

Listening to Adolescents about Text Messaging in Sexual Health

By

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It takes a village to raise a child- African Proverb.

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Listening to adolescents about text messaging in sexual health.

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Abstract

Background: Adolescents are among those at most risk for acquiring sexually transmitted infections (STI) and Manitoba has the highest rate of chlamydia and gonorrhea in 15-24 year-olds among all provinces in Canada. Despite the numerous strategies used to improve STI knowledge and screening rates, adolescents are not being reached as well by traditional preventative efforts. Text messaging is quickly becoming one of the most widely used communication methods worldwide. Among adolescents it is the preferred method of communication and teenagers send and receive over 3417 text messages per month. Emerging literature has reported that text messaging demonstrates a strong potential as a tool for health care improvement.

Purpose: To examine the experiences of text messaging among urban adolescents and to explore their views on the potential for text messaging within adolescent sexual health services.

Methods: Four focus groups were conducted with 21 adolescents in two community agencies in an urban setting. This research drew on the interpretative paradigm as well as on actor-network theory (ANT) to explore how teenagers, cell phones and text messaging interact. The discussions were recorded, transcribed and analyzed using thematic qualitative analysis and Dedoose as the software program. **Results:** Four themes emerged from the two research questions. First, adolescents used text messaging as a way of connecting to others and to themselves. Second, adolescents

used text messaging to exert control over their self-presentation and their parental communications. Third, adolescents were generally receptive to the use of text messaging in sexual health. Fourth, adolescents revealed that privacy, anonymity and protection are important concerns when accessing sexual health services.

Discussion: For the young people interviewed, cell phones, text messaging and the adolescent self are intimately intertwined and the cell phone functions as an extension or appendage to the adolescent body. Based on their experiences of text messaging, adolescents were generally enthusiastic about how this technology could improve their access and satisfaction with various sexual health services.

Implications: Findings suggest ways in which adolescent health care organizations can adopt text messaging services and interventions to better serve adolescents' needs.

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CHAPTER I: INTRODUCTION

Statement of the Problem

Adolescents are among those at most risk for acquiring sexually transmitted infections (STI) (McKay, 2004). Indeed, the overall rates of chlamydia, gonorrhea and syphilis are among the highest among the 15-24 year old age group (Public Health Agency of Canada, n.d). Manitoba has the highest rate of chlamydia and gonorrhea of all provinces in Canada among 15-24-year-olds (Government of Manitoba, n.d). It is estimated that one in four adolescents has been infected with an STI (Centers for Disease Control and Prevention [CDC], 2009).

A strong public health impetus exists to address the STI epidemic by improving STI screening rates and knowledge of STIs among adolescents. STIs are largely preventable and treatable and testing is an effective means of reducing the disease burden (Miller, 2005). Undetected and/or untreated STIs pose serious health consequences including pelvic inflammatory disease, cancer and infertility. Despite the numerous strategies used to increase STI knowledge and screening, adolescents are not being reached as well by traditional preventative efforts (CDC, 2009). Thus, it is imperative that health care professionals, especially nurses continue to take an active role in finding innovative ways of delivering STI prevention interventions that are relevant and accessible to the lives of adolescents.

Text messaging is quickly becoming one of the most widely used methods of communication worldwide (Battestini, Setlur, & Sohn, 2010). The Canadian Wireless Telecommunications Association's (CWTA)(2013) most recent statistics on text messaging reveal that Canadians sent 71.5 billion text messages in the first three

quarters of 2012 alone, representing more than 90% of the 78 billion text messages sent in all of 2010. In the third quarter of 2012, Canadians sent 24.3 billion text messages; the most ever number of text messages recorded for one quarter. This works out to an average of 3,000 text messages being sent by Canadians per second (Lewis, 2013). Among certain groups, namely adolescents and young adults, text messaging is the preferred mode of communication. In 2010, eighty-five percent of American 15-18 year olds owned a cell phone (Nielsen News, 2010), and a recent Nielsen company report found that teenagers send and receive over 3417 text messages per month, an average of 7 text messages per waking hour (Nielsen Wire, 2011).

Text messaging is by far the preferred means of communication for teenagers. Most of them never make voice calls from their cell phone and have rapidly embraced text messaging as the dominant yet ordinary and everyday form of communication (Cupples & Thompson, 2010). Text messaging demonstrates strong potential as a tool for health care improvement for several reasons; it is available on almost every model of mobile phone, the cost is relatively low, its use is widespread, it does not require great technological expertise and it is widely applicable to a variety of health behaviours and conditions (Cole-Lewis & Kershaw, 2010). Text messaging also has the advantage of being asynchronous as it can be accessed whenever is convenient. Additionally, text messaging has high penetration in resource-poor settings where people may not have access to expensive technology (Terry, 2008).

The use of text messaging in sexual health services and sexual health promotion has been promising. A review of text messaging in sexual health has identified several ways in which text messaging has been applied to sexual health promotion such as clinical management, sexual health services and health promotion (Lim, Hocking, Hellard & Aitken, 2008). Despite the increasingly pervasive use of text messaging and the increasing clinical application and research into text messaging in sexual health, there exists a paucity of data from Canadian researchers. There is currently no published research on the use of text messaging in adolescent sexual health services in Canada and a paucity of Canadian clinical applications of text messaging in sexual health. Furthermore, there is no widespread application of text messaging in adolescent sexual health services in Winnipeg. However, in light of text messaging's increasing use, determining Winnipeg adolescents' receptivity to sexual health information or education via text messaging should be an essential first step.

Conceptual Framework

For the purposes of this study, Actor-Network Theory (ANT) provided a framework to examine the sensitive balance between the technical and social dimensions of adolescents' use of the mobile phone and text messaging and its potential within adolescent sexual health services. By exploring adolescents' use of text messaging, ANT was useful in providing explanations of how the abovementioned technology is translated and accepted within this population.

Purpose of the study

The primary purpose of this qualitative study is to explore the meaning of text messaging for Winnipeg adolescents as well as their views on the use of text messaging in sexual health services. To investigate the aforementioned issues, four focus groups with adolescents recruited from Klinik and New Directions were conducted in July and August of 2012.

Research questions

This study examined the following research questions:

Research question #1

How do Winnipeg adolescents describe their current use of text messaging?

Research question #2

How do Winnipeg adolescents perceive the use of text messaging in sexual health services?

Assumptions

The assumptions for this exploratory study came from a review of the literature, actor network theory (ANT) and the researcher's professional experience in the field of sexual health services.

- 1) Research involving adolescents is necessary to the progress of sexual health promotion, which includes improvements in technology, and communication (World Health Organization, 2010).
- 2) Improvement in information through IT will result in improved quality of care (Cresswell, Worth & Sheikh, 2010).

- 3) There is no a priori division between micro or macro contexts or attribution of agency to either humans or social structures (Law, 1999).

Significance of the study

The findings of this study may demonstrate how texting can be used to communicate with adolescents about health-promotion and disease-prevention. This study may also lay a foundation for others to build upon and further investigate text messaging in adolescent sexual health research. Lastly, and perhaps the most significant implication of this study is that it contributes to the emerging body of research on text messaging in sexual health services in particular from a Canadian perspective.

Definition of terms: Conceptual definitions

Text Message

A text message, also called SMS (short message service) is a communications protocol that allows mobile phone users to deliver short text messages to each other. From a technical standpoint, SMS refers to sending a text that is limited to 160 characters including spaces.

Sexually transmitted infection (STI)

Infections that are acquired and transmitted by sexual contact. Although virtually any infection may be transmitted during intimate contact, the term sexually transmitted infection is restricted to conditions that are largely dependent on sexual contact for their transmission and propagation in a population.

Chapter Summary

This chapter provides a synopsis of the background and significance of investigating adolescents' receptivity to text messaging in sexual health services. A paucity of published literature including both clinical and research applications has been established. With the increasing pervasiveness of cell phones and text messaging, it is imperative that research into text messaging in sexual health be conducted. In particular, a better understanding of Canadian adolescents' receptivity and views on text messaging in sexual health services is necessary.

The following chapter will present a review of the literature pertaining to adolescents and text messaging as well as the emergence of text messaging in sexual health promotion, which includes research on partner notification, decreasing time to treatment for Chlamydia, STI results and health promotion.

CHAPTER II: LITERATURE REVIEW

Introduction

Chapter two stages this study amongst previous research addressing the experiences of adolescents with text messaging. Though much of the research into adolescents' experiences of text messaging originates from countries other than Canada (Cawley & Hynes, 2010, Cupples & Thompson, 2010, Maddell & Muncer, 2007), a review of this research is necessary to glean a preliminary understanding of this topic. Following the aforementioned review, literature pertaining to adolescent sexual health services is considered. The application of text messaging in partner notification or contact tracing will be reviewed, followed by a review of the literature on text messaging's use in the dissemination of STI results as well as its use as appointment and medication reminders. In addition, literature pertaining to decreasing time to treatment to chlamydia and sexual health promotion in various contexts will be reviewed. Finally, a broad evaluation of the strengths and limitations of the current published literature will be conducted.

Adolescents and text messaging

The mobile phone and text messaging are technologies that have demonstrated a rapid uptake amongst teenagers. According to Decima Research, young people ages 13 to 24 are the largest group of wireless phone users in Canada and text messaging is the most commonly used feature of the mobile phone (CWTA, 2011). Much has been said about the prevalence of cell phone and text messaging technologies in the lives of adolescents and numerous concerns have been raised with regards to teenagers and text messaging. In the body of research, dichotomous views

on adolescents' use of text messaging have been promulgated. The perils and dangers associated with text messaging have been well documented and these include sleep problems (Van den Bulck, 2003), distracted driving (Carney, 2009; Haigney & Westerman, 2001), repetitive stress injuries in the thumb, also called "teen texting tendonitis" or "Blackberry thumb" (Williams & Kennedy, 2011), as well as the commonly held view that texting fosters antisocial behaviour (Hart, 2010).

Alternatively, recent research has demonstrated that texting in adolescence is also associated with some positive outcomes such as improved literacy (Durkin, Conti-Ramsden, & Walker, 2011; Plester, Wood & Joshi, 2009), and increased social capital (Campbell & Kwak, 2010).

Germane to the aims of this study's research questions, an increasing amount of research has sought to examine the communication practices of teenagers and one of the dominant discourses that has emerged from this research, is that text messaging is a tool of sociability and connection for teenagers (Campbell, 2006; Broege, 2009; Cawley & Hynes, 2010; Oksman & Turtiainen, 2004; Hundley & Shyles, 2010). Independent of nationality or race, young people use mobile phones and text messaging to bond closely with their friends and increase their social contacts (Broege, 2009; Oksman & Turtiainen, 2004; Cawley & Hynes, 2010). Oksman and Turtiainen's (2004) study determined that the mobile phone and text messaging has become rooted in the everyday communication practices of Finnish teenagers and serves as a "social adhesive" between a young person's family members and friends. Similarly, Broege's (2009) study on the daily communication practices of New Zealand university students (ages 18-25) found that text messaging

serves as the principal means for social networking and supports the construction and maintenance of friendship networks. Research conducted among Irish teenagers has demonstrated similar findings: though communication with a boyfriend/girlfriend could involve a high number of voice calls, with regards to communication between friends, texting is clearly preferred (Cawley & Hynes, 2010).

Another prominent theme that emerges from the literature is one of privacy and independence. Kim (as cited in Campbell, 2006) has argued that among South Korean teenagers, communication technologies such as the mobile phone and text messaging have radicalized their potential for independence from parental authority. Through the clandestine use of text messaging, adolescents are able to undermine the authority and surveillance of parents, teachers and other authority figures (Ling & Yttri, 2005; Faulkner & Culwin, 2005; Ito & Okabe, 2005; Thompson & Cupples, 2008). Other acts of adolescent resistance include refusing to answer a parent's phone call or text message in order to avoid conversations or reveal their location (Campbell, 2006). By undermining authority in the aforementioned ways, adolescents are able to retain a sense of independence, which is essential to identity formation, one of the major developmental tasks of adolescence (Selwyn, 2003).

Text messaging provides adolescents with greater control over their communication and self-presentation (Cupples & Thompson, 2010; Maddell & Muncer, 2007; Oksman & Turtiainen, 2004; Thompson & Cupples, 2008). By allowing asynchronous exchanges of communication, adolescents are able to delay their responses, which, enables a selective self-presentation (Maddell & Muncer, 2007; Cupples & Thompson, 2010). Text messaging is viewed as empowering to

teenagers, as it allows random conversations with romantic interests, without embarrassment, ridicule or awkwardness (Bergdall, Kraft, Andes, Carter, Hatfield-Timajchy & Hock-Long, 2011; Cupples & Thompson, 2010). Moreover, texting also enables identities to be read in a different way; the shy person can become confident or outspoken in text (Bryant, Saunders-Jackson & Smallwood, 2006; Cupples & Thompson, 2010). Furthermore, beyond the actual communication being used as device with which adolescents construct meanings of themselves and others, Oksman and Turtiainen (2004) argue that: “young people’s self-presentation occurs through choice of the device and attachment of symbolic meaning to it” (p. 333).

Cell phones and text messaging are also commonly used to regulate adolescents’ use of time and space. Teenagers are not bound to temporal considerations when communicating by text message, as there is no equivalent of a “bad time to call”; text messages can be returned whenever it is convenient (Cawley & Hynes, 2010). According to Oksman and Turtiainen (2004), mobile communications and its applications (such as text messaging) have become important tools that adolescents’ use to define their personal space. In essence, text messaging is used to delineate boundaries and to create a space, or alternately, to create a deeper bond, in relationships with friends and parents (Boase & Kobayashi, 2008; Devitt & Roker). Ishii (2006) argues that the mobility of cell phones should be understood in a wider sense to include three interconnected aspects of human interaction: spatial, temporal and contextual mobility. According to Ishii, spatial mobility refers to the concept of physical travel, which is most common interpretation of the meaning of *mobile* phone. Temporal mobility denotes the consequences of spatial mobility, as in

speeding up and saving time. Contextual mobility is essential to understanding the social consequences of the integration of cell phones into our society (i.e. increasing adolescent freedom; blurring of public and private space).

Cell phones are construed as invaluable to adolescents. Devitt and Roker's (2009) study on the role of the mobile phone in family communications found that for teenagers, and in particular for teenage girls, mobile phones occupy a significant place in their lives. Moreover, for many participants in Devitt and Roker's study, the mobile phone *is* their life. Thompson and Cupples (2008) describe the integration of the cell phone with the adolescent life as a cyborg, an entity that is part biological and part machine, a composite of elements that cannot be reduced to one another. In a later study, Cupples and Thompson (2010) further the cyborgian claim by relating the cell phone to a prosthesis of the adolescent body, an entity that "extends the body and makes its boundaries and contents difficult to determine" (p. 2).

Text messaging has numerous advantages. Much of the literature on the uptake of text messaging among adolescents has noted that its low cost is a significant factor in its pervasiveness (Bryant, Saunders-Jackson & Smallwood, 2006; Grinter, Palen & Eldridge, 2006; Leung, 2007). Two distinct dimensions of cost have been identified. The first pertains to the difference in cost between making a voice call and sending a text message, with the lesser cost of a text message highlighted as a reason to send a text (Ling, 2004). Second, research has identified that adolescents prefer to have advance knowledge of how much a conversation will cost, and voice calls with their fluid and open-ended qualities preclude such a predetermination, unlike the fixed cost associated with a text message (as cited in

Grinter et al., 2006). However, one of the major shortcomings of text messaging is that messages are generally limited to 160 characters. However, Leung (2007) argues that the aforementioned weakness has paradoxically contributed to text messaging's wide appeal among the youth market, resulting in a comprehensive and inventive dialect of abbreviations, pictograms and emoticons.

Text messaging in sexual health

The use of text messaging has been studied in several aspects of sexual health services such as partner notification, appointment reminders, disseminating STI results. An appraisal of the benefits and limitations of text messaging in the aforementioned contexts' will be reviewed below.

Partner notification

Partner notification (also termed partner management or contact tracing) is a well-established public health activity with the intent of controlling sexually transmitted infections (World Health Organization, 2004). The approach is based on the premise that the sexual partners of people with sexually transmitted infections are likely to be infected but may be asymptomatic and may not otherwise seek care. Partners can be reached through several different strategies including those led by infected "index" patients (patient led), by health providers (provider led), or by a combination of approaches (conditional referral—index patients are encouraged to ensure that partners attend by an agreed date, after which the provider will notify the partner). The public health objectives of each of these strategies are the same: to increase the treatment rates of sexually transmitted infections by identifying and when necessary treating those people known to be at high risk for sexually

transmitted infections; to interrupt the cycle of transmission; and to reduce the occurrence of new infections and the overall burden of disease (Hawkes, Mabey & Maynaud, 2003).

In the absence of provider led partner notification, patients are typically left with the responsibility of notifying their sexual contacts themselves. The effectiveness of this approach is not known, although data from sources such as program evaluations (van de Laar, Termorshuizen, & van den Hoek, 1997) and the control conditions of partner notification trials suggest that up to 50% of infected persons notify one partner (Hogben, 2007). The efficacy of partner notification through any method based on diagnosis in private settings is also unknown. Novel strategies such as the Internet, social media sites, and text messaging may increase partner notification rates. However, to date, limited research has been conducted on the use of text messaging within contact tracing and most of these studies have been exploratory.

Apoola et al. (2006) surveyed 2544 patients attending three genitourinary clinics in the United Kingdom (UK), to identify patient preferences for partner notification. Apoola et al.'s (2006) findings failed to support text messaging as an acceptable method of partner notification. Rather, the participants favoured direct notification by partner of the risk of an STI. With health care provider referral methods, patients preferred private letters versus phone calls, emails or text messages. However, a significant minority and in particular men, Asian and Black people were more likely to consider text messaging as an acceptable method of partner notification.

Demonstrating similar findings, a recent Australian study conducted semi-structured interviews to determine the acceptability of various partner notification methods among 40 people who were recently diagnosed with chlamydia (Hopkins et al., 2010). The authors suggest that based on their findings, face-to-face partner notification remains the gold standard, followed by phone. Email and text messaging were not favoured for partner notification. Text messaging was deemed the least acceptable method of notification due to the inherent brevity of text messages, its impersonal nature and the potential for the message to be read by others or to not be taken seriously. (Hopkins et al., 2010).

In contrast, Bilardi et al.'s (2010a) telephone survey of 286 people recently diagnosed with chlamydia found that while only a minority of chlamydia-infected participants contacted partners using SMS or email, 47% of individuals indicated that they would have found a website that allowed them to send anonymous emails or SMS useful. In support of the aforementioned findings, Bilardi et al. (2010b) evaluated an online partner notification service that offers email and text messaging to individuals diagnosed with chlamydia. Bilardi et al. (2010b) found that a substantial and increasing number of text messages were sent indicating the potential for improved partner notification rates.

In clinical practice, the New York Department of Health has introduced texting as a means of notification of an STI diagnosis as well as a partner notification method. Though this method is only to be used if "traditional" strategies such as phone calls, letters, and home visits have not worked, it has proven to be a successful complementary method and was responsible for identifying at least one case of

untreated chlamydia and one case of early syphilis (Kachur, Adelson, Firenze & Herrera, 2011).

Reminders

Non-attendance at sexual health clinic appointments is a significant problem. Missing appointments has a negative impact on patients, by delaying time to and impeding treatment, and on clinics by wasting valuable time and resources (Downer, Meara, & Da Costa, 2005). Several studies have investigated the use of text messaging for appointment reminders, with the aim of increasing patient attendance by decreasing the number of patients who forget their appointments. A 2008 study conducted in London, in which questionnaires were distributed to 350 STI clinic attendees, determined that 88% of respondents approved of appointment reminders with text messaging being the preferred option (Cohen, Coyne, Mandalia, Waters, & Sullivan, 2008).

Similarly, in 2007 a texting program entitled “txt2remind” was trialed in two New Zealand family planning clinics, using only the automated appointment reminder feature (Mackenzie, 2009). The results from the trial demonstrated that the appointment reminders improved communication, decreased the average length of staff calls to mobiles by 32% which represented one day of receptionist time per month, and decreased the numbers of calls to mobiles by approximately one third with a corresponding decrease in monthly costs. There was a small decrease from 7.9% to 5.9% in missed appointments at one clinic and no change at the other. However, as that clinic’s non-attendance rate was already at less than 4%, Mackenzie (2009) argues that it may be unrealistic to expect any less.

An American study assessed text messaging's use for enhancing testing and treatment for tuberculosis (TB), human immunodeficiency virus (HIV) and syphilis (Person, Blain, Jiang, Rasmussen & Stout, 2011). Anonymous surveys were conducted among HIV-infected people attending an HIV clinic, people with TB at a public health clinic, and people presenting for TB, HIV and syphilis screening at a community screening clinic. Of the 315 respondents, 76.5% owned a cell phone and 56% would be amenable to receiving a text messaging appointment reminder, while only 33% were receptive to receiving a text message as a medication reminder. Younger age and cell phone ownership were significantly associated with acceptance of text message reminders. African-American and Hispanic respondents were more likely to feel that text messaging medication reminders were helpful than Caucasian respondents. Furthermore, African-American and Hispanic respondents, as well as those with a lower educational attainment were more receptive to health related educational text messages.

