Sext Me Tender: Sexting Frequency, Sexual Communication, and Sexual Satisfaction in Canadian Young Women

by

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Sexting, exchange of sexually explicit digital content, is prevalent among young adults (Courtice & Shaughnessy, 2017). While previous research has explored texting as a tool to communicate about desires and sexual health (Tannebaum, 2018), limited research has investigated the ways sexting might be linked to quality of sexual communication (Bridle, 2019) and confidence with sexual communication (Falco, 2019). The study utilized secondary data analysis of survey data from Elle Canada. The purpose of this study was to investigate how young women’s sexting frequency was related to communication and satisfaction. Results from 1302 women found that sexters were more likely to be verbal communicators ($p = 0.05$), to regularly disclose their current sexually transmitted infection (STI) status ($p < 0.001$), and to ask a partner about their STI status ($p < 0.001$). Frequent sexters were more sexually satisfied ($p < 0.001$) and were more likely to report a very pleasurable last sexual encounter ($p < 0.001$). These findings have applications in relationship research, as well as exploring sexting as a potential tool in couple’s therapy.
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TABLE OF CONTENTS

ABSTRACT ................................................................................................................................. ii
ACKNOWLEDGEMENTS ........................................................................................................... iii
LIST OF TABLES ....................................................................................................................... vi
LIST OF FIGURES ................................................................................................................... vii
Introduction .............................................................................................................................. 1
  Technology ............................................................................................................................. 2
  Emerging Adulthood ............................................................................................................. 4
  Normalcy vs Deviance Discourse ....................................................................................... 5
  Triple A Engine ..................................................................................................................... 7
  Sexual Health and STIs .......................................................................................................... 8
  Sexual Interests and Limits .................................................................................................. 12
  Sexual Satisfaction and Pleasure ......................................................................................... 15
  Factors Associated with Sexting and Sexting Outcomes ................................................... 17
Rationale .................................................................................................................................... 20
Methods ..................................................................................................................................... 22
  Participants .......................................................................................................................... 22
  Procedure ............................................................................................................................. 22
  Materials ............................................................................................................................... 22
  Analysis .................................................................................................................................. 25
Results ...................................................................................................................................... 26
  Data Cleaning Process .......................................................................................................... 26
  Sample Characteristics ....................................................................................................... 28
    Comparison of Sexting Frequency by Sexual Orientation, Relationship Status, and Relationship Configuration.........................................................................................................................28

Research Objective #1: To determine if participants who have never sexted (non-sexters) differ from sexters in terms of their verbal sexual self-disclosure, disclosure and asking regarding STI status, sexual satisfaction, and pleasure at last sexual encounter .................. 31

Research Objective #2: To determine if the frequency of sexting is related to verbal sexual self-disclosure, how often individuals disclose STI status, how often individuals ask partners about regular STI testing and STI status, as well as sexual satisfaction, and pleasure at last sexual encounter. ............................................................................................................. 32
Research Objective #3: To determine if sexual orientation, relationship status, or relationship configuration acts as a moderator in the relationship between frequency of sexting, verbal sexual self-disclosure, how often individuals disclose and ask regarding STI status, sexual satisfaction, and pleasure at last sexual encounter.

Discussion........................................................................................................................................... 37
Sexting Frequencies by Sexual Orientation ......................................................................................... 39
Sexting Frequencies by Relationship Status ......................................................................................... 40
Sexting Frequencies by Relationship Configuration ............................................................................. 41
Communication about STIs .................................................................................................................. 42
Sexual Self-Disclosure .......................................................................................................................... 44
Sexual Satisfaction and Pleasure .......................................................................................................... 46
Moderating Effects of Sexual Orientation ......................................................................................... 47
Moderating Effects of Relationship Status ......................................................................................... 49
Moderating Effects of Relationship Configuration ............................................................................ 49
Implications for Triple A Engine ......................................................................................................... 50

Strengths and Limitations ................................................................................................................... 52
Future Research ................................................................................................................................... 57

Implications ........................................................................................................................................... 58
Appendix .............................................................................................................................................. 61
References .............................................................................................................................................. 63
LIST OF TABLES

Table 1. Excluded Cases .............................................................................................................. 27
Table 2. Sexting Frequency Among Queer and Heterosexual Participants ................................. 29
Table 3. Sexting Frequency Among Single and Casually Dating Participants and Participants in a Relationship .................................................................................................................. 29
Table 4. Sexting Frequency Among Monogamous and Consensually Non-Monogamous Participants ................................................................................................................................... 30
Table 5. Verbal Compared to Non-Verbal and No Communication Between Sexters and Non-Sexters .................................................................................................................................. 31
Table 6. Communication about STI Status and Testing Between Sexters and Non-Sexters ....... 31
Table 7. Sexual Satisfaction and Sexual Pleasure at Last Sexual Encounter for Sexters and Non-Sexters ......................................................................................................................... 32
Table 8. Interaction Between Sexting Frequency and Sexual Orientation In Terms of Verbal Sexual Self-Disclosure, Disclosure of STI Status, and Asking about Regular STI Testing and STI Status .................................................................................................................. 34
Table 9. Interaction Between Sexting Frequency and Relationship Status In Terms of Verbal Sexual Self-Disclosure, Disclosure of STI Status, and Asking about Regular STI Testing and STI Status .................................................................................................................. 34
Table 10. Sexual Satisfaction Predicted from Sexting Frequency and Relationship Configuration ................................................................................................................................. 36
Table 11. Pleasure at Last Sexual Encounter Predicted from Sexting Frequency and Relationship Configuration ......................................................................................................................... 37
Table 12. Sexual Satisfaction Predicted from Sexting Frequency and Sexual Orientation ........ 61
Table 13. Sexual Pleasure at Last Encounter Predicted From Sexting Frequency and Sexual Orientation ............................................................................................................................. 61
Table 14. Sexual Satisfaction Predicted from Sexting Frequency and Relationship Status ........ 61
Table 15. Pleasure at Last Sexual Encounter Predicted from Sexting Frequency and Relationship Status ............................................................................................................................ 61
Table 16. Tests of Normality to Evaluate Distribution of Dependent Variables ............................. 57
LIST OF FIGURES

Figure 1. Sexual satisfaction based on sexting frequency as moderated by relationship configuration. ................................................................................................................................. 36
Introduction

With the ubiquity of smartphones and social media, the influence of digital technology also extends to our sexual lives and relationships (Courtice & Shaughnessy, 2017; Galovan, Drouin, & McDaniel, 2018). Sexting, the creation and exchange of sexually explicit digital content, is one such example of the merging of sexuality and technology. More specifically, sexting can include sending and receiving sexually explicit messages through media like text, photos, as well as the use of social media networking sites like “Snapchat.” Much of the research on sexting has taken a risk-focused perspective; centering on instances of sexual violence and coercion, negative relationship outcomes, and negative mental health correlates (Courtice & Shaughnessy, 2017; Galovan et al., 2018; Klettle, 2014; Kosenko, Luurs, & Binder, 2017; Stasko, 2015). There has been little research on the positive outcomes of sexting, which might include increased sexual communication and sexual pleasure (Ferguson, 2011; Tannebaum, 2018). This research has largely focused on adolescents, even though sexting is more common among emerging adults (Courtice & Shaughnessy, 2017; Doring, 2014; Galovan, 2018; Klettle et al., 2014; Kosenko, 2017). Further, many of the studies on emerging adults have only included university and college student participants rather than broader community samples. In order to address these limitations, the current study will investigate sexting frequency and correlates among emerging adult women (18-29) with data collected from an Elle Canada online survey. Specifically, the purpose of the current study is to explore the link between sexting and sexual communication, sexual satisfaction, and sexual pleasure. Filling this gap in research is imperative as sexual communication has been associated with various positive outcomes including sexual satisfaction, sexual health, and relationship satisfaction (Byers, 2011; Mark & Jozkowski, 2013; Rehman, Rellini & Fallis, 2011). Similarly, sexual satisfaction has also been
linked to relationship satisfaction and relationship stability (Sprecher, 2002), thus sexual satisfaction can have broader implications for health and wellbeing. As such, and given the pervasiveness of technology among young adults, a thorough understanding of the role of technologically-mediated communication in the sexual and romantic lives of young women is critical in order to generate effective policy, curriculum, and public health campaigns with the aim of fostering healthy lives and relationships.

**Technology**

The use of technology to communicate has become increasingly widespread, with 63% of individuals owning a smartphone in 2017. Communication accounts for 70% of time spent on the Internet (Zenith Media, 2017). More individuals than ever before are communicating with one another through a technological intermediary, be it via text messaging, social media networking sites, or a phone call. Technologically-mediated communication (communication through a digital intermediary) varies in several ways from face-to-face communication. For example, the lack of access to ongoing non-verbal cues (Sproull & Kiesler, 1986; Tolins & Samermit, 2016; Walther & D’Addario, 2001), or in the case of live video streaming platforms like Skype or Google Hangouts, the lack of mutual gaze (Vertegaal, Weevers, Changuk, & Cheung, 2003). Specifically, individuals communicating through a technological intermediary like text messaging or a photo-sharing platform are unable to see facial expressions, posture, or eye movements in real time. These cues provide indications of interpersonal intimacy as well as additional information, such as attitudes about the topic being discussed (Patterson, 1973; Tolins & Samermit, 2016).

While there are many limitations to technologically-mediated communication, there are many benefits as well. For example, the lack of immediacy in these forms of communication
allows the individuals involved in the exchange to take more time to compose their message and craft multiple drafts before sending (Bridle, 2019; McKie, Lachowsky, & Milhausen, 2015). Additionally, technology can be used to assist in starting or maintaining relationships for individuals living in different locations (Le, 2016), as well as to provide a tool for communication among individuals with disabilities for whom in-person communication can be challenging (McNaughton & Light, 2013).

Despite the apparent limitations, technology users have found novel ways to communicate non-verbal cues. For example, messaging platforms on social media networking sites like Instagram and Snapchat allow private photo-sharing, which bridges the gap between face-to-face and online communication by way of sharing facial expressions. This was highlighted in a study of the role of the social media networking site Snapchat in emerging adults’ interpersonal relationships (Vaterlaus, Barnett, Roche, & Young, 2016). Participants reported that the site’s functionality, in terms of adding captions and enhancements like virtual “drawing” and overlays on photos shared between friends, decreased the likelihood of misunderstanding. The vast array of methods of communicating non-verbal cues through technological mediums have recently been coined “textisms” including also expand to include the use of relational icons such as emojis (Kelly & Watts, 2015; Thomson, Kluftinger & Wentland, 2018), emoticons (Lo, 2008; Walther & D’Addario, 2001), intentional misspellings, and the use of GIFs (Adams, Miles, Dunbar, & Giles, 2018; Tolins & Samermit, 2016). These allow for extended communication of non-verbal information and emotions. Overall, the unique characteristics associated with technologically-mediated communication, coupled with user creativity, may compensate for any limits on communication synchrony or non-verbal cues and lead to novel ways of self-expression.
The explosion of technological communication has also moved conversations about sexuality from face-to-face interactions into the realm of technology. One such example of sexual communication through technology is sexting. Research suggests that individuals sext on phones (Davis, Powell, Gordon, & Kershaw, 2016); Dir et al., 2013; Le, 2016; McCormack, 2015; Stasko, 2015; Yeung, Horyniak, Vella, Hellard, & Lim, 2014) and the Internet (Hudson & Marshall, 2017; Le, 2016; Yeung et al., 2014) through various apps, websites, and programs for private messaging. Such platforms include text messaging (Broaddus & Dickson-Gomez, 2013; Broaddus & Dickson-Gomez, 2016; Galovan et al., 2018; Stasko, 2015 Tannebaum, 2018; Widman, Nesi, Choukas-Bradley, & Prinstein, 2014), social media networking sites (Dir et al., 2013; Tannebaum, 2018; Widman et al., 2014) and dating apps (McCormack, 2015). The roles that technological communication can play in romantic relationships may be diverse as well. For instance, sexting might be used as a gateway to ease individuals into communicating about their sexual desires and sexual health, or even act as a form of foreplay, increasing sexual pleasure and satisfaction. However, there has been little research on any potentially positive uses of sexting in young adults’ sex lives, particularly with regard to sexual communication (Burkett, 2015; Ferguson, 2011; Galovan, 2018; Kosenko, 2017; Le, 2016). In the age of widespread technology, a comprehensive understanding of the role of sexting in young adult’s sexuality is needed in order to create accurate and exhaustive policies, curriculum, and public health campaigns to promote safer sexting.

