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Sexual Health Education's Role in Predicting Safer Sex Practices

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by

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Abstract

This study investigated the relationship between each of the source of and satisfaction with sexual health education, and comfort in negotiating safer sex practices, as well as frequency of safer sex. Data from 127 participants aged 18-25 from an undergraduate participant pool were analyzed. Participants identified their primary source of sexual health education and rated the satisfaction of such education. Further, participants completed a questionnaire measuring their comfort with the use of negotiation strategies to achieve safer sex, if applicable. Lastly, participants reported frequency of safer sex behaviour. The education system was the most common reported primary source of sexual health education (44.1%), followed by peers (25.8%), and the Internet (20.5%). Reported frequency of safer sex was positively correlated with comfort in negotiating safer sex (r = *.48,* p = .00, N = 91), but not with satisfaction with parent- (r = .12, *ns*, N = 90) or education-based sexual health education (r = .04, *ns*, N =85).

To my beautiful niece, Hadlee Hoekstra, born during the creation of this study. I love you dearly and cannot wait to see you grow. Further dedication to Stella Aucoin, my dear grandmother, who passed during the studies' construction.

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"Appreciation is a wonderful thing. It makes what is excellent in others belong to us as well." – Voltaire

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Sexual Health Education's Role in Predicting Safer Sex Practices

Current research has revealed that undergraduate students and emerging adults are at an increased risk for sexually transmitted diseases, and are particularly likely to engage in risky sexual behaviours (Benotsch, Snipes, Martin & Sheana, 2013; Norton, 2009; Parker, Harford & Rosentstock, 1994). Often implicated in such concerning behaviour, is the field of sexual health education. It is logical to assume that the education one receives about sexual health will contribute to habit formation, decision making, and skills pertaining to one's sexual safety and sexual health. This field has been well studied, particularly in the past two decades (Byers, 2003a; Byers, 2003b; McKay & Holowaty, 1997; Somers & Surmann, 2004). Often times, such studies compared evaluations of effectiveness of different teaching styles (Caron, Godin, Otis & Lambert, 2004), sexual health education curricula (Kohler, Manhart & Lafferty, 2008), or particular instructional methods for such education. The role that the source of sexual health education has on effectiveness has also been examined in the current literature (Byers, 2003a; Byers, 2003b; Caron, Godin, Otis & Lambert, 2004). This effectiveness of sexual health education should reflect the goals of the sexual health curriculum. One of the most pertinent goals of the Ontario sexual health education curricula is a reduction of risky sexual behaviours. Thus, for the purposes of this study, effectiveness of sexual health education will be defined as a decrease in risky sexual behaviours. This reduction of risky sexual behaviours, in turn, will be defined in this thesis as increased frequency of safer sex, as well as self-reported comfort with negotiating such practices, if applicable.

Participants' reported satisfaction with sexual health education received has been less extensively evaluated. As such, the purpose of the present study is to measure the relationship

between participants' (1)(a) primary source of sexual health education and (1)(b)reported satisfaction of such education on the one hand, and (2)(a) the reported frequency of safer sex practices and (2)(b) self-reported comfort in negotiating such practices if applicable, on the other.

Source of Sexual Health Education

Because in the current study I am investigating the role played by source of sexual health education in sexual health behaviours, previous literature regarding the role of sexual education is explored in three ways. First, the literature concerning students' reported preferred sources of sexual health education is reviewed. Second reviewed, is the literature concerning frequencies at which students receive sexual health education from various sources. Last examined, and most importantly for the purposes of the study undertaken, is literature concerning the role source of sexual health education plays in predicting safer sex behaviour and attitudes.

A student's reported preferred source of sexual health education may not match his or her actual received source. A study of 406 grade seven to twelve students in Ontario, Canada, explored such discrepancy. The researchers found that the most common, primary source of education was school (55%), followed by family (44%), and friends (32%). The study further concluded that 58% of students' preferred source of sexual education was school-based, then family (40%), and lastly, friends (24%: McKay, & Holowaty, 1997). In similar research, Somers and Surman (2004) investigated high school students' preferred source of sexual health education within an ethnically diverse sample of 672. A frequency analysis of the data revealed that students generally endorse parents as their preferred primary source of sexual health education. This source was followed by formal school-based education, and then peers. Further,

the researchers note that no other source of sexual health education was rated as desirable (Somers & Surmann, 2004). Logically, students' preferred source of sexual health education might have important implications for their level of overall satisfaction with that education.

The absence of a relationship between source of sexual health education and safer sex behaviour is a consistent result across the several studies that have assessed it. A seminal study conducted at Wayne State University examined the relationship between source of sexual health education and students' sexual behaviour and contraceptive use, in a sample of 113 urban high school students. Results indicate that the source of sexual health education did not predict extent of sexual behaviour, nor consistency in use of contraceptives. Interestingly, the study found that those students who reported an adult as their major source of sexual health education were no more knowledgeable about sex or contraceptive use than were those who listed peers as a primary source (Handelsman, Cabral, & Weisfeld, 1987).

Further, a study by Guthrie and Bates (2003) examining 75 college students in the Southern United States, found that the most frequently reported primary source of sexual health education were peers, parents, and school-based education, in that order. Previous sources of sexual health education did not significantly predict condom use. Thus, none differed from the others in their level of predictiveness of this key risk behaviour.

Consistent with the aforementioned research, Somers and Surmann (2005) also examined the effect of timing and source of sexual health education on attitudes toward sex and sexual behaviours in a sample of 672 ethnically diverse high school students. This study separated sexual health education into several major components (*Importance of birth control*, *Consequences of teen pregnancy*), and analyzed how the source might differently emphasize

each. It was revealed that the emphasis placed on various subject matters did indeed vary with the primary source of sexual health education. Further, the study concluded that the source of sexual health education did not significantly predict attitudes or behaviour.

