not having to travel to a clinic. However, the SHOUT and TESTme results suggest that people assess telephone consultations as offering distinct advantages over webcam. Telephone consultations allow patients to remain anonymous. They also do not raise the same degree of security concern because the information does not become digital. In addition, some respondents in the TESTme study reported preferring the telephone because of its familiarity and convenience.

No studies in the literature were found with which to directly compare patients’ views with the findings of this study. There was, however, a limited literature examining the use of sexual health telephone helplines (Fugl-Meyer, et al., 2004; Simonelli et al., 2010). While helplines are not the same as medical consultations, the advantages of telephone helplines discussed in the literature are similar to the advantages of telephone consultations listed in the SHOUT and TESTme studies. Simonelli et al. (2010) reported that people use sexual health telephone helplines because they are anonymous and time saving, and make it easier to share sensitive matters with others because the conversation is not in person.

Despite the advantages of telephone consultations, it is notable that this medium was the top preference for SHOUT respondents only if living two hours from a doctor; when living close to a doctor, respondents reported preferring to consult a doctor in person. That most people still preferred an in-person sexual health consultation suggests that anonymity cannot be young people’s primary concern. The specific reasons for this finding are not clear from the questionnaire results and would require a qualitative approach to better understand why people often prefer consulting a doctor in person.
Some insight into why people prefer in-person consultations may be gained from studies investigating patients’ views on telephone consultations for primary care. A study examining Scottish patients’ views on telephone consultations through focus group discussions found that patients expressed concern about whether they could accurately describe their symptoms to a doctor over the telephone (McKinstry, et al., 2009b). They also questioned the quality of the communication when unable to see the doctor’s body language and non-verbal communication. Another study by the researchers reported that patients expressed concern about other people overhearing their telephone conversations (McKinstry, et al., 2009a). Similarly, another qualitative study examining patients’ views on telephone consultations in the UK found that patients were anxious about a doctor’s ability to make an accurate diagnosis over the telephone, both because they were concerned about how well they could describe their own symptoms and whether the doctor would be able to reach the correct conclusions without the aid of a physical examination (Payne, et al., 2001). These findings may shed some light onto why many people may still prefer to consult a doctor in person.

6.2 CHALLENGING MISCONCEPTIONS ABOUT YOUNG PEOPLE AND THE INTERNET

The results in this thesis counter two misconceptions about young people in the popular media: 1) that young people do not care about privacy and 2) that this age group always prefers to communicate online.

6.2.1 Misconception 1: “Privacy is dead”

“Kids today. They have no sense of shame. They have no sense of privacy. They are show-offs, fame whores, pornographic little loons who post their diaries, their phone numbers, their stupid poetry-for God’s sake, their dirty photographs!-online. They have virtual friends instead of real ones. They talk in illiterate instant messages” –Emily Nussbaum, New York Magazine, 2007 (Nussbaum, 2007).

“People have really gotten comfortable not only sharing more information and different kinds, but more openly and with more
people. That social norm is just something that has evolved over time.”
-Mark Zuckerberg, Facebook CEO, 2010 (Kirkpatrick, 2010).

These two quotations exemplify a common perception portrayed in the popular media that young people no longer care about privacy (e.g. Nussbaum, 2007). Examples are given in newspaper articles and TV news reports of youth providing detailed personal information on their blogs or posting drunk or revealing photographs on their Facebook pages as “proof” that this generation’s views on privacy are vastly different from the one that came before them. This is, however, a simplistic view of young people’s nuanced relationship with privacy and online technology. Counter to these views, the SHOUT study found that young people care deeply about online privacy. Over and over in the free text responses respondents describe their lack of trust in online communication and their concerns about privacy and the potential risks and consequences of discussing sensitive matters online.

This finding is consistent with other research which has reported that young adults view online privacy as important. For example, the Pew Internet and American Life Project conducted a survey with over 2,000 Americans about reputation management and social media (Madden & Smith, 2010). The study found that, in comparison with older adults, younger respondents (aged 18-29) were more concerned about their online reputation and took more steps to actively control their privacy. For example, 44% of young adult Internet users in the study reported actively managing online information to limit the amount of personal data available. By comparison, only 33% of Internet-using-adults aged 30 to 49, 25% of 50- to 64-year-olds, and 20% of people aged 65 and older reported taking similar steps. This trend was also found for social media websites (e.g. Facebook). In the same study, 71% of young adults who used social media reported altering their privacy setting to decrease the amount of information available to the public. In contrast, only 55% of older adults (55-64) had changed their default privacy settings. Similarly, Caverlee and Webb’s (2008) analysed almost two million Myspace profiles and found that younger users were more likely than older users to make their profiles private. Boyd and Hargittai (2010) also examined young adults’ views on privacy within the context of social media. After surveying over a 1,000 18-and 19-year-old American students, they reported
that 98% of the Facebook users in the sample had altered their privacy settings at least once in 2010 and that 51% had altered their settings at least four times. Finally, in the Australian context, a survey examining children’s and teenagers’ use of social media found that 76% of 16-and 17-year-olds reported making their profiles private (Australian Communication and Media Authority, 2009a). The results of these studies demonstrate that young people are taking active steps to protect their privacy. Like the SHOUT results, these studies found that online privacy is important to young people.

6.2.2 Misconception 2: Young people prefer to communicate online

“Armed with BlackBerrys, laptops, cellphones and other gadgets, Generation Y is plugged-in 24 hours a day, 7 days a week. This generation prefers to communicate through e-mail and text messaging rather than face-to-face contact.” – Sally Kane, About.com (Kane, 2011)

The SHOUT results also counter a popular perception in the media, exemplified by the above quotation, that young people’s avid use of digital technology means that they prefer to always communicate online. The SHOUT study found that, in at least some situations, this age group still favours in-person interaction.

6.3 IS THERE A PLACE FOR TELEMEDICINE IN STI CARE?

The results of the studies raise the question of whether there is a place for telemedicine in STI care given the low acceptability of webcam consultations. This section discusses the possible adoption of webcam consultations, methods to increase the acceptability of webcam consultations, potential sexual health services using telemedicine, and a note on government policy.

6.3.1 Possible adoption of webcam consultations

While currently the acceptability of webcam consultations is low, this does not mean that they will remain unpopular. Everett Rogers (2003) notes that, for many types of
technology, substantial time passes from when it is developed to when the technology becomes widely used. Although it is not possible to predict the future adoption of a technology, the diffusion of innovation theory (Rogers, 2003) and the technology acceptance model (Davis, 1986) may help to predict whether webcam consultations will ever be adopted into routine sexual health care. Rogers (2003) argues that successful adoption of technology is influenced by five attributes of the innovation:

- Relative advantage: the extent to which the new innovation is considered superior to the idea or product that came before it.
- Compatibility: the extent to which the innovation is in agreement with a person’s values and needs and the social norms.
- Complexity: the extent to which the innovation is hard to understand or use.
- Trialability: the extent to which the innovation can be tested out for a short time.
- Observability: the extent to which the innovation can be observed by others (Paraphrased from Rogers 2003, p. 15-16).

In short, the rate of adoption will increase when the relative advantage, compatibility, trialability, and observability are high and the complexity is low. When considering webcam consultations, the relative advantage may be low because the increase in access may not outweigh the privacy and security concerns raised about online consultations. Webcam consultations may also have low compatibility because they have the potential to violate the contextual integrity of a medical consultation and breach appropriate norms of information flow (See Chapter 5, Section 5.2.2.2). As well, webcam consultations may be considered more complex than the familiar technology of telephone. The observability of webcam consultations would also be low as few people would choose to have a webcam consultation while others were watching. This factor may adversely impact on the adoption of a technology because Rogers (2003) notes that many people wait to use a new technology until they have spoken to or seen other peers adopt the innovation. This would be unlikely with sexual health webcam consultations because these consultations would most likely occur in the privacy of one’s own home without anyone present. Even after using the
technology, people may be unlikely to tell others about having a sexual health consultation online.

The only factor that may be considered an advantage in the list of attributes is that the service would have high trialability as a person could try a webcam consultation and, if they did not like it, they could choose not to use the service again. When considering the attributes needed to augment the adoption rate of an innovation, it seems that there would be a low adoption of webcam consultations for sexual health.

A second theory, the technology acceptance model put forth by Davis (1986), may also help to predict whether webcam consultations for sexual health will ever be adopted on a large scale. Davis argues that the two major factors that influence people’s attitudes towards, and intention to use a technology, are the technology’s perceived usefulness and its perceived ease of use. The results of research conducted during this thesis suggest that the majority of people do not view webcam consultations as more useful than telephone or in-person consultations. Webcam consultations may also be more difficult to use than the conventional and familiar telephone. Thus, the technology acceptance model also suggests the likelihood of a low adoption rate of webcam consultations.

Both the diffusion of innovations theory and the technology acceptable model suggest a poor prognosis for webcam consultations for sexual health, due to the medium’s limited advantages, compatibility, observability, perceived usefulness, and ease of use. However, this projection may change. If for example, some early adopters of the technology, be it healthcare professionals or patients, act as publicists to reassure peers about the safety, ease, and the advantage of webcam consultations, people’s views on webcams may be altered.

**6.3.2 Increasing the acceptability of webcam consultations**

While the majority of respondents in the SHOUT study preferred telephone or in-person consultations, 23% were willing to have a webcam consultation with a known doctor; 28% of male respondents were willing to have a webcam consultation with a known doctor. The varying preferences of respondents highlight the value of offering a range of options for accessing sexual health services because a heterogeneous
population may desire using different media to contact a doctor. Offering webcam consultation as part of routine service is useful if it attracts a segment of youth who would not otherwise access a sexual health service.

The acceptability of webcam consultations could be increased by overcoming or lessening some of the privacy and security concerns listed in the SHOUT study. Respondents’ unwillingness to have a webcam consultation was related to a potential violation in contextual integrity if security measures were breached. If security and privacy concerns could be minimised, the acceptability of such services might increase. Security concerns could be minimised by the clinic having a policy that webcam consultations would not be recorded or saved. The information on protecting patients’ privacy would ideally be posted on the medical centre’s website as well as being reiterated at the start of every online consultation. While there would still be a risk of one’s personal information being ‘leaked’ onto the Internet, not saving or recording the information are important steps that can be taken to appease patients’ privacy and confidentiality concerns. In fact, a webcam consultation that is not recorded or saved, and is conducted over an encrypted Internet connection, may actually be safer than a telephone consultation. Additionally, security concerns around confirming the identity of the doctor could be overcome by having the first consultation with the doctor in person.

Patients might also be more comfortable having a webcam sexual health consultation, for example, if the webcam camera was only on for the doctor, but not the patient. This would allow the patient to view the doctor, making it more similar to an in-person consultation, while at the same time minimising some privacy concerns by not having any video footage of the patient.