**Emerging Adulthood**

While individuals of all ages are adopting technological mediums to communicate, this form of communication is uniquely relevant to emerging adults, who grew up in a digital world. Today’s emerging adults (ages 18-29) were born between the years 1989-2000, with the birth of
the World Wide Web ushering in their generation. It is unsurprising, therefore, that research has shown that emerging adults are the demographic with the highest rates of sexting. Specifically, that emerging adults have a higher prevalence of sexting behaviours than adolescents and older adults (Coutrice & Shaughnessy, 2017; Doring, 2014; Galovan et al., 2018; Klettle et al., 2014). These findings are supported by the theory of Emerging Adulthood, pioneered by Jeffery Arnett (2000, 2007). Arnett posits that emerging adulthood is marked by an exploration of one’s identity, including in the area of love and relationships (Arnett, 2007). He suggests that emerging adults are learning about what they look for in a relationship, deepening emotional intimacy, and potentially exploring the possibility of having multiple romantic and sexual experiences (Arnett, 2007). It follows, then, that the exploration characterizing emerging adulthood would also apply to sexting. Individuals may be more drawn to explore sexting as it allows for possibilities to connect with romantic partners, build relationships, and flirt with various partners. Overall, it appears that sexting may be uniquely appealing to emerging adults and compatible with the aims and developmental milestones of emerging adulthood. Sexting could allow emerging adults to extend their sexuality into the online spaces they so readily inhabit.

**Normalecy vs Deviance Discourse**

Research on sexting largely follows a deviance discourse, depicting sexting as a “gateway drug” (Diliberto & Mattey, 2009) that leads to other sexual behaviours that are considered harmful or inappropriate (Doring, 2014). These include promiscuity (Doring, 2014), condomless sex (Broaddus & Dickson, 2016; Kosenko, Luurs, & Binder, 2017), pornography use (Galovan et al., 2018), sexual violence (Dir, 2017) and negative mental health outcomes - such as attachment issues and symptoms of mental illness (Galovan et al., 2018). From a normalcy framework, researchers have critiqued this perspective on sexting as stemming from
some degree of moral panic and slut shaming (Doring, 2014). Moral panic, a concept popularized by criminologist Stephen Cohen, describes a fear within the public (most often irrational) that someone or something is a threat to social norms or values (Cohen, 1972). Moral panic is often associated with groups who are marginalized within society, drawing upon and reinforcing negative stereotypes. In the case of sexting, moral panic goes hand-in-hand with slut shaming. Slut shaming is defined as a culture wherein individuals (most often women) are criticized and shamed for their perceived sexual availability, behaviour, or history (Gong & Hoffman, 2012). In the case of moral panic and slut shaming, the fear is that bodies, which are coded as female are inherently sexual, are therefore dangerous to the owners of those bodies and others (Gill, 2008). The danger to women sexting is twofold. First, the danger of becoming “a slut,” therefore ruining her reputation and losing her value as a “respectable woman.” Secondly, a further danger is presented from the (assumed) men she is sexting in the form of sexual harassment and violence. These instances of moral panic and slut shaming can be seen in the negative repercussions women and girls experience when their sexting behaviours have been made public (PEW Research Centre, 2010; Ringrose et al., 2013; Lippman & Campbell, 2014), in the victim-blaming and gender-stereotyping messages seen in educational campaigns around sexting (Doring, 2014), and in the countless court cases that conflate consensual sexting among youth and distribution of child pornography (Gond & Hoffman, 2012).

This study takes a normalcy approach to sexting, considering sexting to be a normal extension of our digital lives into the realm of sexuality, and no more inherently dangerous or fraught with power imbalances than other forms of sexual expression. That sexting exists in relationships of all kinds of relationships serves as evidence for its normalcy (Drouin, Vogel, Surbey, & Stills, 2013; Courtice & Shaughnessy, 2017; Dir et al., 2013). As well, individuals list
a variety of consequences and outcomes of sexting, including feeling sexy and excited (Dir et al., 2013), sharing mutual sexual desire and affection, and bonding and trust (Hasinoff, 2013; Karaian, 2012). Individuals also list negative outcomes and consequences from sexting, some that mirror findings for offline sexual experiences. For example, in Drouin (2017)’s study, women reported less positive outcomes from casual sexting, and additional research has indicated that women also experience more negative outcomes from casual encounters, such as being less likely to have an orgasm (Armstrong, England, & Fogarty, 2009). Given the previous focus on the potential negative outcomes and experiences of sexting, research is now needed to explore the potential benefits.

**Triple A Engine**

The “triple A engine” is a model developed to understand the emerging of online dating culture at the beginning of the 2000s among young heterosexual adults. The model includes three “As”: accessibility (the ability to meet potential partners easily), affordability (the low cost of Internet and dating applications), and anonymity (the ability to choose a level of anonymity when searching for partners). The model has since been expanded with six additional components to the model. King (1999) added a component of acceptability, denoting the greater acceptability of the use of technology to find partners. Further, Ross and Kauth (2002) added approximation, describing the ambiguity or fluidity of “truth” online. Hertlein and Stevenson (2010) added ambiguity (the ambiguity around classifying various online behaviours as infidelity) and accommodation (the tension or difference between the “real” and “online” selves). Most recently, McKie, Lachowsky, and Milhausen (2015) added two additional components from their research with young gay, bisexual, and queer men. These included assessment (the ability to screen partners for compatibility) and affirmation (the ability to explore or affirm one’s
identity). As in McKie, Lachowsky, and Milhausen’s research (2015) on the benefits of technology in gay, bisexual, and queer men’s lives, the “triple A engine” can be applied to social and sexual technology use outside of online dating. As described in the accommodation component of the engine, there are differences between how individuals may approach topics related to sexuality online as they would in offline interactions. In Young’s (2006) exploration of how the Internet can influence relationships and online infidelity, she proposes that a lowered inhibition in online communication can lead to increased openness and honesty in communication. This in turn can lead to increased intimacy, trust, and acceptance within relationships. McKie, Lachowsky, and Milhausen (2015) also highlight the utility of technology for facilitating communication in relationships, as respondents described it as a way of decreasing physical, social, and emotional risks such as embarrassment or confrontation. As such, it may be that this openness and comfort also applies to sexting, which may be related to communication about STIs status, testing, as well as providing information about sexual interests and desires.

**Sexual Health and STIs**

Sexually transmitted infections (STIs) are on the rise across Canada, with the number of cases rising between 2010 and 2015 among the three most common STIs (Choudhri, Miller, Sandhu, Leon, & Aho, 2018). Specifically, rates of chlamydia increased by 16.7%, cases of gonorrhea rose 65.4%, and rates of infectious syphilis increased by 85.6%. These rates are highest among young adults in particular. One of the contributing factors to the rise of STIs is their associated stigma. The stigma around STIs perpetuates transmission at all levels, including STI disclosure to partners (Hood & Friedman, 2011). In a review of STI-related stigma, feelings of guilt and embarrassment were among those that prevented individuals from disclosing STI
status to a partner, as well as fears surrounding relationship conflict or dissolution and slander (Hood & Friedman, 2011). While disclosure is an important factor in prevent STI transmission, it remains challenging, leading many young adults avoid participating in this important sexual health behaviour (Balfe & Brugha, 2010). As such, investigation into potential factors associated with STI disclosure is a necessary step in reducing rates of STI transmission.

Research on sexting and sexual health has largely centered on negative sexual health outcomes, such as a lack of condom use. This stems from a common theoretical framework in the field of sexting: deviance discourse. The deviance discourse positions sexting as possessing inherent risk for attachment issues, conflict in relationships, symptoms of mental illnesses (Galovan et al., 2018), and trauma (Drouin, Coupe, & Temple, 2017), therefore separate from normal sexual behaviour (Doring, 2014). Nonetheless, findings are inconsistent with this theoretical proposition, specifically in that sexting is not always linked with increased risky behaviour. While Crimmins and Seigfried-Spellar (2014) and Yeung and colleagues (2014) found that sexting was correlated with condomless sex among young adults, research conducted by Ferguson (2011) indicated that sexting was uncorrelated with use of birth control methods with young Hispanic women. Similarly, Gordon-Messer and team (2013)’s study of young adults found that sexting was unrelated to the number of unprotected sex partners over the last 30 days. When investigations that consider number of sex partners as a measure of risky sexual behaviour were included in meta-analytic analysis, Kosenko (2017) only found a weak association between sexting and sexual risk taking. Furthermore, this research explicitly avoids the potential of linking sexting with positive sexual health outcomes by excluding items or scales related to sexual health communication (Doring, 2014). Lastly, even the research on “risky sexual behaviours” is limited by narrowly focusing on number of partners and excluding other
important variables, such as regular STI testing and disclosure of STI status. As such, a more holistic approach is needed to fill this gap in this area of research.

There is a gap in research on how sexting may be related to communication about sexual health topics, such as STI status and testing. Specifically, this is the first study to explore the link between sexting and these positive sexual health behaviours. However, there has been research on how other kinds of technologically-mediated communication, such as texting and social media messaging, are related to communication about sexual health. Despite the discrepancy between this research and the specific relationships investigated in this study (sexting and communication about STIs and testing), studies on technologically-mediated communication more generally can still be applied to the more specific sexual communication behaviour of sexting. For instance, most of the studies do not explicitly exclude sexting from their definition of text messaging or private social media messaging (Tannebaum, 2018; Broaddus & Dickson, 2013), and given the broad definition of sexting (Coutrice & Shaughnessy, 2017), it is possible that participants may have included sexting in their definition of communication about sexual health topics via text messaging or social media messaging. This can be seen in Broaddus and Dickson’s (2013) study of text messaging for sexual communication about condoms, STI testing, and sexual interests, one participant described her text messages as “pretty provocative” (Broaddus & Dickson, 2016 p. 1347) and described sending photos of her genitals to partners. As such, while a study may not have chosen the term “sexting,” participants may have included sexting with text messaging and private social media messaging behaviours.

The use of technology to communicate about sexual health behaviours has been documented across a wide range of technological platforms, the most common being text messaging, followed by private social media messaging (Broaddus & Dickson-Gomez, 2013;
Broaddus & Dickson-Gomez, 2016; Tannebaum, 2018; Widman, 2014), with one exploratory study including communication with smartphones and over dating apps (McCormack, 2015). The topic areas of discussion through technological mediums are similarly diverse. STIs and STI/HIV testing have been found to be discussed by emerging adults via text messaging and social media messaging (Broaddus & Dickson-Gomez, 2013; Broaddus & Dickson-Gomez, 2016; Tannebaum, 2018; Widman et al., 2014), as have other sexual health-related topics, such as condoms (Broaddus & Dickson-Gomez, 2013; Broaddus & Dickson-Gomez, 2016; Tannebaum, 2018; Widman et al., 2014), birth control (Tannebaum, 2018; Widman et al., 2014), HIV/AIDS in general or with regards to status (Tannebaum, 2018; Widman et al., 2014), pregnancy risk (Tannebaum, 2018; Widman et al., 2014), and sexual history (Broaddus & Dickson-Gomez, 2016).

As noted above, text messaging has been used by young adults to discuss STIs and HIV/AIDS. In Broaddus and Dickson-Gomez’s (2013) mixed methods study on texting and sexual communication, 20% of men and women had used texting to communicate about STI/HIV testing. Tannebaum (2018) and Widman and colleagues (2014) included items about HIV/AIDS and STIs in general, as opposed to inquiring about testing practices or STI disclosure, in their survey-based studies of university and high school students’ use of technology to communicate about sexual health topics. Estimates for communication about HIV/AIDS ranged from 13.9% - 20% across these studies and between 20.8% - 24% for participants communicating about STIs using technology. While these studies did not explore how individuals might use texting to discuss current STI status with partners, these findings do indicate the commonality of the use of technology to communicate about sexual health topics among young adults.
Research has also explored how technology-mediated communication might reflect increased overall communication about sexual health practices. Specifically, in Tannebaum’s (2018) study of university students, participants who had ever used technology to communicate with their partner about any safer sex topic (condoms, birth control, STIs, HIV/AIDS, pregnancy risk, sexual limits, sexual preferences) had a higher perceived self-efficacy for face-to-face communication. This finding may be explained by research suggesting that individuals who are more comfortable with sexuality are more likely to communicate with others about sexuality, sexual behaviours, and contraception (Pluhar, DiIorio & McCarty, 2008; Tschann & Adler, 1997). Communication about sexuality via technology may indicate level of comfort with sexuality, with more frequent online communicators - potentially including sexting - having increased overall sexual communication.

Overall, the use of technology by young adults to communicate about sexual health topics, including STIs, is quite widespread (Broaddus & Dickson, 2013; Tannebaum, 2018; Widman et al., 2014). A step towards investigating a link between this technologically-mediated communication and overall sexual communication has also been made, specifically that participants in Tannebaum’s study (2018) who had used technology to communicate about sexual health-related topics had a higher self-efficacy for face-to-face communication. As illustrated above, while the ways that sexting might relate to communication about sexual health topics has not been fully explored, as sexting is a form of technologically-mediated communication about sexuality, it could be posited that this behaviour might also be related to sexual communication about sexual health practices, but further research is needed to clarify this, especially with regard to disclosure of STI status and regular STI testing.