The above review demonstrates a few examples of how source of sexual health education has been addressed in the literature. In it, further, source of sexual health education has been hypothesized to play a role in predicting safer sex behaviour, as well as safer sex attitudes. Studies to date, however, have failed to empirically support these claims. What is consistently demonstrated is that parent- and school-based sexual health education remain both (1) the most common primary sources of education, as well as (2) the most frequently reported preferred sources of sexual health education. Peers repeatedly place third both as preferred source of sexual health education and as its actual source. Media, self, and health professionals are infrequently reported as primary sources of sexual health education.

Satisfaction with Sexual Health Education

In an exploratory study, Byers *et al.* (2003a) explored adolescents' perspectives on the quality of their sexual health education both at school and at home, in a sample of 1663 youths in New Brunswick, Canada, in grades nine through twelve. Approximately 50% of students rated the sexual health education provided to them as *fair* or *poor* on a 5-point scale. The researchers broke the sexual health education curriculum up into several different topics in order to discover any differences in how well each was covered. This analysis demonstrated that while no topic was rated as *covered very well*, the median rating of coverage of puberty and development was *well*. The median ratings of coverage of abstinence, sexual decision making, and sexual personal safety were *poor.* Remaining topics (correct names for genitalia, reproduction, sexually

transmitted diseases, coercion and assault) were all rated as *covered.* Further, over one-half rated their sexual health education instructor as *pretty comfortable* or *very comfortable* with the presentation of sensitive sexual material. Interestingly, students were generally more satisfied with their home-based sexual health education than that delivered in the classroom. Despite this, the majority of students indicated they were not encouraged to ask sexual health related questions at home. Each student participant was requested to ask two sexual health-related questions, which demonstrate particular areas that their sexual health education had not adequately addressed. The majority of questions fell under three themes as determined by a qualitative thematic analysis; factual information, practical skills application, and values clarification. Questions concerning factual information and practical skills were much more frequent than were value clarification questions. These questions exemplified the students' need for more factual information and for more information regarding practical skills to be integrated into their sexual health education.

In a concurrent, exploratory study, Byers *et al.* (2003b) explored students' perspectives on the quality of their sexual health education. The authors sampled 745 middle school youths in grades six through eight, in New Brunswick, Canada. A general finding was this sample's overall satisfaction with the quality of sexual health education received. The researchers noted that older middle school children rated the quality of sexual health education more poorly than did their younger counterparts. The researchers theorized that this effect might be due to the increased sexual demands older students might face and additional questions such students might have, due to more of them having begun romantic relationships. Note that 75% of students in the study indicated they had experienced only kissing, or no sexual activity at all. Students also rated the sexual health education instructor as being knowledgeable and comfortable with the subject

matter. Coverage of only two out of ten topics was associated with students' quality rating of sexual health education. These two topics were correct name for genitalia and stages of physical development. Despite these two topics bearing the highest rating for comprehension, even these topics were not rated as *covered well* or *covered very well*.

In a sample of recently graduated high school students in Ontario, Canada, Meaney, Rye, Wood, and Solovieva (2009) examined the effect of level of satisfaction with sexual health education on (1) comfort with sexuality, (2) past sexuality, and (3) sexual self-image. This study also made use of The General Satisfaction with Sexual Health Education scale (Byers, Sears, Voyer, Thurlow, 2003), in addition to a variety of other measures assessing sexual attitudes, and level of satisfaction. Students were found to be generally satisfied with their sexual health education. Sexual self-concept refers to the perception of oneself as a sexual being, and includes assessments of power and assertiveness in sex, desire to avoid risky sexual situations, and a general awareness of one's sexuality. It was observed that in males, sexual self-concept correlated positively with satisfaction with sexual health education. In females, satisfaction with sexual health education received correlated with both past and present rated comfort with sexuality. The researchers present the notion of “erotophobia”, as pertaining to an individual who displays discomfort when presented with sexuality-related stimuli. Logically, if an individual is uncomfortable (erotophobic), they might give lower ratings of satisfaction with their sexual health education received, based partially on the fact that they did not want to be presented with the stimuli to begin with. Erotophobic students have been shown to be less consistent in their contraceptive use and hold more negative reactions toward communicating about sex (Fisher, Byrne, & White, 1983). The researchers theorize that the female students within their sample

scoring low on comfort with past and present sexuality would likely score high on erotophobia, and would thus be expected to engage in more risky sexual behaviours.

When evaluating the effectiveness of sexual health education, one vital measure would appear to be its effect, if any, on such life-saving behaviours as safer sex practice. The studies reviewed involve a discussion of level of satisfaction with sexual health education received. These studies, however, do not investigate the role this satisfaction might have on sexual behaviour. One study based in the Southern United States investigated perceived helpfulness of sexual health education, and its effect on sexual attitudes and behaviour, in a sample of 1 878 undergraduate students. The overwhelming majority of this sample identified school as their primary source of sexual education. This study demonstrated that the overall "perceived helpfulness" of one's sexual health education experience at school – as indexed by their recall accuracy and subjective satisfaction rating – was a significant predictor of more consistent condom use. It was further noted in the study that the only other significant predictor of consistent condom use was instruction on specific skills to negotiate safer sex (Walcott, Chenneville, & Tarquini, 2011).

Negotiation of Safer Sex

Many studies have examined the role that the utilization of different strategies used to persuade or influence one's sexual partner to wear a condom, have on actual reported safer sex.Logically, such condom influence strategies might be predictive of the use of a condom during sex. Noar, Morokoff, and Harlow (2002) identified six different condom influence strategies in their development and validation of the Condom Influence Strategy Questionnaire. This instrument was based on a survey of 625 undergraduate students. Principle component

analysis revealed six distinct such strategies including *direct request, withholding sex, seduction, relationship conceptualizing, risk information* and *deception*. Researchers noted that each of these six strategies was strongly related to sexual assertiveness. Further, the researchers created a shortened version of the Condom-Influence Strategy questionnaire to evaluate the ease with which participants could apply any of the six strategies (Noar, Crosby, Benac, Snow, & Troutman, 2011).