It is also possible that the security concerns could be lessened if the consultation was not directly between the doctor and the patient in their home, but rather, like many other telemedicine services, between a distant specialist at one end and a healthcare professional and patient at the other end in a local clinic. In this situation the service may be perceived as more legitimate and the doctor on the other end of the screen as more trustworthy because the consultation is taking place at a familiar clinic.
6.3.2.1 Recommendations from the 2011 UniQuest report, “Telehealth Business Case, Advice and Options”

In June 2011, UniQuest published a report prepared for the Department of Health and Ageing titled, “Telehealth Business Case, Advice and Options- Final Report” (Gray et al., 2011). The report addressed in detail security and privacy concerns regarding telemedicine and suggested solutions to minimise these risks. Many of the recommendations are now posted on the Department of Health and Ageing’s Medicare Benefits Schedule website under the heading “Connecting Health Services with the Future: Guidance on Security and Privacy Issues for Clinicians” (Department of Health and Ageing, 2011a). In this section, I will review relevant recommendations in the UniQuest report and examine how implementing these recommendations may minimise many of the security and privacy concerns raised by respondents in the SHOUT study.

The UniQuest report outlines a security, privacy, and authentication framework. The framework recommends approaches to ensure that data generated during a video consultation are securely transmitted. As mentioned in the section above (Section 6.3.2), encryption can be used to increase the security of data transmission. The authors of the report suggest using Public Key Infrastructure (PKI). PKI is a procedure whereby “the sender encrypts data for Internet transmission and receiver decrypts data to human-readable format,” which stops others from being able to easily access the data while it is being transmitted (Gray, et al., 2011, p. 51). However, PKI is also an authentication process. During PKI, two keys are used (one to encrypt the data and one to decrypt the data), and these keys are distributed by a Certification Authority, such as a Government department or another trusted third party body. The authors of the report recommend that:

- “Telehealth services, whether discrete practitioners or service providers should use a valid Public Key Infrastructure (PKI) certificate.”
- “The PKI certificate should be signed by a Certification Authority who maintains a Certificate Revocation List (CRL).”
• “The PKI certificate should use a minimum key strength e.g. 2048-bit encryption. As computing power increases then the level of encryption may need to be increased.”

• “PKI certificates should be stored in a physically or technically secured environment” (Gray, et al., 2011, pp. 56-57).

While it is impossible to completely remove the threat of unauthorised third parties accessing data from a video consultation, implementing the recommended strategies above will increase the privacy and security of telemedicine consultations.

Authentication and limiting access to health data are important steps in increasing confidence in telemedicine. The report notes the critical need for usernames and passwords to limit access to sensitive information. Healthcare identifiers can also be used to ensure that both the patient and healthcare professional involved in a webcam consultation are talking to the correct, bona fide person. Following the passing of the Healthcare Identifiers Act 2010, every resident in Australia has been issued their own 16-digit Individual Healthcare Identifier (Department of Health and Ageing, 2011b).

Healthcare identifiers have also been distributed to individual healthcare providers and healthcare organisations, such as health clinics and hospitals. The Healthcare Identifiers Service is run by Medicare Australia, which is a government body. These healthcare identifiers can be very useful during telemedicine consultations because they can verify who is on each side of the webcam during an online consultation. Such measures can increase patients’ confidence that they are speaking to a real doctor. The concern about verifying a doctor’s credentials was one of the main anxieties about webcam consultations listed by respondents in the SHOUT study and this concern could be overcome by the use of healthcare identifiers.

Another point listed in the UniQuest report that may be valuable when considering webcam consultations for sexual health was a case study describing medical video conferencing in Queensland. While the visual input for the consultation was provided by video, the audio was delivered by telephone. The separation of video and audio

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8 These recommendations are also listed on the Government’s Medicare Benefits Schedule website (Department of Health and Ageing, 2011a).
offered increased privacy protection, because if the audio or video input was intercepted by outside parties, only limited information would be available to them. The damage of the unauthorised release of footage from an asymptomatic sexual health consultation, for example, would be minimal if this approach was used because no audio would be available from the footage. As a result, there would be no information about the actual topic of the consultation. If on the other hand, the audio from the consultation was accessed by an unauthorised third party, the lack of video data would limit the ability to identify the patient.

It is likely that the acceptability of telemedicine consultations for sexual health would increase if health clinics implement the steps detailed in this section, including the use of encryption and healthcare identifiers. As the UniQuest report notes, “to ensure public trust in a teleconsultation, privacy protection and security mechanisms must be integral to any implementation” (Gray, et al., 2011, p. 56). It is important not only for clinics to take steps to ensure the privacy and security of telemedicine consultations, but also to educate patients about the measures being taken to minimise these risks.

### 6.3.2.2 Lessons from online banking

While the privacy and security concerns voiced about webcam consultations may seem to suggest that people are unwilling to transmit sensitive information online, a large percentage of Australians use the Internet for online banking (Ewing & Thomas, 2010). While transmitting health information online is not the same as transmitting financial information, there are parallels between online banking and online sexual health consultations. In both scenarios sensitive, potentially damaging information is being transmitted. Like the risk involved in conducting a sexual health consultation online, if security measures are breached during online bank transactions, sensitive information can be transmitted with serious consequences. In the case of online banking, this is potentially losing large sums of money. Despite these risks, 75% of Australians who use the Internet engage in Internet banking (Ewing & Thomas, 2010). Lessons learned from the field of online banking on how to increase people’s willingness to engage in a potentially risky online interaction may be informative when trying to design an acceptable online medical service.
Research has found that people’s concerns about online banking revolve largely around trust, both with the institute itself and the online environment (Yousafzai, Pallister, & Foxall, 2005). Online, people are unable to interact with the bank’s staff face-to-face and, they cannot view the staffs’ body language or look straight into their eyes, methods which people often use to determine trustworthiness (Ba, Whinston, & Zhang, 1999). As a result, it may be difficult during an online interaction to determine whether the people providing the service are honest, capable, and good-willed (McKnight, et al., 2002). In addition, people may question the security of the online connection (Yousafzai, et al., 2005). Given these findings, increasing people’s trust in terms of both the institute itself and the online environment should then increase people’s willingness to conduct transactions online.

Yousafzai, Pallister, and Foxall (2005) examined the effectiveness of a range of techniques to increase people’s trust in banks’ online websites. They found that having comprehensive and understandable security and privacy policies that were easy to locate on the website increased people’s trust in the bank. The authors note that these policies should clearly explain in lay person terms the security measures in place on the website, such as “encryption, firewalls, server authentication, and password protection” (Yousafzai, et al., 2005, p. p. 185). Additionally, an attractive, professionally designed website increased people’s trust in the bank. In contrast, customer testimonials on the website and “third party privacy and security seal” were not found to increase people’s trust in the bank. Another study, examining e-commerce more broadly, found that familiarity with an online business increased people’s willingness to conduct an online transaction (Gefen, 2000).

These research findings suggest that the approaches listed at the start of the section to increase the acceptability of webcam consultation may be effective. People may be more willing to conduct an online health consultation if the clinic is familiar (by, for example, having the first consultation in person) and if the clinic’s website is professional and has clearly stated and accessible privacy and security policies.
6.3.3 Potential sexual health services using telemedicine

The results from the SHOUT and TESTme studies reveal that telephone is the preferred mode of consultation if living a long distance from a doctor. While only a subset of respondents were willing to have a webcam consultation, such a service may be invaluable for youth who may not otherwise access a sexual health service. It is also possible that once a minority of youth start utilising the service, the amount of people willing to use the service will grow.

Webcam consultations could potentially be used in two scenarios. The first would be for a follow-up consultation. As Whiddett, Hunter, Norris, McDonald, and Waldon (2009) note, how willing a person is to engage in a potentially risky activity is dependent on how much trust that person has in the person/organisation with which they are interacting. During a follow-up consultation, the patient would potentially already have a trusting relationship with the healthcare professional on the other side of the computer screen and be confident that the person he/she is speaking to is actually a medical professional. This should increase a patient’s trust in the safety and legitimacy of the service.

The use of telemedicine for follow-up consultations is supported by research evidence that patients may prefer using a webcam for follow-up consultations. For example, a qualitative study examining HIV/AIDS patients’ use of home telemedicine reported that, while patients preferred video consultation to telephone because they were able to see the nurse’s face, they preferred using webcam consultations for follow-up appointments (Lillibridge & Hanna, 2009). Patients reported wanting to have the first consultation in person so they could develop a relationship with the nurse or doctor; something they reported as difficult to do over a webcam. Additionally, a study examining the use of webcam consultations for oncology/haematology appointments found that patients’ satisfaction with the telemedicine consultation depended on them seeing doctors by webcam for only part of their care (Mair, Whitten, May, & Doolittle, 2000). Patients in the study did not want webcam consultations to completely replace face-to-face appointments. These findings suggest that using a webcam for follow-up consultations may increase its acceptability. Additionally, the Australian Medical Association suggests that online consultations should “normally
only be available to patients that have an established relationship with the doctor or the practice” (Australian Medical Association, 2006).

The second situation where there may be use for a webcam consultation is for psychological counselling following the diagnosis of an STI. Telepsychiatry is a popular field of telemedicine (Richardson, Frueh, Grubaugh, Egede, & Elhai, 2009). Psychological counselling, it has been argued, is an apt field for telemedicine because such consultations do not require a physical examination, but instead involve mainly face-to-face communication (Baer et al., 1995). Reviews have revealed that mental health services provided to patients by webcam are highly reliable in comparison with in-person consultations, and that patients report high levels of satisfaction using these telemedicine services (Richardson, et al., 2009).

A potential sexual health service using telemedicine for counselling could involve patients in rural areas logging on to a sexual health clinic’s secure website and completing a questionnaire to assess their risk. If symptomatic, patients would be asked to consult a doctor in-person for a genital examination. If patients were asymptomatic, they would be sent a home STI testing kit. (The acceptability of home STI testing kits was very high in the SHOUT study with 88% of respondents being willing to receive testing kits.) After the kit was mailed, if the patient or the healthcare professional needed to clarify any information they could contact each other by telephone. After collecting their sample, patients would post their kits back to the clinic. If patients’ results were negative, they could be informed over telephone or email. If the results were positive, at the point of diagnosis, webcams could be used to inform patients of their diagnosis and patients could be offered psychological counselling over webcam if needed. Patients could then be posted tablet treatment for STIs such as chlamydia and gonorrhoea. A diagram outlining a potential service is provided below (Figure 6.1).
Alternatively, a sexual health telemedicine service could be modelled on already existing online health service such as Hello Health in the United States (http://hellohealth.com/patients/). Hello Health is an online platform started in 2008 that enables patients to communicate with their healthcare professional securely either through video, email or instant messaging. Telephone and home visits are also available. Online, patients can schedule an appointment, access their online health record and lab results and request a prescription renewal.