**Sexual Interests and Limits**
Sexual self-disclosure, revealing personal and private information about our sexual selves such as sharing with partners what’s working and what isn’t sexually, is one type of sexual communication that has been linked to sexual satisfaction as an important factor in maintaining sexual wellbeing (Byers, 2011; MacNeil & Byers, 2005, 2009). Despite this, most couples do not share all their sexual interests and limits with one another. For example, in one study of heterosexual couples who had been together on average 14 years, both members of the couple scored between 4 and 5 on a 7-point scale of verbal sexual self-disclosure from sharing nothing to everything (MacNeil & Byers, 2009). This gap in communication is reinforced by findings that participants only understood 62% of their partner’s likes and 26% of their dislikes (MacNeil & Byers, 2009). Sexual self-disclosure is another area that has been linked to one’s comfort with sexuality (Herold & Way, 1988). As with communication about STIs, it may be that individuals who sext may have increased comfort with sexuality and therefore also have increased overall communication of verbal sexual feedback with partners.

Research exploring whether individuals use technology to facilitate sexual self-disclosures has been conducted using both qualitative and quantitative approaches. One participant from Broaddus and Dickson-Gomez’s (2013) qualitative study described how she uses texting to communicate with her partner about specific sex acts she wanted to engage in later in the day, areas on her body she wanted to be stimulated, and exactly how she liked to be stimulated. Using quantitative research, among their measures of sexual health, both Tannebaum (2018) and Widman and colleagues (2014) included items related to communication about sexual preferences or limits. In Tannebaum’s investigation of college students’ use of technology to communicate with romantic partners, 43.1% of participants discussed sexual limits and 51.4% of participants discussed sexual preferences with the use of texting or private social media.
messaging. Widman and colleagues (2014) reported a similar prevalence for sexual limits in their study of high school students, with 42% citing that they had used technology to communicate with their partners about this topic.

A study by Hudson and Marshall (2017) on undergraduate students’ perceived consequences of sexting linked sexting to potential sexual self-disclosure via technological platforms. This study included the item “I was able to communicate about issues/emotions that I normally would feel uncomfortable discussing face-to-face” (Hudson & Marshall, 2017). A significant minority of individuals endorsed positive consequence from sexting at 21.8%, this may be due to the vagueness of the wording. The inclusion of “issues” and “emotions” in one item is likely to produce a range of interpretations by and responses from participants, as these are not the same concepts and are both quite vague in meaning. Nonetheless, this research demonstrates emerging adults do use technologically-mediated communication to facilitate sexual self-disclosure.

As proposed earlier, individuals who communicate via technology may be more comfortable with sexuality, and therefore may be more likely to communicate about their sexual desires and limits in offline exchanges. Four studies to date have investigated this. First, in Tannebaum’s (2018) study of university students, students who had communicated about sexual health topics, including sexual preferences and limits, through texting reported higher self-efficacy for communicating about these topics offline. Further, a study by Davis and colleagues (2016) on young adult men and communication with friends also produced relevant findings with regard to sexting and overall communication. In this study, talking more frequently with friends about sex predicted sending or receiving a sext from a steady partner, which links sexting with offline communication about sexuality. Lastly, recent Canadian studies explored the link
between sexting and sexual communication among partners. One study found that recent sexters reported higher dyadic sexual communication quality in their relationship than lifetime sexters (Bridle, 2019). As well, sexual communication was positively, though weakly, correlated with sexting frequency (for all kinds of sexting, except nude photos). Scores on the Dyadic Sexual Communication Scale (DSC) (Catania, 1998) were also a positive predictor of recent sexting engagement, even with sexual and relationship satisfaction included. The other study found that those who had sexted reported higher levels of confidence with sexual communication (Falconer, 2019). This connection between quality of sexual communication and sexting suggests that sexting may also be related to other specific aspects of sexual communication – such as verbal sexual self-disclosure.

**Sexual Satisfaction and Pleasure**

The implications of sexting for sexual arousal and pleasure have been more widely acknowledged and investigated by researchers than the previously described domains (i.e., sexual communication and sexual health practices). Research has linked sexting to both arousal and sexual satisfaction. Two studies have explicitly linked sexting with “feeling sexually aroused” or “turned on” (Hudson & Marshall, 2017; NCPTUP & Cosmo Girl, 2009). When asked to indicate all the feelings associated with receiving a photo or video sext, 57% of young adults in the Sex and Tech study conducted by the National Campaign to Prevent Teen and Unplanned Pregnancy (2009) cited feeling “turned on.” The link between sexting and sexual arousal was also alluded to in Le’s (2016) qualitative investigation of female young adult experiences of sexting. “Desire for physical intimacy” was one of the researchers’ subordinate themes within the theme of “characteristics of relationships.” Participants described sexting as a
way to meet or attempt to meet “sexual needs” when away from partners and to relieve feelings of sexual frustration.

Indirect evidence of the relationship between sexting and sexual arousal can be found in investigations of consequences, expectations, and motives related to sexting. Hudson and Marshall (2017) connected sexting to arousal in an investigation of positive consequences associated with sexting among undergraduate students. In this case, 60.5% of participants who reported having sexted endorsed “feeling sexually aroused” as a positive consequence of sexting. Arousal was also included in the Sexpectancy measure, a measure aimed at evaluating the positive and negative expectations around sending and receiving sexts. This measure was validated using undergraduate participants and included items such as “sexting makes one aroused” and “sexting makes one horny” in the Sending Positive Expectancy Scale factor (Dir et al., 2013). Lastly, Parker and colleagues’ (2013), investigating relationship factors and motivations related to sexting in an adult, non-college sample, also reported findings related to arousal and pleasure. They used Cooper, Shapiro and Powers’ (1998) Sex Motives Measure (SMM), which contains a hedonism subscale. This subscale includes motives for sexting such as “feels good” and “satisfy sexual needs.” Hedonism was indeed correlated with sexting motivation, suggesting a potential link between sexting and sexual pleasure (Parker, Blackburn, Perry, & Hawks, 2013). Research has also assessed the link between sexting and sexual satisfaction and pleasurable experiences. In an American study on young adult Hispanic women’s experiences of sexting, sexting was correlated with pleasure in sex (Fergusson, 2011). Recent Canadian university samples (mean age of 20.93) within the Trent Psychology department, found that recent sexters (Bridle, 2019) as well as those who had sexted with a partner reported higher sexual satisfaction (Falconer, 2019). Findings from two age-diverse
studies of sexting and relationship outcomes illustrated that sexting was related to sexual satisfaction in non-university samples (Galovan et al., 2018; Stasko, 2015). In Galovan and colleagues’ (2018) study of American and Canadian individuals in committed relationships, those who sexted at all, regardless of frequency, reported greater satisfaction than non-sexters. Similarly, in Stasko (2015)’s investigation based in the United States of sexting and relationships, sexting was positively correlated with sexual satisfaction. Furthermore, this correlation did not vary by gender, relationship type, or motivators, indicating that this is a relatively robust correlation. These correlations between sexting and sexual satisfaction and pleasure lay a solid foundation for further investigations in non-university Canadian samples.

Factors Associated with Sexting and Sexting Outcomes

Sexting is not experienced similarly across contexts. Research indicates that sexual orientation, relationship type, and relationship configuration all impact the frequency, motivations for, and experiences of sexting.

Sexual Orientation and Sexting. LGBT people have an extensive history of technology use, especially with regards to domains of dating and sexuality. For example, 70% of couples who report meeting online are similar-gender couples, compared to 22%-30% of differing-gender couples (Rosenfeld & Reuben, 2010; Rosenfeld & Thomas, 2012). Technology can provide unique benefits in creating networks when there are limited opportunities to meet potential partners in offline communities (Hannan-Leith, 2017; McKie, Lachowsky & Milshausen, 2015). Research into the prevalence of sexting among LGBT individuals has yielded mixed results thus far. Among a study of LGB university students, 71.7% of individuals reported that sexting within a relationship is acceptable (Twist, Belous, Maier, & Bergdall, 2017). One study of adults (mean age of 44.35 years) in the United States found that being LGBT was
among the best predictors of having sent a sext, including sexually explicit texts and nude photos via phone or email (Wysocki & Childers, 2011). A study by Galovan et al. (2018) of individuals ages 18-85 including the United States and Canada found that individuals in “same sex relationships” were 4.95 times more likely to be “hyper sexters” (sent and received both explicit text messages and nude or nearly nude photos between “everyday” and “multiple times a day”) and 3.30 times more likely to be “frequent sexters” (sent and received explicit word texts slightly more than “a few times a week” and sent and received nude or nearly nude pictures slightly less than “a few times a week”) than to be non-sexting individuals. However, an investigation of undergraduate students found there was no difference between gay, lesbian, and bisexual individuals compared to heterosexual participants in frequency of receiving photos (Dir, Coskunpinar, Steiner, & Cyders, 2013). Similar, a study of young adults by Gordon-Messer and colleagues (2013) found no differences in sexting based on sexual orientation. Given the mixed findings and lack of focus on specific groups within the LGBT community, further research is needed to understand the prevalence of sexting and potential sexual health behaviour outcomes among queer (lesbian, bisexual, questioning, asexual) women.

**Relationship Status and Sexting.** Relational context of sexting is an area of research that has been begun to be explored. Investigations on this topic have largely focused on young adults in university samples, with three studies using web questionnaires to collect data on young adults. Among undergraduate students, results are consistent in illustrating that people in a relationship have a higher prevalence of sexting compared to those who are single (Crimmins & Seigfried-Spellar, 2014; Delevi & Weisskirch, 2013; Dir et al., 2013; Drouin et al., 2013; Hudson et al., 2014; Samimi & Alderson, 2014). Two of the studies investigating young adults in non-university samples found similar results (Henderson & Morgan, 2011; Weisskirch & Delevi,
2011), with the one study of minority young adult men finding higher prevalence of sexting with casual sex partners (Davis et al., 2016). It has been suggested that this may be due to increased trust in committed romantic relationships, which has been supported in qualitative interviews of young adult women’s experiences of sexting (Le, 2016). This research builds upon a foundation of findings on prevalence of sexting to explore the partner context of sexting and potential sexual behavioural outcomes.

**Relationship Configuration and Sexting.** Consensual non-monogamy (CNM) is a burgeoning area of study within the field of sex research. Research thus far has largely focused on comparing consensual non-monogamous relationships to monogamous relationships regarding commitment, relationship satisfaction, jealousy, and family life. Specifically, research into CNM relationships have elucidated some differences between monogamous and CNM individuals regarding sexual communication and sexual health. Individuals in CNM relationships have been found to communicate more than those in monogamous relationships about the nature of their relationship agreement, as well as boundaries (Martin et al., 2017). As such, it may be that CNM individuals are also more likely to communicate sexual feedback to their partners. Regarding sexual health, individuals in CNM relationships are also more likely to have ever been tested for STIs (Lehmiller, 2015). Furthermore, in a study comparing unfaithful individuals and those in consensually non-monogamous relationships, 63% of CNM individuals had discussed STI testing history with partners outside of their primary relationship (Conley, Moors, Ziegler, & Karathanasis, 2012). From this, it is possible that CNM individuals are more communicative about STI disclosure, as well as and asking about regular STI testing, and current STI status. However, given the novelty of exploration into technology and sexuality, including sexting, research into the sexting behaviours and outcomes of CNM individuals has yet to be conducted.
As such, this study will be the first to explore the prevalence of sexting among CNM individuals, as well as potential impact on the relationships with verbal sexual self-disclosure, sexual health disclosure behaviours, and sexual satisfaction.

**Rationale**

Though research on sexting among young adults has increased in recent years, this research has largely focused on negative outcomes, such as symptoms of mental illness, sex without contraceptives, and relationship conflict (Courtice & Shaughnessy, 2017; Klettle, 2014; Kosenko et al., 2017; Stasko, 2015). Often this research is conducted from a risk and danger perspective (Doring, 2014). Few researchers have investigated possible positive consequences of sexting, such as increased comfort in communication of sexual desires and preferred sexual health practices. Further research is needed to explore the relationships between sexting and sexual satisfaction and pleasure in non-university Canadian samples (Bridle, 2019; Ferguson, 2011; Galovan et al., 2018; Stasko, 2015).

Beyond this, the majority of research has focused on adolescents, despite findings showing that sexting is most common among emerging adults (Doring, 2014; Courtice & Shaughnessy, 2017; Galovan, 2018; Klettle et al., 2014; Kosenko, 2017). Of the investigations of emerging adults, many have used convenience samples of undergraduate students, neglecting young adults outside of academic settings (Courtice & Shaughnessy, 2017). Further, there remain gaps in our understanding of how relational context, including sexual orientation, relationship status, and relationship configuration, may play a role in individual’s experience of sexting and how it may be related to sexual health outcomes.