Kharbanda, Stockwell, Fox, Ipp and Rickert (2011) implemented and evaluated text message reminders for parents of adolescent girls receiving their second (HPV2) and third doses (HPV3) of the human papillomavirus (HPV) vaccination in nine pediatric clinical sites in New York. Of the 765 HPV vaccine events, 434 enrollment instructions were distributed to parents (56.7% of doses) and parents of 124 adolescent girls (28.6% of those given instructions) activated text message reminders. Comparing children of parents who enrolled versus both those who did not, and a historical control group, on-time receipt of the following HPV

vaccine dose occurred among 51.6% versus 35% in the first control group and 38% in the second control group.

Furthermore, in an Australian study aimed at increasing HIV and STI re-testing rates among men having sex with men (MSM), Bourne et al. (2011) noted that participants who received a text message reminder were three to four times more likely to present for re-testing than either historical and control groups.

STI Results

In STI clinics, a significant proportion of staff time is spent providing STI results. In turn, the time invested in disseminating results, decreases the amount of time staff are available to treat clients, which can lead to lack of timely care for clients (with its potential consequences) and frustration experienced by both groups. Innovative strategies aimed at providing STI results are needed and text messaging has been proposed as a possible solution to the abovementioned quandary. However, the use of text messaging in disseminating STI results has been inconclusive to date. Two recent UK studies have demonstrated conflicting findings. Brown, Copas, Stephenson, Gilleran and Ross (2008) studied young adults' (ages 16-25) preferred options for receiving STI screening results. The survey study revealed that participants preferred receiving their results via telephone or face-to-face consultation. Less than 5% of participants reported text messaging, email or the Internet as their first choice for receiving STI results.

In contrast, Dhar, Leggat and Bonas (2006) implemented an intervention in which patients' STI results were optionally disseminated via text messaging. Of the 13,825 patients who had undergone STI screening, 6451 agreed to receive their

results by text messaging and 100% of those who received their results via text messaging were pleased with the method and found it a quick, safe and confidential means of sharing information. Furthermore, Dhar et al.'s (2006) study demonstrated significant administrative gains by reducing the amount of staff time dedicated to providing results.

Decreasing time to treatment for Chlamydia

Reducing treatment times for chlamydia has the potential for reducing complication rates as well as mitigating the spread of the infection. Menon-Johansson, McNaught, Mandalia and Sullivan (2006) concluded that clients diagnosed with chlamydia in a UK clinic received treatment more than six days sooner than historical controls following the introduction of a text messaging results service. Furthermore, providing results by text resulted in significant staff time savings per month. However, these results differ from those of a New Zealand study in which Lim, Haar and Morgan (2008) found no significant change in median time to treatment following the introduction of text messaging. Nonetheless, the authors of the latter study emphasize that their results support that the use of text messaging is at least as effective as more traditional methods of communicating STI results.

Health Promotion

Australia. The bulk of the literature on text messaging in sexual health is focused on the use of text messaging for sexual health promotion. At the forefront of sexual health promotion interventions delivered via text messaging, are Australian researchers from the Burnet Institute who have conducted numerous studies on the impact of text messaging for sexual health promotion. A 2011 study in which 1771

young people received bimonthly text messages over the course of four months pertaining to sexual health, demonstrated an increase in STI testing and knowledge compared to baseline among the 587 participants who completed the follow-up survey (Gold et al. 2011a). The findings regarding the number and type of sexual partners as well as condom use are more difficult to interpret. For example, among men, a lower proportion reported multiple, new or casual partner at follow-up. In contrast, a significantly higher proportion of females reported multiple sexual partners at follow-up but a lower proportion reported casual or new partners. Furthermore, a higher proportion of men reported always using condoms with casual partners, with a lower proportion reporting always using condoms with new partners. Counter intuitively, there was a significant decrease in the proportion of women reporting always using condoms at follow-up with casual or new partners (Gold et al., 2011a).

In a follow-up study conducted by Gold, Lim, Hellard, Hocking and Keogh (2010), focus group data from 43 young people determined that text messages delivering sexual health promotion content were viewed as an acceptable means of health promotion, despite the “sensitive” subject matter. However, the participants revealed that the message style, content, timing, and length are important considerations when planning a text messaging intervention aimed at young people.

Confirming the above-mentioned findings, two recent randomized controlled trials have investigated the use of SMS to deliver sexual health promotion messages to young people in Australia. Lim et al. (2011) determined that STI knowledge at 12-month follow-up was higher among both male and female participants in the

experimental group, and women (but not men) were more likely to have had an STI test or discuss sexual health with a health care provider than the control subjects. Condom use did not differ significantly between the two groups. Similarly, in a population-level intervention (n=7606) that used text messaging advertising aimed at promoting safer sex and sun safety among young Australians, Gold et al. (2011b) determined that participants who received the safer sex messages had significantly higher sexual health knowledge than their sun safety counterparts. Interestingly, the sun safety intervention demonstrated very limited impact. Gold et al. (2011b) were unable to ascertain why the outcomes of the sun safety intervention were so poor. However, the authors theorize that as awareness of sun safety in Australia is already high, the messages may not have provided individuals with additional information. Furthermore, Gold et al. (2011b) struggled with designing sun safety messages that were funny, entertaining and innovative, all factors previously found important for recall and impact of safer sex messages (Gold et al., 2010).

Adolescents. As previously mentioned, adolescents are among those at most risk for acquiring STIs (Center for Disease Control and Prevention [CDC], 2009). Indeed, the current rates of chlamydia, gonorrhea and human immunodeficiency virus (HIV) are among the highest in the 13-19 age group (CDC, 2009) and Manitoba has the highest rate of chlamydia and gonorrhea of all provinces in Canada among 15-24-year-olds (Government of Manitoba, n.d). It is estimated that one in four adolescents has been infected with an STI (CDC, 2009).

A strong public health impetus exists to address the STI epidemic by improving STI screening rates and knowledge of STIs among adolescents. STIs are

largely preventable and treatable and testing is an effective means of reducing the disease burden (Miller, 2005). Undetected and/or untreated STIs pose serious health consequences including pelvic inflammatory disease, cancer and infertility. Despite the numerous strategies used to increase STI knowledge and screening, adolescents are not being reached as well by traditional preventative efforts (CDC, 2009). As text messaging has become the preferred mode of communication among the adolescent age group, the technology may present an innovative method of delivering STI prevention interventions that are relevant and accessible to the lives of adolescents.

Cornelius and Lawrence (2009) conducted focus groups to investigate the receptivity of African-American adolescents to an HIV-prevention curriculum enhanced by text messaging. The findings demonstrated that adolescents believed that sending text messages as boosters to the curriculum was an intriguing and innovative idea. Selkie, Benson and Moreno (2011) discovered similar findings. Focus group data revealed that participants would like to access sexual health information through their preferred channels of communication such as text messaging and social networking sites. In addition, text messaging was deemed as more confidential, safer and less threatening to participants than social networking sites.

In a follow-up study, Cornelius et al. (2011) examined African-American adolescents' perceptions of a text messaging-enhanced HIV prevention intervention. Participants attended seven weekly face-to-face sessions, followed by a daily multimedia message (pictures, videos, text messages) for three months. Focus group

data revealed that participants benefited from the intervention and were also receptive to mobile phone interventions without face-to-face sessions citing convenience as a significant benefit of a stand-alone text messaging intervention.

The use of text messaging for sexual health education and promotion has been promising in the clinical setting. Recently, the San Francisco Department of Public Health partnered with Internet Sexuality Information Services to launch SEXINFO, a text messaging service to provide sexual health information to young people. The program has been a success receiving over 4500 text messages within its first 25 weeks of service (Levine, McCright, Dobkin, Woodruff & Klausner, 2008). In a follow-up study to assess the impact of the SexInfo campaign among adolescents at greatest risk for STIs, Dobkin, Kent, Klausner, McCright & Kohn (2007) found that the campaign, most effectively reached the target population of African-American youth and that text messaging should be further explored as a means of improving adolescent sexual health and reducing disparities among racial groups. SEXINFO has since been expanded to the entire state of California and is now called “HOOKUP”. Young adults text “HOOKUP” to a phone number to then subscribe to receive weekly sexual health advice and referrals to free clinic services. Hookup had nearly 3000 subscribers in its first year, with approximately 30% texting for clinic referral information (Levine, 2011).

In a similar format to SexInfo, the BrdsNBz Text Message Warm Line (BrdsNBz) was launched by the Adolescent Pregnancy Prevention Campaign of North Carolina (APPCNC) in 2009. BrdsNBz provides an anonymous forum for adolescents to ask questions about sexual health and receive informed and accurate

responses within 24 hours (Phillips, 2010). Formative research determined that adolescents trusted the service and were more likely to follow-up on an answer from BrdsNBz than from other resources in the community (Phillips, 2010).

Similarly, an American quantitative survey study, investigating the acceptability of internet, mobile phone and text messaging for disseminating health advice among women attending an urban STI clinic found that text messaging was nearly ubiquitous, equally appealing and less discriminating (in terms of age, education level and socio-economic status) than the Internet (Samal et al., 2009).

Wright, Fortune, Juzang and Bull (2011) conducted focus groups with African-American young men to determine the feasibility of using text messaging to promote HIV prevention among the aforementioned population. Study findings revealed that the participants were receptive to the idea of receiving text messages for an HIV prevention campaign but wanted the messages to incorporate certain theoretical constructs such as empowerment and social capital in the message design.

Through the use of focus groups Coker and colleagues (2010) sought the perspectives of adolescents and parents in improving access to and utilization of adolescent preventive health care, and found that technology-driven tools such as text messaging and social media sites were viewed as viable options for receiving information and counseling on sensitive health-related topics by adolescents. However, parents were concerned about lack of parental control over technology-driven tools.

A recent study conducted in Uganda, using self-reported quantitative surveys determined that from the 1503 secondary school students in Mbarara, only 27% have

cell phones (as of 2008-2009) (Mitchell, Bull, Kiwanuka, & Ybarra, 2011).

However, 51% of all students and 61% of students who owned a cell phone believed that they would access a text messaging based HIV intervention program if it were available. Nonetheless, other forms of program delivery such as the internet, religious organizations and schools were preferred as intervention programs (Mitchell et al., 2011).

Review. To date, only one review published in 2008 has been conducted to investigate the uses of text messaging in sexual health. The authors identified only nine studies that evaluated the uses of text messaging in sexual health (Lim, Hocking, Hellard & Aitken, 2008). Most of the studies mentioned in the review have been discussed in this chapter and pertain to appointment reminders, disseminating STI results, partner notification and sexual health promotion and education. Lim et al.'s (2008) study concludes that very few of the applications described in the literature were rigorously evaluated.

Discussion on text messaging in sexual health

Due to the novel nature of text messaging, a dearth of data exists to support its use in sexual health. However, the early data has been encouraging. The majority of the above studies have demonstrated evidence of positive outcomes related to sexual health promotion. Of the two studies that found text-messaging undesirable for sexual health promotion, both pertained to partner notification (Apoola et al., 2006; Hopkins et al., 2010). Text messaging sexual contacts may present particular challenges in terms of consent and confidentiality as the contacts have not agreed to such disclosure via text messaging, and may be taken completely unaware when

receiving this information. Furthermore, the veracity of the text message may be difficult to ascertain. Nonetheless, as other more recent studies (Bilardi et al., 2010a; Bilardi et al., 2010b) have shown a demonstrable benefit from text messaging in partner notification, further research should be conducted to determine text messaging's acceptability and effectiveness in partner notification. In particular, it would be important to establish if the increasing pervasiveness of text messaging, especially among young adults will translate to greater acceptability of text messaging in current and future research and clinical applications.

As noted in this review, research into text messaging in sexual health has been dominated by quantitative research such as large-scale surveys, quasi-experimental research and a couple of randomized controlled trials. Only six studies examined text messaging in sexual health through a qualitative lens. However, there is increasing interest in developing qualitative approaches to the study of adolescents' sexual health (Jackson, 2004). Taken together, the literature review and study findings suggest the need for more qualitative research to illuminate the experiential or subjective aspect of adolescents' sexual health and adolescents' *use of* or *views on* text messaging in sexual health services, as well as exploring the social and cultural context which informs this experience.

A further methodological limitation is that only Cornelius and Lawrence (2009) and Gold et al. (2011) provided a theoretical framework for their research. Furthermore, only Cornelius and Lawrence (2009) discuss their framework while Gold et al. (2011) merely specify that they do not subscribe to a particular theoretical model but that the intervention is primarily based on Weinstein's Precaution

Adoption Process model, while incorporating elements of Ajzen's Theory of Planned Behavior and Bandura's concept of self-efficacy. However, research on STI prevention has shown that to be effective, interventions must have an explicit theoretical basis (Malow, Kershaw, Sipsma, Rosenberg, & Dévieux, 2007).

Additionally, this review highlights that very few studies on the use of text messaging in sexual health have been conducted outside of Australia, New Zealand, the United Kingdom and to a lesser extent the United States of America. Given the pervasiveness of text messaging, including its diffusion in developing countries with mobile phone teledensity at 98% in South Africa, and Ghana, Kenya and Tanzania soon following suit (Swendeman & Rotheram-Borus, 2010), the paucity of published research stemming from other countries merits mention. However, Mitchell et al.'s (2011) research demonstrates that despite Swendeman and Rotheram-Borus' (2010) claims, cell phone ownership is not nearly as ubiquitous in Uganda and sexual health interventions disseminated via text messaging are not assured. Clearly, further research is needed to investigate the pervasiveness of cell phones in developing countries as marked differences in ownership have been noted.

Nonetheless, as various clinical applications of text messaging in sexual health have been implemented with positive effect (i.e. SexInfo, Hookup and BrdzNBz), it is primordial that researchers and clinicians alike collaborate to bridge the gap between practice and research. Furthermore, to demonstrate the beneficial application of text messaging in sexual health, future studies should evaluate the benefits of these clinical programs. As the findings of several of the studies in this review note that the timing, content, language and style of the text messages are

important, additional studies evaluating the abovementioned characteristics may provide valuable information for developing the most effective and efficacious text messaging interventions.

As the rates of text messaging continue to rise in Canada, it is important for researchers to approach text-messaging interventions with a measure of urgency. Unlike computer technology whose ownership and use is more prevalent among persons with a higher socio-economic status and education level (Samal et al., 2009), mobile phone ownership and use (including text messaging) is equally prevalent among persons of low socio-economic status (Krishna, Boren, & Balas, 2009). Moreover, as Apoola et al. (2006) and Person et al. (2011) have noted that minority groups are particularly receptive to text messaging in sexual health services, the greatest power of the mobile phone and its applications (such as text messaging) may be in its ability to not only reduce the digital divide but to reduce health disparities as well.

Chapter Summary

In conclusion, this chapter provided an overview of the published literature pertaining to the use of text messaging among adolescents as well on text messaging in sexual health. The expansion of the cell phone and text messaging in the lives of adolescents is growing at a rapid pace. The cell phone and text messaging are being used in ways that researchers are only just beginning to understand. Through the use of these aforementioned technologies, adolescents' relationships with others as well as well as their own self-presentation are modified. For researchers, these new challenges will influence how they interact with teens as well as influence the design

and solutions for adolescent problems. A deeper appreciation for Winnipeg adolescents' experiences of text messaging is needed to support possible clinical interventions relating to adolescent health.

While there is an emerging understanding of the use of text messaging in sexual health, and an increasing use of text messaging in clinical sexual health promotion applications, the research on text messaging in adolescent sexual health services is particularly scarce. Thus, this literature review supports the need for a study that would examine the perceptions of adolescents on the use of text messaging in sexual health services. An exploratory approach stemming from the qualitative paradigm would ensure an in-depth examination of adolescents' views with regards to text messaging in sexual health.

The next chapter will present an overview of the conceptual frameworks that underpinned this study. Actor-Network Theory (ANT) will be described with a brief review of its use in various fields of study. Furthermore, a discussion on interpretivism will also be broached and a rationale for using a combined interpretive and ANT framework as the basis for this study will be provided.

CHAPTER III: CONCEPTUAL FRAMEWORK

Introduction

In this chapter, the conceptual framework used for this study, as well as the guiding philosophical paradigm are detailed. A brief review of the use of Actor-Network Theory (ANT) as a conceptual framework in past research will be assumed. A discussion on interpretivism will also be provided. Lastly, this chapter will provide the rationale for using ANT as a lens through which to investigate text messaging in adolescent sexual health services.

Actor-Network Theory (ANT)

Though many theories have been developed to study people and their interactions with technology, many of these theories treat the social and the technical in entirely different ways. In contrast, ANT proposes a view in which neither social nor technical accounts are privileged, but rather both positions are equally considered. ANT is positioned in the middle of the debate between constructivist and technological deterministic studies. Technological determinism assumes that technology and its impact are given and defined, while constructivism assumes that technology does not matter, because it is always and inherently socially constructed (as cited in Cordella & Shaikh, 2006). ANT posits that the world is indeed constructed, but not just socially constructed. For example, Latour argues that we are bound to our electricity provider by “things” like loyalty and fear, but also by things like “wires, meters, copper and filament lamps” (as cited in Matthewman, 2011, p.106).

ANT's ontological and epistemological position is that the world is composed of networks (Law, 1992), and these networks include humans, things, ideas and concepts- all of which are referred to as "actors" in the network (Latour, 1986). An actor is defined as the source of the action regardless of its status as a human or non-human (Creswell, Worth & Sheikh, 2010) and because any actor can have agency, ANT suggests the elimination of all a priori distinctions between the technical and the social actors in a network (Callon, 1986). The emphasis in ANT is on tracing and explaining the transformation of heterogeneous networks (Latour, 1986). It explores the ways in which network relations are composed, how they emerge and come into existence, how they are assembled and sustained, how they compete with other networks, and how they are made durable over time (Tatnall, 2010).

Actor-networks are highly dynamic, unstable and fluid open systems. (Greenhalgh & Stones, 2010). Translation occurs when entities come together and change one another to form connections or networks that eventually become stable. Once stable, networks become "black boxes" that appear immutable and inevitable, while concealing all the negotiations that brought it into existence (Fenwick & Edwards, 2010). There are four steps in the process of translation, which includes problematization, interessement, enrolment and mobilization. The problematization stage is the first moment of translation during which a focal actor defines identities and interests of other actors that are consistent with its own interests, and establishes itself as an obligatory passage point thus "rendering itself indispensable" (Callon, 1986). The second moment of translation, interessement, involves a process of convincing other actors to accept the definition of the focal actor (Callon, 1986). If

interestment is successful, enrolment will follow through a process of coercion, seduction or consent leading to the establishment of a solid, stable network of alliances (Callon, 1986). Enrolment, involves more than just one set of actors imposing their will on others; it also requires these others to yield (Clarke, 2002). Finally, mobilization occurs as the proposed solution gains wider acceptance.

ANT proposes that intermediaries and mediators can form relationships between actors. While the outputs of intermediaries can easily be predicted based on their inputs, mediators transform inputs into unpredictable outputs. In other words, mediators can transform actions, and create something that is not necessarily related to what set it into motion (Cresswell, Worth & Sheikh, 2010). ANT assumes that the social world is composed of many mediators and very few intermediaries.

The concept of non-human agency is controversial, but Matthewman (2011) argues that if we think of agency as creating effects, or as a mediator between the physical world and culture, or matter and meaning, viewing technologies as agents becomes possible. We use technology to act upon and in the world, and technologies reciprocate. “What humans are and what their world is, receive their form by artifactual mediation. Mediation does not simply take place between a subject and an object, but rather coshapes subjectivity and objectivity” (Verbeek, 2005, p.130). Thus, technologies are not intermediaries but rather they act as mediators transforming actions and coshaping the world.

The three main tenets of ANT that pertain to the theory’s ontology and epistemology are agnosticism, generalized symmetry and free association (Callon, 1986). Agnosticism means that the researcher has to be impartial towards all actors in

the network whether they are human or non-human. Generalized symmetry refers to explaining the multiple viewpoints of different actors by using the same abstract and neutral vocabulary that works the same way for all actors, be they human or technology (Tatnall & Gilding, 1999). Finally the idea of free association means that there can be no assumed distinctions between the technological and the social worlds in coming to an understanding of the phenomenon being researched (Bird, 2009).

Law (1992) clarifies that generalized symmetry is an analytical stance within ANT and not an ethical position. Impartiality towards all actors (whether human or non-human) does not mean that we treat humans like machines. “We don’t have to deny them the rights, duties or responsibilities that we usually accord people” (p. 383). Rather, impartiality is used to sharpen ethical questions about the special character of the human effect. From an analytical perspective, Law (1992) claims that people are who they are because they are a patterned network of heterogeneous material. For example, if I did not have my computer, my professors, my books, my desk, the internet, I would not be a student writing papers and producing “knowledge”. I’d be something different and Law (1992) argues that the same is true for everyone. ANT doesn’t refute that human beings usually have to do with bodies, nor does it deny that human beings have an inner life. Rather, it maintains that social agents are never situated in bodies alone, but rather that an actor is a patterned network of heterogeneous relations.