Once a patient signs up for the service, they are asked to choose a healthcare professional. A list is provided of healthcare providers with the physicians’ photographs, their qualifications, their speciality, address, and the cost of their appointments. Next, patients fill out their Personal Health Record online by providing basic demographic information, information about their allergies, their health conditions, their family history, their current medications and social habits. After the Personal Health Record is complete, patients can schedule an appointment online. Online appointments are accessed through the Hello Health platform. Similar to the recommendations in the previous section, Hello Health notes that the first
appointment may be required to be in person depending on the preference of the health provider. Hello Health recommends video or instant messaging appointments be used for follow-up consultations because at this point a relationship with the healthcare provider has already been developed.

The Hello Health website has a detailed privacy policy explaining the following topics: “How we use your non-medical information”, “How we use your medical information, “What information do we collect?”, “Info on third parties”, “Billing”, “Use of cookies”, “Our disclosure of your information”, “Payment information”, “Anonymized aggregated data”, and “Data security and integrity”. It is notable that the privacy statement makes no mention about whether they record or save the video footage from the medical consultation.

Sexual health clinics could model their online services on Hello Health and use an online interface not just for webcam consultations, but also for instant messaging, scheduling appointments, and filling scripts. Demonstration videos could also be viewed on the clinic’s website, informing patients of what would be involved in a video consultation. This may help alleviate some concerns about contacting a doctor through an unfamiliar medium. The Hello Health service highlights how a number of different online services can be utilized under one platform. Such a service offers patients a variety of ways to contact a doctor, each to their preference. Webcam and telephone sexual health consultations could be but one service offered at a clinic among a multitude of different choices. Telemedicine consultations could be offered for a first appointment or for a follow-up appointment, depending on the patient’s and doctor’s preference. By widening the options to communicate with a doctor, medical clinics may be able to better satisfy the preferences of a broad range of patients.

6.3.4 A note on Government policy

Broadband Internet and its potential to enhance online health has been a main platform of the Australian Labor Party (ALP) since 2007 (Rudd, et al., 2007). Prime Minister Julia Gillard, during her ALP campaign launch in August 2010, spoke extensively about the ability of online (webcam) consultations and the National
Broadband Network (NBN) to improve the health and wellbeing of many Australians (Gillard, 2010). She stated,

“[The National Broadband Network] is about transforming how we deliver health care ... We will be using the power of new technology. So instead of just being on the phone, you can be on broadband. Instead of a voice at the other end of the line, there will be a person in your lounge room ... Imagine being able to do that. Not by talking over the phone, desperately trying to describe what you see and anxious you’ve got the description wrong, but by being able to show a healthcare professional what it is you’re worried about and getting the advice you need. This is the future of healthcare” (Gillard, 2010).

During the ALP Campaign Launch, Gillard announced that Medicare rebates would be available for online consultations for people living in rural, remote, and outer metropolitan areas from July 2011 (Gillard, 2010).

While telemedicine has received the Government’s endorsement, the ALP has conceded that online consultations have thus far had low adoption rates in Australia (Gillard & Roxon, 2010). The Government blames the low uptake of online consultations on poor infrastructure and a lack of Medicare rebates (Gillard & Roxon, 2010). These barriers should be removed by the pledge of $250.5 million in Medicare rebates for online consultation and the development of the National Broadband Network. The National Broadband Network, by providing Internet at speeds of 1,000 times faster than currently available, will enable the transmission of high-quality video images and sounds during a webcam consultation (Gillard & Roxon, 2010). These changes will no doubt increase the feasibility of webcam consultations, but it is still important to consider other factors which might influence the uptake of such consultations, such as privacy and security concerns.

It is notable that the mention of privacy and security concerns about online consultations is entirely absent from the Government fact sheet for the public on “Connecting health services with the future: Modernising Medicare by providing rebates for online consultations”. The fact sheet, located on the Labor website, only
mentions a lack of infrastructure and Government rebates as barriers to widespread adoption of telemedicine. The results of the SHOUT study and other research on telemedicine (e.g. George, et al., 2009) suggest that anxieties about privacy and security are important barriers which also need to be considered. The results of this research project suggest that the acceptability of online health services may increase if the Government acknowledges potential privacy and security concerns in their documents to the public and outlines the steps that they are taking to minimise these risks. This may help to increase the public’s confidence in online health services.

6.4 Future research

The virtues of telemedicine has been extolled and widely publicised by academics, politicians, and even celebrities such as Jennifer Lopez⁹. On the surface, telemedicine may be viewed as an adequate substitution for in-person care. However, modifying the healthcare medium may significantly alter patients’ perceptions of various elements of the consultation including the perceived privacy and security of the consultation, anonymity, trust, and the quality of doctor-patient communication. These factors can influence patient’s willingness to engage in a health consultation. As a result, a more nuanced understanding of the benefits and limitations of telemedicine is required rather than simply viewing it as a means to increase access to services. As Finch, Mort, Mair, and May (2008) state,

“Those who make broad claims that telehealthcare will benefit patients emphasise its potential for improving access to services by facilitating the sharing of information between health professionals and patients. A major problem is that such ‘priorities’ are assumed rather than based in empirical understanding, and that for individual patients themselves, preferences between forms of service delivery are likely to represent

⁹ Telemedicine is one of the main focuses of Jennifer Lopez’s foundation, The Maribel Foundation. A letter from Jennifer Lopez on the foundation’s websites states, “Our organization will focus on the health and well-being of women and children, adopting a strategy that will achieve maximum impact in the area of children's health worldwide, through our commitment to telemedicine. Telemedicine is a remarkable new healthcare delivery system that uses telecommunications technology to remotely treat patients” (The Maribel Foundation, 2011).
trade-offs between multiple priorities.” (p. 93, emphasis in the original).

Some evidence of these trade-offs is found in the results of the SHOUT study. Further research is needed to better understand these trade-offs. Group discussions and interviews could help elucidate situations in which telemedicine could satisfactorily substitute for an in-person consultation. For example, which health topics are acceptable for a telemedicine consultation? Which demographically specific groups are willing to have such a consultation and under what circumstances? Factors such as speaking to a familiar or unknown doctor and using telemedicine for the first or follow-up appointments could also be investigated. A better understanding of the advantages and limitations of in-person, telephone, and webcam consultations could assist the Government and healthcare clinics in determining how telemedicine can most effectively be utilised.

More research is also needed on people’s views specifically on telemedicine consultations for sexual health. The SHOUT study found that men and some same-sex-attracted youth were more willing to have webcam consultations. However, the quantitative nature of the study prevents one from answering the question, “why?” Group discussions and interviews could help answer this question and enable healthcare providers to tailor their services accordingly.

Additionally, the SHOUT results suggest that, for those living a long distance from a doctor, the top preference for an asymptomatic consultation is the telephone. From this result, one would have anticipated that TESTme would have been successful, but very few clients used the service. Therefore, it is unclear whether the TESTme service was underutilised because only a limited number of people were interested in the service, or if ineffective advertising resulted in few people being aware of it. Group discussions with rural youth would help clarify the reasons behind the low uptake of the TESTme service and provide insight into how telephone consultations can best be utilised to increase access to sexual health services.

It is notable that, in the SHOUT study, few privacy concerns were mentioned about the possible breach in security during a telephone consultation, despite the potential
for these conversations to be also recorded, saved, and transmitted to others. Are people less concerned about the privacy of telephone consultations than webcam consultations due to the lack of identifiable video footage or because of the increased familiarity and comfort with communicating over the telephone? More research is needed to answer this question.

One could also examine how people’s privacy concerns about telemedicine consultations compare with their views on electronic health records, which are currently being introduced in Australia. Electronic health records have been celebrated by the Government as a way “to make medical information much more secure and private” (Roxon, 2011). The Minister for Health and Ageing, Nicola Roxon (2011), for example, in her press release on “eHealth Privacy Legislation” noted that conventional paper health records are susceptible to many breaches of privacy from medical records ending up in the rubbish, to records being read by unauthorised personnel when left in unsecure areas, to x-rays being forgotten by patients on buses. By contrast, Roxon stated that the new system of electronic health records will record every time anyone reads a record, and these records can be shared between health professionals electronically instead of having to physically transport them. While electronic health records do offer these advantages and others listed by Roxon, such as efficiency and convenience, it is notable that this endorsement fails to acknowledge that digitising health records may potentially increase privacy and security risks due to the attributes of digital information. Like webcam consultations, if electronic health records are hacked into, these records can be saved, duplicated, searched, and viewed unlimited times online in a different context from that originally intended. If the government does not acknowledge this threat and address how these risks will be minimised, it may limit the acceptability of electronic health records.

The results of the SHOUT and TESTme studies also raise questions about how and when people prefer to use online communication more generally. Future research could examine if there is a relationship between people’s willingness to converse with friends and family online and their willingness to communicate with a doctor over the Internet. Is a person’s willingness to communicate with a doctor online related to the degree of online communication in which he/she already participates? This could be
examined, for example, through in-depth interviews with three groups of participants: 1) active social media users and online communicators, 2) people who used social media websites, but have quit or rarely use them, and 3) those with access to the Internet who have chosen not to partake in social media. Interviews could examine people’s thoughts on online privacy and security and the quality of online communication. Participants could be asked their views on: how privacy and security concerns could be minimised; how the dynamics change when conversing online through video versus through textual media as in most social media interactions; and whether there is a relationship between people’s use of webcam consultations to communicate with friends and family and their willingness to use webcam consultations for medical matters. Interviews with young people could provide insight into how factors such as the topic, the audience, the perceptions of online security, and the type of technology used influence people’s willingness to converse online.

More research is also needed on how the Internet is influencing Australian life. The Pew Internet and American Life project in the United States and the Oxford Internet Survey in the UK provide rich insight into how the Internet is impacting on the lives of their citizens. A national, representative annual Internet survey in Australia could provide much needed data on the public’s attitudes towards and usage of the Internet in their daily lives.

6.5 STRENGTHS AND LIMITATIONS OF THE SHOUT STUDY

(Note: The strengths and limitations of the TESTme study are discussed in the TESTme chapter.)

6.5.1 Strengths

To my knowledge, SHOUT is the first study to investigate people’s views on the use of webcam and telephone consultations between patients and healthcare providers for routine STI care. The SHOUT study was a national questionnaire that had a large sample size with over 650 respondents. The results of the study are valuable because
they can serve as a baseline to determine if young people’s views on telemedicine consultations change over time.

The results of the SHOUT study bring to light a number of concerns people have about webcam consultations. Examining people’s perception of webcam consultations is important so that sexual health clinics considering similar services have evidence to assist them in deciding whether online services are acceptable and should be implemented. The results can also aid clinic staff in determining which types of media young people prefer to use to communicate with their doctors in a range of scenarios. This will help clinicians plan the most appropriate sexual health service for their target audience.

### 6.5.2 Weaknesses

The SHOUT study’s limitations fall under two categories: sample limitations and instrument limitations.