The present study aims to address these limitations. Specifically, the purpose of the current study is to investigate if frequency of sexting among emerging adults (ages 18-29) is
related to their communication with sexual partners about STI status and verbal sexual self-disclosure, as well as to their sexual satisfaction and pleasure. It will explore potential differences in these relationships between queer and straight women, individuals in casual and committed relationships, as well among individuals in monogamous and consensually non-monogamous relationship configurations. It is critical to fill this gap in research because aspects of sexual communication, such as sexual self-disclosure, have been associated with sexual satisfaction, sexual health, and relationship satisfaction (Byers, 2011; Mark & Jozkowski, 2013; Rehman et al., 2011). Investigating correlates of sexual satisfaction and sexual pleasure is especially relevant in order to work to close the continued orgasm gap experienced by women (Blair, Cappell, & Pukall, 2018). With technology becoming increasingly more accessible, a greater understanding of how technology is related to communication about STIs and STI status disclosure may facilitate the creation of innovative interventions and public health campaigns to address the rising rates of STIs and steadfast stigma towards STIs in Canada. A strengths-based approach is needed to ensure that, given technology’s growing role in the daily lives of Canadian women, they can navigate their sex lives with empowerment, not shame.

Therefore, the research questions of the current study are:

1. Do participants who have never sexted (non-sexters) differ from sexters in terms of their verbal sexual self-disclosure, frequency of disclosure and asking regarding STI status and testing, sexual satisfaction, and pleasure at last sexual encounter?

2. Is the frequency of sexting related participation in verbal sexual self-disclosure, how often individuals disclose STI status, how often individuals ask partners about regular STI testing and STI status, as well as sexual satisfaction, and pleasure at last sexual encounter?
3. Does sexual orientation, relationship status, or relationship configuration act as moderators in the relationship between frequency of sexting, verbal sexual self-disclosure, how often individuals disclose and ask regarding STI status, sexual satisfaction, and pleasure at last sexual encounter?

**Methods**

**Participants**

The sample for the current study consists of 1099 sexually active young women who participated in the 2016 Elle Canada Sex Survey co-created by researchers Dr. Robin Milhausen, Dr. Jessica Wood, and Dr. Erin Watson at the University of Guelph in collaboration with members of the Elle Canada team.

**Procedure**

Participants were recruited through various online channels associated with Elle Canada. These included Elle Canada’s social media platforms (Twitter, Instagram, Facebook) as well as Canadian Living’s Twitter and Facebook page. A link to the survey was also included in email newsletters to Elle Canada, Canadian Living, and Style at Home readers. Beyond this, individuals may have shared the link to the survey within their social networks. Lastly, participants may have found the survey through organic traffic to the Elle Canada website. Data was recruited from October 2016 to March 2017, however, this study denoted a study period between October 2016 and November 2016, as only 19 individuals completed the survey after November.

**Materials**

The study analyses were conducted using secondary data analysis with the 2016 Elle Canada Sex Survey. The following variables were included in the current analyses.
**Demographic variables:** These demographic items were included in the analysis: age, sexual orientation, relationship status, and relationship configuration.

Age was assessed by the item “What year were you born in?” and only participants ages 18 to 29 were included in the sample.

Sexual orientation was assessed by the item “Which of these commonly used terms would you use to describe your sexual orientation?” with potential responses: 1 (Heterosexual), 2 (Gay), 3 (Lesbian), 4 (Bisexual), 5 (Queer), 6 (Pansexual), 7 (Uncertain or questioning), 8 (Asexual), 9 (My sexual orientation is not listed above – Please tell us how you identify), 11 (I choose not to answer). For the purpose of this study, women (including transgender, non-binary, and cisgender women) who identify as gay, lesbian, bisexual, queer, pansexual, uncertain or questioning, and asexual will be analysed together and referred to as queer women. This language has been adopted as an umbrella term encompassing these sexual minority women’s identities. This term has been used to describe sexual minorities and minority sexualities that challenge norms related to gender and/or sexuality (Hannan-Leith, 2017; van Anders, 2015; Goldey et al., 2016).

Relationship status was assessed by the item “What is your relationship status?”, with responses: 1 (Single), 2 (Casually dating), 3 (Seriously dating), 4 (Living with a partner, but not married or engaged), 5 (Engaged), 6 (Married), 7 (Other, please specify), 8 (I choose not to answer).

Relationship configuration was determined by the item “How would you describe your current relationship?” with potential responses: 1 (Monogamous ie. both partners have agreed to have a sexual and intimate relationship with each other only), 2 (Consensually non-monogamous ie. in a sexual and/or intimate relationship with one or more partners and partners know about it
and agree to it), 3 (Non-consensually non-monogamous ie. in a sexual and/or intimate relationship with one or more partners and your partners does NOT know about/agree to it), 4 (I choose not to answer).

**Sexting frequency:** Sexting frequency was evaluated with two items. The first item, “Have you ever participated in sexting,” had three potential responses: 1 (Yes), 2 (No), and 3 (I choose not to answer). Only participants who responded “Yes” were prompted to answer “How frequently do you engage in sexting?” Response choices were given using on a 5-point scale from 1 (A few times a year) to 5 (Daily).

**Sexual self-disclosure:** Participants sexual communication was assessed using one item of the survey. The item “Do you communicate with your partner about what’s working or not working for you sexually?” had five potential responses regarding verbal and non-verbal communication: 1 (Yes, verbally and non-verbally), 2 (Yes verbally but not non-verbally), 3 (Yes, non-verbally but not verbally), 4 (No), 5 (I choose not to answer).

**Frequency of communication (STI status):** Frequency of communication about STI/STD status was assessed using the following item: “How often do you disclose your current STIs/STDs status to your partner?”. Response choices ranged from 1 (Always) to 5 (Never) as well as additional options including 7 (Does not apply to me, I don’t have a partner), 8 (Does not apply to me, I’ve been with my partner a long time), and 6 (I choose not to answer). Participants frequency of communication regarding partners STI/STD status was assessed using: “How often do you ask people if they are regularly tested for, or are currently infected with, STIs/STDs before having sex?” with response choices ranging from 1 (Always) to 5 (Never) and 6 (I choose not to answer).
**Sexual satisfaction:** Participants' sexual satisfaction in their primary relationship was assessed using: “How sexually satisfied are you in your primary relationship?” with response choices ranging from 1 (*Very satisfied*) to 4 (*Very unsatisfied*) and 5 (*I choose not to answer*).

**Sexual pleasure:** Participants' pleasure during their last sexual encounter was assessed with the item “How pleasurable was your last sexual encounter?” Response choices ranged from 1 (*Very pleasurable*) to 4 (*Not at all pleasurable*) and 5 (*I choose not to answer*).

**Analysis**

Descriptive statistics (means, standard deviations) were computed to report participants’ demographic variables (age, sexual orientation, relationship status, relationship configuration). Sexting frequencies by demographic group were also reported.

Chi square analyses were conducted to assess whether differences existed between sexters and non-sexters for all communication and satisfaction outcome variables. Items were dichotomized for this analysis. The sexual self-disclosure item was dichotomized to contrast those who communicated (considering verbal communication as communication) with those who did not (combining response options for non-verbal communication and no communication). The frequency of STI status disclosure and frequency of asking about regular STI testing and current STI status items were dichotomized as always and not always. The STI status disclosure item included responses 7 (*Does not apply to me, I don’t have a partner*), 8 (*Does not apply to me, I’ve been with my partner a long time*), and 6 (*I choose not to answer*) that were coded as missing. 6 (*I choose not to answer*) was similar marked as missing for asking about regular STI testing and current STI status. This decision was made in order to have a clear indication of variables which would be associated with health-protective variables (i.e., communicating about
STI testing and status). To compare sexual satisfaction, sexual pleasure at last sexual encounter among sexters and non-sexters independent samples t-tests were conducted.

Logistic regressions were also conducted to investigate the relationships between sexting frequency and the sexual self-disclosure and STI status communication variables. Spearman’s rho correlation was used to investigate the relationships between sexting frequency and sexual satisfaction and sexual pleasure at last encounter. Further logistic regression analyses were used to investigate any potential moderators (sexual orientation, relationship status, or relationship configuration) between sexting frequency and verbal sexual self-disclosure, frequency of STI status disclosure, frequency of STI testing and current status inquiry, sexual satisfaction, and pleasure at last sexual encounter. This was done through the generation of interaction terms for each of these relationships. For example, to determine if the relationship between sexting frequency and verbal sexual self-disclosure differs depending on sexual orientation, relationship status, or relationship configuration.

Descriptive statistics were conducted to evaluate the normality of the data. Dependent variables including verbal sexual self-disclosure, frequency of STI status disclosure, frequency of STI testing and current status inquiry, sexual satisfaction, and pleasure at last sexual encounter were found to not be distributed normally. For all dependent variables the value of Shapiro-Wilk was $p < 0.001$ (Table 16 in Appendix). This is not unexpected, as the data were all positively skewed, which is in line with what is common within the field of sexuality. As such, logistic regression and chi square analyses were used.

**Results**

**Data Cleaning Process**
The data cleaning process began with the exclusion of participants who completed the questionnaire outside of the study period, between October and November 2016 (N = 19). Following this, participants whose demographic characteristics did not fall within the eligibility criteria for these analyses were excluded. As such, individuals who indicated that they were over the age of 29 (N = 3769) or under the age of 18 (N = 1) were excluded. Participants were excluded if they responded to the question “How do you describe your gender?” as “men” (N = 32), “neither of these” (N = 8), or “choose not to answer” (N = 5). Further, individuals were excluded for indicating 0 sexual partners (N = 147) or if they did not provide a response to the question (N = 59).

The next step in data cleaning was to exclude participants who did not respond to items pivotal to the research questions. This included individuals who responded “choose not to answer” or provided missing data to the item “have you ever participated in sexting?” (N = 258).

<table>
<thead>
<tr>
<th>Step</th>
<th>Number of Excluded Cases</th>
<th>Reasons for Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>19</td>
<td>Excluded as not in the study period</td>
</tr>
<tr>
<td>2</td>
<td>805</td>
<td>Excluded as did not report age</td>
</tr>
<tr>
<td>3</td>
<td>3769</td>
<td>Excluded as indicated they were over the age of 29</td>
</tr>
<tr>
<td>4</td>
<td>1</td>
<td>Excluded as under the age of 18</td>
</tr>
<tr>
<td>5</td>
<td>32</td>
<td>Excluded as indicated their gender as “men” (Q2)</td>
</tr>
<tr>
<td>6</td>
<td>8</td>
<td>Excluded as indicated their gender as “neither” (Q2)</td>
</tr>
<tr>
<td>7</td>
<td>5</td>
<td>Excluded as indicated “chose not to answer” regarding gender (Q2)</td>
</tr>
</tbody>
</table>
Sample Characteristics

6199 individuals consented to participate in the ELLE Canada 2016 Sex Survey. After excluding individuals outside of the desired sample as well as missing data, the final sample included 1099 women. A minority of participants (2.4%) responded with additional information about their gender, with 10 indicating they were genderqueer and 16 non-binary participants. The average age of participant was 23.3 years of age (SD = 3.2). The majority of the sample indicated that they were in a committed relationship - seriously dating, cohabiting, engaged, married (82.8%), with 17.2% participants responding that there were single or casually dating. Further, 76.4% of participants indicated that they were heterosexual, with a small majority of participants identifying as bisexual (13.1%). The vast majority of participants indicated they were in mixed gender relationships (98.7%). The majority of participants (83.3%) indicated that they were in a monogamous relationship, with 6.4% in consensually non-monogamous relationships and 3.8% non-consensually non-monogamous relationships.

Comparison of Sexting Frequency by Sexual Orientation, Relationship Status, and Relationship Configuration

Tables 2, 3, and 4 present the results of chi square analysis comparing sexting frequency by sexual orientation, relationship status, and relationship configuration. Significant differences in sexting frequency were found among all of these demographic categories. For one, queer
participants differed significantly in sexting frequency from heterosexual participants \( (\chi^2 (3, N = 815) = 13.24, p = 0.05) \) (Table 2). Specifically, queer participants reported sexting several times a week in significantly greater proportion to heterosexual participants \( (p < 0.05) \). Among both queer and heterosexual participants, the most common sexting frequency was “a few times a year,” with 42.7% queer participants and 48.4% of heterosexual participants reporting this frequency.