As stated by Cresswell, Worth and Sheikh (2010), purist applications of ANT are uncommon, and subject to considerable debate. However, an ANT-informed approach has been used in many disciplines such as journalism (Plesner, 2009),

marine biology (Callon, 1986), education (Fenwick & Edwards, 2010; Tatnall, 2010; Mlitwa, 2007), architecture (Guggenheim, 2009) and healthcare (Cresswell, Worth & Sheikh, 2010; Greenhalgh & Stones, 2010). More importantly, ANT has also been used as a lens through which to study adolescents and their interactions with mobile phones (Cupples & Thompson, 2007; Cupples & Thompson, 2010).

Interpretive paradigm

The interpretative paradigm is characterized by the ontological assumptions that reality is complex, subjective, and context-dependent (McEwan, 2007). The emphasis of the investigation is on understanding the actions and meanings of individuals. Because reality and human experience are variable, multiple ways of knowing are valued to uncover the knowledge that is embedded in human experience (Monti & Tingen, 1999).

Interpretivism has constructivist ontology in that realities about the world are given meaning by the researcher (Cordella & Shaikh, 2006). In essence, meaning or understanding is constructed by the researcher, which entails some control over the findings - a selection of the truth. In contrast, as mentioned above, ANT has a much more flat ontology which dictates that the actors speak for themselves thus challenging a constructivist approach (Bird, 2009). ANT proposes that forces in the interplay amongst actors themselves define, constitute and construct this interplay (Law, 1999). Therefore, by choosing an interpretivist position, the researcher may be imposing some structure on the data being gathered rather than 'allowing' the actors to construct their own reality. However, Bird (2009) argues that even if one is purporting to use a purist application of ANT, the selection of participants or actors

as well as the questions asked play a part in constructing the responses received.

“...in other words the actors may be speaking for themselves but only within your ‘script’ and thus some constructivism is inevitably at work” (2009, p.6).

Though there is conflict between an interpretative paradigm and ANT, by using an ANT-informed or influenced approach and viewing ANT as a lens on reality rather than a fundamental ontology, a reconciliation between interpretivism and ANT is achievable. The works of Walsham (1997), Wynn (2001) and Bird (2009) demonstrate the viability of using a combination of an interpretive stance viewed through the lens of ANT. Furthermore, in more recent works, even Latour (1999) asserts that ANT is:

...a way for the social scientists to access sites, a method and not a theory, a way to travel from one spot to the next, from one field to the next, not an interpretation of what actors do simply glossed in a different more palatable and more universalist language (p. 20-21).

As a final musing, despite the fact that there is hardly any disagreement on the role and position of theory in quantitative research (Creswell, 2007), there is no clear agreement in qualitative research regarding the role and significance of theory. Debate ensues, and based on Anfara and Mertz’ (2006) opinion, there are three separate understandings about the role of theory in qualitative research. The first understanding is that theory relates to the researcher’s chosen methodology and the epistemologies underlying it (Gay & Airasian, 2003). The second affirms that qualitative research theory, compared to methodology, has a relatively more broad and extensive role (Denzin & Lincoln, 2003), and the third is that theory may oppose

the basic tenets of the qualitative research process (Speziale & Carpenter, 2003). In essence, the role of theory in qualitative research has not been finalized. This creates ambiguities for new researchers on two levels: in determining the true nature of theory, and in determining the importance of theory as a major reference in their work (Tavallaei & Talib, 2010). For the purposes of this study, theory is used as a lens or a starting point and not something to be confirmed or falsified. Once nested within a qualitative paradigm, theory is also subject to the basic tenets of qualitative research such as subjectivity, interpretation and multiple truths and faces the impossibility of converting itself into a fixed point. Ultimately, in qualitative research any theory will never convert itself into a series of claims, of rules, or a creed. Law (1999) argues that we must defy the overwhelming academic desire to render knowing simple, transparent and formulaic. On this note, with regards to theory, Law has the final words “Only dead theories and dead practices celebrate their self-identity. Only dead theories and dead practices, hang on their names, insist upon their perfect reproduction. Only dead theories and dead practices seek to reflect, in every detail, the practices which came before” (1999, p. 10).

Chapter Summary

In the above chapter, a review of the theory as well as the epistemological paradigms that underpinned this research study was undertaken. A brief overview of ANT was provided as well as the rationale for dually nesting this research within the traditions of ANT and interpretivism. The methodology used in this study, as well as issues germane to the methodology such as sampling, settings, data collection and

data analysis will be discussed in the following chapter. Ethical implications, rewards and gifts will also be addressed.

CHAPTER IV: METHODOLOGY

Introduction

The methodology and procedures selected to conduct this study are discussed in this chapter. The research design is identified and described and a rationale for the design is provided. Also identified are the methodological procedures employed in this research including sampling strategies, data collection methods, as well as data analysis. In addition, ethical considerations, rewards and gifts, and criteria for establishing methodological trustworthiness and validity are presented.

Research Design

Exploratory Description Method

Given the exploratory nature of the research questions, as well as the researcher's interest in adolescents' subjective perspectives, views, and opinions, a qualitative approach was deemed most appropriate for this research. Researchers conducting qualitative descriptive studies explore as much data as possible, in an attempt to capture all of the elements of an event while allowing space for the unanticipated to unfold as well (Sandelowski, 2000). Furthermore, qualitative research designs are especially conducive when a paucity of information is known about a particular subject (Gerrish & Lacey, 2006).

The design of this research is both exploratory and descriptive. The purpose of this research was to *explore* adolescents' experiences of mobile phones and text messaging, *explore* their perspectives on the potential for text messaging within sexual health services, as well as *describe* their relationships with text messaging. Thus, based on Parse's (2001) understanding of exploratory descriptive studies as

investigations into the meaning of a phenomenon for a group of people, with the intention of discovering themes and patterns, this particular research was suited to the design selected.

In order to explore and describe adolescents' experiences of text messaging and their views on the hypothetical use of text messaging in sexual health services, a focus group methodology was employed. Additional information on the rationale for using focus groups, the number of focus groups conducted as well as focus group size will be discussed under the "Data Collection" heading.

Participants

Individuals are selected to participate in qualitative research based on their personal knowledge of a particular experience, social process or culture (Speziale & Carpenter, 2003). The outcome of a qualitative study is a greater understanding of a particular phenomenon (Krasner, 2001). Therefore, the two principles that underpin qualitative sampling are appropriateness and adequacy (Morse & Field, 1995). Appropriateness refers to identifying and selecting participants who can best inform the study according to the research questions. The measure of adequacy has been met if enough data is available to develop a rich and full description of the experience and saturation of the data has been reached (Morse & Field, 1995). In all, a total of 21 young people participated in this study.

Setting

Sampling from community agencies that provide services for youth ensured that a diversity of youth who are often excluded from this sort of research are encouraged to participate within the safety of their normal community-based settings

(Flicker & Guta, 2008). In order to have representation from adolescents from different communities and settings, as well as encourage participation from youth and maximize youth comfort and safety, two different community agencies (Klinik Community Health Centre and New Directions) were selected for recruitment and setting. Klinik Community Health Centre (Klinik) was specifically chosen for recruitment as it operates weekly teen clinics on-site as well as conducts weekly satellite teen clinics in Winnipeg high schools. New Directions was chosen due to their extensive experiences with youth and the availability of pre-existing gender-segregated youth groups.

Klinik is a community health centre that provides a full range of health related services such as medical care, counseling and education. Klinik operates a sexually transmitted infections (STI) clinic five times a week, which includes a dedicated teen clinic on Mondays from 16h to 20h (Klinik, n.d.) as well as weekly teen clinics at Tec Voc high school in Winnipeg. Klinik is one of the primary sexual health agencies in Winnipeg, and Klinik's sexual health services are available to youth from across the city of Winnipeg independent of catchment areas.

New Directions is a community agency that works with children, youth, adults and families providing services such as: counselling, assessment, support and prevention programs; training and education programs; and residential and support programs. Youth were recruited from the Resources for Adolescent Parents (RAP) group, a program of counseling, support and education to help young single parents develop vocational plans and life skills as well as from the Training Resources for Youth (TRY) group, a pre-employment program for young people between 16 and

19 years of age that prepares young people for entry into the workforce, return to school or further training (New Directions, n.d.). An advantage to recruiting from existing groups within New Directions is the familiarity participants had with each other, the setting and especially for participants in the RAP program, their experiences with current reproductive/sexual health services available in Winnipeg. Furthermore, the focus group interviews were integrated into existing program schedules. This approach built on community networks, however, one limitation is that adolescents not accessing services were effectively excluded from participating in this research (Flicker & Guta, 2008).

Sampling strategies

In qualitative research events, incidents and experiences and not people, are the objects of purposive sampling (Sandelowski, 1995). Participants were selected through criterion sampling. Criterion sampling was used to identify the adolescents participating in the study as it was necessary to recruit participants of a certain age and specific experience(s) for the purposes of this research. The original established criteria for adolescent participants in this study were as follows: 1) participants must be between the ages of 15 to 19 years old; 2) participants must be able to provide informed consent; 3) participants must have current or past experiences of cell phones and text messaging; 4) participants must be interested in exploring their experiences of text messaging and be willing to discuss their views on the hypothetical use of text messaging in sexual health services. Participants were excluded if they were unable to speak English.

Due to Klinik's teen clinic policy that considered any person 20 and under as a "teen" for access to teen clinic, the first criterion for inclusion in the study was modified to reflect this policy and young people between the ages of 15 to 20 were recruited. Furthermore, it is important to note that despite both the invitation letter as well as the personal review of the consent form indicating that participants must be between the ages of 15 and 20, two male participants, both aged 23, participated in the last focus group. This information was only discovered after the focus group discussion was completed, once the demographic questionnaires were reviewed. As the questionnaires were answered anonymously it was impossible to identify these two individuals and to remove their data from the transcriptions. Rather, the researcher acknowledges this breach of the inclusion criteria.

Recruitment

For the purposes of this study, participants were recruited from two community agencies in Winnipeg: Klinik and New Directions. Prior to recruitment, the principal investigator sent a letter of introduction (Appendix A) to the directors of Klinik, New Directions as well as Mount Carmel Clinic describing the study, its purpose and the researcher's contact information. Following the receipt of this letter, the director at Klinik requested that a summary of the research, methodology and recruitment be sent to Klinik for their review and subsequent approval. New Directions requested that their own ethical submission form be completed and reviewed prior to granting access. Though staff at Mount Carmel Clinic had previously demonstrated interest in this research study, at the time of recruitment, the agency director declined to participate due to internal issues. Without any

modifications needed to the proposal submitted to Klinik, access was granted to that agency in July 2012, and recruitment ensued on July 15th 2012. Following the review of the ethical submission protocol form the researcher completed for New Directions, the agency director requested a modification to the original consent process. New Directions requested that participants under the age of 18 obtain parental consent. This modification to consent was accepted by the researcher, sent to the Education and Nursing Research Ethics Board (ENREB) for review, and once accepted by ENREB, research access was granted by New Directions and recruitment from the abovementioned agency ensued in August 2012. The differences in recruitment strategies between Klinik and New Directions are detailed below.

Recruitment from Klinik.

Prior to recruitment from Klinik the principal investigator contacted the director of health services at Klinik to discuss the research (purpose of the study, how participants will be recruited, contact information). The director advised teen clinic staff of the researcher's intent to recruit on July 15th and arranged for staff to be present five minutes prior to teen clinic hours on the day of recruitment (July 15th 2012). Immediately prior to teen clinic hours, the principal investigator briefly presented her research to teen clinic staff and provided staff with an exemplar of the participant invitation letter (Appendix B). The purpose of the staff presentation was to enhance staff's understanding of the research and provide a rationale for the principal investigator's presence in the waiting room. Teen clinic staff did not participate in recruitment.

Following the brief presentation to staff, the principal investigator sat in the waiting room of the teen clinic at Klinik. When adolescents presented to the teen clinic, the principal investigator approached them with an introduction and reviewed the details of the study as written in the invitation letter (adolescents were given the aforementioned letter- Appendix B). At that time a review of the adolescent's rights and adolescent's voluntary participation was emphasized and an opportunity for discussion was allowed. Adolescents were only requested to sign the consent form (Appendix C), indicating that they agreed to participate in the research study once in attendance for the focus group interview (on the following day). Five participants were recruited from Klinik.

Recruitment from New Directions.

Prior to recruitment at New Directions, the researcher contacted the program managers of the Resources for Adolescent Parents (RAP) and the Training Resources for Youth (TRY) programs to discuss her research and to confirm suitable dates and times to present this research opportunity to the adolescents in these groups. The brief presentations (approximately five minutes to the two different youth groups) conducted by the principal investigator addressed all the information provided within the invitation letter (Appendix B) and the aforementioned letter was given to the adolescents for their review. Interested adolescents had the opportunity to meet with the researcher to further emphasize the voluntary nature of the study and address any other concern they may have had pertaining to the study. Interested adolescent participants (under 18 years of age) were also required to obtain parental consent for participation. Adolescents were given a parental consent form (Appendix D) for

their guardian's review and signature. Adolescents who wished to participate in the focus group, attended the interview with a parental consent form signed by their guardian. At that time, adolescents also signed a consent form (Appendix C), indicating their agreement to participate in the research study. Nine participants were recruited from the RAP program and seven participants were recruited from the TRY program.

Data Collection

In qualitative research, the researcher is the primary instrument for data collection (Morse & Field, 1995). A researcher can take part in the study as the observer, interviewer, or the interpreter; hence, the subjective nature of qualitative research and the understanding that researchers affect what is studied (Speziale & Carpenter, 2007). The principal investigator in this study was the research instrument, conducting four focus group discussions with adolescents as well as interpreting the information collected. Furthermore, a brief questionnaire was collected in order to obtain pertinent demographic information from the participants (Appendix E).

Justification for using focus groups

As little was known about Winnipeg adolescents' *views on* and *receptivity to* text messaging in sexual health, focus groups with adolescents were conducted. Although focus groups as a method of data collection did not arise from a qualitative tradition (Kidd & Parshall, 2000), they are particularly useful when little is known about a phenomenon of interest (Stewart, Shamdasani & Rook, 2007). They are also useful in a number of settings, especially when dealing with sensitive topics such as

sexual health (Speziale & Carpenter, 2007). The major advantage to the use of focus groups in qualitative research is the opportunity to collect rich experiential information from participants by using group interactions (Rabiee, 2004). Focus groups also free children and investigators from the limitations of literacy/reading levels that plague quantitative data collection methods such as surveys and self-reports (Kennedy, Kools & Krueger, 2001).

As previously noted in the literature review, research on text messaging in sexual health has been dominated by large-scale surveys. When using such highly structured research tools, it is only possible to obtain information that pertains to the questions asked. To be successful, researchers using surveys must know what questions to ask and how to ask these questions. However, in order to develop suitable questions, thorough knowledge of the research area and a clear understanding of the information required are needed (Frith, 2000). In an underexplored topic such as text messaging in adolescent sexual health, detailed knowledge of this kind is not available. Indeed, text messaging is not currently being used in adolescent sexual health services in Winnipeg and no prior research has been conducted to examine this topic in Winnipeg. Thus, in this situation, focus groups provided a useful alternative to explore how adolescents view text messaging and its theoretical application to sexual health services. Additionally, the use of focus groups contributes to the qualitative research base needed in adolescent sexual health (Jackson, 2004).

Lastly, when adopting a relatively unstructured format, focus groups are an ideal way of identifying needs, which are not currently being met (Frith, 2000).

Focus groups have been used to identify gaps in existing sexual health service services including: the need for electronic sexual health information that is written in plain, understandable language (Selkie, Benson & Moreno, 2011); support in favour of advance provision of emergency contraception for teenagers (Adamji & Swartwout, 2010); and the need for mental health care and psychosocial support provision alongside sexual and reproductive health services (Fisher et al., 2011).

Focus Group Size

Research on focus groups has cited limits of six to eight adolescent participants per focus group as the most effective size (Morgan, 1998). Thus, for the purposes of this study, four focus groups of three to eight adolescent participants per group were conducted. With the knowledge that participants may agree to participate but not present to the focus group interview, over-recruitment was sought, and indeed the participation rates from the RAP program at New Directions was so strong that it resulted in two focus groups versus the intended one.

Though both single and mixed gender focus groups have been successfully used in child health without any consistent differences in responses or behaviours (Kennedy, Kools & Krueger, 2001), Heary and Hennessy (2002) suggest that a high interest in the opposite sex among adolescents, may negatively affect group productivity and provide the researcher with less meaningful data. Though the researcher had originally planned to conduct one male and one female focus group at each setting (Klinik, and New Directions), subsequent to no male recruitment at Klinik, only one female focus group was conducted at that agency. Very few males presented to Klinik's teen clinic on Monday July 15th, and none met the inclusion

criteria. In speaking with staff at teen Clinic, the researcher was informed that the low volume of male clients was not unusual.

Most advice about the number of focus groups required for successful data collection refers to the concept of “saturation” (Carlsen & Glenton, 2011). Saturation is obtained when no new or relevant data seem to emerge regarding a category (Strauss & Corbin, 1990). Though, Nyamathi and Schuler (1990) state that four focus groups are sufficient and saturation should be considered after the third group, for this research saturation was not considered until after the fourth focus group, as this would have resulted in no responses from male participants. Indeed, saturation was achieved after the fourth focus group and recruitment was discontinued.

Interview Guide

The interview guide (Appendix F) was informed by the literature review conducted on text messaging in sexual health promotion, and the research on adolescents and text messaging. Questions were developed based on key issues identified in the above- mentioned literature. The interview guide progressed from more general and less sensitive questions to more specific and sensitive issues. However, every attempt was made to phrase sensitive questions in a non-threatening or embarrassing manner.

Field notes

Field notes from the focus groups interviews were also conducted and subsequently became part of the data analysis. These field notes, written by the researcher and the researcher’s advisor (for the first focus group) described

observations, participants' non-verbal expressions, as well as documented assumptions about what was being observed and heard. Field notes are important additions during data analysis as they can provide validation for important points made by the participants and reinforce the importance of certain themes (Speziale & Carpenter, 2007).

Data analysis

Analysis involves breaking up the data and allows the researcher to see it from a new perspective. In contrast, interpretation is the knowledge produced from the data through the creation by the researcher (Sandelowski, 1995). The first major task in analyzing the interview data was to become very familiar with the data as suggested by Morse and Field (1995). Shortly after completion of the interview, the audio recordings were replayed while the researcher carefully listened to the content, the questions asked and the participants' responses. A professional transcriptionist then transcribed the audio recordings verbatim. Field notes, the audio recordings and the interview transcriptions were examined using thematic analysis as described below. The demographic questionnaires were also analyzed to provide insight into the makeup of the groups and provided essential information on the number of texts participants send and receive in a day.

Thematic analysis. Thematic analysis was chosen as the approach to analyze the data in this study. Thematic analysis is a method for identifying, analyzing, and reporting common threads within data (Morse & Field, 1995). However, it also often goes further than this, and interprets various aspects of the research topic (Boyatzis, 1998). One of the benefits of thematic analysis was its

flexibility. According to Braun and Clark (2006), qualitative analytic methods can be separated into two camps. Within the first, there are those that stem from a particular theoretical or epistemological position (e.g. content analysis from constructivism). Second, there are methods that are essentially independent of theory and epistemology, and can be applied across a range of theoretical and epistemological approaches. Although often (implicitly) framed as a realist/experiential method, thematic analysis is actually in the second camp, and is compatible with both essentialist and constructionist paradigms (Braun & Clark, 2006). In my opinion, this was important as thematic analysis lends itself to an application of both ANT and interpretive paradigms.

In this research, data analysis proceeded both manually and through the use of Dedoose (2012), a qualitative and mixed methods software program. The transcriptions, field notes and demographic data were uploaded to the Dedoose platform which helped organize the data and created ease with which to browse, search, and sort the data. Subsequently, the material was dissected and after initial coding occurred, abstract themes were identified and refined from the coded material. A thematic network was then created within the Dedoose platform by selecting and arranging basic themes under organizing themes (in Dedoose they are identified as parent and child themes). Global themes were deduced from this process and the researcher illustrated the thematic network manually on paper in order to better visualize this network. The Dedoose platform does illustrate the child and parent codes as a “cloud code”, with the codes swirling around in an elliptical fashion, however, the researcher found this visually confusing and preferred to map the

thematic networks on paper. As noted by Attride-Stirling (2001) “thematic networks are a tool in analysis, not the analysis itself; to take the researcher deeper into the meaning of the texts, the themes that emerged now have to be explored, identifying the patterns that underlie them” (p.393). Thus, once the networks were constructed, the researcher returned to the original text and interpreted it with the help of the networks. The transcriptions were then described and explored through the lens of the basic, organizing and global themes. Following this exploration, the thematic networks were summarized. Finally patterns were interpreted while addressing the original research questions and the theory that underpins this research.