#### 6.5.2.1 Sample limitations

The SHOUT results are from a self-selected convenience sample, not a representative sample. Some recruitment strategies were more successful than others. However, no evidence is available to explain why some organisations were more willing than others to advertise. It is possible that some organisations were deterred by the sensitive topic of youth’s sexual health; STI services have been perceived as “unmentionable” or controversial topics in advertising (Waller, 1999; Wilson & West, 1981). Comparison to the Census data reveals that women were overrepresented. Given that women in the study reported being less willing than men to have a webcam consultation, the general population may find webcams slightly more acceptable. Most respondents also had high levels of education. In Australia, people with high levels of education have higher rates of home Internet access (Australian Bureau of Statistics, 2008). Greater access to and familiarity with the Internet could result in a sample more able and willing to have a webcam consultation than the general population. However, such a sample may also be more aware than the general population of the security and confidentiality risks posed by an online service.
**6.5.2.2 Instrument limitations**

The questionnaire used was not validated because no validated questionnaire existed in the published literature examining people’s pre-use views on telemedicine consultations.

In an attempt to make the SHOUT questionnaire succinct, a few questions were omitted or shortened which could have influenced respondents’ answers to the questions:

- Respondents were not asked their views on having a webcam consultation where they could see a doctor’s face, but the doctor could not see their face. This would have allowed the patient to remain anonymous and may have minimised security concerns because the patient would not be identifiable. Such changes may have increased the acceptability of webcams from the patient’s perspective.

- Respondents during the piloting of the questionnaire suggested shortening the introduction to the first set of questions about webcam. As a result, the sentence that explicitly said that this section was not asking about genital examinations was removed. This modification may have misled respondents into incorrectly thinking that these questions were asking about genital examinations. This could have decreased respondents’ willingness to have a webcam consultation.

- In one section, respondents were asked to rank their top preference for speaking to a doctor with the options of in-person, telephone, or webcam consultation. While for the in-person option respondents were provided with the choice of speaking either to a known or unknown doctor, these options were not provided in the remaining two conditions in order to keep the question clear and succinct. This may have influenced respondents’ preferences. Concerns about the doctor’s identity and security measures relating to webcam and telephone consultations may be minimised if the patient already has a relationship with the doctor. Respondents may have been more likely to choose a telemedicine consultation as their top preference if they could have specified that it would be with their usual doctor.
Additionally, SHOUT respondents may have been more willing to have a
telemedicine consultation if they could have chosen the sex of the doctor. This detail
was not specified in the questionnaire.

The use of an online questionnaire instead of the more traditional telephone and mail
questionnaire may also raise some methodological concerns, specifically response
rate, multiple submissions, demographic authenticity, and exclusion of respondents.
It is difficult to determine a response rate for online questionnaires (Couper, 2000;
Rhodes, et al., 2003). Online questionnaires also have the potential for multiple
submissions and for respondents to mislead researchers about their identity.
However, research has revealed that multiple submissions for online questionnaires
are rare (Birnbaum, 2004, 2000; Mustanski, 2001) and that there is little advantage in
presenting a false identity during a research study (Walther, 2002). The potential for
respondents to provide misleading demographic information is also not unique to
online questionnaires, but can also occur for mail and telephone questionnaires
(Beddows, 2008). Another limitation of online questionnaires is that they exclude
people who do not have access to the Internet from participating in the study.
However, an online questionnaire was deemed the most appropriate method to
examine people’s views on an online service.

The views in the free-text responses are not representative because only 44% of
SHOUT respondents wrote comments. These comments are likely to have been
written by people who felt strongly, either positively or negatively, about telephone
and webcam consultations.

Finally, the results from the studies cannot be generalized beyond the field of sexual
health. As sexual health is perceived as a private and sensitive topic, security and
privacy concerns about webcam consultations for STI care may be more extreme than
people’s views on webcam consultations for other health matters.
In this thesis, I examined young adults’ views on telemedicine consultations for sexual health in Australia. This project was devised with enthusiasm and optimism that telemedicine could provide a useful tool to decrease barriers young people face to access sexual health services. Telemedicine could potentially overcome obstacles such as confidentiality concerns, limited options around medical providers, and lack of transportation, by providing young people with an option to consult a medical provider without having to physically enter a clinic.

Two studies were conducted to investigate the acceptability of telemedicine consultations. The first was a national online questionnaire examining young people’s pre-use views on telephone and webcam consultations for sexual health (the SHOUT study). The second study was an evaluation of a piloted telemedicine sexual health service (the TESTme study). The results of the SHOUT study suggest that, despite young people’s ubiquitous use of online communication, many still prefer health consultations to be conducted in person, especially if they live close to a doctor. If, however, distance is a barrier, the majority prefer a telephone consultation. This finding was supported by the results of the TESTme study. While only a subset of respondents in the study was willing to have a webcam consultation, the service may benefit a minority of youth who might not otherwise access sexual health services. Rather than using the results to dismiss the use of webcam consultations, they are better understood as indicating the value of offering a variety of services to cater to heterogeneous needs.

Whether webcam consultations for sexual health will ever be adopted on a large scale depends, in part, on whether privacy and security concerns are minimised. In practice, fewer women than men will be willing to use webcam consultations for sexual health unless these concerns are adequately addressed. Implementing policies such as never recording or saving consultations, using encryption for increased security, and healthcare identifiers for authentication are likely to increase the
acceptability of such services. (It should be noted, however, that clinical governance will require that some record of the consultation is retained by the health care professional.) Familiarity with the medical clinic may also increase trust in webcam consultations.

However, even if privacy and security concerns are minimised, it is possible that webcam consultations for sexual health may only ever attract a subset of patients. The reason behind this may be similar to reasons for the slow uptake for video calls in general. The professional services firm Deloitte noted in a recent report discussing their predictions for video calling that,

“There are two main reasons why video calling is unlikely to experience an inflection. First, for conversations that can be handled by phone, a voice-only call will continue to suffice in most cases; video exceeds needs. Second, in situations that require a deeper level of interaction, a video call, despite many recent innovations, still cannot compete with the richness and depth of a face-to-face meeting” (Deloitte, 2011, p. 41).

The reasons suggested by Deloitte for the limited interest in video calling were echoed in many of the free text responses in the SHOUT study and the TESTme interviews about webcam consultations. Many respondents viewed telephone as sufficient for remote consultations and perceived few benefits from being able to see the doctor by webcam. If visual input was necessary, most respondents thought that this consultation should then be conducted in person.

Despite the general disapproval of webcam consultations, it is possible that the acceptability of such consultations for sexual health will increase in time. The development of the National Broadband Network, cheaper and improved technology, and Government support for online consultations through Medicare rebates may result in webcam consultations becoming more common in the healthcare field. An increased familiarity with and trust in online consultations may result in patients being more willing to use this medium for sexual health. The results of this research highlight that we are only starting to understand for which health conditions and in
which situations patients are willing to use telemedicine. More research is needed to build an appropriate evidence base.

To my knowledge, this is the first study to examine young adults’ views on telemedicine consultations for sexual health care, thus providing evidence to inform service development in an important area of public health. Interest in telemedicine for sexual health is revealed by the fact that, in November 2011, after a fortnight in online pre-publication, the journal *BMC Infectious Diseases* flagged the paper discussing the SHOUT results as "highly accessed" with over 1,000 views.

When considering the future of telemedicine consultations for sexual health, it may be worthwhile to reflect on the fate of the Picturephone (See Chapter 5, Section 5.2.4.1). A 1973 report commenting on the low uptake of the Picturephone noted that it:

> “Was actually technologically ready for the marketplace before questions about human response to the system were seriously considered. Even the most perfect matching of device operation to human senses and skills is quite useless if human needs and desires are not properly taken into account” (Falk, 1973, p. 47).

The technology for webcam consultations for sexual health is currently available and will improve in the coming years. However, as the historical example of the Picturephone demonstrates, investment in the technology alone does not guarantee its adoption. Rather, human response to the technology also needs to be considered. If telemedicine consultations for sexual health are to succeed, investment needs to be directed towards identifying and addressing the benefits, as well as the risks and trade-offs, of using this technology for medical consultations. Telemedicine may find a useful place in sexual health care as a tool to augment in-person care. This will only be achieved, however, through proper consultation with patients and other key stakeholders.
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APPENDICES

Appendix A: Instruction sheets for taking vaginal, anal, and throat swabs
How to take an Anal Swab

1. What’s in the kit:
   a. A grey cylinder containing a ziplock bag with black cap
   b. A questionnaire
   c. A padded "Reply Paid" envelope
   d. A green labelled swab in a plastic tube
   e. This instruction sheet

2. Start:
   - Wash your hands thoroughly with soap and water before taking a sample

3. The swab:
   - Take the swab out of the green plastic tube
   - Hold the swab 3 to 4 cm from the tip as shown

4. Taking the sample 1:
   - Sit in a position that allows you to comfortably access your rear
   - Pull one turn cheek to the side

5. Taking the sample 2:
   - Hold the swab tightly and slowly insert the soft tip into your anus 3-4 cm

6. Taking the sample 3:
   - Twist the swab slightly as you slowly pull it out of your anus

7. Return to plastic tube:
   - Place the swab tightly back into the green labelled plastic tube
   - Then insert the green capped tube with the other items into the grey cylindrical envelope with black cap
   - The ziplock plastic bag does not need to be sealed

8. Finish:
   - Wash your hands again with soap and water
   - Please turn over for packing and postage instructions

How to take a Throat Swab

1. What’s in the kit:
   a. A grey cylinder containing a ziplock bag with blue cap
   b. A questionnaire
   c. A padded "Reply Paid" envelope
   d. A blue labelled swab in a plastic tube
   e. This instruction sheet

2. Start:
   - Wash your hands thoroughly with soap and water before taking a sample

3. The swab:
   - Take the cotton-tipped swab out of the blue labelled plastic tube, just bend and pull to remove it
   - Hold in your hand and look into a mirror

4. Taking the sample:
   - Open your mouth wide and wipe the swab around the tonsils and back of the throat several times
   - Try not to touch the teeth, tongue or cheeks with the swab

5. Return to plastic tube:
   - Place the swab back into the blue labelled plastic tube and twist it tightly

6. Return to plastic tube:
   - Place the swab tightly back into the grey labelled plastic tube
   - Then insert the green capped tube with the other items into the grey cylindrical envelope with black cap
   - The ziplock plastic bag does not need to be sealed

7. Finish:
   - Wash your hands again with soap and water

8. Postage:
   - Please ensure cover for packing and postage instructions
Appendix B: University of Melbourne Advertising Department recommendations

This table of recommendations and proposed responses was created by Candice Fuller.