A test of Noar, Morokoff, and Harlow's six proposed condom negotiation strategies (2002) was conducted by Holland and French (2012). These researchers distributed the Condom Influence Strategy Questionnaire to 262 sexually experienced, heterosexual undergraduate students in California, U.S. The data revealed, in accordance with the researchers' predictions, that participants were unlikely to use just one condom influence strategy. Additionally, no one strategy emerged as the most effective in leading to a safer sex outcome, and the use of any of the strategies led to increased condom use. It was found that *direct request*, *withholding sex*, and *seduction* were the strategies used most assertively, based on strongest agreement with these items. It was further noted that those participants who employed these more assertive strategies were more likely to show consistent condom use. Since such negotiation has been shown to increase frequency of condom use, and since experiment demand characteristics of this study may influence some participants to overstate the frequency at which they engage in safer sex practices, it was thought important to include this instrument. Note that these negotiation strategies are hypothetically worded (*e.g., How easy or difficult would it be for you to let your partner know that no condoms means no sex*). Thus, responses to this measure of participants who have not yet reached sexual debut may be analyzed, to assess their future thoughts and

feelings (if any), surrounding negotiating safer sex. Predictions as to individual safer sex practice among those who will not engage in it until long after sex education may be made.

The Present Study

This study investigates four variables pertaining to sexual health education. The first variable is primary source of sexual health education. To complete it, participants either chose from the most common sources of sexual health education, or entered a text response. The second variable was general satisfaction with sexual health education, measured by the General Satisfaction with Sexual Health Education Scale (Byers, Sears, Voyer & Thurlow, 2003a). This scale was included to measure participants' attitudes toward the sexual health education they received. It also involves participants rating the quality, content, and mode of instruction of that education. Additionally, participants' reports of the frequency at which they engage in safer sex behaviou within a given time frame will be taken, for those participants having reached sexual debut. This is used as a measure of effectiveness of sexual health education. This measure is comprised of one item adapted from an item included in the Condom Use Consistency Questionnaire (Onoya, Reddy, Ruiter, Sifunda, Wingood & Van, 2011). Lastly, assertiveness in the use of condom influence strategies will be assessed. This assertiveness will be measured via the Condom Influence Strategies Questionnaire – 8 Item Scale (a Likertscale measure: Noar, Crosby, Benac, Snow, & Troutman, 2011).

The current study promulgates three hypotheses, based on the previous literature presented. The first hypothesis is (1) that home-based and school-based sexual health education will be identified as the primary source of sexual education more frequently than any other source. It is also hypothesized (2) that general satisfaction with sexual health education will

correlate with frequency of safer sex, (3) as well as with comfort while employing condom influence strategies (as in Noar, Morokoff, & Harlow, 2002). Finally, it is hypothesized that (4) comfort with which participants could employ condom-influence strategies, will correlate with the frequency of safer sex.

Method

Participants

Participants included 127 undergraduate students, 80 of which were female (63 %), and 47 of which were male (37 %), who participated in exchange for course credit. Note here that gender and sexual orientation were requested using an open-text response and the researcher coded these responses. Gender was coded to be either male, female, or undetermined. *Man*, *Male*, *FtM*, *M*, and *Boy* were all coded as male, whereas *Woman*, *Female*, *F*, or *girl* were all coded as female. No participant's responses could not be classified into these two categories. The age range was 18-25 years, with a mean age of 18.87 (*SD* = 1.19). The sample was composed of 114 heterosexual (89.8 %) and 12 non-heterosexual participants (9.4 %), and one participant who chose not to provide sexual orientation information (0.8%). *Heterosexual*, *Straight*, *normal*, were all classified as heterosexual participants. *Gay*, *Homosexual*, *Bi-Sexual*, and *Lesbian* were all classified as non-heterosexual. Further, any participant who indicated the partner gender they preferred as their answer to the question seeking their sexual orientation (*e.g.,* "interested in men"), had this stated preference checked against their own reported gender, in order to infer their sexual orientation.

Important to the current study are demographic data on relationships and whether or not participants have reached sexual debut. One hundred and four participants indicated that they had been in a romantic relationship previously (82.5 %), with 22 participants indicating they had not

(17.5%). Relationship length varied from 0 months (among those stating they had ever been in a relationship), to 84 months (seven years). The mean length of relationships for the entire sample was *M* = 14.11 months (*SD* = 14.59). Among participants reporting currently being in a relationship, mean length was 17.40 months (*SD* = 14.32). Lastly, participants were asked whether or not they had reached sexual debut (engaged in sexual intercourse with at least one partner). A sizeable majority of participants had reached sexual debut (72.4 %), with 22.4 % of participants indicating they had not, and 3.1% declining to answer.

Participants were required to be aged 18 or older to participate in the study. Participants were recruited through SONA, an online portal for research pool participants on which they are able to look at advertisements for studies and sign up for particular ones. The advertisement used for this study is attached as Appendix A. Participants were granted partial course credit in compensation.

Materials

Demographic Data

A demographic questionnaire (Appendix B) constructed by the researchers was administered to each participant. This questionnaire asked participants' age, gender, sexual orientation, and whether participants had reached sexual debut. Participants were also asked to indicate the primary source of their sexual health education by choosing among several alternatives, or by indicating *other*, in which case the participant was able to type a response. Previous research was consulted to inform the list of sources of sexual health education alternatives (Byers *et. al.*, 2003).