To enhance the writing of the findings of this research, the researcher listened closely to the audio-recordings anew, once the transcriptions had been completed, and was able to flesh out the transcriptions. In particular, whereas the participants were only labeled as “male” or “female” by the transcriptionist, when the researcher was able to distinguish between voices within particular topics, these participants were given a pseudonym (i.e. Jennifer, Kathy). This created a dialogue between participants that would have been lost if the researcher had not taken this extra measure in data analysis. Furthermore, to confirm and provide guidance on emerging themes in the data, the research advisor reviewed the researcher’s thematic analysis and modifications were made to the themes. This “second pair of eyes” further enhanced the credibility of the research.

It is important to note that in this research, the rationale for conducting single gender focus groups was to improve group productivity and cohesiveness (by minimizing the interest adolescents have in the opposite sex), thus providing the

researcher with more meaningful data. Though gender is considered in this study, the purpose of this research is not to analyze the issue of gender in depth as this is beyond the purview of this research. Due to the paucity of male focus groups (one), as well as the unintended inclusion of two 23 year-old males in this focus group, it is impossible to disentangle the issue of age and gender from the male focus groups. Thus, though participants' quotations in the findings chapter may reveal gender, and notable differences in responses between the male focus group and the female groups are acknowledged, a further gender analysis was not undertaken and this is an area that is recognized as a limitation of this study and warrants investigation in future research.

Ethical Considerations

Ethical approval for this research was obtained through the University of Manitoba Education and Nursing Research Ethics Board (ENREB) (Appendices G and H) and the access review committees of Klinik and New Directions (Appendix I) prior to starting the research. The modification to the consent process requested by the review committee at New Directions was approved by ENREB. All printed information given to participants and participating community agencies was printed on University of Manitoba letterhead.

All participants were asked to sign a consent form that clearly delineated the purposes of the study and their voluntary participation in the study. Consent forms were written with developmentally appropriate language as modeled in the Toronto Teen Survey (Flicker & Guta, 2008). New Directions' participants who were under the age of 18 were also required to obtain written parental consent in order to

participate in the research. All participants' information was used only for the purposes of this study. Adolescent participants were advised that they could withdraw from the study at anytime without affecting the quality of care they receive from the community agencies. Though no participants withdrew from the study, participants were advised that any data obtained from participants who withdraw from the study would not be used and shredded as confidential waste. Furthermore, to maintain confidentiality, participants were advised to abstain from disclosing fellow participants' identity as well as any information discussed by other participants outside the focus group interviews.

The original intent was to waive parental consent for all adolescent participants in this research, as participants are capable of consenting to adolescent sexual health services through the concept of "mature minor" status. A "mature minor" is a person who has the capacity to fully appreciate the nature and consequences of a proposed health treatment and is capable of giving consent. It is not based on age but on capacity to understand (Government of Manitoba, n.d.). The "mature minor" concept applies to all medical and surgical treatments and is recognized by the courts (Government of Manitoba, n.d.). When adolescents can consent to their own treatment, the need for parental consent for research within that specific context is obviated (Smith, Boel-Studt & Cleeland, 2009). Furthermore, given the importance of adolescent sexual health research, requiring parental consent for adolescent participation may be unwarranted, inconsistent with the principles of justice and inclusiveness, confusing, and serve to silence young people who most need to have a voice in sexual health research (Flicker & Guta, 2008).

Though waiving parental consent was suitable for participants at Klinik, as the researcher was recruiting adolescents while they were attending a teen clinic which operates under the auspices of the “mature minor” concept, the review committee at New Directions requested that parental consent be obtained for participants under the age of 18. Thus, the consent process for participants at New Directions who were under the age of 18 years of age was modified to reflect the traditional process of informed consent at New Directions. This modification to the consent process was approved by ENREB prior to recruitment.

Though minimal risk was anticipated with regards to this study, in the event that concerns or feelings might arise from the interviews, participants were directed to resources to assist them with these issues. Participants were given Teen Talk’s telephone number for referral to an appropriate counseling agency. Risk was further minimized to participants as focus groups sessions were conducted in safe, youth-friendly spaces (Klinik and New Directions) with experienced staff available that may already have a working relationship with participants. Although experiences of child abuse, child neglect or planned criminal activity were not the interest of this study, the principal investigator did forewarn participants of her requirements to inform authorities if such issues were raised.

Data obtained from the focus groups interviews was kept confidential according to ethical research principles. Only the researcher, transcriptionist and the researcher’s academic advisor had access to the data. The transcriptionist signed a pledge of confidentiality (Appendix J) and audio recordings were transcribed verbatim while leaving out names or any other identifying information. All field

notes and transcriptions were kept in a locked filing cabinet (in the researcher's home) with no public access and will be disposed of (shredded) as confidential waste as per ethical research guidelines two years after completion of the study. A one-page executive summary of the results will be made available to participants through email at their request. Finally, a presentation will be conducted at each community agency participating in the study in order to inform health care workers and management staff of the study's findings. Adolescents will also be welcomed at these presentations. The executive summary and presentations will occur within a month of completion of the study.

Rewards and Gifts

The purpose of providing research participants with incentives is to maximize participation and minimize attrition over the course of the study (Rice & Broome, 2004). Even in studies of adults, the use of incentives or gifts is contentious (Rice & Broome, 2004). The underlying ethical concern with incentives is that they can influence vulnerable people and place them at greater risk than usual because of the incentive offered (Dickert & Grady, 1999). However, due to the minimal risk to participants in this study, a reward for participation recognized adolescents' participation and acknowledged their efforts. For the purposes of this research, a "wage-payment" model was used to compensate the adolescent participants as they have an appreciation and understanding of the value of money (Bagley, Reynolds & Nelson, 2007). Each adolescent participant was compensated with \$20 for their time (approximately 90 minutes not including travel) for their participation in the focus

group. To minimize any potential coercive effects of the reward, participants were given the reward upon signing the consent form, prior to the focus group discussions.

Validity and Trustworthiness

The trustworthiness of this research was judged by its credibility, confirmability, transferability and dependability (Polit & Beck, 2004). These criteria allowed the researcher to present credible and meaningful findings and let readers draw comparable conclusions from the data (Morrison-Beedy, Cote-Arsenault & Fischbeck Feinstein, 2001). Credibility within qualitative research is established if the data is reflective of multiple realities and there is confidence in the truth of the data (Morrison-Beedy et al., 2001). To ensure that credibility has been met within this research, four different focus groups, conducted in two distinct community agencies with different participants were conducted to elicit multiple viewpoints and realities. To ensure a high level of data collection, the researcher's advisor attended the first focus group. Credibility was further enhanced through the inclusion of the field notes provided by the researcher and the advisor into the data analysis.

Dependability refers to the stability of the findings over time and has been met once researchers have demonstrated the credibility of the findings (Speziale & Carpenter, 2003). To enhance reliability, the same interview guide was used with each focus group, the same conditions were provided with each group, and transcripts as well as field notes were prepared promptly.

Transferability pertains to the likelihood that the study findings are meaningful to others in similar situations (Speziale & Carpenter, 2003).

Transferability has been met if others view the findings as applicable, and fitting.

The decision as to whether the criterion of transferability has been achieved is made by readers for their own use and not by the researcher. However, to enhance the likelihood of transferability for the reader, thick, rich data slices were provided as descriptions along with direct quotes when presenting the findings. Furthermore, the sample and setting were described so that the readers can make decisions about transferability.

Lastly, the criterion of confirmability is concerned with assuming that the findings of the study are objectively rooted in the contexts of the participants' words in the transcripts and in the researcher's fieldnotes (Guba & Lincoln, 1989). Confirmability was demonstrated through the process of providing a detailed audit trail to the research advisor that described the researcher's decisions, choices and insights.

Chapter Summary

An outline of the study's methodology including research design, sampling, data collection and data analysis was provided in this chapter. Additionally, a review of the ethical implications, rewards, and the measures used to address the trustworthiness of the study were reviewed.

In the following chapter, the participants of the study will be described, the focus group procedure will be discussed and the findings of the study will be presented as global and organizing themes. Additional topics pertaining to text messaging in adolescent sexual health services will also be explored.

CHAPTER V: FINDINGS

Introduction

This chapter consists of a description of the findings that resulted from four focus groups held with adolescents at Klinik Community Health Centre (Klinik) and New Directions. The research methods described in the previous chapter were employed in order to describe adolescents' current use of text messaging and explore their perceptions on the hypothetical use of text messaging in sexual health services. Each research question was analyzed and is described separately. Through a focus group qualitative method and thematic analysis, the first research question yielded data that describes adolescents' experiences of text messaging through two global themes: 1) text messaging as a connection to others and to self, 2) exerting control. The focus group qualitative method and thematic analysis was also used to explore the second research question seeking to uncover adolescents' views on text messaging in sexual health services. From this question, two major themes emerged from the data: 1) adolescents are generally receptive 2) need to feel safe. This chapter will introduce the research participants, describe the focus group procedures as well as explain some unexpected focus group events that occurred.

Description of the participants

A total of 21 young adults participated in this study. The first focus group, recruited and conducted at Klinik included five females. The second focus group recruited at New Directions included six females. The third focus group recruited from New Directions included three females and the last focus group recruited from New Directions included seven males. The participants ranged in ages from 16 to

23. Most of the participants were currently attending school (14/21), less than half of the participants were currently working (9/21), and 15/21 participants currently owned a working cell phone. The number of text messages sent and received in a day ranged from 0 to 900 per participant. The mean number of text messages sent and received in a day was 160.95, the median was 75 and the mode was 10, 60 and 400 as all three of the aforementioned numbers occurred equally the most in the distribution. Removal of the outlier (900 texts sent and received in a day, which was much higher than the next highest value of 500 texts sent and received in a day) provided a mean of 124 texts sent and received in a day, a median of 71 and the modes remained unchanged. Table 1 presents a summary of the participant demographics.

Table 1

Participant Demographics

Characteristic	Number (%)
Sex: Female Male	14 (66.7%) 7 (33.3%)
Age: 16 17 18 19 20 23	3 (14.3%) 6 (28.6%) 3 (14.3%) 6 (28.6%) 1 (4.8%) 2 (9.5%)
Currently in school: Yes No	14 (66.7%) 7 (33.3%)
Last year of school attended: 2008 2009 2010 2011 2012	1 (4.8%) 1 (4.8%) 1 (4.8%) 3 (14.3%) 15 (71.4%)
Currently working: Yes No	9 (42.9%) 12 (57.1%)
Own a working cell phone Yes No	15 (71.4%) 6 (28.6%)
Number of texts sent and received in a day:	Range: 0-900 (0, 5, 10, 10, 30, 40, 50, 60, 60, 67, 75, 80, 83, 100, 105, 150, 255, 400, 400, 500, 900) Mean: 160.95 Median: 75 Mode: 10, 60, 400 Removal of outlier (900): Mean: 124 Median: 71 Mode: 10, 60, 400

The Focus Group Procedure

The following section will describe salient details concerning the research participants and the focus group from which they took part.

Results of the Recruitment Procedures

Klinic. Of the three community agencies that were contacted to participate in this research, only two, Klinic and New Directions agreed to participate in this study. Recruitment at Klinic occurred during teen clinic operating hours and recruitment was conducted one day before the anticipated focus group. The purpose of recruiting on very short notice was to limit the incidence of “no shows”; participants who agree to participate but subsequently do not attend the focus group discussion, either because they have forgotten or because their schedule has changed. The researcher approached teenagers in the waiting room of teen clinic by introducing herself, and describing her research. Though over 30 adolescents attended teen clinic on the evening of recruitment, only two adolescent males were present in the waiting room. Of those two males, one had never owned a cell phone nor had experiences with text messaging and the other stated he was unable to attend the focus group discussions. In total, five participants attended the focus groups including one participant who had not been at the teen clinic but had decided to participate after her friend (who had attended teen clinic) invited her to come along. The participants in this group ranged in ages from 16 to 20, most attended high school or university and most had been using a cell phone and text messaging for a few years.

Resources for Adolescent Parents (RAP). Recruitment from the RAP program at New Directions was successful, largely because the program manager

was very supportive of the research, allowing not only recruitment to occur during program hours but providing time during regular program hours for the focus group discussions. This facilitated recruitment, as the participants did not have to extend their day or return at a later time to participate in the focus groups. Nearly every participant in the RAP program chose to participate in this research for a total of nine participants. As the researcher did not want to conduct a focus group with more than eight people, a decision was made to split the group into two and conduct two focus groups. Six adolescents participated in the first focus group, and four were supposed to participate in the second, however one participant did not attend the second focus group. As with any research, this unplanned circumstance arose that could not be avoided without compromising other issues (i.e. not obtaining information from the three participants who were present and keen on completing the discussion). Thus, a decision was made to conduct the second RAP focus group despite the lower than anticipated participation rate. The ages of the participants in the two RAP focus groups ranged from 15 to 19. Most of these participants were currently in school and only two of them worked. All had children or were expecting a child shortly.

Training Resources for Youth (TRY). Recruitment of participants from the TRY program proceeded in a similar fashion to recruitment at RAP. The program manager allowed the researcher to briefly present her research to participants on August 24th, 2012 and the focus group was set for the following Friday. However, the researcher was not aware that the TRY program operates more as a drop-in program, and some of the teenagers who had been present for the presentation did not attend the focus group interview the following week. Due to presence of young men

who had not been informed of the research the following week, the researcher once again reviewed the study details to the participants who were present, and those that were interested signed a consent form at that time. Parental consent was not necessary as none of the participants were under 18 years of age. As one of the distractions on the day of the focus group, many young men (clients of the TRY program but not wanting to participate in the focus group) were playing video games on a large screen television in an open area, and it was difficult for the researcher to gain the undivided attention of the participants during the presentation. Another unforeseen circumstance was the inclusion of two 23 year-olds in the male focus group. It is unknown whether these two participants intentionally or unintentionally overlooked the eligibility criteria. It must be acknowledged that the presence of these two young men may have threatened the integrity of the research results. However, as it is impossible to isolate the contributions of these participants from the discussion, the findings from the focus groups that they attended are presented and this exception is noted as a limitation of this research.

With use of the data analysis software program Dedoose (2012), the transcriptions, field notes and audio-recordings from all four focus groups were analyzed, coded and organizing themes as well as global themes were drawn from the data. Two themes along with several organizing themes emerged from the data in response to questions about adolescents' experiences with cell phones and text messaging. The outline of the global themes and organizing themes for this research question is as follows:

1. Text messaging as a connection to others and to self

- a) Embedded part of self
 - b) Connection to others
2. Exerting control
- a) Negotiating public space
 - b) Controlling self-presentation and parental communications

Global Theme 1: Text messaging as a connection to others and to self

For the participants in this study, the cell phone and in particular the text messaging application serves as a connection to others as well as a connection to self. Adolescents are intimately intertwined with their cell phones and text messaging. This convergence of humans and technology was integral to identifying the first theme of this study: that cell phones serve not only as a connection to others but as an embedded part of adolescents' self.

Organizing Theme 1: Embedded part of self. Adolescents' connection to their phones is such an integral part of their being, that adolescents often describe sleeping with their cell phones under their pillows or mattresses and checking their phones soon after they wake. One participant stated "I usually just check the phone right away (in the morning) to see if I got any texts while I was sleeping...I usually leave it charged and then put it under my mattress so no one can bother it". Another participant affirmed "...I check my phone before I get ready for work. Because before I sleep, I mostly put my phone under my pillow".

Revealing a more profound connection between cell phone and self, participants attributed various personalized feelings to their experiences of being without a cell phone. For example, a participant who had recently been going to

school without a cell phone revealed that she felt “kind of lost because then if something happens, like I don’t really have, um, I don’t know about it because I don’t have my phone with me”. Another participant described that she felt “...lost kind of cuz it’s like how I get through the day texting my mom and dad”. Another participant explained that she felt “naked” without her cell phone. Yet another adolescent stated, “...when it’s dead or you don’t have it or something, you feel like, like you don’t know what’s going on with your friends. And it’s like going under a rock or something...”

The frequency with which participants checked their phones for new messages also suggests that the cell phone is an embedded part of the adolescent body. On how often she checks her phone, one adolescent described: “For me it’s like any opportunity. Like if I’m on the bus, I’ll check it. If like I’m waiting in line for something, I’ll check it. Like any opportunity I get, like, I check it”. Revealing minimal differences between the answers from female participants, male participants also checked their phones with great frequency. Though one participant expressed checking his phone “every ten minutes”, another revealed that he checked his phone “every minute I guess”. Another participant added that intuition plays a part into how often he checks his phone, “Even if it doesn’t go off...you basically feel it. I sense that I should look at it, just look at it”.

Organizing Theme 2: Connection to others. The cell phone and in particular text messaging is a useful way for adolescents to connect with others. Most participants in this study described texting back and forth all day long (until they go to bed) as well as connecting with an increasing number of people through

text messaging. For adolescents, texting may also help maintain a connection with others when schedules and lifestyles preclude face-to-face communication. A participant expressed:

...it helps communicate with people easier...because I don't have time to hang out with them (friends) lots...Like it's easier to talk (text) to them and ask them how their day went rather than being with them every day because I'm so busy.

Texting is also used as a tool to initially connect with a new friend. Another participant added:

...Say you go to a party and you talk to somebody and you know you're having a lot of fun and like, uh, if you don't have a cell phone, you'll be like, well add me on Facebook. Well you usually forget the name, you know. So a lot of times, it's like, oh well just give me your number, I'll text you and then you have a friendship on that. Makes it easier actually to make friends when like everybody has this little thing in their pocket where we can communicate with them.

Additionally, adolescents noted that maintaining a connection to people who do not own a cell phone is very difficult. When specifically asked about the connection with friends who do not own a cell phone, a participant plainly answered, "...That sucks. Yeah, it does make it harder". Another participant added, "I know certain friends of mine still don't have cell phones and I find that I'm not as close with them almost because of it. Because it's a lot harder to get in contact with them because they don't have a cell phone".

Furthermore, adolescents commented that texting enabled a connection to others than would not have been possible through voice calls. The concept of “random conversations” through text messaging was acknowledged as a way in which connections could be maintained. “Like if you call somebody, you have to have a reason to call them. So it’s easier to text”. Another participant stated, “You kind of text people without a reason...”. Yet another participant described this as texting etiquette.

Texting has its own etiquette...Like when I first got my phone, my sister said, when you’re texting, it’s completely acceptable to be like in class and just text somebody “what’s up?”...It’s fine to text anybody, whatever you want at any time of the day because it’s texting. It just has its own, you know, impersonal kind of...etiquette.

For teenagers, this ability to initiate and entertain random conversations with others seems to expand rather than collapse their social networks. On expanding her social network through texting, one participant explained:

I feel like if it’s someone I haven’t talked to in a while, I’ll just, texting kind of makes it easy. Like I’ll just feel like, hey, how are you, let’s talk and stuff. And then we’ll like talk about our week, our day, what we’ve been up to and like. I, I think I have conversations over text...I feel like, since I had a phone I’ve been like hanging with people more. Like when I get a new phone, it’s like more social I guess.

Text messaging also permits adolescents to communicate with each other while existing in very different spatial worlds. This transcendence of spatiality is

seen as a benefit as it enables the maintenance of relationships with people who no longer frequent the same physical spaces. For example, one participant acknowledged, “I know a couple people that I’ve only been texting (not seeing or calling). Like people that I used to work with that like we still text every now and then. But we haven’t really hung out...”. As a further benefit, many participants described that texting allowed them to multi-task and perform other duties while maintaining a conversation. On the benefits of texting, one participant illustrated, “...If you’re texting you can like do the dishes and stuff while you’re waiting for a response instead of while you’re on the phone and stuff...(on the phone) it’s like you gotta worry about your screaming children in the background sometimes when they act crazy”.

In social terms, texting may function as much more than a simple tool for connecting or communicating with others. For some teens, sending and receiving text messages may ensure their placement within their social network. According to one participant frequent texting is necessary “So you won’t be like totally forgotten (by your friends)”.

Global Theme 2: Exerting control

This research has indicated that text messaging is a useful tool for adolescents to negotiate and control various aspects of their social and physical environments, their parental communications, as well as managing their self-presentation.

Organizing Theme 1: Negotiating public space. All participants acknowledged that though cell phone use is banned in the classroom or at work, in general adolescents did not adhere to these regulations and either openly viewed their

text messages while in class or found creative ways to hide their use of text messaging. One participant described an elaborate routine to enable the use of text messaging while in class.

What I did last year was, um, I would just come in with my jacket and then I'd have it half on and I have my arm like not in my jacket and I just put the empty arm on the table so it looks like both my hands are on the table and then I would text. That's what I used to do (laughter) in the wintertime.

Other participants described hiding their cell phones under their desks to enable them to send and receive text messages while in class, agreeing with one participant's testimonial to "Just make sure it's on vibrate or you'll get it taken away". This process of negotiating the use of the cell phone at inopportune times also extends to adolescents who work. For example, another participant explained that he leaves his phone on vibrate while at work and when it vibrates "I'll probably like give an excuse to go to the bathroom and check it".

Through the use of text messaging, adolescents are further able to negotiate public space and subvert authority, as the regulations regarding text messaging seem rarely imposed. Adolescents in one focus group were very vocal about the lack of enforcement of text messaging while in class, a supposed "cell phone free" premise.