**Table 2**

<table>
<thead>
<tr>
<th>Sexting Frequency Among Queer and Heterosexual Participants</th>
<th>Queer ((N = 178))</th>
<th>Heterosexual ((N = 637))</th>
<th>(\chi^2) value</th>
<th>(p)-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A few times a year</td>
<td>42.7% (76)</td>
<td>48.4% (308)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Once or twice a month</td>
<td>23.0% (41)</td>
<td>29.8% (190)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Almost weekly</td>
<td>16.9% (30)</td>
<td>12.4% (79)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Several times a week</td>
<td>17.4% (31)*</td>
<td>9.4% (60)*</td>
<td>13.24</td>
<td>0.004*</td>
</tr>
</tbody>
</table>

\*\(p < 0.05\)

Single or casually dating participants differed significantly from participants in a relationship in terms of their sexting frequency as well, \( \chi^2(3, N = 827) = 40.14, p < 0.001 \) (Table 3). Specifically, participants who were in a relationship reported sexting “a few times a year” in significantly greater proportion to single or casually dating individuals \( (p < 0.05) \), while single and casually dating participants reported sexting “almost weekly” or “several times a week” in significantly greater proportion to participants in relationships \( (p < 0.05) \). Single and casually dating participants were twice as likely to report sexting “almost weekly” \( (22.5\% \text{ vs } 10.7\%) \) and almost three times as likely to report sexting “several times a week” \( (20.5\% \text{ vs } 7.4\%) \) as those in relationships.
Table 3

Sexting Frequency Among Single and Casually Dating Participants and Participants in a Relationship

<table>
<thead>
<tr>
<th>Sexting frequency</th>
<th>Single or casually dating (N = 151)</th>
<th>In a relationship (N = 676)</th>
<th>$\chi^2$ value</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A few times a year</td>
<td>40.5% (46)*</td>
<td>51.8% (350)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One or twice a month</td>
<td>26.5% (40)</td>
<td>28.6% (193)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Almost weekly</td>
<td>22.5% (34)*</td>
<td>10.7% (72)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Several times a week</td>
<td>20.5% (31)*</td>
<td>7.4% (61)*</td>
<td>40.14</td>
<td>&lt;0.001*</td>
</tr>
</tbody>
</table>

* $p < 0.05$

Sexting frequency among monogamous and consensually non-monogamous (CNM) participants was also compared. Non-consensually non-monogamous individuals were excluded as it is not a consensual and deliberate relationship configuration decided by all parties of the relationship. Those in CNM relationships and monogamous relationships were significantly different in terms of sexting frequency $\chi^2(3, N = 725) = 16.14, p < 0.001$ (Table 4).

Specifically, monogamous participants were significantly more likely to sext a few times a year ($p < 0.05$) than CNM participants, while CNM participants were significantly more likely to sext several times a week ($p < 0.05$). CNM participants were more than twice as likely to sext several times a week (23.0% vs 8.9%).

Table 4

Sexting Frequency Among Monogamous and Consensually Non-Monogamous Participants

<table>
<thead>
<tr>
<th>Sexting frequency</th>
<th>Consensually non-monogamous (N = 61)</th>
<th>Monogamous (N = 684)</th>
<th>$\chi^2$ value</th>
<th>$p$-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>A few times a year</td>
<td>34.4% (21)*</td>
<td>50.7% (347)*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>One or twice a month</td>
<td>24.6% (15)</td>
<td>28.7% (196)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Almost weekly</td>
<td>18.0% (11)</td>
<td>11.7% (80)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Several times a week</td>
<td>23.0% (14)*</td>
<td>8.9% (61)*</td>
<td>16.137</td>
<td>0.001*</td>
</tr>
</tbody>
</table>

* $p < 0.05$
**Research Objective #1:** To determine if participants who have never sexted (non-sexters) differ from sexters in terms of their verbal sexual self-disclosure, disclosure and asking regarding STI status, sexual satisfaction, and pleasure at last sexual encounter.

A chi square analysis was conducted to evaluate if sexters and non-sexters differed in terms of communication regarding what was and wasn’t working for them sexually (Table 5). Sexual communication was dichotomized as those who communicate (considering verbal communication as communication) and those who do not (combining response options for non-verbal communication and no communication). Most participants were both sexters and verbal communicators, but sexters were also significantly more likely to be verbal communicators than non-sexters ($\chi^2(1, N = 1090) = 3.914, p = 0.05$).

<table>
<thead>
<tr>
<th>Communication style</th>
<th>Sexters</th>
<th>Non-sexters</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal communication</td>
<td>781</td>
<td>136</td>
</tr>
<tr>
<td></td>
<td>85.1%</td>
<td>79.1%</td>
</tr>
<tr>
<td>Non-verbal and no communication</td>
<td>137</td>
<td>36</td>
</tr>
<tr>
<td></td>
<td>14.9%</td>
<td>20.9%</td>
</tr>
</tbody>
</table>

Sexters and non-sexters were compared in terms of their communication about STI status with a partner, specifically how often they disclosed their current STI status to partners and how often they asked if their partner if they regularly tested for, or were currently infected with, STIs before having sex (Table 6). Using an independent samples t-test, significant differences were found between sexters and non-sexters. Sexters disclosed STI status more often ($t(939) = 2.10, p < 0.001$) and asked about STI status and testing more often ($t(1088) = 3.88, p < 0.001$).
Table 6

*Communication About STI Status and Testing Between Sexters and Non-Sexters*

<table>
<thead>
<tr>
<th></th>
<th>Sexters</th>
<th>Non-sexers</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Disclosure of current STI status</td>
<td>856</td>
<td>2.78</td>
<td>1.89</td>
</tr>
<tr>
<td>Asking about regular STI testing and current status</td>
<td>806</td>
<td>3.47</td>
<td>1.56</td>
</tr>
</tbody>
</table>

Independent t-tests were used to determine if sexters and non-sexers differed in terms of how sexually satisfied they were in their current primary relationships as well as how pleasurable their last encounter was (Table 7). Ratings of sexual satisfaction ($t(1090) = 1.40, p = 0.16$) and pleasure ($t(1094) = 1.83, p = 0.07$) weren’t significantly different between sexters and non-sexers.

Table 7

*Sexual Satisfaction and Sexual Pleasure at Last Sexual Encounter for Sexters and Non-Sexters*

<table>
<thead>
<tr>
<th></th>
<th>Sexters</th>
<th>Non-sexers</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexual satisfaction</td>
<td>921</td>
<td>3.43</td>
<td>0.71</td>
</tr>
<tr>
<td>Sexual pleasure at last sexual encounter</td>
<td>926</td>
<td>3.54</td>
<td>0.63</td>
</tr>
</tbody>
</table>

Research Objective #2: To determine if the frequency of sexting is related to verbal sexual self-disclosure, how often individuals disclose STI status, how often individuals ask partners about regular STI testing and STI status, as well as sexual satisfaction, and pleasure at last sexual encounter.

Logistic regressions were used to determine if sexting frequency was related to verbal sexual self-disclosure, disclosure of STI status, and asking about regular STI testing and current STI status. Individuals who sexted more frequently were significantly more likely to verbally communicate sexual self-disclosure to their partner ($p = 0.02$), such that if individuals sexted more often by a unit of 0.25, they were 1.28 times more likely to give verbally sexually self-
disclosure ($\beta = 0.25, \text{Exp}(\beta) = 1.28$). This was also found for disclosure of STI status ($p < 0.001$). In this case, as individuals sext more often by a unit of 0.29, they were 1.33 times more likely to disclose their STI status ($\beta = 0.29, \text{Exp}(\beta) = 1.33$). Frequency of communication with partner about regular STI testing and current STI status was significant ($p = 0.04$), such that individuals who sext more frequently by 0.15, were 1.16x more likely to ask their partner about regular STI testing and STI status ($\beta = 0.15, \text{Exp}(\beta) = 1.16$).

Sexual satisfaction and sexual pleasure at last sexual encounter were compared across participants’ sexting frequency. Using Spearman’s rho correlation, individuals who sexted more frequently were significantly more sexual satisfied ($rs(833) = 0.126, p < 0.001$) and had higher sexual pleasure ($rs(837) = 0.131, p < 0.001$) during their most recent sexual encounter at 0.01.

**Research Objective #3: To determine if sexual orientation, relationship status, or relationship configuration acts as a moderator in the relationship between frequency of sexting, verbal sexual self-disclosure, how often individuals disclose and ask regarding STI status, sexual satisfaction, and pleasure at last sexual encounter.**

Heterosexual and queer (gay, lesbian, bisexual, queer, pansexual, uncertain or questioning, or asexual) women were compared in terms of the relationship between frequency of sexting and the communication and sexual satisfaction outcomes variables. Using logistic regressions, an interaction term was generated for sexual orientation and sexting frequency for verbal sexual self-disclosure, how often individuals disclose and ask regarding STI status, sexual satisfaction, and pleasure at last sexual encounter. The interaction terms for verbal sexual self-disclosure, how often individuals disclose STI status, and asking partners about regular STI testing and status were found to be non-significant (Table 8). Indicating that relationships between sexting frequency and verbal sexual self-disclosure, frequency of STI status disclosure
and frequency of communication about STI testing and status do not differ depending on sexual orientation.

### Table 8

<table>
<thead>
<tr>
<th>Interaction Term</th>
<th>Interaction Term (p-value)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal sexual self-disclosure</td>
<td>0.14</td>
</tr>
<tr>
<td>Disclosure of STI status</td>
<td>0.22</td>
</tr>
<tr>
<td>Asking about regular STI testing and STI status</td>
<td>0.31</td>
</tr>
</tbody>
</table>

Moderation regression analysis was used to explore if sexual orientation acted as a moderator for the relationship between sexting frequency and sexual satisfaction or sexual pleasure. As illustrated by Tables 12 and 13 in the Appendix, sexual orientation did not act as a moderator for sexual satisfaction ($p = 0.54$) or sexual pleasure ($p = 0.62$) at last encounter. In other words, the relationships between sexting frequency and sexual satisfaction and sexual pleasure do not differ between queer and straight women.

Logistic regressions were used to determine if relationship status acts as a moderator of the relationship between sexting frequency and verbal sexual self-disclosure, disclosure of STI status, and asking about regular STI testing and STI status. Relationship status was dichotomized as single and casually dating compared to those in relationships (seriously dating, living with a partner, but not married or engaged, engaged, and married). The interaction terms for sexting frequency and relationship status for each of the outcome variables were found to be non-significant (Table 9). As such, the relationship between sexting frequency and verbal sexual self-disclosure, frequency of STI status disclosure, and asking about regular STI testing and status are not different for single and casually dating individuals compared to those in relationships.
### Table 9

*Interaction Between Sexting Frequency and Relationship Status In Terms of Verbal Sexual Self-Disclosure, Disclosure of STI Status, and Asking about Regular STI Testing and STI Status*

<table>
<thead>
<tr>
<th>Interaction term (p-value)</th>
<th>0.61</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verbal sexual self-disclosure</td>
<td>0.61</td>
</tr>
<tr>
<td>Disclosure of STI status</td>
<td>0.49</td>
</tr>
<tr>
<td>Asking about regular STI testing and STI status</td>
<td>0.42</td>
</tr>
</tbody>
</table>

As seen in Tables 14 and 15, relationship status was not found to be a moderator for the relationship between sexting frequency and sexual satisfaction \( (p = 0.37) \) or pleasure at last sexual encounter \( (p = 0.14) \) (Appendix). Between single and casually dating individuals and people in relationships, the relationship between sexting frequency and sexual satisfaction as well as pleasure is no different.

Relationship configuration (monogamous and consensually non-monogamous) was investigated as a potential moderator for the relationship between frequency of sexting, sexual self-disclosure, communication about STI status, and sexual satisfaction and pleasure. Using logistic regression, relationship configuration only acted as moderator for the relationship between sexting frequency and disclosure of STI status, with a significant interaction term \( (p = 0.05) \) and a negative \( \beta \) (-0.56) indicating that the relationship between sexting frequency and disclosure of STI status is stronger for consensually non-monogamous participants. Interaction terms for the relationships for asking about regular STI testing and STI status \( (p = 0.27) \) and verbal sexual self-disclosure \( (p = 0.45) \) were both non-significant.

Moderation analyses were conducted to investigate if relationship configuration acted as a moderator for the relationship between sexting frequency and sexual satisfaction and sexual pleasure at last encounter. As shown in Table 10, relationship configuration significantly moderated the relationship between sexting frequency and sexual satisfaction \( (p = 0.04) \). This
indicates that the relationship between sexting frequency and sexual satisfaction is different for monogamous and CNM participants. Specifically, sexual satisfaction is low for CNM participants when sexting frequency is low, and sexual satisfaction is higher for CNM participants when sexting frequency is higher. This is in contrast with monogamous participants, for whom sexual satisfaction is not dependent on sexting frequency. This interaction is illustrated in Figure 1.