Also included with the demographic questionnaire was the measure for frequency of safer sex. This consisted of a single, modified item from the Condom Use Consistency Questionnaire

(Onoya, Reddy, Ruiter, Sifunda, Wingood & Van, 2011). The item, as it appears in the present study (*In the past 6 months, how often did you employ safer-sex practices with your sexual partner(s)?*), was administered using a 7-point Likert scale, with anchors of 1 (*never*), and 7 (*always*). This item was modified (from the original: *In the past six months, how often did you use a male condom during sex with your main partner*) to omit the specification that the safer sex referred to was only that engaged in with a primary partner. As such, participants would answer based on all sexual relations engaged in, with all sexual partners, over the given time period. Further, the specification that the safer sex referred to utilize a *male* condom was eliminated, to include other safer sex practices participants might employ (*i.e.* dental dam, female condom).

General Satisfaction with Sexual Health Education

Satisfaction with sexual health education received was measured using the General Satisfaction with Sexual Health Education Questionnaire (Byers, Sears, Voyer, Thurlow, 2003). In the current study, this instrument was modified to make the questions concerning satisfaction retrospective in nature. Additionally, demographic questions from this measure were eliminated as they were measured elsewhere within the survey. Questions concerning specific sexual activities the participant had engaged in were also omitted due to concerns over length, and since they had no application to the current study's hypotheses. This measure includes six sub-scales: each was presented on a separate page.

For the purposes of the current study, five items were selected to create a scale measuring satisfaction with sexual health education received at school. Each of these items were 5-point Likert scales. Multiple items were selected as opposed to a single-item measure due to the greater stability and predictive validity of multi- as opposed to single-item survey measures (Diamantopoulos, Sarstedt, Fuchs, Wilczynski & Kaiser, 2012). These items were: *Overall, how*

would you rate the quality of the sexual health education you have received in school?, *The sexual health education I received in school covered the topics I was most interested in*, *How comfortable was your instructor with the topics that were discussed?*, *How often did your instructor encourage students to ask questions about sexual health?*, and, *How well did he or she answer these questions?*. Response anchors ranged from *Excellent* to *Poor*, *Strongly Agree* to *Strongly Disagree*, and *Very Often* to *Not at all* respectively.

An additional scale was constructed using three items to infer participants' satisfaction with sexual health education received by parents, for the same reason. Each of these items were presented on a 5-point Likert-type scale, with response anchors ranging from *Excellent* to *Poor*, *Very Often* to *Not at all*, or *Strongly Agree* to *Strongly Disagree*. One of the items was reverse coded. The items were as follows: *How well do you think your parents or guardians did in providing the sexual health education that you needed?, How often did your parents or guardians encourage you to ask them questions about sexuality?*, and *I wish my parents or guardians had talked to me more about sexuality.*

Condom Influence Strategies Questionnaire – 8 Item Scale

Comfort level with which participants might utilize various condom-use strategies if applicable was measured using the Condom Influence Strategies Questionnaire – 8 Item Scale (Noar, Crosby, Benac, Snow & Troutman, 2011); a 5-point Likert scale. This instrument includes a number of hypothetical situations and asks participants how comfortable they would be in each. One question, for example, states *Think about a sexual partner. How easy or difficult would it be for you to do the following: Be clear that you'd like to use condoms.* Response scale anchors are 1, *Very Difficult*, to 5, *Very Easy.*

Procedures

All students enrolled in Psychology 1000 as well as one, second-year psychology class, were eligible to participate. Interested participants self-enrolled via SONA (an on-line participant recruitment system used by the university at which the study was conducted: Sona Systems Ltd., 1997-2016) after reviewing a one page advertisement poster. The study was administered completely online. Thus, participants were free to complete the study at a private location, most likely in their own homes or wherever they were most comfortable. The study was designed to take no longer than 30 minutes to complete.

Participants were first asked to complete the demographic questionnaire and the frequency of safer-sex item (modified from Onoya *et al.*, 2011). The Condom Influence Strategies Questionnaire – 8 Item Scale (Noar, Crosby, Benac, Snow, & Troutman, 2011) was administered on the next screen. The subsequent seven screens consisted of the seven parts that make up the General Satisfaction with Sexual Health Education Scale (Byers, Sears, Voyer, Thurlow, 2003). These measures were presented in this uniform order for all participants. This order was selected to ensure that the most vital variables were included first, in order to maximize the number of participants completing these prior to discontinuing the study. Following the completion of the survey, participants were thanked for their participation and received a debriefing letter.

Statistical Design

A *t*-test was planned, comparing means on the hypothetical comfort with negotiating safer sex scale among those having reached sexual debut, with those who had not. This was planned, in order to allow for evaluation of whether the hypothetical nature of the scale made it inappropriate for use with the latter segment of participants. Further, an additional *t*-test was conducted to compare the genders on average sexual assertiveness and sexual health education

satisfaction scores. A final *t*-test was conducted to compare those participants who identified as heterosexual, compared to those participants who identified as a sexual minority (non-heterosexual), on scores of average sexual assertiveness and sexual health education satisfaction.

A one-way ANOVA was planned, in order to test for mean differences in satisfaction with sexual health education, depending on primary source of sexual education.. A Pearson correlation coefficient calculation was planned in order to test for such an association between reported level of satisfaction with sexual health education and reported frequency of safer sex practices. Likewise, another Pearson correlation coefficient was planned, in order to test for such an association between reported level of comfort with negotiating safer sex practices and reported frequency of safer sex practices.

A 2 (gender: male versus female) by 2 (sexual orientation: heterosexual versus sexual minority) factorial ANOVA was planned, in order to detect any interaction of gender and sexual orientation on reported satisfaction with sexual health education, reported assertiveness in negotiating safer sex practices, and reported frequency of safer sex.