Researcher: And for you, do you ever find you're looking at your cell phone or your texts when you're in class and not supposed to?

Jane: Like all the time.

Researcher: And how do they, do they usually call you out on it? Do they usually say, like, no you can't do that?

Jane: Yeah.

Sally: They always do. Always.

Researcher: Oh really? Ok.

Jane: Put your phone away, or I'll take it away she always says...

Sally: Yeah.

Researcher: Do they ever take it?

Jane: No.

Sally: Not mine anyways.

Kathy: No.

One of the main reasons text messaging is viewed as beneficial to negotiating private and public space is the ability to use the technology quietly and privately. Though there was some dissent, the majority of adolescents in the focus groups, perceived text messaging as a more private mode of communication. One participant confirmed, "Nobody can hear you, what you're saying on a text message". However, by using the technology in public, adolescents are aware that they risk nosy bystanders peering over and reading their texts, a practice described by several participants as "rubbernecking". For the participants in this study texting is still preferable to ensuring privacy, especially in public space as long as "there isn't some creep just standing there reading your text..." or "...there's someone sitting beside you and you don't know if they'll read the text messages you're sending back and forth".

Independent of space, another participant added that an element of trust is necessary when texting and it is the bond between the two individuals that

determines how private or secretive a conversation will be viewed. “They (text messages) can always be shown and stuff. So, so it’s not really complete secrecy. It really depends on your like, bond with that person, like, you know, some people can be more secretive than others”. In opposition to the above-mentioned passage, another participant maintained that text messaging permitted no greater benefit of privacy to the user over other modalities such as voice calls or face-to-face encounters.

Yeah. The same as if you’re going to tell something (in person)... You have to like trust them with the information... I don’t think there’s, you know, any more privacy in texting than there is unless like you’re in a room with somebody you don’t want them to hear. You don’t want them to hear what you’re talking about.

Despite the above efforts to negotiate public space to ensure privacy, the mobility of the cell phone and its domestication among adolescents has also created situations in which other people (friends, parents) will read a person’s text messages if they leave their phones unattended. One participant declared, “If you put your phone down, someone’s bound to take it and be like reading your texts”. However, to circumvent the potential problems associated with this practice, several participants described deleting their messages at the end of each conversation while others locked their phones with a personal password. As examples of the above scenarios one participant stated, “...you just delete the message after you’re done” while another acknowledged, “And so I get a little lock or you just delete your conversations after you’re done... ”.

Interestingly, participants were generally derisive of adults who did not negotiate their use of communication media in public space in the same way that adolescents do. On privacy and the negotiation of public space, one participant elaborated:

I think it's just a waste of time calling somebody when you can just text them.

It's more quiet and you don't have to answer your phone ring, and go hello, like. People on the bus are nuts because they answer their phones loudly and you hear all their personal shit.

Organizing Theme 2: Controlling self-presentation and parental communications.

Self-presentation. One of the most significant ways in which adolescents use text messaging to exert control is through the manipulation of their self-presentation. Adolescents are able to project an alternate identity through text, an identity that is at once perceived as a more revealing version of self and alternately as a more concealed or inauthentic self. “I think texting is kind of like... A cover-up. Like it's easier. Like you can do something different over text than you could do in real life...”. Another participant added “...I've had people talk to me who'll like say something over text that like I just can't say the same thing in real life...It's just different. It's most like two personalities with people”. Participants expressed that it is possible to be more honest via text. For example, “...You can be a lot more bold I guess...saying something rather than what you normally would I guess. Like you can be more honest”. However, texting also enables adolescents to project an

alternative version of themselves as another participant maintained, "...it's easier to portray yourself as something you're not".

One of the main ways in which text messaging allows adolescents to manipulate their self-presentation is through the ability the medium has in transcending temporality. Text messages can be sent synchronously and asynchronously. By sending messages synchronously the conversational nature of texting is retained. However, by sending texts asynchronously, participants are able to pause and think before answering a text. For one participant: "It (texting) would give you more time to think about what you want to say...". Another participant explained that conversations over text can be continued over long periods of time allowing participants a pause to answer which helps in avoiding awkward silences and may provide time for adolescents to think of a funny or entertaining way to respond to a text message.

Because when you're texting you could continue the conversations for such a long period of time because you can take breaks and stuff. On the phone, you know, like awkward sounds. Just be like, I'll call you later. Instead you could just text, and wait for ten minutes til you come up with the question there (on text), and answer the question then.

Another participant added: "Sometimes you just don't want to talk to people. Or you gotta think of something funny. It can take a while to think of a funny joke".

Phone conversations are thought to be too revealing. For example, one adolescent expressed, "texting...it's kind of better sometimes because when you're talking on the phone, you just might expose yourself". Furthermore, texting permits

adolescents to avoid potentially embarrassing and self-revealing situations such as awkward pauses in conversations, stuttering, and rejection. With regards to phone conversations, one participant identified “I sound like a retard and awkward silence. And awkward silence on text, it’s like oh he’s probably busy right now”. Another adolescent added, “Like you can text me...Instead of making those awkward phone calls or silence. And like, you don’t want to go out with me tonight? Like, oh because I freaking stuttered (chuckle)”.

Additionally, text messaging is often used to “break the ice” when initiating contact or communication with someone in a romantic context. Nearly all participants agreed that using text is the preferred mode of communication to initially interact with someone of romantic/sexual interest. Though a few adolescents stated that they prefer calling, because “I want to hear his voice”, most of the participants preferred to text, especially when initially expressing interest in a person. One participant clarified, “I’d say texting is more common but it also depends on the person. I mean if the person’s really bold, then yea (chuckle), I would get a phone call maybe”. Another participant summarized “It’s just easier to break the ice texting”. When dealing with rejection, participants generally preferred to receive this news via text, as though receiving this rejection through text allows adolescents’ to save face and preserve their self-identity. One participant explained, “I’d rather be told on a text even so I don’t have to like hear from their voice or their own person”. Furthermore, adolescents also find it easier to reject others through text. Another participant’s comment typified this belief. “...If you’re worried about the way they react, you don’t necessarily have to deal with the way they react first hand”.

Adolescents have also fashioned a novel use of the cell phone and text messaging as a prop to avoid or mitigate embarrassing or awkward scenarios thus managing their self-presentation. Two girls in one focus group best described the pretend use of the cell phone and text messaging as a useful tool to manipulate their self-presentation:

Kathy: Like if there's a bus shack and there's someone else there and I feel all awkward, I'll just like pretend like I'm texting someone (chuckle).

Sally: Or, or a guy who was trying to hit on you and you don't want anything to do with him. And you're just like "texting my boyfriend".

Kathy: Or if you walk in the wrong direction and you realize you're walking in the wrong direction, you can pretend you got a text, pull it out, and be like, oh, and then turn around even though you were walking in the wrong direction all the time...I did that a few times...(helps you) not look like an idiot.

In a similar vein, teenagers in another focus group described the use of text messaging less as a prop but as a secret language that allows adolescents to discretely communicate with each other about themselves and others.

Jennifer: You know I've actually been in situations when I'm face-to-face with somebody and you have to say something that's kind of like, I don't really want to say it. And even though, it's just the two of us, I like text them (chuckle) what I want to say...And they just check it and text me back.

Researcher: (Noticing two other participants pointing at each other and laughing). You guys are pointing at each other.

Jennifer: Yeah. No, um, on the bus today, she decided that she would tell me that she thought some construction workers were hot rather than, you know, tell me, but she's sitting right next to me on the bus.

Brenda: And he (construction worker) was sitting right there too. So not going to be just like...

Jennifer: When we got off the bus and she's still making gestures at me. I'm like, I don't understand this. Just say it out loud. She's saying no, I'll text you.

Though adolescents are aware that text messaging is helpful in manipulating their own self-presentation, it can also contribute to mixed signals and create difficulties in interpreting the true meaning of a message received from someone else. "It's hard to interpret (texting) rather than like talking on the phone. Because you don't get the voice tone or the facial expressions...". Another participant echoed, "It's hard to interpret...you're seeing something, you're not getting any visuals or anything like that. So you interpret it your own way, not the way they necessarily want to be portrayed". From yet another participant, "...it works both ways...you might not be receiving someone's message right. They can portray, they think they're portraying their messages in a certain way that they might not actually be received that way". Supporting the aforementioned findings, another young adult also added that sarcasm and humour are particularly difficult to interpret in a text.

It's confusing sometimes too, when you're texting they might not be reading the text message the same way as you want to send it. Like you were it like,

oh, hey funny, but they're reading it like, what a jerk. Sarcasm doesn't come across very well.

Parental communications. Notably, for some participants, texting is also viewed as a simpler and less contentious way in which to communicate with parents. Young men were especially vocal in illustrating the way in which texting is used to avoid or modify interactions with their parents. Many male participants described completely ignoring the texts they receive from their parents. "They text you, you just ignore them...It's easy". Texting is also a way in which adolescent males are able to communicate potentially hurtful comments to their parents without apparent consequence. The young men perceived that they were able to communicate these potentially hurtful comments to their parents without repercussion due to the inherent difficulty in interpreting context and emotion in text. One young man elucidated:

I keep them updated too but this (texting) is better, because you're not in front of their, you're not talking to them if you say something mean. Like if you're texting and you want to say something mean, it doesn't sound mean. Like you're just reading it normally.

Another male participant echoed this thought by stating, "If you were to say something mean, they're like, oh, is he happy right now or is he mad or something". Another young man described that a parental phone conversation could easily become argumentative whereas this situation is easier to avoid in text.

They (*parents*) might take it mean, or they might take it just as a saying. On the phone, they (*parents*) can take it and start an argument. In texting, you could just be like, I don't want to talk about it right now and just leave it at

that. Or if you don't want to talk to them, put their text messaging as a different ring tone.

Alternately, though female participants also used text messaging to exert control over their communication with their peers, rather than ignoring their parents' texts, many young women texted their parents throughout the day. Examples of this behaviour included the following comments from two young women. "...I text her (mother) all the time" and "I text my mom, my dad...and it's like back and forth all day...that's how I get through my day now texting my mom and dad". Further yet, another female participant described a better relationship with her mother since their joint use of text messaging as a communication medium. "...I didn't really have a relationship with my mom because she's like a hard person to talk to in person...because she's scary...Texting it makes everything easier, you know. Now we're cool".

Related to the notion of control, the subject of whether texting increased an adolescent's independence was broached. Though the majority of participants denied being more independent since text messaging, most did agree that text messaging allowed them to socialize to a much greater extent than prior to text messaging. In response to whether texting has increased her independence, one participant stated "It makes it easier to communicate. I don't think that necessarily makes you more independent". However, a few participants disagreed with the aforementioned sentiment and believed that cell phone ownership and text messaging did increase their independence. For one participant, her notion of independence was tied-in with her ability to micro-coordinate and schedule her life. "I think, um, it's helped me be

more independent...Because it kind of allows you to do more and make your own plan and like, you could even like put your own schedule in your phone”. Another participant had experienced a dramatic transformation since using text messaging:

Well, I actually, I was kind of a hermit. And, uh, now I find that I am spending a lot of time doing things for myself. Like going out, hanging out with friends or like you know, just doing things I never really did before. Like it definitely has something to do with texting because now I can communicate with people easier. But I have become more independent to be honest.

In response to questions about adolescents’ receptivity to text messaging in sexual health, the data was analyzed using Dedoose (2012), and codes, themes and subthemes emerged. The two global themes as well as the organizing themes are outlined below:

1. Adolescents are generally receptive
 - a) Text messaging for sexual health programs
 - b) Sexual health promotion via text messaging
 - c) STI services
2. Need to feel safe
 - a. Anonymity and Privacy
 - b. Protection

Global Theme 1: Adolescents are generally receptive

In general, most participants expressed an interest in the use of text messaging in adolescent sexual health services. The organizing themes below describe adolescents’ responses to the various applications of text messaging in

sexual health and correlate to current programs or studies in which text messaging has been used in adolescent sexual health.

Organizing Theme 1: Text messaging for sexual health programs.

Nearly all participants were in agreement that a sexual health text messaging program for youth similar to HOOKUP in San Francisco or TOHealth in Toronto would be beneficial and utilized by teenagers. Adolescents were very keen on having the capability to ask a private sexual health question and to receive an answer via text. A plethora of positive responses were noted. “Yeah, that would be awesome”. Another participant added, “A lot of kids would use that actually”. Additional participants stated “A lot of kids would feel a lot more, um better when they’re texting instead of going out and asking a question” and “I would love that”.

One of the reasons given for preferring to text a sexual health question rather than placing a voice call, was the amount of time involved in waiting on hold or waiting for an answer with the latter communication medium. Many participants had experiences with Health Links, a “24-hour, 7-days a week telephone information service that is staffed by registered nurses with the knowledge to provide answers over the phone to health care questions and guide you to the care you need” (WRHA, Health Links, n.d.), and agreed with the following statement made by one of the participants: “I don’t really like Health Links though. It takes like an hour to get through”.

Due to the spatial and temporal mobility that texting affords, participants rather “wait” for an answer via text than wait for an answer while on the phone. One participant maintained that she would “...rather text (a question) because I wouldn’t

want to wait on hold for an hour. I'd rather wait for the response for an hour". The concerns of another participant echoed those of the former. "I rather text. Because you don't have to go there. It would be stressful going in...Most times I'm always like, so stressed for time too". Another participant would prefer to receive a sexual health answer via text because "It's more discrete. It's more private". Another participant concurred that he'd prefer to text a sexual health question than ask it on the phone or face-to-face because:

I'd feel the same way. Because you're embarrassed to ask some questions in person, so when you text it you're not there to see the facial expression or to actually hear what they're actually going to say...I'd prefer that, for me, I'd prefer that.

Another teen insisted that she would prefer to send a sexual health concern via text because of the difficulty she experiences in communicating verbally to others. "I'm not good with talking, explaining like in person".

A minority of teens disagreed with the general sentiment and expressed a preference for calling to ask a sexual health question. Proponents of voice calls maintained that a greater amount of information might be translated this way. One participant professed, "For me I think I, you get more information talking to someone on the phone rather than by text...So for me, I'd rather talk on the phone". Another claimed that texting might be more inefficient than a phone call. "But maybe if you need to explain something then you'd have to take your whole time just to text and there's only a limited characters on your phone now".

Organizing Theme 2: Sexual health promotion via text messaging.

Participants in the focus group were asked about their receptivity to receiving information pertaining to adolescent sexual health promotion via text. Two different adolescent sexual health promotion programs were described to adolescents and their opinions and receptivity to each of these programs was sought. The first program consisted of an adolescent sexual health promotion class, in which text messaging is being used to supplement the content of the class. The second program described a population level sexual health promotion program in which young people receive random sexual health information via text and not as an enhancement to an existing sexual health class. By and large, adolescents were receptive to the use of text messaging in lieu or as a supplement to a sexual education class. Some participants mentioned that the traditional face-to-face mode of delivery for sexual health classes is boring, awkward, and that asking questions is potentially embarrassing. The dialogue between three young men highlights the aforementioned findings:

Jon: Yea, because young kids are like, oh this is so boring (sexual education class), why are we paying attention? That's how I was personally.

Chris: And the instructors just make it feel all awkward. And like, oh can you come up for a demonstration, help us.

Dave: You need some senior citizen...telling you about sex?

One participant described a novel way in which text messaging could be used as an adjunct to a sexual health education class.

Do you remember, um, sex ed, that make you write out a little question and then to put it in a box and the teacher would like answer it. And there'd be

like all these really ridiculous questions...and really ridiculous answers. I'm just wondering maybe that it would be better with text because nobody wants to go up and put the questions in the box in the first place.

However, another adolescent maintained that she would prefer to receive sexual health education in the traditional face-to-face context. "I don't know. I like going and seeing (someone). If I was going to learn something, I'd rather learn it with someone there". Another teen expressed ambivalence about either modes of delivery. "Well I don't mind the class either, but if they're going to text, I'll get a text".

Adolescents were much more divided on population level sexual health promotion programs using text messaging technology. Initial concerns were expressed regarding how adolescents' cell phone numbers would be obtained. Participants also described that receiving random sexual health text messages could be bothersome. "If it's not directly related to your situation at the moment it might be kind of annoying". Other participants added "If it was random, I think some people might find it offensive or something" and "It would probably be annoying because you'd get text after text". Participants also articulated trepidation about the possibility of someone else reading these texts. "I don't want a bunch of messages to my phone about like chlamydia and stuff...because other people can read them". Another participant maintained, "Like if you're in class or something and then you get a text like oh. Or like your friend steals your phone. Like who is texting you?"

Other participants expressed that random text messages might be perceived as junk mail. "I don't know, it would sound like junk mail to me". Further yet, another

participant agreed that such messages would be interpreted as junk and would be deleted prior to being read. “It sounds like junk mail. Like I just...I’ll delete, delete, delete...No, I wouldn’t read it”.

Alternately, some participants recognized that text messaging offered benefits with regards to the ease with which a message can be relayed to its intended audience and the pervasiveness of the technology. For one participant texting is “Just quicker to get things (information) out like that I guess”. Another stated, “Look how many people do text a day? Almost everybody in the whole world do, you know what I mean? It’s like the new computer that’s helping us get information”. Other participants were also agreeable to a text-messaging based sexual health promotion campaign and did not express concern over the possibility of others reading these texts. These participants voiced that it would be preferable to receive this knowledge than to suffer the consequences from the lack of this knowledge. On receiving random text messages as part of a population level sexual health promotion program, two participants described:

Donna: That would be cool.

Karen: Yeah.

Researcher: And it wouldn’t be a problem if someone else read the text because?

Donna: No, I wouldn’t be embarrassed. I’d say no, it’s better than getting pregnant.

Karen: Or catching the clap.

Organizing Theme 3: STI Services. In general teens expressed interest in receiving their STI results via text. The responses from three out of the four focus groups were overwhelmingly positive. Examples of responses from several participants included: “That would be totally awesome”; “Handy” ; “Yeah. That would probably do quite well around here”; “People would respond a lot better and faster”; and “Yeah. That would be good”. Another participant elaborated that receiving STI results by text would promote confidentiality and reduce embarrassment.

...Because if you get it in person you want to, you’re probably be so nervous someone will like think that guy probably has AIDS or something...And people’ll be sitting, because now people always wait at the clinic, and you go right to the front desk...And some people will be like, oh, they’ll just assume or make assumptions that you have something right away because you’re going to the clinic...It’s confident, not confidence, personal...Yeah, confidential. That’s what I was going to say.

In contrast to the aforementioned findings, the participants in one focus group preferred to receive their STI results either in person or by calling in for their results. For this group, the ability to ask additional questions via in-person or voice call was deemed beneficial. One participant in this group summarized, “ (I) Rather talk on the phone, or talk to the nurse or whoever one-on-one and ask any questions I have”.

Adolescents were generally inclined to using text messaging in specific instances of partner notification. For example, participants would prefer to send anonymous text messages to their sexual partners if they were the index case and

were required to inform their partners of their exposure and need for treatment. The dialogue below between three teenagers illustrates not only the preference teenagers have for text messaging in partner notification but also the anxiety they experienced merely considering this scenario.

Jane: Oh my God...I would not do it (partner notification).

Kathy: You might have to.

Sally: Oh my God...I'm getting nervous just thinking about doing that (partner notification).

Kathy: I'd text from somebody else's phone (laughter).

Sally: Yeah.

Kathy: They'd like punch me in the face. So hey, I've given you chlamydia. Just deadly.

Sally: Oh, it's better that way. Yeah, anonymous text would be like better.

Other participants expressed similar views maintaining that texting would be the preferred method of partner notification, especially if the text could be sent out anonymously.

Donna: If I was in that situation, I'd probably want to text.

Researcher: And why?

Donna: Especially if you're around people.

Karen: But then I wouldn't want to text but what if their friends are around. They'll show them or something.

Researcher: Now what if it can be sent out anonymously?...

Karen: That would be even better.

Donna: That'll be better.

Some male participants expressed that they would prefer to send a text as the conversation would be “so awkward”. However, while some male participants preferred to send out the message anonymously, others divulged that they would send the text non-anonymously or even tell their contacts in person or over the phone.

Jon: I would do it by text and I'd let them know it's me. And leave it at that.

Chris: Same too. Same thing...because obviously if I was the last person (they had sex with)...

Dave: I like that face-to-face and sort of like because then you're going to have to do it anyways....So yeah, yeah.

Brad: Tell them face-to-face...And say, look you gave me chlamydia, now I'm going to check you (laughter).

Dichotomously, when asked to consider the reverse scenario, whereby the adolescents were to receive a partner notification message, adolescents' preference for in person or voice call communication was overwhelming. Furthermore, anonymity for the index case was not viewed as important, with most teenagers, regardless of gender wanting to know the identity of the index case. Two participants stated, “If that was me, I'd want them to come face-to-face so I can slap them” and “Tell me in person and I'll go the clinic”. Regarding receiving an anonymous partner notification message, one participant responded, “Yeah, that would kind of bother me because I'd like know who gave me this shit”. Aware of the disparity between how she wished to send partner notification messages and how

she wished to receive them, another participant noted: “There should be a law that men have to come face-to-face and women just text” (laughter).