Table 10

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>p-value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexting frequency</td>
<td>0.09</td>
<td>&lt; 0.01</td>
<td>0.04 0.15</td>
</tr>
<tr>
<td>Relationship configuration</td>
<td>0.18</td>
<td>0.14</td>
<td>-0.06 0.42</td>
</tr>
<tr>
<td>Sexting frequency x relationship configuration</td>
<td>-0.17</td>
<td>0.04</td>
<td>-0.33 -0.01</td>
</tr>
</tbody>
</table>

Figure 1. Sexual satisfaction based on sexting frequency as moderated by relationship configuration. The blue line is CNM participants, red line indicates monogamous participants.
On the contrary, relationship configuration was not found to be a moderator for the relationship between sexting frequency and sexual pleasure at last encounter ($p = 0.96$)(Table 11).

Table 11

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>p-value</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexting frequency</td>
<td>0.09</td>
<td>&lt; 0.01</td>
<td>0.04 0.14</td>
</tr>
<tr>
<td>Relationship configuration</td>
<td>0.23</td>
<td>0.02</td>
<td>0.04 0.42</td>
</tr>
<tr>
<td>Sexting frequency x Relationship configuration</td>
<td>-0.004</td>
<td>0.96</td>
<td>-0.16 0.15</td>
</tr>
</tbody>
</table>

**Discussion**

The purpose of the current study was to investigate sexting prevalence and frequency among young adult Canadian women (trans, cis, and non-binary) and the relationship between sexting and sexual communication, sexual satisfaction, and sexual pleasure. Sexting frequency was compared between queer and heterosexual women, single and casually dating individuals and those in a relationship, and consensually non-monogamous and monogamous individuals. Specifically, this study investigated whether sexting at all (RO1) or sexting at different frequencies (RO2) might be related to communication (specifically, verbal sexual self-disclosure, frequency of STI status disclosure, frequency of asking about STI testing, frequency of asking partners about STI status and regular testing), sexual satisfaction, and pleasure at last sexual encounter (defined broadly as “the last time you got frisky”). Lastly, this study investigated whether sexual orientation, relationship status, and relationship configuration might moderate the relationships between sexting frequency and sexual communication, satisfaction, and pleasure (RO3). Participants were Canadian young adult women who participated in Elle Canada’s 2016
Sex Survey. The sample \( (n = 1099) \) reported on their sexting frequencies, communication behaviours, sexual satisfaction, and pleasure. Descriptive statistics were used to describe the sexting frequencies among the various groups within the sample. Chi square analyses, logistic regressions, and spearman’s rho correlations were used to investigate the potential relationships between sexting and sexual communication and satisfaction and pleasure.

Sexting prevalence among participants was similar to prevalences reported in previous research on sexting in young adults. In the current sample, 84.3% of participants reported having ever sexted. A literature review conducted in 2017 indicated the prevalence of sexting and identified inconsistencies in the definition of sexting across studies in terms of sexting platform (mobile phone, Internet, and/or texting) and level of mutuality (sending, receiving, or exchanging) (Courtrice & Shaughnessy, 2017). As such, it is challenging to determine a conclusive prevalence of sexting among young adults. The lowest prevalence among young adults was among undergraduate Hispanic women at 20.5% having sent erotic photographs (platform undefined) (Ferguson, 2011) and the highest was 80.9% among undergraduate students including the exchange of photos/videos/texts by mobile phone or computer-mediated communication (Hudson, Fetro, & Ogletree, 2014). As the current study did not include a definition of sexting within the item, it follows that the results mirror best onto the definition inclusive of all possible methods of sexting. Furthermore, a more recent study of Canadian adults recruited through Trent University’s Psychology department’s online research management system (SONA Systems), Trent University and University of Guelph Facebook groups, and Amazon’s Mechanical Turk (MTurk) reported the lifetime prevalence of sexting to be 89% (Falconer, 2019).
When broken down by frequency, the most commonly endorsed sexting frequency was “a few times a year” with 44.0% of respondents, followed by “once or twice a month” with 26.1%, then decreasing with the greater sexting frequencies with “almost weekly” at 12.2%, “several times a week” at 8.6% and “daily” at 1.7%. As such, it appears from the current data that sexting is a very common lifetime sexual behaviour among young women, but not necessarily one that is participated in regularly.

**Sexting Frequencies by Sexual Orientation**

Queer and heterosexual women had some similarities and differences in their sexting frequency. The most commonly reported sexting frequency among both queer and heterosexual women was “a few times a year,” as well, across the sexting frequency categories, queer women and straight women were similarly likely to be sexting “a few times a year,” “once or twice a month,” or “almost weekly.” However, queer women reported sexting significantly more often than heterosexual women. Specifically, queer women endorsed sexting “several times a week” significantly more than straight women.

Research exploring sexting frequency across sexual orientation has thus far yielded mixed results. Some studies have identified a link between sexual orientation and sexting, such as a study on digital infidelity wherein being LGBT was a predictor for sexting behaviour (Wysocki & Childers, 2011) and a study of adults where individuals in “same sex relationships” were more likely to sext more frequently (Galovan et al., 2018). However, others have failed to find any differences (Dir et al., 2013; Gordon-Messer, Bauermeister, Grodzinski, & Zimmerman, 2013). Findings from this study support previous research outlining differences between queer and straight individuals. This is because while queer women reported sexting more frequently, most (98.7%) of the queer women in the sample were in differing gender relationships,
indicating that sexual identity may be a greater predictor of sexting frequency than if the relationship is with a similar or different gender partner. That queer individuals are already outside the dominant heterosexual scripts for young adults (Sakaluk et al., 2014), in combination with greater technology use within this population in the areas of dating and sexuality generally (Rosenfeld & Reuben, 2010; Rosenfeld & Thomas, 2012), this may lead queer women to be more likely to explore technology as a venue to express their sexuality regardless of the gender of their partner. Overall, it is clear that sexual identity should be investigated in future research alongside information about the gender of partners in the relationship.

**Sexting Frequencies by Relationship Status**

Sexting was most common among participants in relationships, compared to single participants. Over three-quarters of participants indicated that they sexted with their relationship partner, with 42.5% of participants engaging in sexting with their current boyfriend/girlfriend, and 36.2% sexting with their partner/spouse. The remainder reported sexting with casual-dating partners or potential hookups (10.6%), previous partners or lovers (6.1%), Tinder or online-dating matches (1.5%), friends (0.4%), and strangers (0.9%). This contributes to the preponderance of research indicating that sexting is most common with romantic relationship partners (Crimmins & Seigfried-Spellar, 2014; Dir et al., 2013; Drouin et al., 2013; Falconer, 2019; Henderson & Morgan, 2011; Hudson et al., 2014; Samimi & Alderson, 2014; Weisskirch & Delevi, 2011). Trust may be one factor in sexting occurring within longer term relationships. In Le’s (2016) qualitative study of young women’s experiences of sexting, a “foundation of trust” was one of four essential components in a relationship where sexting can occur, citing that long-term relationships were often the context of this trust and that trust was
built over time. Future research could explore how individuals determine trustworthiness among short-term partners.

Nonetheless, single and casually dating individuals were more likely to be sexting at higher frequencies, specifically, twice as likely to be sexting “almost weekly” as well as “several times a week” or “daily.” This might be attributed to various sources—those in short-term and casual relationships may use sexting as a form of foreplay or to indicate sexual interest. There is a preponderance of research indicating that sexting is used for flirtation and to initiate sex (Albury & Crawford, 2012; Burkett, 2015; Dir et al., 2017; Drouin et al. 2013; Henderson & Lenhart 2009; Morgan 2011; NCPTUP, 2008; Yeung et al. 2014), but these findings have not explored how these uses might change based on the relationship context. As well, as greater desires and sexual exploration is common in the early stages of a relationship (Impett, Muise, & Peragine, 2014), sexting may be used as a new venue for getting to know new partners sexually.

**Sexting Frequencies by Relationship Configuration**

This is the first study to explore sexting behaviour among consensually non-monogamous individuals. With regards to the prevalence of sexting, CNM respondents were significantly more likely to have ever sexted and 3 times as likely to be sexting “several times a week.” Greater lifetime sexting may be related to greater priority given to communication generally among those in consensually non-monogamous relationships (Conley et al., 2017; Conley & Moors, 2014; Montenegro, 2010; Ramirez & Brown, 2010; Sheff, 2014; Wosick-Correa, 2010). Previous research does suggest greater relational communication among CNM participants (Conley, Matsick, Moors, & Ziegler, 2017; Martin et al., 2017). While sexual communication was mentioned in Montenegro’s investigation (2010) of gay and bisexual Mormon men’s experiences of CNM with regards to discussions about safer sex, sexting or in-person communication about
sexual desires or interests has not previously been explored among CNM individuals. It could be that CNM individuals have greater sexual communication skills and comfort around sexuality, having had to explore their own relationship orientation and deliberately negotiate a relationship configuration outside the cultural norms, but future research is needed to explore this further. With regards to sexting frequency, this may be due to the fact that individuals are sexting with multiple partners. In particular, as CNM individuals may have multiple relationships at different stages, individuals may be in (multiple) new or casual relationships, which as illustrated by findings around relationship status and sexting in this study, may be conducive to greater frequencies of sexting.

**Communication about STIs**

Sexting was related to increased frequency of disclosure of STI status, as well as increased frequency of asking partners about regular STI testing and current status. This was among both participants who had ever sexted ($p < 0.001$ for both outcome measures) and among those who sexted more frequently ($p < 0.001$ for disclosing STI status and $p = 0.04$ for asking about regular testing and current status). The relationships between sexting and frequency of communication about STIs may be related to potential increased comfort with sexuality among sexters. As in Tannebaum’s (2018) study of communication about sexual health topics through texting, those who communicated about sexuality-related topics had greater confidence in their ability to discuss these topics in offline interactions. Watson’s (2018) investigation of young women’s experiences of sexting also explored how sexting allowed participants to develop comfort and familiarity with sexuality. It may be that sexting increases individuals’ comfort and confidence to talk about sexuality-related topics more generally, including STIs.
However, it is important to note that previous research on sexting and STIs has indicated that individuals who sext may be more likely to have an STI, specifically that those who had ever received a sext were more likely to report a lifetime STI than those who had not ever sexted (Benotsch et al., 2013). This may explain why individuals who sext are more likely to disclose STI status. However, in qualitative study on adults living with genital herpes or genital human papilloma virus (HPV), the majority of respondents did not feel that their STI status was related to an increased frequency of communication about STIs with partners. Instead, many reported avoiding disclosing their STI status to both regular and casual partners (Newton & McCabe, 2008). Nonetheless, a small number of respondents did feel that their experience having an STI was empowering and spurred individuals on to learn more about safer sex and sexual health (Newton & McCabe, 2008). Overall, while individuals who have ever sexted may be more likely to have a history of STIs, research is inconclusive regarding if that makes them more likely to communicate with partners about the topic.

These findings have implications for sexual health promotion campaigns, as communicating with partners about sexual health - including disclosure of STI status, STI testing, and asking about current status - is an important aspect of decreasing STI transmission. Nonetheless stigma around communicating about STIs remains pervasive and hinders the potential for these conversations between partners (Balfe & Brugha, 2010; Hood & Friedman, 2011). As such, identifying sexting as a potential protective factor for STI status disclosure and communication about STIs is of unique relevance. Especially given the rise of STIs in Canada (Choudhri, Miller, Sandhu, Leon, & Aho, 2018), organizations such as Action Canada have launched campaigns aimed at increasing STI testing among young adults (Action Canada, 2019). Future research should explore the mechanism behind the relationship, as it is unlikely that
individuals are sexting about STIs, but that sexting could be facilitating communication through increased comfort with communication, either through digital platforms or in person. If this is the case, digital communication about sexuality, including sexting, might be considered in interventions or campaigns to increase STI testing and communication about STI testing and status. A recent example of this is the “SlutBot” - a chatbot created by Juicebox, a sex technology company, that responds to sexts sent via text message (Juicebox, 2019). After a short sexting session, the phone number sends the user weekly sex and relationship tips (including tips about consent, non-violent communication, lube, and bondage safety) created by sex educators and therapists. By creating a safe environment via sexting over text messages, SlutBot is able to reach individuals with sexual health information who might not otherwise interact with an intervention.