Results

The reported frequency of safer sex ($M = 4.57$, $SD = 3.57$) ranged from 1 (*never*) to 7 (*always*), with 40.1 % of respondents indicating that they practice safer sex *inconsistently* or *never*. Note that those participants who had not reached sexual debut were excluded from analyses using this variable. The most commonly reported, primary source of sexual health education was school (44.1%), followed by peers (26.8%), Internet (20.5%), parents (6.3%), church (1.6%), and other (0.8%). The participant who selected other indicated that their primary source of sexual health education was “Magazines.”

Reliability analyses were conducted and Cronbach's alphas indicated good reliability of the scales measuring participants' satisfaction with sexual health education in school ($\alpha = .81$), and that measuring participants' comfort negotiating safer sex ($\alpha = .89$). Further, Cronbach's alpha indicated acceptable reliability of the scale measuring participants' satisfaction with sexual health education at home ($\alpha = .72$).

An independent sample *t*-test was conducted to assess mean differences in those participants who had reached sexual debut, and those who had not, on the comfort negotiating safer sex scale. It was revealed that these two groups did not significantly differ on this scale ($M_{Debut} = 3.60$, $SD = 0.97$, $N = 92$; $M_{Non\text{-}Debut} = 3.64$, $SD = 0.90$, $N = 31$; $t_{(121)} = -.24$, *ns*). An additional independent sample *t*-test was conducted, revealing no significant differences between men and women on scores of comfort negotiating safer sex ($M_{Males} = 3.52$, $SD = 0.76$, $N = 46$; $M_{Females} = 3.68$, $SD = 1.04$, $N = 80$; $t_{(124)} = -91$, *ns*). Likewise, no significant differences were observed between men's and women's scores of satisfaction with sexual health education received at home ($M_{Males} = 3.21$, $SD = 0.86$, $N = 46$; $M_{Females} = 3.24$, $SD = 1.05$, $N = 79$; $t_{(123)} = -17$, *ns*), or at school home ($M_{Males} = 2.71$, $SD = 0.73$, $N = 44$; $M_{Females} = 2.95$, $SD = 0.80$, $N = 76$; $t_{(118)} = -1.61$, *ns*).

An independent sample *t*-test was conducted to assess mean differences between heterosexuals and non-heterosexuals on the comfort negotiating safer sex scale, as well as on satisfaction ratings of sexual health education both at home and at school. It was revealed that these two groups did not differ on scores of comfort negotiating safer sex ($M_{Heterosexuals} = 3.60$, $SD = 0.95$, $N = 114$; $M_{Non\text{-}Heterosexuals} = 3.79$, $SD = 0.89$, $N = 12$; $t_{(124)} = 0.66$, *ns*). Contrarily, it was revealed that heterosexuals and homosexual differed significantly on their mean scores of satisfaction with sexual health education, both at home ($M_{Heterosexuals} = 3.29$, $SD = 0.99$, $N = 113$;

$M_{Non\text{-}heterosexuals}$ = 2.69, *SD* = 0.76, *N* = 12; $t_{(123)}$ = -2.01, *p* = .046), and at school ($M_{Heterosexuals}$ = 2.79, *SD* = 0.72, *N* = 109; $M_{Non\text{-}Heterosexuals}$ = 3.47, *SD* = 1.05, *N* = 12; $t_{(119)}$ = 2.94, *p* = .00).

A Pearson correlation revealed no association between frequency of safer sex with satisfaction with either sexual health education received at home (*r* = .12, *ns*, *N* = 90), or that received at school (*r* = .04, *ns*, *N* =85). Likewise, no correlation was found between comfort negotiating safer sex and satisfaction with sexual health education received either at home (*r* = = -.03, *ns*, *N = 125*), or at school (*r* = -.07, *ns*, *N* = 120). A moderate, positive correlation was found between scores of comfort negotiating safer sex (*M* = 3.62, *SD* = .94, *N* = 127) and participants' reported frequency of safer sex (*M* = 4.25, *SD* = 2.2, *N* = 92; *r* = .48, *p* = .00, *N* = *91*).

Lastly, a one-way ANOVA was conducted to assess any difference in mean, rated satisfaction with sexual health education received (at school or at home), between those receiving sexual education from each of the given, primary sources (*i.e.,* parents, school, peers, Internet, or church). Marginal group differences were found on mean score of satisfaction with sexual health education received in school according to primary source of received education ($F_{(5, 115)}$ = 2.13, *p* = .06). Additionally, primary source of education group differences were observed on mean scores of satisfaction with sexual health education received by parents ($F_{(5, 120)}$ = 4.95, *p* = .00). Lastly, group differences on mean scores of comfort negotiating safer sex by primary source of sexual health education approached significance ($F_{(5, 121)}$ = 2.09, *p* = .07).

Descriptive statistics were computed by source of satisfaction, for satisfaction of home- and school-based sexual health education, as well as comfort negotiating safer sex (see Table 1). These means were compared amongst the primary sources, and t-tests were conducted to reveal where differences lie within the source of sexual health education on these variables. Firstly, an

independent sample T-test revealed that participants identifying school-based education as their primary source had significantly higher scores on their ratings of their parent-based sexual health education, than did participants who identified parents as their primary source ($M_{schoolbased}$ = 3.31, SD = 0.89, N = 56; $M_{parentbased}$ = 1.88, SD = 0.85, N = 8; $t_{(63)}$ = *-3.19,* p = .01). Additionally, it was revealed that participants identifying peers as their primary source of sexual health education had significantly higher scores on their ratings of their parent-based sexual health education, than did participants who identified school as their primary source ($M_{schoolbased}$ = 3.31, SD = 0.89; $M_{peerbased}$ = 3.54, SD = 0.99, N = 26; $t_{(62)}$ = 4.42, p = .00). It was further revealed that participants who identify the Internet as their primary source of sexual health education have significantly higher scores of rated satisfaction of school-based sexual health education than do participants who identify school as their primary source ($M_{Internetbased}$ = 3.10, SD = 0.84, N = 25; $M_{schoolbased}$ = 2.65, SD = 0.74, N = 55; $t_{(79)}$ = 2.40, p = .02). Interestingly, participants who identify school as their primary source of sexual health education also demonstrate the lowest mean score of satisfaction with school-based sexual health education, when compared to other sources.