Global Theme 2: Need to feel safe

Participants in every focus group raised concerns about confidentiality, privacy, anonymity and legitimacy in adolescent sexual health services. Establishing measures to ensure adolescents’ safety in sexual health services are necessary and participants in this study were vocal in describing these necessary measures. The themes reflect adolescents’ safety needs when accessing sexual health services. The second organizing theme below highlights the nature of the protection that participants would deem appropriate in terms of their safety in accessing and receiving sexual health services via text messaging.

Organizing Theme 1: Anonymity and privacy. When asked how important privacy and anonymity were in adolescent sexual health, participants were nearly unanimous in wanting any services pertaining to their sexual health “like 100% anonymous” as one participant stated. The issue that evoked the greatest desire for anonymity in adolescent sexual health was partner notification. When it comes to sending a message to a partner regarding their potential exposure to a sexually transmitted infection, female participants were nearly unanimous in wanting to send this message anonymously. Summarizing the general sentiment, one participant succinctly responded, “Yeah. Anonymous text would be better”. Interestingly, male participants were less concerned with anonymity in partner notification as well as in all other adolescent sexual health services. Many claimed that they would notify

their sexual partners via text and would reveal their identity. One young man declared, “I would do it by text and I’d let them know it’s me. And leave it at that”.

Privacy was one specific concern some adolescents’ expressed with using text messaging as a medium for communicating sexual health information. With regards to obtaining STI results, many participants preferred receiving these by text because the medium conferred more privacy. One participant affirmed, “It’s more discrete. It’s more private”. Privacy was also discussed with regards to adolescent sexual health services in general. The comments from three participants highlighted the importance of privacy in sexual health. “I want it private...No one else can know but me and that doctor”; “That’s your own business, you know what I mean?”; “Especially when it is about your health. Nobody needs to know that but me”.

Further confirming that privacy is an important issue, adolescents expressed that they were amenable to receiving STI results by text only if the message did not include any confidential information. One adolescent explained, “Yea that would be good...If they’re not going to say like any private information...you got the clap”.

One of the main concerns that teenagers had with the use of text messaging in adolescent sexual health is the ease with which others can obtain their phones and read and/or forward this confidential information. One participant stated “Someone has your phone and you’re receiving them (STI results) to it. They can easily start sending, edit, copy, edit, paste to all the other people”. Echoing this aforementioned sentiment, a participant stated, “No I wouldn’t (want STI results by text) because...like what if you lost your phone. A lot of people lose their phone...And all of a sudden someone looks at your phone, oh yeah, you’ve got HIV...”. Another

adolescent added, “Or you could put it (cell phone) down go to the bathroom and like someone in your household sees it (STI results)”.

Organizing Theme 2: Protection. Despite being generally optimistic about the use of text messaging in adolescent sexual health services, most participants agreed that measures to protect their confidentiality and anonymity were necessary. For example, with regards to receiving STI results by text, one adolescent stated:

They should, uh, get us to confirm who we are just before they send it. If someone else gets our phone, like, and then, even just say, well, what’s your full name and well whoever that person is, they’re going to know their full name so and we’re going to be knowing we’re going to get information (*STI results*) so it’s not like we’re going to put it down (*cell phone*) or anything.

Reaffirming the opinion declared in the aforementioned passage, another teen mentioned that the use of a password or code would be useful if STI results were to be sent by text. “Password...Or even if they text you saying like, um, something to do with like “call us”...Something very subtle and like anonymous. Like just a code type thing”.

Another facet of protection in adolescent sexual health is the assurance of legitimate and credible sexual health services and programs. Notably, adolescents emphasized that legitimacy and credibility are important in health services in general. For example, many participants scrutinized Health Links and several adolescents expressed that the service was not helpful and lacked credibility.

I don’t really like Health Links though... One time we had like, this paramedic come in and we were talking about Health Links and he said that

he doesn't even, even like Health Links because one time this lady called him, like the ambulance because she had a headache and the Health Links is like, oh you have to call 911 and all this stuff, when she just had a headache. Like are they even real nurses?

With regards to a text-messaging based sexual health promotion program in which random texts are sent to adolescents, several participants expressed that these messages might be perceived as illegitimate. "I don't know, it would sound like junk mail to me". Another adolescent added that if the source of the message is considered illegitimate or "junk mail", these messages are likely to be deleted prior to being read. "It sounds like junk mail. Like I just...I'll delete, delete, delete...No, I wouldn't read it".

The concepts of legitimacy and anonymity were intertwined. Though adolescents wanted anonymity for themselves in sexual health services, (especially in partner notification), the possibility of receiving anonymous texts decreased the perception of text messaging as a legitimate service in sexual health. Regarding partner notification, the discussion between a few participants best exemplifies the problem:

Victoria: Well if it's anonymous, you don't know if it's a prank.

Emily: Yeah. Exactly.

Candice: You don't know if someone's just sending out random texts like that, like messing around with you.

Partner notification elicited the greatest concern with regards to legitimacy and credibility. Across every focus group, very similar comments were noted from

teenagers regarding receiving anonymous partner notification messages. One participant emphasized, “Is this a joke?” while another agreed, “I would think it was a joke. Honestly”.

To legitimize any application of text messaging in sexual health, several participants mentioned that the public must be made aware the aforementioned communication medium is being used in sexual health services. The following responses from several adolescents underscore the importance of informing the public about this service: “If you know people were getting these kind of texts and it was a legitimate thing, then you’d know. It’s like, all right”; “Like if it was announced”; and “Like if people knew that that’s what’s going on”.

Diamonds in the rough

Beyond the themes that emerged from this research, several interesting findings were also noted during the focus group interviews. These topics are ‘diamonds in the rough’, issues that were not discussed across focus groups, but may be mined or refined and elaborated upon in future research on text messaging in sexual health services. For example, of importance to several participants was the style and tone of the language used in any application of text messaging to sexual health promotion. On this issue, some of the adolescents were divided. Though participants in the male group affirmed that any sexual health message should have a “hook”. “Yeah...It’ll catch your attention and you’ll think about it later. Like you’ll laugh about it later on, you know?”. Another young man added, “And then they’ll remember it (the message). If it’s funny, they keep it and show their friends...It’ll just be funny”. However, participants in one of the female groups expressed opposing

views. They preferred that a message be serious, otherwise the message could be interpreted as “cheesy”. Several female participants elaborated, “It (the message) could be more serious. And yeah, I think if it’s like fun, it’s more like cheesy to me”; and “If it’s more like serious, then like I’d actually like read it well and listen”. Yet another young woman stated “Like don’t make it child friendly because it’s not for children”.

Another topic of importance to a few teenagers was the timing of sexual health promotion messages. Some participants preferred to receive these messages in the morning: “I wouldn’t want it during lunch time when I’m eating (laughter)...So early for me” or “(When I’m) Awake. I’d just like read it and like, ok, and then go on with my day”. While other participants preferred to receive these messages in the evening. “After dinner”; “Yeah, like after supper. Somewhere around 7 or something...Because it won’t interfere with your buddies...”. Participants in another focus group stated that a message’s timing should be adolescent-directed. “Well, you don’t really want to be at school but at the same time you don’t want to be at work. So I don’t know...Maybe you could specify that”. Another participant concurred, “Individualized...Set it up”.

When asked to consider how many sexual health promotion messages would be considered appropriate, varying answers were given. Three times a week was considered appropriate to some. “Three a week” stated one participant, while others found this to be excessive: “No, like three a week, that’d be like time consuming because you’d learn lots. Or there wouldn’t be a lot of time to actually just look at

it...”. Other participants believed that receiving one message per week was more suitable: “Once a week would be better”.

Several participants also identified other ways in which text messaging could be used in adolescent sexual health and these bear noting. One participant mentioned that even if STI results were not available by text, texting could be used to notify patients that their test results were available. “...Even if it’s not necessarily saying the results, even just getting like a notification, of, like, hey, it’s ready, you can go in”. Another female participant mentioned that texting could be used as a reminder for adolescents taking oral contraceptives. “You know you’d get a text every morning and it’s like, you know, remember to take your pill”. Another participant requested that text messaging could be used to cancel or change a medical appointment. “If it was something like, oh, I need to change my appointment, I’d rather like text my doctor instead of like calling, you know?”

Chapter Summary

Chapter Five offered the reader a detailed description of the research findings. A demographic profile of the research participants was presented, the focus group procedures were described and a discussion on the themes that emerged from the two research questions was broached. Two global themes, along with several organizing themes relating to adolescents’ experiences of text messaging were identified. The global themes were: 1) text messaging as a connection to others and to self, 2) exerting control. The first theme described how participants used texting to connect with others but also described how the technology has become an embedded part of the adolescent body. The second theme identified that adolescents used texting to

exert control over their parental communications, personal relationships, self-presentation as well as their use of public space.

The second research questions elicited two global themes, as well as several organizing themes, and a discussion concerning these themes was attempted. The two themes were: 1) yes, but...teens' receptivity to SMS in sexual health 2) need to feel safe. Additional topics pertinent to text messaging were also explored and discussed.

In the following chapter, the findings and themes of this research will be compared to those in the relevant literature. Methodological strengths and weaknesses of the study will be discussed, as well as recommendations for future directions will be reviewed. Lastly, actor-network theory, the conceptual framework in which this research was grounded will be revisited.

CHAPTER VI: DISCUSSION

Introduction

In this final chapter, the themes of this research will be examined against the findings of the relevant literature on the experiences of text messaging among adolescents as well as with the literature pertaining to text messaging in sexual health. The findings of this research will be viewed through the lens of Actor-Network Theory (ANT) and the assumptions of this study will also be reviewed. Finally, a discussion of the study's limitations and future directions will be assumed.

Discussion

The findings of this study are discussed in relation to the two research questions. Within each research question, two global themes were identified for a total of four global themes: connection to others and to self; exerting control; adolescents are generally receptive; need to feel safe. Within each of these themes, several organizing themes are identified and explored.

Connection to Others and to Self

Participants in this study revealed that text messaging serves as both a medium to maintain connection to others but that adolescents also experience their cell phones and text messaging as an extension of self. These findings are discussed in relation to those of other authors.

Embedded Part of Self

The findings of this research demonstrate that adolescents have clearly embraced text messaging technology and that cell phones have merged with the adolescent body. Adolescents' need for their cell phone to be in their very near

proximity, even while they sleep (under the mattress or under the pillow), their incessant “checking” to determine if they have received new text messages, and their feelings of being “lost” or “naked” without their phones is consistent with the findings of Thompson and Cupples (2008), Cawley and Hynes (2010), Walsh, White and Young (2008), and Cupples and Thompson (2010). Walsh et al. posit that cell phone use is a highly salient aspect of Australian adolescents’ quotidian, suggesting that being a cell phone user has become integrated into many adolescents’ self-identity. Cawley and Hynes’ study on the mobile communication practices of Irish teenagers revealed that cell phones are deeply embedded in teenagers’ lives and for these teenagers, the experience of being without a cell phone is akin to missing a limb. The notion of the cell phone and by extension text messaging as a prosthesis is also echoed by Cupples and Thompson: “The convergence of body and machine is a kind of technosocial shaping embraced by young people, who have some sense of phones invisibly merged with bodies” (p.7). The findings of this research, in particular the narratives of feeling “lost” or “naked” without a cell phone, adds weight to Thompson and Cupples’ claim that the merging of adolescents and cell phones has created a cyborgian entity. Like the adolescents in the aforementioned study, for the young people in this study, their imaginaries and their sense of selves are tied to the technology.

Connection to others

Text messaging affords adolescents the near unlimited ability to connect with others and by extension the world around them. Adolescents reported texting back and forth all day. Furthermore, the sheer volume of texts adolescents send and

receive per day (median of 124 texts/day) confirms the crucial role that text messaging plays in connecting to others. The technology has become a virtual meeting place in which adolescents are able to communicate not only with those closest to them (physically and emotionally), but also with those who are less familiar or who no longer frequent the same physical spaces. Recent findings from the Pew Research Center in the United States have noted a similar finding: that text messaging has been embraced by teens as a vital form of daily communication with friends (Lenhart, Ling, Campbell, & Purcell, 2010).

However, unlike many other studies on adolescents' use of communication technologies which have demonstrated that cell phones (including text messages) are most often used to stay in touch with very close friends and family (Broege, 2009; Cawley & Hynes, 2009; Ishii, 2006; Oksman & Turtiainen, 2004), the participants in this study expressed that text messaging permits the maintenance of ties to close friends while also allowing emerging friendships to develop. There has been relatively little research on text messaging's ability to create and reinforce social ties and friendships among adolescents. However, Bryant, Saunders-Jackson and Smallwood's (2006) study of adolescent friendship ties and social networks found that adolescents were not creating more ties, nor were they creating weaker ties through text and instant messaging. Furthermore, unlike the poignant account of one adolescent in this study, who described her pre-text messaging existence, as a "hermit", the socially isolated adolescents in Bryant et al.'s study were not creating any (or very few) relationships through text or instant messaging

Nonetheless, evidence to support this study's findings that the technology helps increase socialization and positively influences near and far peer relations is not entirely lacking. For example, Thompson and Cupples' (2008) study among New Zealand adolescents revealed that text messaging did not collapse or inhibit in-person communication and potentially enhanced the teen social network. Furthermore, a longitudinal study of Japanese undergraduate students conducted by Igarashi, Takai and Yoshida (2005) found that students using text messaging in concert with face-to-face contact increased the intimacy of their relationships. Contrastingly, those who only communicated in-person sustained stable levels of intimacy, but did not increase their intimacy over time. Like the participants in Igarashi et al.'s study, participants in this study also maintained that text messaging enabled them to stay in close contact with newly met ties only if the text messaging communication was supplemented by face-to-face interactions. In this way, text messaging serves as a bridge to new social groups.

Connections to friends and acquaintances are also maintained through "random conversations" that would not be attempted through voice calls. Adolescents insist that "...if you call somebody, you have to have a reason to call them", unlike texting with its unique etiquette that supports the texting of messages for any reason or no reason at all, and at any time of the day or night, independent of the sender or the receiver's location. The notion of "random conversations" is supported in the research of Cupples and Thompson (2010) who indicate that this aforesaid concept highlights the relationality of these interactions: adolescents are able to connect with others, but the result is not foreseeable. Thus, through text

messaging adolescents are creating connections with others that are novel and unpredictable. Similarly, Oksman and Turtiainen (2004), claim that these “random conversations” not only fill the empty moments of everyday life by helping teenagers to pass time and decrease boredom but also allows adolescents to retain a sense of being connected to others, as the cell phone is carried everywhere.

Broege (2009) asserts that with “text messaging, social and physical distances between various places are bridged, and spatial immobility caused by situation-based communication, such as landline phones, can be overcome” (p. 18). For participants in this study, the bridging of time and space contributed to the sense of connectedness adolescents had with others. Connections with past co-workers or friends from a previous school are often maintained through text messaging alone. Furthermore, for some of the participants, namely adolescent mothers with young children, the cell phone’s ability to transcend space allowed them to maintain ties with friends despite their significant familial responsibilities and their situational alienation from their traditional peer group. One young mother’s report of preferring to communicate by text while completing her household chores and tending to her screaming children highlights the transformative possibilities of text messaging. For this young mother, like another, who maintained that frequent texting with her friends from her former school was necessary “so you won’t be like totally forgotten”, texting while existing in different physical and social spaces permits not only a continued connection to friends but also allows these young mothers to perform adolescent selves. Thrust into the role of motherhood, through the use of

text messaging, these young women are able to transcend space and time to regain a sense of their former identities.

Exerting control

For adolescents in this study, text messaging afforded them an unprecedented amount of control over various aspects of their lives. The myriad of ways in which adolescents' exerted control through text messaging is discussed through the organizing themes below and a comparison to the findings of past research is attempted.

Negotiating public space

Adolescents in this research described novel ways in which they negotiated the use of text messaging in public space. Notably, one adolescent's account of wearing her winter jacket in class, placing both arms on the table and then slipping one arm out to text under the table was particularly creative. By putting cell phones on vibrate, sending and receiving texts under the school desk, and by finding excuses to go to the bathroom to read their text messages while at work, adolescents were able to manipulate regulations (school and work) and authority (teachers, parents, employers). Thompson and Cupples (2008) describe this as a way in which adolescents can play with visibility-invisibility and audibility-inaudibility to escape adult supervision. Particularly, the account of one of Thompson and Cupples' participant's who inconspicuously sent and received a large quantity of text messages from his coat pocket while on vacation with his family, is very similar to the account described above in this research and demonstrates the important way in which adolescents accommodate their use of text messaging to manage public

environments, regulations and authority. Mirroring the findings of this research, Grinter, Palen and Eldgridge (2006) have noted that the ability to silence the technology, mute the device, and keyboard quietly allows interactions to go unnoticed which is important in the negotiating of public space. Drawing further comparisons to the text messaging practices of young people in this study, teenagers in Grinter et al.'s study describe how they reconfigure space by using their own body or elements in a classroom (i.e. desk) to carve out a private area in which text messaging activity can be hidden.

Negotiating public space with text messaging is only possible because the technology allows adolescents to send and receive texts quietly and privately. For most participants in this study, text messaging enhanced the privacy of their communications. Indeed, other research has confirmed that the cell phone has become a contested site of privacy (Cawley & Hynes, 2010). However, like the participants in Cawley and Hynes' (2010) research, the adolescents in this study were concerned about other people looking through their messages when their phone is left unattended and were concerned about random people peering over their shoulder to read their text messages. The portrayal of the aforementioned people who invade a teenager's privacy evoked some of the greatest emotional responses from the participants. Vividly described as "rubberneckers" and "creeps", nearly all adolescents had experienced such breaches of privacy.

Though public and private space has been blurred with the advent of cell phones, for adolescents the act of talking on the cell phone in public, rather than texting is seen as a violation of the unspoken rules of public space. For example, one

of the participants noted that people taking voice calls while on the bus were “crazy” and “loud” and that “you hear all their personal shit”. On this issue, the participants in this study are not alone. These findings have been confirmed by Ishii (2006) who describes this as an invasion of the sanctity of public space and that in many countries, the use of cell phones in public areas such as trains and restaurants has garnered extensive criticism. Dichotomously, though teenagers often use text messaging to subvert authority, in the above instance, the use of text messaging in public space demonstrates adolescents’ implicit understanding and respect for the regulations of public space.

Controlling self-presentation and parental communications

Self-presentation. Unlike most other communication media, text messaging allows adolescents to better control their self-presentation. In contrast to face-to-face or voice conversations which may offer competing social and sensory information such as those described by the participants in this study (tone of voice, stuttering, pauses in conversation, etc.), the lack of these aforementioned cues allocates increased cognitive capital to the creation of both the text message and the selective presentation of self. Adolescents are able to project alternate identities through text: an identity that is at once viewed as a bolder and more honest self, and on the other hand, an identity that is perceived as a more concealed or inauthentic self. These aforementioned findings are mirrored by Cupples and Thompson (2010) who suggest that for adolescents: “The ability to say things you wouldn’t normally say suggests that in this sense, texting like other forms of virtuality permits the projection of alternate identities and new modes of spatial becoming” (p. 9). Similarly, Maddell

and Muncer (2007) note the lack of social cues inherent in text messaging allows users to control their self-presentation, which might contribute to its popularity among adolescents.

The ability to communicate with others while mitigating the potentially embarrassing visual and/or verbal cues that face-to-face or traditional phone interactions allow is deemed particularly advantageous when navigating the minefield of adolescent romantic relationships. The participants in this study revealed that through the use of text messaging, they reveal less of themselves, manage their insecurities and are better able to preserve their self-esteem in light of any rejection they may receive. Cupples and Thompson (2010) describe this behaviour in adolescents as a “cautious testing of the waters” (p.9) that affords adolescents the ability to get to know each other prior to meeting while minimizing rejection and associated shame. Like the participants in this study who generally prefer to use text messaging to communicate with romantic partners, reject potential suitors and to receive rejection from potential suitors, the quantitative findings of a study among young urban African-American and Puerto-Rican participants demonstrated that 90% of participants use cell phones to communicate with partners and that text messaging is used to screen and “talk” to new partners while also allowing young people to reject unwanted partners (Bergdall, Kraft, Andes, Carter, Hatfield-Timajcy, Hock-Long, 2011).

The young people in this study also use text messaging in traditional and novel ways to modify their self-presentation. Texting is often utilized as an asynchronous form of communication, allowing participants to transcend time in

order to “avoid awkward silences” or allow teenagers to “think of something funny to say”. A second, more novel way in which the cell phone and text messaging is used to modify self-presentation is by using it as a prop, or a pretend artefact, to avoid awkward scenarios or potential embarrassment. The stories of young women who avoided conversations with strangers at bus stops by pretending to read or write a text, as well as the account of another who pretended to use her cell phone when she realized she was walking in the wrong direction highlights the importance of self-presentation for teenagers and the creative ways in which the cell phone is being used to maintain impressions. Though scant, previous studies have confirmed these findings. Maddell and Muncer (2007) describe that for young people, text based communication is most desirable as it allowed breaks in conversation deemed particularly useful in emotional situations or when trying to manage the impression that one makes. Similarly, the young people in Cupples and Thompson’s (2010) study described that when they are being observed by others, they also pretend to send or receive texts to give the impression to others that they are loved, and to avoid being perceived as a loner. This “cyborgian faking” as it is described in Cupples and Thompson’s study, situates the phone as a virtual friend and makes social space more manageable for teens.