<table>
<thead>
<tr>
<th>Issues identified by UoM</th>
<th>Recommendations by UoM</th>
<th>Suggested action by TESTme steering committee members</th>
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<tbody>
<tr>
<td>The webcam option is heavily promoted on the website. Young people with privacy concerns may react negatively to the webcam option as they won’t want to be physically identified and may be worried that the webcam is involved in the testing.</td>
<td>Delete webcam from website and have telephone contact and highlight the more private option of submitting information by email.</td>
<td>Make email contact more prominent on the home page. This is how appointments can be made, questions answered.</td>
</tr>
<tr>
<td>Potential clients are currently required to obtain a registration number by telephoning the 1800 number. It is cumbersome to refer people to websites and then ask them to make a phone call. The limited business hours for registration are potentially restrictive to young people at school or working normal business hours.</td>
<td>Remove the requirement to obtain a registration number. Potential clients should be able request an appointment time by email or phone.</td>
<td>Remove To Register You Need To Call 1800. This will remove the requirement for needing a registration number. Phone optional for appointments. Add “EMAIL US for an appointment time” button on the TESTme home page. Add a disclaimer explaining that emails will be checked each business day but not on public holidays or weekends.</td>
</tr>
<tr>
<td>Clients are required to obtain the results of tests by telephone.</td>
<td>Results should be available without having to phone and you should not have to speak to a doctor or nurse unless you want to.</td>
<td>As with the policy at MSHC clients will be informed that they can assume that their results are negative unless they hear from TESTme. If they want their results that can email Testme or phone the phone MSHC will contact the client if the results are positive.</td>
</tr>
<tr>
<td>The privacy policy is inadequate. It is complex, too brief and not clear.</td>
<td>The privacy statement should provide proof to a potential client that they are safe should they decide to use the service. There should be a set of frequently asked questions on the site where privacy issues are addressed and which handle the immediate and more sensitive concerns that people may not want to talk about. Questions such as “what if I don’t want the package sent to my home address?”</td>
<td>Candice to draft and send around to steering committee members for comments &amp; review. As a part of the FAQs, a link to the Health Insurance Commissioner for purpose of complaints.</td>
</tr>
<tr>
<td>---</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>There is a lack of information on the website about who is running the service, and how the service works.</td>
<td>The website should fully disclose that the service is being run by MSHC who are part of Alfred Health. The website should clearly state the purpose of the project (increase testing and reduce STI rates in rural Victoria), who has funded the project, how long the project is funded for. FAQ’s should also address these issues i.e.; “is a physical examination required?” There should be PDF of swab instructions online, as well as online questionnaires online and detailed photos of what is contained in the kit.</td>
<td>Candice to draft info re TESTme that fully explains what it is, how it works, who funds it etc. Candice to draft a set of frequently asked questions and send around for comments and review. Candice to ask Mark Chung to place PDF of swab instructions onto the website. A digital photo of the kit could be taken and put onto the website.</td>
</tr>
<tr>
<td>Rebuild the home page. Currently the content is not well organised, and parts of it are far too brief</td>
<td>Put on the home page: What – what is TESTme about Why - why should they test themselves? What are the risks of not being tested? How common are STIs in the under 25 population and why should they bother? What if they have no physical symptoms, why should they bother? How – process from beginning to end outlined, The online form/ sexual health evaluation, requesting a kit, what is in the kit, how do I take the sample and what do I do with it, results, what about treatment, everything so they can understand fully what is required without picking up the phone.</td>
<td>Candice to draft and send around for comments and review</td>
</tr>
</tbody>
</table>
Who – that bit you have made clear but you should also tell them why you are targeting rural people specifically.

Email contact: An email address for those that have questions and don’t want to phone, or want to register but cannot phone during the limited hours of operation. This needs to be presented as an option on the home page.

Contact us: In full, name of the Unit, and department name and University name if that’s the case. Actual location, name of person to speak to: the detail will ensure that people know you are legitimate.

| Young people much prefer doing everything online if possible | Create web forms and online registration so people can follow the process from beginning to end online | Continue to reflect on the potential for online only services. There is currently no need to have web forms. |
Appendix C: Nurse’s transcript

Webcam and telephone consultations are a new service offered by the Melbourne Sexual Health Centre. We are asking people to help us evaluate this service by completing a short survey about the consultation.

The survey will take 10 to 15 minutes to complete.

Your survey responses are confidential and will not impact your access to services.

Participation in this research project is voluntary.

Would you be willing to complete the survey? It is important for us to get feedback on the consultation so we can improve the service and determine if we should include telephone and webcam consultations in normal practice.

If you decide within one month of your consultation that you would rather not participate in the questionnaire evaluation, you may withdraw your agreement. The questionnaire will be destroyed.

The survey will be included in the package with the testing kit we are posting to you. Please return the survey with your samples.

Interview:

A second component of the evaluation involves interviews. The one-off phone interview will last no more than 20 minutes and will be audio-taped for data analysis. If you would prefer for the interview not to be audio-taped please let me know and the interviewer will take hand-written notes instead.

We hope to use the data from the interviews to gain a more in-depth understanding of people’s views about this type of consultation.

Would you be willing to be contacted about participating in an interview?

People who participate in an interview will be compensated for their time with a $25 voucher to Coles/Myer.
If you decide within one month of the interview that you would rather not participate, you may withdraw your agreement. The data from the interview will be destroyed.

Thank you for your assistance with the evaluation.
Appendix D: Client participant information form

(questionnaire and interview evaluation)

QUESTIONNAIRE EVALUATION

CLIENT PARTICIPANT INFORMATION: TELEPHONE AND WEBCAM CONSULTATIONS

Thank you for considering participating in this questionnaire.

We are keen to seek your views on the telephone or webcam consultation that you have recently received. This will help us plan the service so it best meets the needs of those living in rural Victoria.

The questionnaire will take 10 to 15 minutes to complete. It will ask you questions about your consultation through the phone or webcam and how it compares to other consultations you have received through health services.

Participation in this research project is voluntary. If you do not wish to answer the questionnaire then just discard it. Your decision whether to take part or not will not affect your relationship with the health centre.

Your responses are confidential. You will note that the questionnaire has only a number on it and no name. The researcher analysing the data, a PhD candidate collaborating with the Centre, will not have access to any identifiable information about you. Centre staff will compare your responses to the questionnaire with some health information collected during the consultation in order to summarize data about Centre clients. The data will be coded and electronically entered into a password-protected database. Only the Centre staff who have access to clients’ health records as part of normal practice will have access to the coding key. No identifying information will be used in any publication or presentation of the data.
If at any time after starting the questionnaire you wish to stop it, simply discard it. If you submit the questionnaire and later decide to withdraw from the study, please notify a member of the research team. You may withdraw up to one month after completing the questionnaire. If you withdraw during this time, your questionnaire will be destroyed. After one month, the data will have been analysed.

The results will be presented at conferences and published in academic journals as well as being written in one of the researcher’s (Cameryn Garrett) PhD thesis at the University of Melbourne.

The ethical aspects of this research project have been approved by the Human Research Ethics Committee of the Alfred Hospital. This research has been funded by DHS Victoria.

Again, thank you for your help.

For further information or appointments: If you want any further information concerning this project you can contact the principal researcher, Christopher Fairley on 03 9341 6241 or Cameryn Garrett at garrett@unimelb.edu.au.

For complaints: If you have any complaints about any aspect of the project, the way it is being conducted or any questions about being a research participant in general, then you may contact: Rowan Frew, Manager of Alfred Hospital Ethics Committee tel: 03 9076 3848.

**INTERVIEW EVALUATION**

**CLIENT PARTICIPANT INFORMATION: TELEPHONE AND WEBCAM CONSULTATIONS**

In addition to the questionnaire, you are also invited to participate in a phone interview to describe your views on the consultation in more detail. Only those who informed the nurse of their willingness to be contacted about a phone interview will be rung.
Participation in the interview is voluntary. Your decision whether to take part or not will not affect your relationship with the health centre.

The structured interview will last no more than 20 minutes. You will be asked about your experience of the consultation in general, why you chose to have a webcam or telephone consultation instead of seeing your local GP, your preference for a webcam or a phone consultation and how it compares to an in-person visit.

The interviews will be audio-taped on a digital recorder for analysis. Each recording will then be transferred to a password-protected computer. The recording will be deleted from the recording device. If you would not like to be tape-recorded during the interview, the interviewer can take hand-written notes instead. Only the researchers on the project will have access to the data. The interviews will be coded and will not be connected to your questionnaire data or health records. In any publication and/or presentation of the data, pseudonyms will be used to maintain the confidentiality of participants.

If you complete the interview and later decide you would like to withdraw from the study, please notify a member of the research team. You may withdraw up to one month after completing the interview. If you withdraw during this time, your interview data will be destroyed. After one month, the data will have been analysed.

Clients who participate in an interview will be compensated for their extended time evaluating the service with a $25 gift voucher to Coles/Myer.

Thank you for your help.

For further information or appointments: If you want any further information concerning this project you can contact the principal researcher, Christopher Fairley on 03 9341 6241 or Cameryn Garrett at garrett@unimelb.edu.au.

For complaints: If you have any complaints about any aspect of the project, the way it is being conducted or any questions about being a research participant in general, then you may contact: Rowan Frew, Manager of Alfred Hospital Ethics Committee tel: 03 9076 3848.
Appendix E: TESTme client questionnaire

1. Was this consultation over:
   - The phone
   - The webcam
   (Go to question 2)

2. What type of phone did you use during the consultation? Please tick one.
   - Mobile
   - Landline at home
   - Work phone
   - Public phone
   - Other, please specify

3. I feel I would get better care if I saw the doctor or nurse in person. Please tick one.
   - Strongly agree
   - Agree
   - Neither agree nor disagree
   - Disagree
   - Strongly disagree

4. You may explain your answer below.

5. Why did you choose to have a telephone consultation instead of a webcam consultation today? (Please tick all that apply)
   - Didn’t matter which one I used
   - Don’t have access to a computer to use for the consultation
   - Do not have a webcam
   - Poor Internet connection
   - Concern about privacy over the Internet
   - Would prefer for the doctor or nurse to not see my face during the consultation
   - Don’t feel comfortable with using the technology
   - Other, please specify

6. Why did you choose to use this service instead of going to your usual GP? Please tick all that apply.
   - Cost
   - Time
   - Distance
   - Convenience
   - Concerned about confidentiality
   - Did not want to speak to my usual GP about a sexual health concern
   - Don’t have a usual GP
   - Other, please specify

7. If this service were not available, would you have gone to your usual GP to discuss your sexual health concern? (Please tick one.)
   - Yes
   - No
   - Don’t know
   - Don’t have a usual GP

Webcam Consultation
Please indicate your level of agreement with the following statements.

8. The use of the necessary equipment seems difficult to me. Please tick one.
   - Strongly agree
   - Agree
   - Neither agree nor disagree
   - Disagree
   - Strongly disagree

9. How would you rate the visual quality? Please tick one.

10. How would you rate the sound quality? Please tick one.

11. I did not feel that I could say everything I wanted to the doctor or nurse because I was worried about who would have access to my information on the computer. Please tick one.

12. Why did you choose to have a webcam instead of a telephone consultation? Please tick all that apply.

13. Why did you choose to use this service instead of going to your usual GP? Please tick all that apply.

14. If this service were not available, would you have gone to your usual GP to discuss your sexual health concern? (Please tick one.)
   - Yes
   - No
   - Don’t know
   - Don’t have a usual GP

15. I feel I would get better care if I saw the doctor or nurse in person. Please tick one.

16. You may explain your answer below.

17a. The doctor or nurse made me feel comfortable to discuss sexual health matters. Please tick one.