The researchers initially planned to test for any interaction effect of sexual orientation with gender, on scores of comfort negotiating safer sex and on satisfaction with sexual health education. The number of non-heterosexuals within the sample, however, was not large enough to for adequate statistical power of such testing.

Table 1: *Descriptive Statistics across Primary Source of Sexual Health Education:*

	SOURCE														
	School			Parents			Peers			Internet			Total		
	M	SD	N	M	SD	N	M	SD	N	M	SD	N	M	SD	N
SCHOOL-BASED SHE SATISFACTION	2.65	0.74	55	2.93	0.76	8	3.04	0.73	31	3.10	0.84	25	2.86	0.78	121
HOME-BASED SHE SATISFACTION	3.31	0.89	56	1.88	0.85	8	3.21	0.86	33	3.54	0.99	26	3.23	0.98	126
COMFORT NEGOTIATING SAFER SEX	3.63	0.28	56	4.09	1.13	8	3.42	1.12	34	3.85	0.76	26	3.62	0.94	127
FREQUENCY OF SAFER SEX	4.84	1.68	37	4.50	2.51	6	4.52	1.81	31	4.24	2.28	17	4.57	1.89	92

Discussion

Study Findings

The researcher's first hypothesis, that school and parents would emerge as the most frequently cited primary source of sexual health education, was partially supported. In accordance with the researcher's hypothesis, school was selected as the most commonly cited primary source of sexual health education; yet contrary to expectation, the second most commonly cited primary source was peers, followed closely by the Internet. Many studies to date have not had Internet emerge as a primary source (Byers *et al.*, 2003b; Guthrie & Bates, 2003; Somers & Surmann, 2004). One study based in New York, United States, concluded from their qualitative interviews with 55 high school students, that while teens frequently cite the Internet as a source, they put more trust in other more formal or 'legitimate' sources (Jones & Biddlecom, 2011). Interestingly, neither parents nor church emerged as popular selections, which might reflect a shift in values, or the perception that these sources as being out-dated.

The researcher's second hypothesis that satisfaction with sexual health education will correlate with participant's reported frequency of safer sex was not supported for either school- or parent-based scores of satisfaction. Likewise, the researcher's third hypothesis, that that satisfaction with sexual health education will correlate with comfort employing condom influence strategies was also not supported. The lack of correlations between satisfaction with sexual health education and safer sex practices might reflect the multi-faceted nature of the sexual education curriculum as well as the satisfaction variable. Satisfaction, as it is broadly defined in the current study, involves subjective ratings of teacher comfortability, overall impressions, and whether or not topics of interest were taught. It could be that each of these variables is not important to safer sex. It could also be that participants' ratings of satisfaction of their sexual education might not be in reference to only that education pertaining to safer sex practices, and might be in reference to other topics in sexual education (*i.e.* pleasure, sexual acts, protection from coercion). The final hypothesis that comfort with which participants felt they could employ condom influence strategies will correlate with the frequency of safer sex was supported, accounting for 21% of the variance. .

Interestingly, it was found that non-heterosexuals and heterosexuals differed on their satisfaction ratings of parent-based sexual health education, such that non-heterosexuals rated their satisfaction lower than did heterosexuals. Moreover, it was observed that heterosexuals and non-heterosexuals differ on their satisfaction ratings of school-based sexual health education as well, such that non-heterosexuals rated their satisfaction higher than did their heterosexual counterparts. Of further interest is that those participants who identified school as their primary source had the lowest ratings of satisfaction with school-based education, than did participants who selected other sources.

Limitations

The present study's results should be interpreted with caution, given several key limitations. First, due to the online nature of the study, the researchers' lost control of where participants completed the questionnaire. As such, distractions and lack of privacy while completing the study might have biased participants data.

A further limitation is observed when analyzing the scales used. The General Satisfaction with Sexual Health Education was originally a questionnaire developed for exploratory purposes. The survey provides only satisfaction information regarding home- or school-based sexual health education. Logically, conclusions drawn from scores on this scale should be interpreted with caution for participants who select other primary sources of education. Further, this scale has not been validated. Despite the invalidated nature of the scale, the researchers included it due to a lack of better alternatives. Due to the pressing nature presented in research examining sexual risk behaviour, time cannot be spared waiting for a validated scale. Finally, scoring instructions on this scale were not made available to the researchers despite attempts at obtaining same from the scale authors. Thus, facially-valid items were selected to comprise the (1) school- and (2) parent-based satisfaction with sexual health education scales. Thus, caution should be used when interpreting results using these scales.

Although sexual orientation was measured, it was not a central variable examined in the design of this study. When researching sexual risk behaviours, the implications of not practicing safer sex are more severe for certain sexual orientations than for others (Loosier & Dittus, 2010). The current study incorporated sexual orientation by comparing heterosexuals and non-heterosexuals mean differences on satisfaction with sexual health education, and comfort level negotiating

safer sex. Interaction effects of sexual orientation by gender on satisfaction with sexual health education, comfort negotiating safer sex, and on actual reported frequency of safer sex should be measured to better understand the effect sexual orientation has on safer sex practices. This issue is of particular importance when evaluating satisfaction ratings of heterosexuals and non-heterosexuals, as mean differences were observed between these groups. Unfortunately, due to the small number of non-heterosexuals recruited, adequate statistical power did not exist for such analysis. This point is highlighted in one open text response, where a homosexual woman wrote "my partner has a vagina… which is why we don't practice safe sex."