Parental communications. The experiences of the participants in this study reflect the dichotomous and diverse ways in which adolescents use text messaging in their communications with their parents. For some, text messaging permitted the creation of closer bonds with their parents and for others, text messaging allowed a parental-adolescent distancing. In general, for male participants in this research, text

messaging was used to avoid or modify their interactions with their parents. Due to lack of visual or verbal cues, such as facial expressions and tone of voice, adolescents are also able to communicate potentially hurtful comments with impunity. Unlike adolescent boys, who ignored their parents' texts, young women frequently texted their parents throughout the day. For the latter group, text messaging maintains and even augments parent-adolescent communication. Indeed, one participant described a closer bond and relationship with her mother subsequent to frequent communication by text messaging. Published research on this subject has been unclear. According to some researchers, text messaging amplifies and strengthens parental-adolescent communication and can be viewed as an "electronic leash" (Campbell, 2006; Craft, 2010). Furthermore, by removing voice tone, texting decreases misinterpretation and can even improve teenagers' response time to their parents' text messages (Wireless, 2006). However, evidence from many studies also reveals that a common reason for using cell phones and text messaging among young people is to obtain freedom from the family grip (Campbell, 2006; Kennedy, Smith, Wells & Wellman, 2008; Oksman & Turtiainen, 2004; Reidy, 2004). Indeed, adolescent girls in Campbell's (2006) study developed tactics of resistance similar to the adolescent boys in this study, such as refusing to answer the phone when parents were calling or giving misleading information about their location or activity.

Interestingly, despite the acknowledged acts of resistance described in this study, when asked whether the cell phone or text messaging increased their independence, a significant proportion of the teenagers disputed this assertion. In general, adolescents maintained that the advent of text messaging in their lives

merely increased their ability to socialize with others but this did not translate into an increased sense of autonomy. Moreover, as previously mentioned, some adolescents acknowledged an even closer bond with their parents through frequent text messaging interactions, which would appear to oppose the main developmental task of adolescence, to obtain autonomy from parental controls. However, it is important to note that participants were merely asked if text messaging increased their independence, not specifically if it increased their independence from their parents, which may have prompted different answers. Thus, the interpretation of the question on the effects of text messaging on adolescent independence may have been problematic. Furthermore, in light of some of the behaviours participants described, such as ignoring texts from their parents, text messaging may indeed afford teenagers an increased autonomy, but it may not be viewed as such by adolescents.

Adolescents' assertions that text messaging does not increase their independence may represent how fully entrenched and established the technology has become with teen identity. Thompson and Cupples (2008) state that for adolescents the cell phone has become so embedded and pervasive that it can be taken for granted and viewed as a mundane artefact. In essence, for these "digitally native" adolescents who have known no existence without cell phones, it may be impossible for them to reflect on the cell phone as a instrument of independence without taking the technology for granted.

Adolescents are generally receptive

This study determined that adolescents are interested in the use of text messaging for many aspects of sexual health. However, adolescents were more

amenable to the use of text messaging in sexual health in certain instances and had concerns with its use in other scenarios. Opinions were sought regarding the different programs and these opinions as well as a discussion comparing the findings of this research to past will be featured in the organizing themes below.

Text messaging for sexual health programs

Most of the participants in this study believed that a sexual health text messaging program would be beneficial and utilized by teenagers. In particular, the ability to ask sensitive questions privately via text was particularly appealing to teenagers. Furthermore, due to the temporal mobility such a program would provide, participants deemed the ability to multi-task and not “waste time” on hold or in a waiting room as particularly beneficial. Furthermore, the spatial mobility that a text messaging-based program confers would offer complete anonymity and privacy, mitigating teenagers’ potential embarrassment, posing no threat to their self-presentation. Previous research has confirmed that adolescents are equally or more receptive to receiving sexual health information via text messaging than through other means (Coker et al., 2010; Samal et al., 2009; Selkie, Benson, & Moreno, 2011; Wright, Fortune, Juzang & Bull, 2011). For the young people in Selkie, Benson and Moreno’s (2011) study, text messaging is preferred even over social networking sites, as it is deemed as more confidential, safer and less threatening to participants. Indeed, current and past sexual health text messaging programs such as SEXINFO and HOOKUP in San Francisco, and BRdsNBz in North Carolina, have already demonstrated considerable success receiving numerous text messages for sexual health information (Levine, McCright, Dobkin, Woodruff & Klausner, 2008)

and sexual health information subscription (Levine, 2011). Furthermore, formative research has determined that adolescents trust this service and are most likely to follow-up on an answer from a text-based sexual health information line than from other resources in the community (Phillips, 2010).

Sexual health promotion via text messaging

The receptivity of adolescents to a text-based sexual health promotion program was contingent upon whether the text messaging intervention was a corollary component of a class-based program or whether the intervention was a population level sexual health promotion program in which young people receive random sexual health information via text. In general, adolescents were receptive to the use of text messaging as a supplement or in lieu of a class-based program as the medium was considered less boring, awkward and embarrassing for sensitive subjects. The findings are consistent with past research (Cornelius et al., 2011; Cornelius & Lawrence, 2009; Wright, Fortune, Juzang and Bull, 2011). However, the receptivity to a population level sexual health promotion program was not well received and elicited concerns over how adolescents' phone numbers would be obtained, the possibility that these messages could be viewed as bothersome and not germane to an individual's situation or interpreted as "junk mail" and the potential violation of privacy. Though no past research has sought adolescents' hypothetical receptivity to a population level sexual health promotion text messaging program, research on the impact of text messaging at the population level has been conducted with positive outcomes. These studies have demonstrated that text messaging sexual health programs aimed at the population level increase STI knowledge (Gold et al.,

2011a; Gold et al., 2011b; Lim et al., 2011), increase STI testing (Gold et al., 2011a; Lim et al., 2011) and are deemed as an acceptable means of health promotion (Gold, Lim, Hellard, Hocking & Keogh, 2010). Due to the discrepancy between the findings of this research and those in the literature, future research is needed to explore the receptivity and outcomes of such programs from a Canadian perspective.

Sexually Transmitted Infections (STI) Services

Most of the participants in this study expressed interest in receiving their STI results via text. For those adolescents, there was a belief that receiving results in this way would be an economical use of their time and would promote confidentiality and reduce embarrassment. However, a minority of adolescents maintained that they would prefer to receive their results in person or via voice call in the event that they had any additional questions to ask. Some of the literature supports the latter finding that young people prefer to receive their STI screening results by telephone or face-to-face (Brown, Copas, Stephenson, Gilleran and Ross, 2008). However, a much larger study conducted by Dhar, Leggat and Bonas (2006) determined that adolescents were pleased with text messaging and found it to be a quick, safe and confidential method of disseminating STI screening results. Similarly, Menon-Johnson, McNaught, Mandalia and Sullivan (2006) concluded that following the implementation of a text messaging results service, clients attending an STI client, sought treatment for chlamydia six days sooner than historical controls. Though the results of Lim, Haar and Morgan (2008) found no significant differences in time to treatment for chlamydia following the introduction of a text messaging results service, those authors noted that text messaging is at least as effective as traditional

methods of communicating STI results. Most of the aforementioned studies also noted significant administrative gains by reducing the amount of staff time dedicated to providing results (Dhar et al., 2006; Menon-Johnson et al., 2006; Lim et al., 2008). Further research is needed to determine adolescents' preferences for STI screening results and a cost-benefit analysis of the varying methods of communicating STI results should be undertaken. The results of these future studies could prove invaluable to improving STI treatment rates as well as lowering health care costs.

Overwhelmingly, the participants in this study believed that communicating with a partner about their potential risk for STI infection was best done via anonymous text messages. In general, participants expressed great anxiety about considering sending non-anonymous partner notification messages and worried about being “punched in the face”, the message being shown to others resulting in embarrassment for the index adolescent, or simply the awkwardness of the conversation if done in-person or by voice call. Interestingly male participants expressed less concern over sending a partner notification text anonymously as these participants seemed to acknowledge that deducing from whom the message was sent would likely be quite obvious in some instances. Furthermore, though none of the female participants were interested in contacting their sexual partners via voice call, a few male participants claimed that this would be their method of choice because “...you’re going to have to do it anyways”. Contrastingly, when considering preferences for receiving a partner notification method, adolescents strongly preferred to receive this information in-person and non-anonymously. The limited research into this area has been unconvincing and has only examined the concept of

partner notification as a whole and not examined the differences in preferences between receiving versus sending a partner notification message. Some research has clearly demonstrated that text messaging is not suitable for partner notification due to its impersonal nature and privacy issues (Apoola et al., 2006; Hopkins et al., 2010), while other research has been more promising (Bilardi et al., 2010a; Bilardi et al., 2010b). Bilardi et al. (2010a) noted that nearly half of the people in their study, who had recently been diagnosed with chlamydia would use a website that allowed them to send anonymous emails or text messages for partner notification. Bilardi et al. (2010b) then evaluated an online partner notification website that sends partner notification by email or text and found an increasing and substantial number of text messages were sent suggesting its utility. Clearly, future research is needed to determine the receptivity and feasibility of text messaging in partner notification paying particular attention to the differences in how adolescents wish to receive versus how they wish to send partner notification messages. Additionally, due to the differences in male responses versus female responses regarding partner notification preferences, supplementary research conducted with a greater sample is needed to determine if these aforementioned differences hold true.

Need to feel safe

Ensuring safety in accessing sexual health services is primordial to adolescents. Issues such as privacy, anonymity and protection are important concerns for adolescents when learning or dealing with sensitive topics like sexual health. Any sexual health program or service must be legitimate as well as adequately protect adolescents' privacy and anonymity.

Anonymity and privacy

As noted previously, for the participants of this study, anonymity and privacy were considered fundamental to ensuring their safety in sexual health services. In nearly every scenario presented to adolescents pertaining to sexual health, participants deemed text messaging to be a more confidential and private means of receiving information, especially if sensitive information was not revealed in the message. The aforementioned findings pertaining to privacy and anonymity are consistent with previous research regarding the receptivity of adolescents to text-based sexual health education and services (Coker, Sareen, Chung, Kennedy, Weidmer, & Schuster, 2010; Perry, Kayekijian, Braun, Cantu, Sheoran, & Chung, 2012; Selkie, Benson & Moreno, 2011). Though the majority of the participants would prefer to receive their STI results by text, adolescents were concerned that others could obtain their phones and read their messages and forward them to others. Furthermore, most of the participants reported that they would feel embarrassed if someone saw a sexual health message, unlike the adolescents in Perry et al.'s (2011) study who reported that they would not feel embarrassed if anyone, including their parents saw a sexual health message on their mobile phones. Clearly, any future application of text messaging among the study's population must acknowledge that these messages may be uncomfortable for some teens and any sexual health program should assess a population's receptivity to text-messaging prior to using it as a communication vehicle for health promotion or sexual health services.

Protection

The trustworthiness of any sexual health message is a critical element of protection for adolescents in this study. If a message is viewed as illegitimate, it will likely be considered “junk mail” and discarded without being read, or viewed as a prank and thus not taken seriously. Furthermore, if the message is not being sent from a trusted source (i.e. doctor, nurse, clinic), these messages are unlikely to resonate with teens. These views are consistent with those in the literature that have deemed sexual health text messages could be dismissed as a prank (Coker et al., 2010) and that the credentials of a person answering sexual health questions should be obvious (Selkie, Benson & Moreno, 2011). The participants in this study would only trust the information and feel assured by its content if there was a public campaign describing the text messaging service, or if they were made aware of this program beforehand (i.e. advised that they will receive STI results via text when they present for testing). These views have also been expressed by the participants in Selkie, Benson and Moreno’s (2011) study who added that trust in a communication source is contingent upon the preservation of privacy when using it.

The participants in this study desired assurances that their communications would be kept confidential via passwords, codes or confirmations of identity. Though research in this area is negligible, these findings are consistent with those of Coker et al. (2010) whose participants also identified that sexual health information sent via text should be password-protected. Evidently, perceptions of safety, threat and legitimacy will influence adolescents when they are using technology specifically to find or receive sexual health information. Any application of text messaging in

sexual health services must address these conditions or likely result in loss of trust from adolescents and decreased likelihood to seek care.

Locating Actor-Network Theory (ANT) within the research

In this research, an ANT-informed approach was used as a lens through which to view the research, as a tool for reflexivity as well as a tool for sampling. Indeed, it is through the selection of ANT as a theoretical paradigm for this research that the first research question was originally developed. The researcher's original intent was to only examine Winnipeg adolescents' receptivity to text messaging in sexual health. However, subsequent to the readings of some of the more notable proponents of ANT (Latour and Law among others), and the selection of the theory as a conceptual framework, an additional research question was added as the theory had assisted in identifying some of the relevant informants related to the technology and the research question. By preliminarily following the adolescents as actors and tracing their connections with various other actors, it became obvious that a greater exploration of adolescents' experiences of the cell phone and text messaging was needed to provide an understanding of the different perspectives that constitute the components of a network and help keep it stable. However, as the number of potential actors in a network are infinite (Cresswell, Worth & Sheikh, 2010), this investigation only focused on a few actors in the network, such as adolescents, mobile phones, and text messaging while acknowledging that these actors only represent a small aspect of the larger network.

Latour (1987) maintains that the rules to the method include among others, following science and technology in the making, ignoring technologies' intrinsic

qualities and considering their subsequent transformations by other agents, as well as suspending judgment on the make-up of science and technology, rather focusing on what and who does the work. The concept of translation through interaction resonates with the adolescents' experiences of cell phones and text messaging and the use of these technologies as tools for connection, to negotiate power, manipulate space and modify self-presentation.

Substantiated by the research of Thompson and Cupples (2008), the first assumption of this study based on the work of Law (1992) has been demonstrated: cell phones do indeed function like a prosthesis, an extension of the human body for teenagers and enables them to be more comfortable and more in control of the communication process. Though no one would dispute that adolescents have agency, the descriptions of participants feeling “lost” or “naked” without their cell phones or sending text messages to “not be like totally forgotten”, demonstrate the ability of non-human “things” to act within a network. Furthermore, the use of the technologies as props to render social space more manageable highlights the transgressive possibilities of the cell phone and text messaging.

The value of using ANT concepts in future research on the use of text messaging in adolescence may go beyond the ability to describe the way in which the technology is used, towards providing a prescriptive tool for encouraging better adolescent sexual health services. Unfortunately, as none of the adolescents in this study had experiences with text messaging for sexual health services or sexual health promotion, on the second research question, ANT is silent. However, McBride (2007) offers that an “understanding of the actors and their circulation within the

networks should enable the development of tailored inscriptions and enrolment strategies that will support the embedding of mobile technology within diverse geographic and social environments” (p.275). Thus, through a better understanding of some of the actors within the youth-cell phone-text messaging network as well as those within the youth-sexual health services network, it may be possible to extrapolate some of the findings of this research and develop adolescent sexual health services or adolescent sexual health promotion programs that use text messaging with good effect. However, McBride also cautions that translation within hypothetical networks cannot be assured. Prescriptively manufacturing an actor-network is precarious as unexpected behaviours are impossible to calculate. Accordingly, perhaps the best use of ANT within this research is simply as a tool for understanding the sensitive balance between technology, environment and adolescents.

Limitations

A limitation in this research was the small sample size. The focus group findings only represent the ideas and feedback of the adolescents who participated in the study, and cannot be generalized to the larger population of 15 to 20 year olds in Canada. Although, this study presents some important insights about adolescents’ views on text messaging in sexual health, these insights are specific to the context in which these views were provided. Readers may find, however, that the ideas presented may transfer and apply to similar contexts.

Another limitation in this study concerns the unique nature of dialogue. As both the researcher and moderator of the focus groups, it proved problematic to

capture the true essence of the dynamics within the focus groups. Observations, in the form of short-hand field notes, inadequately captured participants' non-verbal cues. As a result, some meaning may have been lost in the process of data analysis. Though this may have been resolved through the use of audio-visual recording equipment, due to the sensitive nature of the topic and the desire to maintain participants' anonymity and confidentiality, the use of such equipment would hinder participation in the study or impede spontaneous dialogue within the focus groups.

In addition, the unequal number of male and female focus groups and in particular the paucity of male focus groups may have shaped the findings and over-represented the views and opinions of female participants. The unintended inclusion of two 23 year-olds in the male focus group may have also contributed to the differences noted in this focus group vis-à-vis the other three. Furthermore, this study was limited by the self-selection bias of participants. Because participants were recruited from a teen clinic, and a program for adolescent parents (and because they agreed to participate in a discussion), their knowledge of and comfort with sexual health issues may have exceeded that of most adolescents.

Finally, due to the inherent bias and subjectivity of qualitative research, my perspective, drawn from my unique experiences as a former sexual health provider undoubtedly influenced the interpretation of the data, shaped the findings, conclusions, and implications of this study. Also, my own personal assumptions, may have given rise to researcher bias. This research did not seek to hide these biases, but rather, aimed to construct a holistic understanding of the dynamic and complex relationships between adolescents, sexual health and mobile phones.

Implications for Practice

As maintained by the World Health Organization (WHO)(2010) and Cresswell, Worth and Sheikh (2010), research involving adolescents is necessary to the progress of sexual health promotion, and research that looks into improvements in technology, and communication will result in improved quality of care. This current study, based on the aforementioned assumptions of this study as well as the emerging body of work pertaining to adolescent sexual health and text messaging (Cornelius & Lawrence, 2009; Perry, Kayekjian, Braun, Cantu, Sheoran, & Chung, 2011; Selkie, Benson, & Moreno, 2011) supports the premise that improvements in technology can result in better outcomes in adolescent sexual health. Adolescents are indeed open to receiving some sexual health information via text messaging programs and perceive this medium as beneficial in numerous ways. Consequently, organizations that offer sexual health services should be aware that text messaging can and should be considered in certain instances but that concerns pertaining to how these services will be offered exist. Issues related to protection such as privacy, confidentiality, anonymity and legitimacy must be addressed to the satisfaction of adolescents prior to the inception of any such program to ensure its success within this population. When considering what communication channels to use for various sexual health services or sexual health campaigns, the results of this study may help guide health care professionals in ensuring the suitability of the communication medium with the service provided.

Implications for Research

If text messaging is to be used in sexual health promotion campaigns, future research should be conducted to determine the specifics of an effective text messaging campaign such as timing, length of message, number of messages and message content (including language and style). Additionally, future research may consider evaluating adolescents' receptivity and subsequent use of text messaging in sexual health services from a gender analysis perspective. Most studies conducted with adolescents have been single gendered or mixed gendered, however none evaluated adolescents' experiences of text messaging in sexual health or receptivity to text messaging in sexual health on the basis of gender. Given the notable differences between male and female answers on certain subjects, it may prove wise to evaluate this issue in greater detail.

Due to the overwhelming receptivity to receiving STI results via text messaging, and past research indicating potential health and administrative gains, a cost-benefit analysis of the use of text messaging to disseminate STI results should be measured.

Chapter Summary

In this final chapter, adolescents' experiences of text messaging, adolescents' receptivity to text messaging in sexual health as well as the themes supporting these research questions were discussed. This discourse on the research findings indicated that participants in this study had many similar but some dissimilar experiences and views compared to other research studies. In conclusion, the study's limitations as well as recommendations for future directions were presented.

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Appendix A

Letter of introduction to agency directors at Klinik, Mount Carmel Clinic and New Directions

I am writing to inform you that I am a graduate student recruiting adolescents to participate in a study. I am interested in exploring adolescents' experiences with text messaging and their views on the potential use of text messaging in sexual health. I am particularly interested in this research area because adolescents are at high risk for sexually transmitted infections and are also the greatest users of text messaging technology. Though research on text messaging in sexual health is limited it has been promising to date. I am interested in contributing to this emerging body of literature, from a Winnipeg perspective. The study is part of my thesis project to in order to obtain a Masters in Nursing with a focus in community health nursing.

Adolescents between the ages of 15 to 19, who have current or past experiences with text messaging and who can speak English, will be recruited, requested to sign consent forms and then participate in one focus group session for approximately 60 to 90 minutes. The study participants will also be asked to answer an anonymous brief demographic questionnaire. The focus group interviews will be audiotaped with permission from the participants.

Participation in this research study will be entirely voluntary and adolescents can withdraw from the research project at anytime by contacting me by phone or by e-mail. See my contact information below. All personal identifiable information will be omitted from the transcriptions. Data from the focus group interviews will be analyzed, grouped into themes and a report will be written (which will become part of my master's thesis).