**Sexual Self-Disclosure**

Sexters were significantly more likely to verbally communicate what was working for them and what was not sexually with partners, as were individuals who sext more frequently. These findings support previous research linking sexting and sexual communication. While participants in Bridle’s (2019) and Falconer’s (2019) studies reported that sexting was related to some aspect of greater sexual communication, this study remains the first to examine the link between sexting and sexual self-disclosure directly. For one, Bridle’s (2019) study of sexual communication used the Dyadic Sexual Communication Scale (DSC), which largely focuses on the quality of sexual communication between partners. Specifically, if individuals are able to communicate about their partnered sex life without conflict or difficulty (Catania, 1998). In this study, recent sexters reported sexual communication quality than lifetime sexters and scores on the DSC was a positive predictor of recent sexting engagement, even when sexual and
relationship satisfaction were included in the model (Bridle, 2019). On the other hand, in Falconer’s (2019) study, investigating sexting via cross-sectional survey of Trent University students and community members, sexters reported increased confidence in sexual communication. This finding parallels Tannebaum’s (2018) investigation of self-efficacy in those who communicate about sexuality using texting. As such, while these studies explored aspects of this topic, this is the first study to directly examine the relationship between sexting and sexual communication, specifically verbal communication about one’s sexual likes and dislikes.

The finding that those who sext more frequently are more likely to verbally communicate their likes and dislikes has implications for sexual satisfaction and wellbeing as well. Sexual self-disclosure has been linked to sexual satisfaction in various studies. This has been attributed to the intimacy that can be developed from sharing one’s sexual interests with a partner, as well as leading to partners to engage in more behaviours that they have indicated are pleasurable and less that aren’t working for them (MacNeil & Byers, 2009). As such, these findings may have implications in sex therapy and counselling. Sexting may be explored as a venue to facilitate sexual communication between partners, thus increasing their sexual satisfaction.

These findings are also relevant to research on sexting and sexual violence. There has been some research which has attempted to link sexting to forms of sexual violence and violations of consent (Choi, Van Ouytsel & Temple, 2016; Stanley et al., 2018), however, many of these have largely conflated sexting with sexting coercion or non-consensual photo sharing. In contrast with these studies, the current findings illustrate that sexting may actually be used to facilitate sexual communication and improve consent in relationships among young adults. Regarding exchange of consent during sexual encounters, research indicates that most people do
not verbally communicate consent or sexual self-disclosure (Shumlich & Fisher, 2018), however, verbal communication provides the greatest clarity about sexual likes, dislikes, and boundaries within a relationship. As such, the finding that sexting is related to increased verbal sexual self-disclosure is especially promising. This was also explored in Watson’s (2018) qualitative study of young women’s experiences of sexting, where many participants shared how sexting gave them a platform to voice their sexual desires, more so than in previous offline sexual experiences. Many noted that they felt more “equal” in sexting sexual encounters for this reason. As Watson (2018) indicated, sexting allowed young women to act on their own interests in communicating about their needs outside of traditional sexual scripts regarding women as passive in sexual encounters. As such, further research could continue to explore how sexting may give individuals a voice to communicate about desires and improve the exchange of consent in their sexual experiences, especially for women and individuals of other marginalized sexual and gender identities, for whom experience higher rates of sexual violence (CDC, 2010; Herman et al., 2016).

Sexual Satisfaction and Pleasure

Sexters did not report being more sexually satisfied or having more sexual pleasure at their last sexual encounter. Only more frequent sexters reported higher sexual satisfaction and pleasure. These findings demonstrate a less robust connection between sexting and satisfaction than has been shown in other studies. These include Galovan and colleagues’ (2018), where Canadians and Americans in committed relationships who sexted at all, regardless of frequency, reported greater satisfaction than non-sexters. As well, in Statsko’s (2015) study sexting was correlated with sexual satisfaction regardless of gender, relationship type, or motivators. Instead, these results mirror more closely to Bridle’s (2019) investigation of adults at a Canadian
university, where only recent sexters reported higher sexual satisfaction. There may be differences across countries with regards to sexting and sexual satisfaction, or it may be that more frequent sexting is required to impact one’s sexual satisfaction and pleasure. This possibility may be particularly likely, as only 44% of this study’s sample reported sexting only “a few times a year.”

These findings may be explored within the context of previous literature on the use of sexting as foreplay. For example, in Marshall and Hudson’s (2018) investigation of consequences of sexting among young adults, 33% of respondents indicated that offline sexual activity was initiated. Foreplay was also included among the qualitative and quantitative findings of a study investigating the uses of texting in sexual relationships among African American young adults (Broaddus & Dickson, 2016). Foreplay has been linked to increased sexual satisfaction, specifically, likelihood of orgasm. In a study of orgasm frequency among heterosexual, gay, lesbian, and bisexual men and women in America, women who had orgasms more frequently were more likely to participate in a variety of “foreplay” behaviours- including deep kissing, sexy talk, and calling or emailing a partner to tease about a sexual act (Frederick, John, Garcia, & Lloyd, 2018). As such, regular sexting may act as a form of foreplay to facilitate more frequent sexual encounters and/or more satisfying ones, increasing overall satisfaction with one’s sex life and likelihood of a very pleasurable last sexual encounter. Again, these findings may have applications for sex therapy and counselling, wherein regular sexting could be used to increase sexual satisfaction.

**Moderating Effects of Sexual Orientation**

Sexual orientation did not moderate the relationships between sexting frequency and any of the outcome variables: including verbal sexual self-disclosure, frequency of STI status
disclosure, frequency of communication about STI status and regular STI testing, sexual satisfaction, and pleasure at last sexual encounter. There is a lack of research about verbal sexual self-disclosure, communication about STI status and STI disclosure among queer women, so it is challenging to hypothesize the potential reasons behind this lack of moderation. Given the unique use of technology within the LGBTQ+ community to foster community and connect with potential partners (Hannan-Leith, 2017; McKie, Lachowsky & Milhausen, 2015; Twist et al., 2017), this study aimed to explore if sexting might play a different role in queer women’s experiences of sexual communication and satisfaction. These findings indicate that there are similarities across the domains of communication about STIs, verbal sexual self-disclosure, sexual satisfaction and pleasure between queer and straight women.

With regards to the lack of differences in the relationship between sexting frequency and sexual satisfaction and sexual pleasure, there is some research indicating that among queer women, sexual health outcomes, particularly sexual satisfaction, differ based on the gender of their partner. In a study of orgasm occurrence across sexual orientation in adults in the US, bisexual women had lower rates of orgasm (58.0%) compared to heterosexual women (61.6%), with lesbians having the highest orgasm incidence rate (74.7%) with a familiar partner (Garcia, Lloyd, Wallen, & Fisher, 2014). Furthermore, when orgasm rates are compared by the gender of partner instead of sexual orientation, as in Blair and colleagues (2018), women in mixed-sex relationships reported have orgasms less often than women in same-sex relationships. As such, given that 98.7% of queer respondents indicated that their primary partner was a man, it might follow that sexting acted in similar ways on queer and heterosexual participants’ sexual satisfaction and pleasure at last encounter because most participants were partnered with another-gender partner across all identities.
Moderating Effects of Relationship Status

There were no differences between individuals in relationships and those who are single or casually dating in the correlations between sexting frequency and verbal sexual self-disclosure, frequency of STI status disclosure, asking about regular STI testing and status, sexual satisfaction, and pleasure at last sexual encounter. This is interesting given that there were differences in sexting frequency by relationship status, with most participants sexting with a relationship partner, but single and casually dating individuals sexting at higher frequencies. As such, it is clear that there are some differences in sexting across relationships, such that sexting might serve different purposes or functions in different kinds of relationships such as for flirting or initiating interest in casual sexual relationships compared to “keeping the spark alive” in romantic relationships. However, if these differences do exist, they were not captured in the measures in this study. This may be because single item questions were used and longer form measurements may be needed for increased sensitivity. As well, future research is needed to explore how other variables may be related to sexting frequency in different relationship statuses. Qualitative research might also be valuable to illuminate the ways that individuals in casual, short, and long-term relationships use sexting and the impact they feel it has on their sexual and relationship satisfaction.

Moderating Effects of Relationship Configuration

Relationship configuration moderated the relationship between sexting frequency and frequency of disclosure of STI status, such that the link was stronger among consensually non-monogamous participants. This supports previous research related to CNM individuals’ communication and safer sex behaviours. CNM individuals place great value on communication (Conley et al., 2017; Conley & Moors, 2014; Martin et al., 2017; Montenegro, 2010; Ramirez &
Brown, 2010; Sheff, 2014; Wosick-Correa, 2010), as well as are more likely to have ever been tested for STIs (Lehmiller, 2015), and communicate about STI testing history with partners (Conley et al., 2012). As such, it is possible that sexting is one method used by those in CNM relationships to facilitate sexual communication, transitioning conversations to discuss other sexual health topics, including STI status.

Relationship configuration moderated the relationship between sexting frequency and sexual satisfaction. Sexual satisfaction was lower for CNM participants when sexting frequency was low, and higher when sexting frequency is high. For monogamous participants, sexual satisfaction was not dependent on sexting frequency. A potential reason for this difference is that CNM individuals may place higher value on sexting and sexting frequency as a sexual activity in their lives. As illustrated in this study, CNM individuals were more likely to be sexting more frequently, and previous research has illustrated the emphasis that those in CNM relationships place in relational communication (Conley et al., 2017; Conley & Moors, 2014; Martin et al., 2017; Montenegro, 2010; Ramirez & Brown, 2010; Sheff, 2014; Wosick-Correa, 2010). As such, sexting may simply play a greater role contributing to sexual satisfaction among CNM individuals than monogamous individuals. Future studies should examine the role of sexting in CNM individuals’ relationships and how it may be used to facilitate sexual communication and satisfaction.

Implications for Triple A Engine

This study adds to previous research and theorizing about how technology can alter the social and sexual interactions of young people. As highlighted in McKie, Lachowsky, and Milhausen’s (2015) qualitative research with young gay, bi, and queer men, as well as Tannebaum’s (2018) research with high school students, technology use in the sample was
related to increased communication in relationships. Participants who had ever sexted or sexted more regularly were found to communicate more frequently about STI status and testing, as well as to verbally discuss their sexual desires. While causational claims cannot be made, these findings may suggest that technology can facilitate these intimate and often challenging conversations. This may be due to the increased “anonymity” of communicating behind a screen, even if the individuals in conversation are not strangers. The additional distance between conversationalists may decrease perceived risks such as embarrassment or confrontation. It may also provide additional strategies for navigating these risks, such as walking away from a phone or sending a pre-prepared script. It may also be related to the “accommodation” aspect of the triple “A” engine, defined as the tension between our “real” and “online” selves. One’s “online self” may be more confident or sexually savvy and therefore more capable of articulating sexual interests or negotiating STI testing. Further research is needed to explore how sexting and other technology use may be used as a strategy to promote safer sex behaviours, such as negotiating condom use or beginning conversations about consent and boundaries.

Overall, the current study explored the relationship between sexting and various positive sexual health outcomes: communication of verbal sexual self-disclosure, frequency of STI status disclosure, frequency of asking about regular STI testing and STI status, and sexual satisfaction and sexual pleasure among young women. Participants who had ever sexted and sexted more frequently were more likely to sexually self-disclose verbally, disclose STI status, and ask partners about regular STI testing and STI status. Further, young women who sexted frequently reported higher sexual satisfaction and pleasure at their last encounter. Queer women, single and casually dating women, and women in consensually non-monogamous relationships sexted more frequently. Relationship configuration was the only moderator of the relationship between
sexting frequency and sexual health outcomes, such that individuals in CNM relationships were more likely to disclose their STI status based on their sexting frequency and more likely to report higher sexual satisfaction with higher sexting frequency.

**Strengths and Limitations**

This study has various strengths in terms of investigating sexting from a non-deviance framework and exploring sexting within relationship contexts. This was the first study to investigate the link between sexting and disclosure of STI status and asking about STI status and testing. As well, it was the first to explore the link between sexting frequency and verbal sexual self-disclosure specifically, as other studies have looked at other elements of sexual communication including quality of sexual communication (Bridle, 2019) and confidence in sexual communication (Falconer, 2019). Given the importance of verbal sexual self-disclosure both in the prevention of sexual violence (Santelli et al., 2018) and the facilitation of sexually satisfying sexual encounters (Byers, 2011; MacNeil & Byers, 2005, 2009), the identification of sexting as a potential stepping stone to increased sexual communication has the potential to promote further research into the positive outcomes of sexting as well as its incorporation into sex education and sexual health interventions.

Regarding relationship context, this study had a large number of queer (largely bi+) women such that comparisons could be made between queer and straight young women, as previous research on sexting and sexual orientation have not focused on young adults specifically (Galovan et al., 2018; Wysocki & Childers, 2011). As the number of LGBTQ+ adolescents and young adults is increasing, bi+ women in particular (Compton & Bridges, 2019; Watson, Wheldon, & Puhl, 2019), in tandem with the increasing pervasiveness of technology
(Zenith Media, 2017), this research exploring queer women’s use of technology in relationships is essential for future educational programming and sexual health interventions. Additionally, this was the first study to investigate the sexting practices of individuals in consensually non-monogamous relationships. Given the growing diversity in relationship configurations, with 21% of Americans reporting having engaged in some form of consensual non-monogamy in their lifetime (Haupert, Gesselman, Moors, Fisher, & Garcias, 2016), this research contributes to the growing body of literature extending our understandings of sexuality and relationships to modern relationship experiences.