The reported frequency of safer sex was measured using a single-item, which was subjective in nature. Other research in the field often includes additional items asking about variables known to correlate with safer sex (HIV status, the contraction of prior STD's, teen pregnancy status, number of sexual partners; Dilorio, Parsons, Lehr, Adame & Carlone, 1992). While measuring these additional variables has merits, the current study examined participants' perception of their own efforts. Because there was no participant restriction based on sexual orientation, a subjective definition of *safer sex behaviour* was thought to allow for all sexual behaviors and all those efforts to be safer, to be included in the operational definition of safer sex.

One final limitation to the current study is the failure to measure additional variables of interest. Participants' current relationship status was not measured, nor was reported number of sexual partners. Further, it was not asked where (*i.e.* which particular province or country) participants received their school-based sexual health education, and as such, the study might be comparing satisfaction ratings from a variety of different curricula. Caution should be taken

when generalizing these results to other geographical areas; even within Canada, the curricula varies greatly from province to province (Public Health Agency of Canada, 2008).

Implications

The findings of the present study should be consulted by those who create, update and enforce the sexual health education curricula. Firstly, the fact that a large proportion of adolescents identified that their primary source of sexual health education was through peers or the Internet, attempts should be made to incorporate these potentially informal sources with sexual health education received in schools. The incorporation of Internet within school-based sexual education is further supported by the finding that satisfaction with sexual health education received in school is highest in those participants who identify the Internet as their primary source of sexual education. Further, students should be educated on how to differentiate legitimate versus non-legitimate sources of sexual health information, and how to use sources, such as the Internet, to elicit useful information.

The correlation observed between comfort negotiating safer sex and actual reported safer sex is also of great importance to educators. One implication is that educators should incorporate attempts at making students not only aware of condom-influence strategies, but to also make them more comfortable with using them. This might be achieved through specific skill training, or through rehearsing scripts. Lastly, parents should be informed that the majority of their children do not regard parents as a primary source of sexual health education.

Future Directions

It could be suggested that several of the limitations of the study are due to the fact of limited research in the area. For example, there is an absence of validated scales, and a dearth of research on Canadian samples. Accordingly, one future direction might be attempting to validate a scale that measures participant's subjective satisfaction with their sexual health education received. Such research could include examination of specific sources of education, and the creation of satisfaction scales appropriate to each.

Additional future research might examine the effect of sexual orientation more in depth. This might include an analysis of how sexual orientation interacts with gender to produce differences in mean scores of satisfaction with sexual health education, frequency of safer sex, and comfort negotiating safer sex. Additionally, it might include tailoring each of these variables to these different sexual minority groups, to ensure that all groups are being accurately identified by risk.

Because peers and Internet both emerged as commonly cited primary sources of sexual health education, future investigations might want to evaluate the quality of such sources, in addition to their subjective satisfaction ratings. It would also be interesting for future research to further categorise those participants who selected Internet as the primary source. This might include discriminating between formal Internet sources (public health unit website) and informal Internet sources (pornography, forums) of sexual health education.

Concluding Remarks

Reported satisfaction with either parent- or school-based sexual education was not shown to correlate with reported safer sex practices in the present study. Contrarily, comfort with negotiating safer sex practices was shown to correlate with reported frequency of safer sex

practices. Safer sex continues to be of utmost importance at reducing adolescent risk behaviours. Sexual health education is the primary tool that researchers have to reduce these risk behaviours. As such, the curricula relied upon such education should continue to consult and reflect the emerging research in the area.

Appendix A

An Exploration of Sexual Education Satisfaction, and Safe Sex Practice and Assertiveness: Sign Up Poster/Advertisement on SONA

You must be 18 years of age, or older, to participate in this study.

The study requires participation in an online survey that consists of 3 scales. The items on the scales are brief statements which you will select your level of agreement. The present study will explore aspects of sexual education and safe sex practice, and so the questionnaire will be asking you some personal questions. If this makes you feel uncomfortable, please do not partake in this study.

The study will take less than an hour to complete. Students can receive a 0.5 participation credit for their time. Participants are free to withdraw at any time and still receive credit for their participation. No additional remuneration or inducement will be used.

Interested? Complete information is available to help you decide by clicking through.

Appendix B:

Questionnaire about Sexual Behaviour:

Please answer each of the following questions as accurately as possible.

Age: _____

Gender: _____

Have you engaged in sexual intercourse with one or more sexual partners?

1) yes
2) 2) no
3) 3) Prefer not to answer.

What is your sexual orientation: _____

What was the primary source of your sexual education?

1) School
2) Parents
3) Peers
4) Church
5) Internet
6) Other Please Specify:_____

In the past 6 months, how often did you employ safer-sex practices with your sexual partner(s)?

1-never 2 3-inconsistently 4 5-consistently 6 7-always.

Appendix C:

We are interested in your general feelings about sexual health education. For each of the following questions, please mark the ONE response that best describes your opinion.

1. Sexual health education should be provided in the schools.

a) Strongly Agree
b) Agree
c) Neither Agree nor Disagree
d) Disagree
e) Strongly Disagree

2. The school and parents should share responsibility for providing children with the sexual health education.

a) Strongly Agree
b) Agree
c) Neither Agree nor Disagree
d) Disagree
e) Strongly Disagree

3. In what grade do you think sexual health education should start?

a) Grades K-3
b) Grades 4-5
c) Grades 6-8
d) Grades 9-12

4. Overall, how would you rate the quality of the sexual health education that you have received in school?

a) Excellent
b)Very Good
c) Good
d) Fair
e) Poor
f) I have not received any sexual health education.

5. The sexual health education I have received in school has covered the topics that I am most interested in.

a) Strongly Agree
b) Agree
c) Neither Agree nor Disagree
d) Disagree
e) Strongly Disagree

There are many topics that could be covered in sexual health education. How important do *you* think it is for *each* of the following topics to be covered in sexual health education at school? For each topic, select the option that best represents your opinion.