Your Interaction with the Health Care Professional

Please turn over for Q. 17b
b) In comparison to having the same consultation with my local doctor, I felt
   Please tick one.
   □ More comfortable
   □ Less comfortable
   □ No difference
   □ Unsure
   c) Please explain your answer  

21. In the past 12 months, how often have you visited a doctor for your own health?
   (0 if none)
   □ Strongly agree
   □ Agree
   □ Neither agree nor disagree
   □ Disagree
   □ Strongly disagree
   d) Please explain your answer  

22. How difficult is it for you to get to a doctor who you would be willing to discuss a sexual
concern with? Please tick one.
   □ Very easy
   □ Fairly easy
   □ Neither easy nor difficult
   □ Fairly difficult
   □ Very difficult
23. Please explain your answer  

24. How difficult was it for you to arrange this webcam consultation?
   □ Very easy
   □ Fairly easy
   □ Neither easy nor difficult
   □ Fairly difficult
   □ Very difficult
25. Please explain your answer  

26. How long does it take you to travel to your local doctor by your normal mode of
transport?
   (please provide this number in minutes)
   □ Don’t know
27. When you make an appointment, how long does it usually take before you are able
to see a health care professional at your local clinic?
   a) For a routine appointment?
   □ Days (0 if same day)
   □ Don’t know
   b) For an urgent health matter?
   □ Days (0 if same day)
   □ Don’t know
28. I have had a sexual health concern in the past where I felt I should go to a doctor but
didn’t? Please tick one.
   □ Strongly agree (Go to question 29)
   □ Agree (Go to question 29)
   □ Neither agree nor disagree (Go to question 30)
   □ Disagree (Go to question 30)
   □ Strongly disagree (Go to question 30)
29. Why did you decide not to go to the doctor? Tick all that apply.
   □ Cost
   □ Time
   □ Distance
   □ Concerned about confidentiality
   □ Did not want to speak to my local doctor about a sexual health concern
   □ Embarrassed
   □ Nervous about possible test results
   □ Could not take time off from work
   □ Symptoms did not seem severe enough to warrant a visit
   □ Other please specify  
30. Have you ever had a test for sexually transmitted infections (not including a pap
smear)? Please tick one.
   □ Yes
   □ No
   □ Don’t know

The next section asks a few questions about you.
31. What is your age (in years)?  

32. Are you: (please tick one)
   □ Male
   □ Female
   □ Transgender (male to female)
   □ Transgender (female to male)
   □ Intersex
33. What is your highest level of education? Please tick one.
   □ Did not complete high school
   □ Completed high school
   □ Still studying: TAFE, diploma or certificate
   □ Still studying: tertiary
   □ Bachelor degree or higher
34. Please rate your overall satisfaction with the test me service Please tick one.
   □ Very satisfied
   □ Somewhat satisfied
   □ Not satisfied
   □ Very dissatisfied
35. Please add any additional comments.  

Thank you for completing the survey.
Please fill in and insert questionnaire into the reply paid envelope with the grey cardboard
envelope which contains your zip.
Appendix F: Interview script

I’m calling today to speak with you about your recent telephone/webcam consultation at the Melbourne Sexual Health Centre. As this is a new service, we are hoping to use these interviews to gain a more in-depth understanding of people’s views on this type of consultation. Participation in this research project is voluntary.

Would you be willing to participate in an interview today? The interview should last no more than 20 minutes. Your responses are confidential and will not impact your access to services.

The interview will be audio-recorded for data analysis. If you would prefer not to have this interview audio-recorded, please let me know. I will take hand-written notes instead.

If you complete the interview, you will be compensated for your time with a $25 voucher to Coles/Myer.

Thank you for your assistance with the evaluation.
Appendix G: SHOUT questionnaire

Sexual Health Online Using Telemedicine (SHOUT)

Sexual Health Questionnaire

Thank you for taking the time to complete this questionnaire. Your responses are anonymous and confidential.

Sexual health is an important part of our general wellbeing. We are interested in learning about your thoughts on access to sexual health services and your interaction with health professionals concerning sexual health matters.

The questionnaire is composed of 5 sections and should take 15 minutes to complete.

- Section 1: About You
- Section 2: Your Access to Health Care
- Section 3: Discussing Your Sexual Health with a Doctor
- Section 4: IT Information
- Section 5: Some Questions About Your Sexual Behaviour

Start
Telemedicine (SHOUT)
Section 1: About You

Please fill in the following information about yourself so we can summarise the details about the participants in this survey as a whole.

What is your age (in years)?

[ ]

Are you:

- [ ] Male
- [ ] Female
- [ ] Transgender (male to female)
- [ ] Transgender (female to male)
- [ ] Intersex
Telemedicine (SHOUT)
Section 1: About You

What is your postcode?

Are you of Aboriginal or Torres Strait Islander origin?

- No
- Yes, Aboriginal
- Yes, Torres Strait Islander
- Yes, both Aboriginal and Torres Strait Islander

What country were you born in?

- Australia
- Other, please specify
Telemedicine (SHOUT)  
Section 1: About You

Is English spoken at home?

- Yes
- No

Are any other languages spoken at home?

- Yes, please specify
- No

What is your highest level of education?

- Did not complete high school
- Still studying: high school
- Completed high school
- Still studying: TAFE, diploma or certificate
- Completed TAFE, diploma or certificate
- Still studying: tertiary
- Bachelor's degree or higher
Sexual Health Online Using

Telemedicine (SHOUT)
Section 2: Your Access to Health Care

Next we would like to know how easy it is for you to get to a doctor and your willingness to discuss certain health matters with your doctor.

In the past 12 months, how often have you visited a doctor for your own health?

☐ Very easy
☐ Fairly easy
☐ Neither easy nor difficult
☐ Fairly difficult
☐ Very difficult

How difficult is it for you to get to a doctor with whom you would be willing to discuss a sexual health concern?

Why is it difficult for you to get to a doctor with whom you would be willing to discuss a sexual health concern?

Please tick all that apply:

☐ Doctor far away
☐ No mode of transport
☐ Long wait for an appointment at the local clinic
☐ Cost
☐ Don’t feel comfortable talking to the local doctor about a sexual health concern
☐ Time constraints
☐ Other, please specify
Telemedicine (SHOUT)

Section 3: Discussing Your Sexual Health with a Doctor

We are interested in learning about your opinions on consulting a doctor about sexual health matters. This consultation could be in-person, on the phone, or through a secure webcam on the computer and in most cases would not include a genital examination.

If you were experiencing genital symptoms (e.g. discharge from the penis or vagina), how willing would you be to consult a doctor in person for a sexually transmitted infection (STI) check-up?

A) My own general practitioner or clinic

- Very willing
- Willing
- Neither willing nor unwilling
- Unwilling
- Very unwilling

B) A doctor I don’t know

- Very willing
- Willing
- Neither willing nor unwilling
- Unwilling
- Very unwilling
Telemedicine (SHOUT)
Section 3: Discussing Your Sexual Health with a Doctor

If you did not have any genital symptoms, but one of your past sexual partners informed you that you may have been exposed to a sexually transmitted infection, how willing would you be to consult a doctor for this in person?

A) My own general practitioner or clinic
   - Very willing
   - Willing
   - Neither willing nor unwilling
   - Unwilling
   - Very unwilling

B) A doctor I don’t know
   - Very willing
   - Willing
   - Neither willing nor unwilling
   - Unwilling
   - Very unwilling
Telemedicine (SHOUT)

Section 3: Discussing Your Sexual Health with a Doctor

How willing would you be to discuss your recent sexual behaviour (e.g. number of recent sexual partners, concern about a sexually transmitted infection) with a doctor over the telephone?

A) My own general practitioner or clinic

- Very willing
- Willing
- Neither willing nor unwilling
- Unwilling
- Very unwilling

B) A doctor I don't know

- Very willing
- Willing
- Neither willing nor unwilling
- Unwilling
- Very unwilling

Additional or explanatory comments (optional)

[Blank space for comments]
Telemedicine (SHOUT)

Section 3: Discussing Your Sexual Health with a Doctor

During a webcam consultation, the doctor's image will be transferred online in real-time to the patient's computer screen; the doctor, in turn, will be able to see a live image of the patient on their computer screen.

How willing would you be to discuss your recent sexual behaviour (e.g. number of recent sexual partners, concerns about a sexually transmitted infection) with a doctor through a secure webcam consultation on the computer?

A) My own general practitioner or clinic

☐ Very willing
☐ Willing
☐ Neither willing nor unwilling
☐ Unwilling
☐ Very unwilling

B) A doctor I don't know

☐ Very willing
☐ Willing
☐ Neither willing nor unwilling
☐ Unwilling
☐ Very unwilling

Additional or explanatory comments (optional)


Sexual Health Online Using

Telemedicine (SHOUT)

Section 3: Discussing Your Sexual Health with a Doctor

Please fill in the questions regardless of how far away you live from a doctor. We are interested in learning if your preferred type of consultation would vary depending on whether you lived 20 minutes or 2 hours away from a specialist.

Imagine you live 20 minutes from a doctor. Please rank your preferences for speaking with a doctor (1 through 4) for each situation with 1 being your top preference.

A) You have no genital symptoms and do not need a genital examination

☐ In-person consultation with your general practitioner or clinic
☐ In-person consultation with a doctor you don’t know
☐ Secure webcam consultation with a doctor you don’t know
☐ Telephone consultation with a doctor you don’t know

B) You have genital symptoms and need a genital examination

☐ In-person consultation with your general practitioner or clinic
☐ In-person consultation with a doctor you don’t know
☐ Secure webcam consultation with a doctor you don’t know

Additional or explanatory comments (optional)

☐

Back  Next
Telemedicine (SHOUT)
Section 3: Discussing Your Sexual Health with a Doctor

Imagine you live 2 hours from a doctor. Please rank your preferences for speaking with a doctor (1 through 4) for each situation with 1 being your top preference.

A) You have no genital symptoms and do not need a genital examination

☐ In-person consultation with your general practitioner or clinic
☐ In-person consultation with a doctor you don’t know
☐ Secure webcam consultation with a doctor you don’t know
☐ Telephone consultation with a doctor you don’t know

B) You have genital symptoms and need a genital examination

☐ In-person consultation with your general practitioner or clinic
☐ In-person consultation with a doctor you don’t know
☐ Secure webcam consultation with a doctor you don’t know

Is there another mode of communication you would prefer to use to speak to a doctor about a sexual health matter?

☐ No
☐ Instant messaging on the computer
☐ E-mail
☐ SMS
☐ Other, please specify

Additional or explanatory comments (optional)

☐
Telemedicine (SHOUT)
Section 4: IT Information

There are 2 sections remaining.

Do you have access to a webcam that you could use for a sexual health consultation?