Nonetheless, the study also has various notable limitations. Most significantly, the term “sexting” was undefined in the Elle Canada survey from which secondary data analysis was completed for this study. As such, I was unable to determine how participants interpreted “sexting.” As outlined in literature reviews of sexting prevalence, there is substantial diversity in the definitions of sexting— including the medium being shared (photos, videos, text messages), the platform used for sexting (mobile phones, computers, the Internet), the level of mutuality (sending, receiving, exchanging), and the degree of explicitness (semi-nude, nude). There are differences in the prevalence of sexting among young adults across these various elements (Courtrice & Shaughnessy, 2017), as well as the outcomes. For example, that sexual communication was not correlated with sexting frequency in the case of nude photos (Bridle, 2019). As such, if sexting had been defined or broken down across these elements differences might have emerged for the outcome variables (verbal sexual self-disclosure, communication about STI status and testing, sexual satisfaction, and pleasure at last encounter) depending on what kind of sexting individuals were participating in. As well, with an explicitly inclusive sexting definition across medium, platform, mutuality, and explicitness, individuals who may
have not believed their behaviour to be sexting and indicated that they had never sexted may have been re-categorized.

In addition to the ambiguity of the definition of sexting in the questionnaire used in the current study, there are also limitations related to the study’s definitions of sexual encounter and communication about STIs. The lack of specificity for these items is particularly noteworthy given the degree to which technology has been integrated into romantic and sexual relationships. The wording for these items did not specify off-line sexual activity and off-line sexual communication, and as such, we are unable to determine if participants reported on off-line experiences. There could be differences in sexting experiences among those who communicate about STIs and desires using digital platforms compared to those who communicate in person, and with recent research including cybersex in a definition with sexting (Courtrice & Shaughnessy, 2017), findings on the relationship between these variables could be different than those who reported on off-line sexual experiences and cybersex.

There are also limitations with regard to the outcome variables used in this study. In terms of investigating communication of verbal sexual self-disclosure, potential ambiguity around what was included as sexual self-disclosure was removed by focusing exclusively on verbal communication. However, as indicated previously, the majority of individuals do not communicate verbally about their sexual likes and dislikes (Shumlich & Fisher, 2018), as such, potentially important information about how sexting may be related to non-verbal communication with partners may have been lost. In the case of frequency of communication about STIs, one item contained two different elements - asking about STI testing and current STI status. As individuals may be more likely to communicate about STI testing than STI status, I
was unable to differentiate between these two outcomes to determine if sexting frequency was related to each differently.

It is important to note that this study is not causational and there are certainly additional relevant covariates that were not examined in the current study. Sexting may be more likely to have positive correlates or outcomes for individuals with certain personality or relational traits. For example, Bridle (2019)’s study found that those in long-distance relationships are more likely to sext, a finding that has also been elucidated in qualitative research, with participants in Le (2016)’s study citing sexting as a way to fulfill their desire for physical intimacy in long-distance relationships. In a similar vein, relationships that are already trusting and satisfying might be more likely to lead to positive sexting experiences. While trust has been cited as an important factor in sexting in qualitative research, findings from Falconer’s (2019) research were inconclusive with regards to the role of trust in sexting experiences. Beyond relational factors, certain personality traits may also predispose an individual to use sexting in positive ways. For example, one study found that extraversion predicted sexting with text messaging. As well, those who are more educated, and who have sex-positive and feminist values may have more positive sexting experiences. For example, in Watson (2019)’s study on sexting and empowerment, all of the participants were completing undergraduate degrees or another post-secondary program, and most
described themselves as liberal, feminist, and interested in sexuality and sexual rights. As such, they may have been more likely to explore or engage with sexual behaviours and ideas, like sexting, that are not considered normative (Watson, 2019). They may be more likely to identify power imbalances and challenges in sexting and avoid these, as well, they may be more empowered to advocate for themselves and their pleasure, thus leading to more positive sexting experiences. In other words, there may be personality traits or attitudes that may contribute to both an interest in and comfort with sexting and positive personal and relational outcomes like increased satisfaction and pleasure. None of these constructs were controlled for in the current investigation.

While the original questionnaire used for this study did include questions regarding individuals in consensually non-monogamous relationships, there are limitations in its ability to capture data on all members of these relationships. For one, information about sexual satisfaction was only collected with regards to the primary partner. As such, if individuals didn’t define their relationship as having a “primary partner” they may have been confused or conflicted as to which partner to answer the question about. As well, there were no questions about the sexual satisfaction in relationships outside the primary partnership, which could have elucidated our understanding on the function of sexting across various relationships. Further, the questionnaire did not include demographic items on race, ethnicity, or ability. As such, it was not possible to ascertain if the sample replicates previous research exploring sexting among mostly white samples. Given the perceived demographics of Elle Canada, it is likely that this is the case, leading to further erasure of BIPOC (Black, Indigenous, people of colour) individuals in sex
research and a lack of nuance with regards to these varied experiences. Furthermore, this prevented further exploration of differences in experiences of sexting across these groups.

**Future Research**

Further research is needed to investigate LGBTQ+ individuals’ experiences of sexting. For one, sexual identity should be investigated alongside gender of partners in future research. A greater number of participants in relationships with non-binary individuals and women are needed to compare sexual health outcomes to women in relationships with men, and to explore how these relationships might be different depending on the individual’s sexual orientation. As well, future research on the sexting experiences of trans and non-binary individuals is needed. While this study was inclusive of trans and non-binary women, only 10 genderqueer and 16 non-binary individuals were in the sample. As such, I was unable to make comparisons based on gender identity. As well, further research into the sexting experiences of trans men, non-binary, and other gender non-conforming individuals is needed, as this study focused on the experiences of young women.

Research into the relational context of sexting also warrants further investigation. While this study was able to illustrate that single and casually dating individuals are sexting more often compared to those in relationships, future research is needed to explore how sexting may serve different purposes over the course of a relationship, such as to flirt or “keep the spark alive”.

As this was the first study to investigate sexing engagement among those in consensually non-monogamous relationships, drawing upon qualitative methods could be used to elucidate how CNM individuals use sexing to improve sexual satisfaction, communicate with multiple partners, and potentially facilitate broader discussions around sexual health. Specifically, given that sexting frequency is more strongly related to disclosure of STI status for CNM individuals,
further investigation into this relationship could be used to develop interventions to improve sexual communication around STIs for all individuals.

**Implications**

The current research contributes to a growing body of literature on positive correlates of sexting for young Canadian women. Through survey-based data collection in collaboration with Elle Canada, sexting was linked to increased verbal sexual self-disclosure, frequency of STI status disclosure, and communication about STI status and testing. Frequent sexting was linked to increased sexual satisfaction and pleasure. Queer women, single and casually dating women, and those in consensually non-monogamous relationships reported sexting more frequently. As well, the relationships between sexting frequency and disclosure of STI status and sexual satisfaction were stronger for CNM individuals. Given the prevalence of sexting among young adults up to 80% (Falconer, 2019; Hudson, Fetro, & Ogletree, 2014) and increasing integration of technology into our daily lives, understanding the benefits that young women experience from sexting is imperative.

Results from this study have implications for the field of sexting research. Future research should continue to have a balanced approach in exploring the role of sexting in the lives of young adults. In particular, moving away from a solely deviance-based approach regarding young women’s experiences of sexting, as these findings illustrate the many positive correlates of sexting among this demographic including increased sexual communication and sexual satisfaction. Additionally, further research into sexting might explore the sexting experiences of those outside the traditional model of sexuality: coupled, heterosexual, and monogamous. This is needed given findings that queer young women, single and casually dating, and consensually
non-monogamous women are more likely to be sexting more frequently. Research is needed to elucidate the function of sexting in these relationships.

Findings from this study can be useful in clinical settings as clinicians can incorporate sexting into treatment plans for those hoping to improve their sexual communication and sexual satisfaction. Given that sexting at any frequency was related to increased verbal sexual self-disclosure, sex therapists and counsellors may use sexting as a stepping stone for partners to communicate their desires and interests with one another, leading to increased sexual satisfaction in their relationships.

Lastly, educational settings and sexual health promotional campaigns may also find these findings useful to increase communication about STIs and STI testing among young people. This can include recommendations that technologically-mediated communication can be used to facilitate conversations about STI status and STI testing with potential and current partners in a lower stakes environment. Sexuality and relationship education platforms should also emphasize the role of sexting to facilitate communication about sexual desires and interests. While digital expressions of consent do not negate the need for in-person sexual communication, given that sexual communication as an essential skill that should be developed among young adults for consensual and satisfying sexual encounters, sexting can be given as an option to begin these conversations.

In conclusion, this study adds to the growing literature exploring the role of technology in young adult’s sexual and romantic lives. With technology becoming increasingly accessible and integrated into many aspects of our daily interactions it is imperative that research is used to develop a greater understanding of the benefits of technologically-mediated communication, as well as how it may be harnessed to promote safer sex behaviours, such as STI status disclosures,
condom and STI testing negotiations, and communication about one’s own desires. In particular, as young women and queer individuals often experience additional challenges in navigating their agency within the realm of sexuality, exploring how technology can be used to create safer and more pleasurable sexual experiences is a goal that is worth striving for.
### Appendix

Table 12. Sexual Satisfaction Predicted from Sexting Frequency and Sexual Orientation

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexting frequency</td>
<td>0.08</td>
<td>0.001</td>
<td>0.03</td>
</tr>
<tr>
<td>Sexual orientation</td>
<td>0.06</td>
<td>0.33</td>
<td>-0.06</td>
</tr>
<tr>
<td>Sexting frequency x Sexual orientation</td>
<td>-0.03</td>
<td>0.54</td>
<td>-0.14</td>
</tr>
</tbody>
</table>

Table 13. Sexual Pleasure at Last Encounter Predicted From Sexting Frequency and Sexual Orientation.

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexting frequency</td>
<td>0.06</td>
<td>0.01</td>
<td>0.01</td>
</tr>
<tr>
<td>Sexual orientation</td>
<td>0.04</td>
<td>0.61</td>
<td>-0.08</td>
</tr>
<tr>
<td>Sexting frequency x Sexual orientation</td>
<td>0.02</td>
<td>0.62</td>
<td>-0.07</td>
</tr>
</tbody>
</table>

Table 14. Sexual Satisfaction Predicted from Sexting Frequency and Relationship Status

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexting frequency</td>
<td>0.10</td>
<td>0.001</td>
<td>0.045</td>
</tr>
<tr>
<td>Relationship status</td>
<td>0.31</td>
<td>0.000</td>
<td>0.16</td>
</tr>
<tr>
<td>Sexting frequency x Sexual orientation</td>
<td>-0.05</td>
<td>0.37</td>
<td>-0.17</td>
</tr>
</tbody>
</table>

Table 15. Pleasure at Last Sexual Encounter Predicted from Sexting Frequency and Relationship Status

<table>
<thead>
<tr>
<th>Predictor</th>
<th>B</th>
<th>p</th>
<th>95% CI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sexting frequency</td>
<td>0.09</td>
<td>&lt;0.001</td>
<td>0.05</td>
</tr>
<tr>
<td>Relationship status</td>
<td>0.27</td>
<td>0.001</td>
<td>0.14</td>
</tr>
<tr>
<td>---------------------</td>
<td>------</td>
<td>-------</td>
<td>------</td>
</tr>
<tr>
<td>Sexting frequency x Sexual orientation</td>
<td>0.09</td>
<td>0.14</td>
<td>-0.03</td>
</tr>
</tbody>
</table>

Table 16. *Tests of Normality to Evaluate Distribution of Dependent Variables*

<table>
<thead>
<tr>
<th>Question</th>
<th>Kolmogorov-Smirnov</th>
<th>Shapiro-Wilk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you communicate with your partner about what’s working for you or not working for you sexually?</td>
<td>0.458 906 0.000</td>
<td>0.555 906 0.000</td>
</tr>
<tr>
<td>STIDisclosureRecoded</td>
<td>0.332 906 0.000</td>
<td>0.692 906 0.000</td>
</tr>
<tr>
<td>STIaskRecoded</td>
<td>0.297 906 0.000</td>
<td>0.783 906 0.000</td>
</tr>
<tr>
<td>How sexually satisfied are you in your current, primary relationship?</td>
<td>0.324 906 0.000</td>
<td>0.737 906 0.000</td>
</tr>
<tr>
<td>How pleasurable was your last sexual encounter?</td>
<td>0.361 906 0.000</td>
<td>0.687 906 0.000</td>
</tr>
</tbody>
</table>
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