Your support is requested to allow me to recruit adolescent participants from your community agency, as well as to conduct the focus groups at your site. You will find attached with this letter, a more detailed explanation of my research and the methodology to be employed. Please call me if you have questions or concerns. I can be reached by phone at home at xxx-xxxx. Please leave a message and I will call you back as soon as possible. Alternatively, you can e-mail me at xxx@xxxxx.ca

Vanessa N. Reynolds, RN, BRS, BN
Master of Nursing student
University of Manitoba

Research Supervisor:
Dr. Lynn S. Scruby
Assistant Professor, Faculty of Nursing
Tel. xxx-xxxx, e-mail: xxx@xxxxx.ca

Appendix B

Participant invitation letter: Printed on U of M letterhead (Adapted from the Toronto Teen Survey)

Project: Listening to adolescents about text messaging and sexual health

What is this project about?

It is about listening to teenagers about how they use text messaging in their day-to-day lives and how text messaging could be used in sexual health services in Winnipeg. We want to hear from 15 to 19 year olds who are interested in talking with us about text messaging and sexual health services.

Who is running this project?

Vanessa Reynolds, a nursing student from the University of Manitoba is conducting this project for her master's program. Her advisor, Dr. Lynn Scruby will be overseeing this project. This project has been approved by the University of Manitoba, Klinik, Mount Carmel Clinic and New Directions.

What do I have to do?

You will take part in a group interview with up to seven other teenagers and you will be asked for your opinions about text messaging, what it means to you and how text messaging could be used in adolescent sexual health. The interview will take about one and a half hours and will be held on-site (at Klinik, Mount Carmel Clinic and New Directions) within the next few weeks.

You will privately (on paper) answer a few questions about your age, level of education, if you own a cell phone and how many text messages you send and receive in a day. You will not write your name on this form, so this information will be completely private.

What will happen with the info?

The information from the interview will be audio taped, transcribed and then it will be used to write a report that becomes part of a document Vanessa completes for her master's program. The report may also be published in a journal. At your request, a summary of the report will also be sent to your private email. A presentation on the report will be conducted at all three of the community agencies taking part in this study (Klinik, Mount Carmel Clinic and New Directions). You will be invited to attend this presentation if you would like to hear about the report.

Will it be private?

Yes, your name or other personal information will not be revealed in the report. Only the researcher and her advisor and transcriptionist will be able to read the interviews. However, you will hear the other teenagers' answers and opinions and they will hear yours. To protect each other's privacy, we ask everyone that comes to the interview

to not talk about what other people said outside the interview and to not discuss who attended the interview.

Do I have to participate? Do I have to answer every question? Can I drop-out?

No. You do not have to participate. Also, if you do participate, you do not have to answer all the questions. You can ask for the recorder to be turned off for any of your answers or comments. You can also drop-out of the study at any time and this will not affect the care you receive from Klinik, Mount Carmel Clinic or New Directions. If you do drop out of the study, the information you have provided will be discarded and not used for any purposes.

What are the pros and cons of participating?

- **Pros:** Letting people know your opinions about text messaging and teen sexual health helps us understand your experiences and may help create better sexual health services for teenagers.
- **Cons:** The interviews will involve questions that may be sensitive as they tackle issues related to sexual and reproductive health. You can ask to hear or read the questions that will be asked prior to agreeing to participate in the interview.

Will I get anything if I participate?

Yes. You will get \$20 to thank you for your time.

Who can I call, text or email if I have questions about this study?

If you have any questions about the project, the focus-group interviews, your ethical rights or anything else, you can contact Vanessa Reynolds at xxx-xxxx or xxx@xxxxx.ca or Dr. Lynn Scruby (assistant professor, Faculty of Nursing, University of Manitoba) at xxx-xxxxx or xxx@xxxxx.ca

Ready?

You can participate in this project if:

- 1) you understand why the study is being done
- 2) you decide you want to participate
- 3) you know that you don't have to
- 4) you know that we're here to help if you have any questions
- 5) you're between the ages of 15 and 19
- 6) you have used text messaging

How do I let you know that I'd like to participate?

You can contact Vanessa Reynolds (the researcher) by telephone, text or email at xxx-xxxx or xxx@xxxxx.ca

If you think your friends or other teenagers would like to participate, please let them know about this study. We'd love to hear from them also!

Appendix C

Participant Consent Form for Focus Groups: Printed on U of Manitoba letterhead

(Adapted from the Toronto Teen Survey)

Project: Listening to adolescents about text messaging and sexual health

Principal Investigator: Vanessa Reynolds, RN, BRS, BN, University of Manitoba,
Master of Nursing thesis student, tel. xxx-xxxx, email: xxx@xxxxx.ca

Research Supervisor: Dr. Lynn S. Scruby, Assistant Professor, Faculty of Nursing
Tel. xxx-xxxxx, e-mail: xxx@xxxxx.ca

This consent form, a copy of which will be left with you for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

What is this project about?

It is about listening to teenagers about how they use text messaging in their day-to-day lives and how text messaging could be used in sexual health services in Winnipeg. We want to hear from 15 to 19 year olds who are interested in talking with us about text messaging and sexual health services.

Who is running this project?

Vanessa Reynolds, a nursing student from the University of Manitoba is conducting this project for her master's program. Her advisor, Dr. Lynn Scruby will be overseeing this project. This project has been approved by the University of Manitoba, Klinik, Mount Carmel Clinic and New Directions.

What do I have to do?

You will take part in a group interview with up to seven other teenagers and you will be asked for your opinions about text messaging, what it means to you and how text messaging could be used in adolescent sexual health. The interview will take about 90 minutes and will be held on-site (at Klinik, Mount Carmel Clinic and New Directions) within the next few weeks.

You will privately (on paper) answer a few questions about your age, level of education, if you own a cell phone and how many text messages you send and receive in a day. You will not write your name on this form, so this information will be completely private.

What will happen with the info?

The information from the interview will be audio taped, transcribed and then it will be used to write a report that becomes part of a document Vanessa completes for her master's program. The report may also be published in a journal. At your request, a summary of the report will also be sent to your private email. A presentation on the report will be conducted at all three of the community agencies taking part in this study (Klinik, Mount Carmel Clinic and New Directions). You will be invited to attend this presentation if you would like to hear about the report.

Will it be private?

Yes, your name or other personal information will not be revealed in the report. Only the researcher and her advisor and transcriptionist will be able to read the interviews. However, you will hear the other teenagers' answers and opinions and they will hear yours. To protect each other's privacy, we ask everyone that comes to the interview to not talk about what other people said outside the interview and to not discuss who attended the interview.

All information (tapes, interviews and notes) will be kept in a locked cabinet in Vanessa's home and will be shredded 2 years after the start of the study. All personal information (such as names) will be removed from the notes and interviews so that you cannot be identified.

Although experiences of child abuse, child neglect or planned criminal activity are not the interest of this study, if these issues are mentioned by participants, Vanessa is obligated to report these issues to the appropriate authorities.

What are the pros and cons of participating?

- **Pros:** Letting us know your opinions about text messaging and teen sexual health helps us understand your experiences and may help create better sexual health services for teenagers.
- **Cons:** The interviews will involve questions that may be sensitive as they tackle issues related to sexual and reproductive health. You can ask to hear or read the questions that will be asked prior to agreeing to participate in the interview.

Do I have to participate? Do I have to answer every question? Can I drop-out?

No. You do not have to participate. Also, if you do participate, you do not have to answer all the questions. You can ask for the recorder to be turned off for any of your answers or comments. You can also drop-out of the study at any time and this will not affect the care you receive from Klinik, Mount Carmel Clinic or New Directions. If you drop out from the study, the information that you have shared will not be used in any of the reports or presentations. If you do drop out of the study, the information you have provided will be discarded and not used for any purposes.

Will I get anything if I participate?

Yes. You will get \$20 to thank you for your time.

Who can I call, text or email if I have questions about this study?

If you have any questions about the project, the focus-group interviews, your ethical rights or anything else, you can contact:

- Vanessa Reynolds at xxx-xxxx or at xxx@xxxxx.ca
- Dr. Lynn Scruby (assistant professor, Faculty of Nursing, University of Manitoba) at xxx-xxxxx or by email at xxx@xxxxx.ca
- If you want to talk privately about your rights as a participant, you can also contact the Human Ethics Secretariat from the University of Manitoba Education/Nursing Ethics Review Board at 474-7122

Ready?

You can participate in this project if:

- you understand why the study is being done
- you decide you want to participate
- you know that you don't have to
- you know that we're here to help if you have any questions
- you're between the ages of 15 and 19
- you have used text messaging

Your signature on this form indicates that you have understood to your satisfaction the information regarding participation in the research project and agree to participate as a subject. In no way does this waive your legal rights nor release the researchers, sponsors, or involved institutions from their legal and professional responsibilities. You are free to withdraw from the study at any time, and /or refrain from answering any questions you prefer to omit, without prejudice or consequence. Your continued participation should be as informed as your initial consent, so you should feel free to ask for clarification or new information throughout your participation.

The University of Manitoba may look at your research records to see that the research is being done in a safe and proper way.

This research has been approved by the Education and Nursing Review Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator (HEC) at 474-7122. A copy of this consent form has been given to you to keep for your records and reference.

If you agree to each of the following, please place a check mark in the corresponding box. If you do not agree, leave the box blank:

1. I have read or had read to me the details of this consent form. ()
2. My questions have been addressed. ()
3. I, _____ (print name), agree to participate in this study. ()
4. I agree to have the focus interview audiotaped ()

6. I agree to have the findings (which may include quotations) from this project published or presented in a manner that does not reveal my identity. ()
7. I want to receive a report by email of the findings ()
9. I want to be notified by email when the report of the study will be presented at Klinik, Mount Carmel Clinic and New Directions ()

Email Address: _____

Participant's Signature _____ Date _____

Researcher's Signature _____ Date _____

Appendix D

Parental consent forms for participants from New Directions (Adapted from the Toronto Teen Survey)

Project: Listening to adolescents about text messaging and sexual health

Principal Investigator: Vanessa Reynolds, RN, BRS, BN, University of Manitoba, Master of Nursing thesis student, tel. xxx-xxxx, email:xxx@xxxxx.ca

Research Supervisor: Dr. Lynn S. Scruby, Assistant Professor, Faculty of Nursing
Tel. xxx-xxxx, e-mail: xxx@xxxxx.ca

This consent form, a copy of which will be left with your teen for your records and reference, is only part of the process of informed consent. It should give you the basic idea of what the research is about and what your teens participation will involve. If you would like more detail about something mentioned here, or information not included here, you should feel free to ask. Please take the time to read this carefully and to understand any accompanying information.

What is this project about?

It is about listening to teenagers about how they use text messaging in their day-to-day lives and how text messaging could be used in sexual health services in Winnipeg. We want to hear from 15 to 20 year olds who are interested in talking with us about text messaging and sexual health services.

Who is running this project?

Vanessa Reynolds, a nursing student from the University of Manitoba is conducting this project for her master's program. Her advisor, Dr. Lynn Scruby will be overseeing this project. This project has been approved by the University of Manitoba, Klinik, Mount Carmel Clinic and New Directions.

What do participants have to do?

Your teen will take part in a group interview with up to seven other teenagers and they will be asked for their opinions about text messaging, what it means to them and how text messaging could be used in adolescent sexual health. The interview will take about 90 minutes and will be held on-site (New Directions) within the next few weeks.

Your teen will privately (on paper) answer a few questions about their age, level of education, if they own a cell phone and how many text messages they send and receive in a day. They will not write your name on this form, so this information will be completely private.

What will happen with the info?

The information from the interview will be audio taped, transcribed and then it will be used to write a report that becomes part of a document Vanessa completes for her master's program. The report may also be published in a journal. At your teen's request, a summary of the report will also be sent to their private email. A presentation on the report will be conducted at all three of the community agencies taking part in this study (Klinik, Mount Carmel Clinic and New Directions). Teens will be invited to attend this presentation if they would like to hear about the report.

Will it be private?

Yes, your teen's name or other personal information will not be revealed in the report. Only the researcher and her advisor and transcriptionist will be able to read the interviews. However, the teenagers will hear others answers and opinions. To protect each other's privacy, we ask everyone that comes to the interview to not talk about what other people said outside the interview and to not discuss who attended the interview.

All information (tapes, interviews and notes) will be kept in a locked cabinet in Vanessa's home and will be shredded 2 years after the start of the study. All personal information (such as names) will be removed from the notes and interviews so that individuals cannot be identified.

Although experiences of child abuse, child neglect or planned criminal activity are not the interest of this study, if these issues are mentioned by participants, Vanessa is obligated to report these issues to the appropriate authorities.

What are the pros and cons of participating?

- **Pros:** Getting teenagers' opinions about text messaging and teen sexual health helps us understand their experiences and may help create better sexual health services for teenagers.
- **Cons:** The interviews may involve questions that may be sensitive or embarrassing as they tackle issues related to adolescent health. You can ask to hear or read the questions that will be asked prior to consenting to have your teen participate in the interview.

Does my teen have to participate? Does my teen have to answer every question? Can my teen drop-out?

No. Teens do not have to participate. Also, teens that do participate do not have to answer all the questions. They can ask for the recorder to be turned off for any of their answers or comments. They can also drop-out of the study at any time and this will not affect the care they receive from New Directions. If they drop out from the study, the information that they have shared will not be used in any of the reports or presentations. If they do drop out of the study, the information they have provided will be discarded and not used for any purposes.

Will my teen get anything if they participate?

Yes. They get \$20 to thank you for their time.

Who can I call, text or email if I have questions about this study?

If you have any questions about the project, the focus-group interviews, your ethical rights or anything else, you can contact:

- Vanessa Reynolds at xxx-xxxx or at xxxx@xxxxx.ca
- Dr. Lynn Scruby (assistant professor, Faculty of Nursing, University of Manitoba) at xxx-xxxx or by email at xxxx@xxxxxx.ca
- If you want to talk privately about your teens rights as a participant, you can also contact the Human Ethics Secretariat from the University of Manitoba Education/Nursing Ethics Review Board at 474-7122

This research has been approved by the Education and Nursing Review Board. If you have any concerns or complaints about this project you may contact any of the above-named persons or the Human Ethics Coordinator (HEC) at 474-7122. A copy of this consent form has been given to you to keep for your records and reference.

How to Get Involved:

1. Please sign the permission form at the end of this page.
2. Talk with your teenager about joining this study.
3. Contact Vanessa with any questions you have.

Your Consent: Do you want your teen to take part in the “Listening to adolescents about text messaging and sexual health” research project at New Directions. If you give your permission for your teen to take part, please check the first line at the end of this page. Print your name. Print your teenager’s name. Sign your name with today’s date.

Parental Consent Form

I have read this permission form. All my questions were answered. All parts of research study are clear to me. I will keep one of the copies of the consent form for my records.

Please check one:

_____ I give my consent for my teen to be part of the program.

Adolescent Name – Please Print

Parent/Guardian Name – Please Print

Parent/Guardian Signature Date

Appendix E

Demographic Questionnaire

Please answer the following questions by circling or handwriting a response. Feel free to ask the researcher if you do not understand the questions or if you have concerns. Please remember your participation is entirely voluntary and you can withdraw from the research project anytime by contacting the researcher by phone or by e-mail. No personal or identifiable information will be collected other than to conduct the study. A report on the study will be written and available to you at the end of the study.

1. Sex:

a. Male

b. Female

2. Age: _____

3. Are you currently in school:

a. Yes

b. No

4. What was the last year you attended school? _____

5. Are you currently working?

a. Yes

b. No

6. Do you own a working cell phone?

a. Yes

b. No

7. How many text messages do you send and receive in one day? _____

Appendix F

Interview guide for teenage participants

TOPIC #1 (Experience of text messaging)

1. Think back about the time when text messaging became a significant part of your life... how did it happen?
2. Describe your experiences of text messaging. What might a typical day look like?
3. Describe your experiences of using text messaging to communicate with your friends, boyfriends/girlfriends and parents?
4. How has text messaging given you more independence?
5. How do you experience the privacy that texting provides?
6. How do you experience the secrecy that texting provides?

TOPIC #2 (Views on text messaging in sexual health services)

8. Would you be open to asking for information about sexual health through a text (i.e. sending a text to find out information about a teen clinic or what to do if a condom broke)? Describe the types of situations in which you would be more open to using text messaging?
9. What do you think about receiving sexual health information through text messaging? What are your impressions of these examples (examples to be provided to teenagers) of text messages sent to teenagers about sexual health?
10. Would you prefer face-to-face communication or would you be interested in a text messaging program?

11. If you would be open to receiving educational text messages, what is the maximum number of messages you would like to receive in a week?
12. When is the best time to send text messages about sexual health?
13. In some cities, teenagers can receive their STI results by text message. (Prompt: example of wording of results.) What are your first impressions of this?
14. If someone were to contact you by text message to tell you that you might have an STI, how would you feel?
15. If you had an STI, how would you feel about contacting someone by text messaging to let them know to get tested and treated?
16. Explain how important it is to you to have privacy and anonymity in adolescent sexual health? If yes, how does text messaging fit with those needs?

Appendix G

ENREB Approval Form

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Appendix G

ENREB Approval Form



Office of the Vice-President
(Research and International)
Research Ethics and Compliance

Human Ethics
208 - 194 Dafoe Road
Winnipeg, MB
Canada R3T 2N2
Fax 204-269-7173

APPROVAL CERTIFICATE

July 3, 2012

TO: Vanessa Reynolds (Advisor L. Scruby)
Principal Investigator

FROM: Stan Straw, Chair
Education/Nursing Research Ethics

Re: Protocol #E2012:053
"Listening to Adolescents about Text Messaging in Sexual Health"

Please be advised that your above-referenced protocol has received human ethics approval by the Education/Nursing Research Ethics Board, which is organized and operates according to the Tri-Council Policy Statement (2). This approval is valid for one year only.

Any significant changes of the protocol and/or informed consent form should be reported to the Human Ethics Secretariat in advance of implementation of such changes.

Please note:

- If you have funds pending human ethics approval, the auditor requires that you submit a copy of this Approval Certificate to the Office of Research Services, fax 261-0325 - please include the name of the funding agency and your UM Project number. This must be faxed before your account can be accessed.
- If you have received multi-year funding for this research, responsibility lies with you to apply for and obtain Renewal Approval at the expiry of the initial one-year approval; otherwise the account will be locked.

The Research Quality Management Office may request to review research documentation from this project to demonstrate compliance with this approved protocol and the University of Manitoba *Ethics of Research Involving Humans*.

The Research Ethics Board requests a final report for your study (available at: http://umanitoba.ca/research/orec/ethics/human_ethics_REB_forms_guidelines.html) in order to be in compliance with Tri-Council Guidelines.

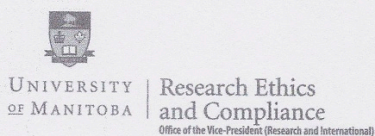
Appendix H

ENREB Amendment Approval

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Appendix H

ENREB Amendment Approval



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AMENDMENT APPROVAL

August 7, 2012

TO: Vanessa Reynolds
Principal Investigator

FROM: Stan Straw, Chair
Education/Nursing Research Ethics Board (ENREB)

Re: Protocol #E2012:053
"Listening to Adolescents about Text Messaging in Sexual Health"

This will acknowledge your Amendment Request dated July 26, 2012 requesting amendment to your above-noted protocol.

Approval is given for this amendment. Any further changes to the protocol must be reported to the Human Ethics Secretariat in advance of implementation.

Appendix I**New Directions Ethical Approval Form**

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Appendix I**New Directions Ethical Approval Form**


NEW DIRECTIONS
FOR CHILDREN, YOUTH, ADULTS & FAMILIES

**The Research Ethics Committee
Certificate of Approval for**



VANESSA REYNOLDS

**Research Project: Listening to adolescents about text messaging
in sexual health**

Approval granted to proceed with research project at New Directions as outlined in the application and any amendments recommended by the New Directions Ethics Committee.

Director of Alternative Services, Health, Safety & Security
Agency Training and Evaluation

August 2012
Date

Appendix J

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Appendix J

Confidentiality Agreement for Transcriptionist

Confidentiality agreement for transcriptionist

Project: Listening to adolescents about text messaging and sexual health

Principal Investigator: Vanessa Reynolds, RN, BRS, BN, University of Manitoba, Master of Nursing thesis student, tel. 204.786.2974, ~~vanessa.reynolds@umanitoba.ca~~

Research Supervisor: Dr. Lynn S. Scruby, Assistant Professor, Faculty of Nursing, Tel. 204.786.2974, e-mail: ~~lynn.scruby@umanitoba.ca~~

I, Sherry Ripak, agree to keep the contents of the audiotapes being transcribed and any identifying information about the participants strictly confidential. I will not discuss this research project with anyone except the principal investigator, and the research supervisor.

Transcription of the audiotapes will not be typed on the computer at my place of work. The audiotapes and transcription data will be secured in a safe place in my home to prevent electronic or physical access by any unauthorized persons, until such time as they are transferred into the possession of the principal investigator. Once the audiotapes are transcribed and data are transferred to the principal investigator, all computer files will be permanently erased and any paper copies of the transcripts will be shredded. Any notes I have made will be turned over to the principal investigator at the conclusion of the process. My signature indicates my willingness to comply with this confidentiality agreement.

Signature of Transcriptionist

Date

Signature of Principal Investigator

Date

Sept. 3, 2012

Sept 5/2012