☐ Yes
☐ No

How willing would you be to purchase a webcam for this purpose? (The average price of a webcam is $30.)

☐ Very willing
☐ Willing
☐ Neither willing nor unwilling
☐ Unwilling
☐ Very unwilling
Telemedicine (SHOUT)
Section 4: IT Information

What time of day would be best for you to talk with a sexual health doctor online?
Please check all that apply.

- □ Early Morning (6 am - 9 am)
- □ Morning (9 am – 12 pm)
- □ Early Afternoon (12 pm - 3 pm)
- □ Late Afternoon (3 pm – 6 pm)
- □ Evening (6 pm- 9 pm)
- □ Late Evening (9 pm – 12am)
- □ Doesn’t matter; it varies

Where is the most likely location that you would go to speak to a doctor over the Internet about a sexual health matter?

- □ At home on your own computer
- □ At home on the family computer
- □ At a friend’s or partner’s place
- □ At an Internet café
- □ At school
- □ Other, please specify
Telemedicine (SHOUT)
Section 4: IT Information

Imagine a service existed where a testing kit for sexually transmitted infections could be mailed to your house, allowing you to do the tests yourself from home. (The box would not be labelled with the clinic’s name.)

A) I would be willing to receive testing kits and/or treatments through the postal mail.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

B) I would be prepared to send specimens (e.g. urine or genital swabs) through the postal mail if I was given directions.

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree
Telemedicine (SHOUT)
Section 4: IT Information

Some conditions such as genital herpes and genital warts can only properly be diagnosed through a visual examination. If you were experiencing genital symptoms, how willing would you be to have a doctor visually examine your genitals \textit{in person} during a sexual health consultation?

A) My own general practitioner or clinic

- Very willing
- Willing
- Neither willing nor unwilling
- Unwilling
- Very unwilling

B) A doctor I don’t know

- Very willing
- Willing
- Neither willing nor unwilling
- Unwilling
- Very unwilling
Telemedicine (SHOUT)
Section 4: IT Information

Some conditions such as genital herpes and genital warts can only properly be diagnosed through a visual examination. If you were experiencing genital symptoms, how willing would you be to have a doctor visually examine your genitals over a secure internet connection during a sexual health consultation?

A) My own general practitioner or clinic

- Very willing
- Willing
- Neither willing nor unwilling
- Unwilling
- Very unwilling

B) A doctor I don’t know

- Very willing
- Willing
- Neither willing nor unwilling
- Unwilling
- Very unwilling
Telemedicine (SHOUT)
Section 4: IT Information

Some conditions such as genital herpes and genital warts can only properly be diagnosed through a visual examination. How willing would you be to take a digital photograph of your genitals and e-mail the photograph to a doctor over a secure internet connection during a sexual health consultation?

A) My own general practitioner or clinic

☐ Very willing
☐ Willing
☐ Neither willing nor unwilling
☐ Unwilling
☐ Very unwilling

B) A doctor I don't know

☐ Very willing
☐ Willing
☐ Neither willing nor unwilling
☐ Unwilling
☐ Very unwilling
Telemedicine (SHOUT)
Section 5: Some Questions About Your Sexual Behaviour

The final section asks about your sexual behaviour.

In the past 12 months how many people have you had sexual contact with who were...

Male partners: 

(0 if none)

Male partners with whom you have always used condoms for vaginal or anal sex:

Not applicable - no vaginal or anal sex

Female partners: 

(0 if none)

Female partners with whom you have always used condoms for vaginal or anal sex:

Not applicable - no vaginal or anal sex
Telemedicine (SHOUT)
Section 5: Some Questions About Your Sexual Behaviour

I feel I could be at risk for a sexually transmitted infection (STI)?

- Strongly agree
- Agree
- Neither agree nor disagree
- Disagree
- Strongly disagree

Have you ever had a test for sexually transmitted infections (not including a pap smear)?

- Yes
- No
- Don't know

When were you last tested?

[ ] months(s) (if unsure, please estimate)

[ ] Do not remember

Have you ever been diagnosed with a sexually transmitted infection by a health professional?

- Yes
- No
- Don't know
Sexual Health Online Using

Telemedicine (SHOUT)

How did you hear about this survey? Tick all that apply.
Please tick all that apply.
- [ ] Website
- [ ] Newspaper (paper or electronic)
- [ ] Friend
- [ ] Electronic newsletter/E-mail
- [ ] Other, please specify

We are interested in learning about any thoughts, concerns, or past experiences you have about discussing sexual health matters with a doctor. You can either go to the blog or write your comments here.

We would like to continue this discussion on sexual health. Would you be willing to have your entry written in the above text box anonymously copied onto the blog so others can comment?

- [ ] OK to put on blog, with my age and sex next to the comment
- [ ] OK to put on blog, but without my age and sex next to comment
- [ ] Do not put on blog
Appendix H: Hypothetical character’s health history

Dave is a 20 year old Australian male living in rural Victoria. In the past 12 months, he had sex with 6 girls and only occasionally used a condom. He has never had a sexual health check-up. Last week one of his past sexual partners informed him that he may have been exposed to chlamydia. She recommended he get a sexually transmissible infection (STI) test. Dave has been reluctant to get tested because the local doctor is his aunt.

Information about Dave:

Section 1:“Information About You”

- Born in Australia
- Only speaks English
- Lives with housemates
- Completed high school

Section 2:“Your Access to Health Care”

- Has not visited a doctor in the past 12 months
- Difficult to get to a doctor
Appendix I: Advertisement for the University of Melbourne pilot

HELP US IMPROVE HEALTH SERVICES

We are recruiting 10 males and females aged 16 to 24 to take part in the piloting of an online questionnaire assessing young people’s access to sexual health services.

The questionnaire is a component of a University of Melbourne student’s PhD thesis.

Please contact c.garrett2@pgrad.unimelb.edu.au if you are interested in participating.

FREE LUNCH PROVIDED
Appendix J: Email to friends and colleagues about SHOUT study

Hi,

As some of you know I am conducting an online survey as part of my PhD at Melbourne Uni. The survey asks about people's preference for accessing sexual health services through different mediums such as telephone and webcam consultation in an attempt to find new ways to increase access. The survey is anonymous and will take 10-15 minutes to complete. The survey is targeting all people living in Australia aged 16 to 24, regardless of sexual experience.

If you have the time to fill in the survey (for those still under 25) as well as send it on to any friends you have in the target age group, I would be most appreciative.


Thank you for your help with my study.

-Cameryn
Appendix K: List of organisations contacted to advertise the SHOUT study

ACT National Youth Week: www.youthweek.com/2010/contact-us

Act Now: www.actnow.com.au

Australian Student Environment Network: www.asen.org.au

Australian Youth Climate Coalition: www.aycc.org.au


Beaconsfield Youth Centre:
www.tco.asn.au/oac/community_groups.cgi?qacID=29&groupID=914


Carclew Youth Arts: www.carclew.com.au

Country BNS Bachelor and Spinster Balls around Australia: www.countrybns.com

CREATE (Geelong): www.creategeelong.com

Cuz Congress: www.cuzcongress.com.au

Dorset Rural Youth: www.ruralyouth.com.au/groups/north/dorset

Dorset Youth Info: www.fewcha.org.au/contact.html

Express Media: www.expressmedia.org.au

Foundation for Young Australians: www.fya.org.au

Freedom Centre: www.freedom.org.au


Fusion North West Tasmania:

Gay and Lesbian Switchboard (Vic): www.switchboard.org.au

George Town Council Youth Strategy:

Getting Out: www.gettingout.info

Girl Power: www.girl.com.au

GRIND Youth Newspaper: www.youth.nt.gov.au/decision/advisory.shtml

Group Training Northern Territory: www.gtnt.com.au

Hagley Rural Youth: www.ruralyouth.com.au/groups/north/hagley

Hard Break Turn: www.concernaustralia.org.au/handbraketurn/hand-brake-turn

Headroom: www.headroom.net.au/index.html

Headspace: www.headspace.org.au

Heywire ABC: heywire.abc.net.au

Ignite:

Indent: www.indent.net.au

King Island Youth Access:
www.tco.asn.au/oac/community_groups.cgi?oacID=66&groupID=1414


Lake Burley Griffin Rover Crew:

Like It Is: www.likeitis.org.au

Linkzone: www.linkzone.tas.gov.au/home
Livewire: www.livewire.org.au


Multicultural Youth South Australia: www.mysa.com.au


My Crew Mandurah Youth Crew: www.mycrew.com.au


National Youth Week: youthweek.com


Northern Territory National Youth Week: youthweek.com/2010/contact-us


Not So Straight: www.notsostraight.com.au

NSW National Youth Week: youthweek.com/2010/contact-us

Oatlands Rural Youth: www.ruralyouth.com.au/groups/south/oatlands

Office for Youth South Australia: www.officeforyouth.sa.gov.au


Office of Youth WA: www.childrenandyouth.wa.gov.au

Oz Lounge: www.ozlounge.com.au
Palmerston City Council Youth Coordinator:
www.palmerston.nt.gov.au/site/page.cfm?u=413

Playford Station: www.playford.sa.gov.au/site/page.cfm?u=713

Queensland National Youth Week:

Reach Out: au.reachout.com/

Rural Youth Organization of Tasmania: www.ruralyouth.com.au

Say What:

SHine SA: www.shinesa.org.au/

Somazone: www.somazone.com.au

South Australia National Youth Week:

South West Youth: youth.mysouthwest.com.au

Speak Out: www.speakout.com.au

St. Martins Youth Arts Centre: www.stmartinsyouth.com.au


Tasmania National Youth Week:

The Hero Project: www.directingthehero.com


The Push: www.thepush.asn.au

The Source: www.thesource.gov.au
The Warehouse: www.myspace.com/thewarehouseyhc

Tolosa Youth and Community Centre Committee Incorporated:
www.infoline.tas.gov.au/AxCMSwebLive_GCC/Tolosa_Youth_and_Community_Centre_Inc___YouthLinx.infoline

Traxside Youth Health Service: www.beanbag.net.au/Traxside

Twenty 10: www.twenty10.org.au

Vibe Australia: www.vibe.com.au

Vibewire: www.vibewire.net

Victorian Young Farmers: www.vicyoungfarmers.org.au

Western Australia National Youth Week: youthweek.com/2010/whos-on-board/ministers/donna-faragher-mlc-jp

Western Australian Federation of Rural Youth: www.ruralyouthwa.org.au

Western Tiers Rural Youth Club: www.ruralyouth.com.au/groups/north/western-tiers

Wyndham City Council’s Youth Services Website: youth.wyndham.vic.gov.au/home

YAPS Young Agribusiness Professionals:

Yorke Peninsula Youth Advisory Committee (YAC - YP):
sacommunity.org/org/198772-Youth_Advisory_Committee

Young Agribusiness Professionals: www.yaps.vff.org.au

Young Carers: www.youngcarers.net.au


Youth Affairs Council of South Australia: www.yacsa.com.au/cgi-bin/wf.pl
Youth Affairs Council of Victoria: www.yacvic.org.au
Youth Affairs Council of Western Australia: www.yacwa.org.au
Youth Affairs Network Queensland: www.yanq.org.au
Youth Arts Queensland: www.yaq.org.au
Youth Beyond Blue: www.youthbeyondblue.com
Youth Central Victoria: www.youthcentral.vic.gov.au
Youth Council of the ACT: www.youthcoalition.net
Youth News Infoxchange Australia: www.youth.infoxchange.net.au
Youth Wyndham: youth.wyndham.vic.gov.au/services
Youth.gov.au: www.youth.gov.au
Youth.NSW: www.youth.nsw.gov.au
Youthgas: www.youthgas.com
YouthNSW: www.youth.nsw.gov.au
YWCA Australia: www.ywca.org.au
Appendix L: Email sent to organisations about advertising the SHOUT study

Dear ,

RESEARCH TO IMPROVE YOUNG PEOPLE’S ACCESS TO HEALTH CARE

We are inviting young people (aged 16 to 24) to participate in an online questionnaire investigating ways to improve access to health care.

The SHOUT (Sexual Health Online Using Telemedicine) research project is based at the University of Melbourne.

We are writing to you about the possibility of including information about our research project’s online survey on your organisation’s website or in your e-newsletter.

500 respondents have completed the questionnaire so far. However, the majority of responses are Victorian. We are hoping to increase the number of participants from other states so the voices of young people throughout Australia are heard.

In the survey, young people will be asked to give their opinions on different types of health consultations, including the use of telephone consultations and webcam consultations over the Internet for sexual health.

We hope to use the information gained from this study to inform attempts to improve access to sexual health services for young adults in Australia.

The research website where the survey is hosted can be accessed at http://shout.mshc.com.au/.

We would be most appreciative if you would be willing to advertise our study. If you have any further concerns or queries please don’t hesitate to contact us.
The University of Melbourne Human Research Ethics Committee has approved this research project [#0931507].

Suggested text to use on your website or newsletter to advertise the study is included.

Results from this survey will contribute to Cameryn Garrett’s PhD thesis.

Thank you for your consideration.

Sincerely,

Cameryn Garrett, MWH
PhD Candidate
University of Melbourne
garrett@unimelb.edu.au

Dr. Maggie Kirkman
University of Melbourne
m.kirkman@unimelb.edu.au
ph: 3 8344 0759

A/Prof. Marcus Chen
University of Melbourne
Melbourne Sexual Health Centre
IMPROVING YOUNG PEOPLE’S ACCESS TO HEALTH CARE

You are invited to participate in the online research project, SHOUT (Sexual Health Online Using Telemedicine), based at the University of Melbourne.

Should there be access to sexual health care services on the telephone or over a webcam on the computer, or just in person? Which would you prefer?

By completing the online questionnaire you can help us find the best way to enable people to talk to their doctors about sexual health matters.

The questionnaire can be accessed at http://shout.mshc.com.au/ and should take 10-15 minutes to complete.

The questionnaire is for all people living in Australia aged 16 to 24, regardless of sexual experience.
Appendix M: Information about the organisations that advertised the SHOUT study

1) Somazone placed a link to the study on the “What’s new” section of their website under the heading “Online sexual health care survey”. www.somazone.com.au/whats-new/online-sexual-healthcare-survey.html

“Somazone is an Australian website developed by young people for young people. Somazone provides fast, free, anonymous access to quality-assured health information. Somazone is a program of the Australian Drug Foundation (ADF) and aims to empower young people to address their physical, emotional and social health needs in a way that is relevant and non-judgemental.”

2) Western Australian Federation of Rural Youth forwarded information about the study to their membership database. http://www.ruralyouthwa.org.au/

The Western Australian Federation of Rural Youth “bring[s] young people together from geographically or socially isolating environments to interact with their peers as well as participate in skill development sessions for future life. We also provide young people with experiences in corporate governance, leadership and financial management so that they can contribute to their local communities now and into the future”.


“headspace provides mental and health wellbeing support, information and services to young people and their families across Australia.”

4) Office of Youth Western Australia placed information about the study on their website under the “Get involved section”. http://www.communities.wa.gov.au/youth

“The Office for Youth (OfY) is a State Government agency within the Department for Communities that is responsible for developing programs and policies that meet the needs of people aged 12 to 25 in Western Australia. The Office for Youth connects
young Western Australians with government and community, and uses their insights and experiences to shape government policy and programs.”

The advertisement on their website is provided below:

5) CountryBNS.com (Bachelor & Spinster Balls around Australia) allowed me to post information about the study on the health section of their website. Later, an administrator sent an email out to all the CountryBNS members about the study.

http://countrybns.com/

CountryBNS.com is “a National Bachelor & Spinster Balls website”.


“The Australian Youth Forum (AYF) is run by the Australian Government as a communication channel between the Government, young people (aged 15 – 24) and the organisations that work with, for and on behalf of young people (also known as the youth sector). It is about engaging young people and the youth sector in on-going public debate and getting their input on important issues and practical solutions that affect young people’s lives now and in the future. It brings young people, the youth
sector and the Australian Government closer together, and gives them an opportunity to be heard.”

7) YouthGAS allowed me to send an email out to their members.
http://www.youthgas.com/

“YouthGAS is a leading networking and communication resource focused on young people and communities. Providing young Australians and those that work with them a range of networking and communication resources, information and opportunities.”


“YAPA is the peak community group working in the interests of young people and youth services in NSW. YAPA strives to achieve social justice for young people, including the appropriate provision of services for young people.”

9) Office for Youth South Australia placed information about the study on their Facebook page and forwarded information about the study on to their networks. http://www.officeforyouth.sa.gov.au/

The Office of Youth South Australia works “collaboratively across government, in partnership with community and young people, to support vulnerable young people to achieve positive life outcomes”. 

10) Gay and Lesbian Switchboard (Vic) placed details about the study on their website.

“Gay and Lesbian Switchboard (Victoria) Incorporated is a volunteer organisation which provides a telephone counselling, referral and information service for the Victorian and Tasmanian gay, lesbian, bisexual, transgender and intersex (GLBTI) communities.”
11) Twenty10 posted information about the study on their website and newsletter. 

“Twenty10 is a community based, non-profit state-wide organisation. Our mission is to provide and promote opportunities, choices and support to young people (under 26) who are gay, lesbian, bisexual, transgender, same-sex attracted and/or gender questioning, their families and communities. The organisation is based in Newtown, NSW.”
Appendix N: Advertisement to University of Melbourne students

SURVEY TO IMPROVE ACCESS TO HEALTH CARE

posted by School Of Population Health on Thursday, September 24 2009

IMPROVING YOUNG PEOPLE'S ACCESS TO HEALTH CARE

You are invited to participate in the online research project, SHOUT (Sexual Health Online Using Telemedicine), based at the University of Melbourne.

Should there be access to sexual health care services on the telephone or over a webcam on the computer, or just in person? Which would you prefer?

By completing the online questionnaire you can help us find the best way to enable people to talk to their doctors about sexual health matters.

The questionnaire can be accessed at http://shout.mshc.com.au/ and should take 10-15 minutes to complete.

The questionnaire is for all people living in Australia aged 16 to 24, regardless of sexual experience.

Links


Contact: Cameryn Garrett
Title: PhD Candidate
Email: c.garrett2@pgmd.unimelb.edu.au
Appendix O: Email to participants involved in the questionnaire pilot

Hi,

Thank you again for contacting me last month about helping in the piloting of my PhD questionnaire about health services. The questionnaire is now online at http://shout.mshc.com.au/ and should take 10-15 minutes to complete. If you have the time to fill in the questionnaire, I would be most appreciative.

I am hoping to gain the opinions of people aged 16 to 24 (under 25) throughout Australia. The anonymous questionnaire asks about people's preference for accessing sexual health services through different mediums such as telephone and webcam consultation in an attempt to find new ways to increase access. I would be very grateful if you could send the questionnaire on to others you know in the target age group. Thank you for your help with my study.

-Cameryn
Appendix P: Email to universities and TAFEs about advertising

the SHOUT study

Dear ,

I am a PhD student at the School of Population Health at the University of Melbourne working with the Melbourne Sexual Health Centre. For my PhD I am conducting an online questionnaire titled “SHOUT (Sexual Health Online Using Telemedicine): Make Your Voice Heard” which asks young people to share their views on how best to improve sexual health services to make them more accessible to Australian youth.

500 respondents have completed the questionnaire so far. However, the majority of responses are Victorian. I am hoping to increase the number of participants from other states so the voices of young people throughout Australia are heard.

To help spread the word about the research project, I am writing to ask if you would be willing to include information about the survey in your School’s student e-newsletter.

The SHOUT survey asks about people’s preference for accessing sexual health services through different mediums such as telephone and webcam consultation in an attempt to find new ways to increase access. The survey is anonymous and is targeting all people living in Australia aged 16 to 24 (under 25), regardless of sexual experience.

The link to the survey can be accessed at http://shout.mshc.com.au/.

The University of Melbourne Human Research Ethics Committee has approved this research project [# 0931507].

Below is suggested text about the study. Thank you for your consideration.

Sincerely,

Cameryn Garrett, MWH

PhD Candidate
University of Melbourne
garrett@unimelb.edu.au

Dr. Maggie Kirkman
University of Melbourne
m.kirkman@unimelb.edu.au
ph: 3 8344 0759

A/Prof. Marcus Chen
University of Melbourne
Melbourne Sexual Health Centre

Prof. Christopher Fairley
University of Melbourne
Melbourne Sexual Health Centre

Dr. Jane Hocking
University of Melbourne
Suggested Text

Sexual Health, Webcams, and Doctors?

Through an online questionnaire, researchers at the School of Population Health at the University of Melbourne are hoping to find the best way to enable people to talk to their doctors about sexual health matters.

The questionnaire can be accessed at http://shout.mshc.com.au/survey.html and should take 10-15 minutes to complete.

We would like to know, should there be access to sexual healthcare services on the telephone or over a webcam on the computer, or just in person? Which would you prefer?

The questionnaire is for all people living in Australia aged 16 to 24 (under 25), regardless of sexual experience.
Appendix Q: Advertisement about the SHOUT study placed on organisations’ Facebook pages

Help Us Improve Access to Health Care for Australian Youth

As part of my PhD at Melbourne Uni, I am conducting an online survey investigating ways to improve access to health care for young people in Australia.

How would you prefer to speak to doctor about sexual health matters? On the telephone, over a webcam on the computer, or just in person?

By completing this online questionnaire you can help us find the best way to enable people to talk to their doctors about sexual health matters.

The survey should take 10 to 15 minutes to complete. The survey is for all people living in Australia aged 16 to 24, regardless of sexual experience.

The anonymous survey can be accessed at http://shout.mshc.com.au/

It would be great if you could complete the survey and pass it on to other friends in the target age group (16 to 24).

Thank you.