	Not at all important	Somewhat important	Important	Very Important	Extremely Important
Correct names for genitals					
Puberty/physical development					
Reproduction and birth					
Birth control methods & safer sex practice					
Abstinence (not having sex)					
Sexually transmitted diseases (e.g. AIDS, herpers)					
Personal safety (to prevent child sexual abuse)					
Sexual pleasure & enjoyment					
Sexual decision making in dating relationships (deciding how far you will go)					
Sexual coercion & sexual assault (feeling forced or pressured sexually)					

We are interested in the sexual health education you have received in school.

1. What grade were you in the last time you received sexual health education?

a) K-5
b) 6
c) 7
d) 8
e) 9
f) 10
g) 11
h) 12
i) I have not had sexual health education.

2. Think about the sexual health education that you have received in school. How well were each of the following topics covered? If you haven't covered any of these topics because you have not received any sexual health education, fill in "not covered at all" next to each topic.

	Not covered at all	Covered poorly	Covered	Covered well	Covered
Correct names for genitals					
Puberty/physical development					
Reproduction and birth					
Birth control methods & safer sex practices					
Abstinence (not having sex)					
Sexually transmitted disease (e.g. AIDS, herpes)					
Sexually coercion & sexual assault (feeling forced or pressured sexually)					
Personal safety (to prevent child sexual abuse)					
Sexual pleasure & enjoyment					
Sexual decision-making in dating relationships (e.g. Deciding how far you want to go).					

3. What grade were you in the last time you received sexual health education?

a)
b)

We are interested in your opinions about how sexual education is taught in school. To answer these questions, think about the teacher who taught sexual health education to you most recently.

1. How comfortable was your instructor with the topics that were discussed?

a) Very comfortable
b) Pretty comfortable
c) Comfortable
d) Slightly comfortable
e) Not at all comfortable
f) I have not had any sexual health education

2. How often did your instructor encourage the students to ask questions about sexual health?

a) Very often
b) Quite often
c) A few times
d) Once or Twice
e)Not at all
f) I have not had any sexual health education

3. How well did he/she answer these questions?

a) Excellent
b) Very Well
c) Well
d) Fair
e) Poor
f) I have not had any sexual health education

4. For the sexual health education classes in your school, which was true? (choose one)

a) Boys and girls were taught separately in different classes
b) Boys and girls were taught together in one class
c) I have not had any sexual health education

5. When receiving my sexual health education, I preferred: (choose one)

a) Boys taught with boys, and girls taught with girls in separate classes
b) Boys and girls taught together in the same class
c) Didn't matter to me.

6. Below is a list of methods which some teachers use to teach sexual health. For each method, indicate (1) whether your teacher used this method in your class; and (2) how useful you think each method would have been in helping you learn about or stay interested in the topics being taught

	(1) Did your most recent sexual health teacher use this method?	(2) How much would this method have helped you learn about or stay interested in the sexual health topics being taught?

	Yes	No	It wouldn't help at all	It would help somewhat	It would help a lot
Lecturing					
Videos					
Readings					
Group discussion					
Guest speakers					
Individual projects					
Roleplay, drama, games					
Question box (so you can ask questions without knowing who you are)					

Below is a list of sexual health education topics that could be covered in class. For each topic, fill in the circle of the grade level at which you would have liked or would like to learn about these topics. For example, if you would have liked to learn the correct names for genitals in kindergarten, or in grades 1, 2, 3, 4, or 5 fill in the circle in the "Elementary School" column beside that topic. If you feel that a topic should not be covered until grade 9, 10, 11, or 12, fill in the circle for that topic under the "High School" column. If you feel a topic should not be taught in school at all, mark the circle under the "this topic should not be included" column.

	I would have liked to learn about this in:			
	Elementary School (Gr. K-5)	Middle School (Gr. 6-8)	High School (Gr. 9-12)	This topic should not be included
Correct names for genitals				
Body image				
Puberty/physical development				
Wet dreams				
Menstruation				
Reproduction and birth				
Birth control methods & safer sex practices				
Abstinence (not having sex)				
Sexually transmitted diseases (e.g. AIDS, herpes)				
Teenage pregnancy/parenting				
Personal safety (to prevent child sexual abuse)				
Sexual coercion & sexual assault (feeling forced or pressured sexually)				
Building equal romantic relationships				
Homosexuality				
Attraction, love, intimacy				
Communicating about sex				
Being comfortable with the other sex				
Dealing with peer pressure to				

be sexually active				
Masturbation				
Sexual behavior (e.g. French kissing, intercourse)				
Sex as part of a loving relationship				
Sexual pleasure & orgasm				
Sexual problems & concerns				
Sexuality in the media				
Pornography				
Teenage prostitution				
Sexual decision making in dating relationships (e.g. Deciding how far you want to go).				

This section is about the sexual health education you have received at home and about your dating experiences. Remember that your answers are CONFIDENTIAL.

1. How well do you think your parents or guardians did in providing the sexual health education that you needed?

a) Excellent
b) Very Well
c) Well
d) Fair
e) Poor

2. How often did your parents or guardians encourage you to ask them questions about sexuality?

a) Very often
b) Quite often
c) A few times
d) Once or twice
e) Not at all

3. I wish my parents or guardians had talked to me more about sexuality.

a) Strongly Agree
b) Agree
c) Neither Agree nor Disagree
d) Disagree
e) Strongly Agree

4. I wish I knew more about sexuality and sexual health.

a) Strongly Agree
b) Agree
c) Neither Agree nor Disagree
d) Disagree
e) Strongly Disagree

5. Have you ever had a boyfriend or girlfriend?

a) No
b) Yes

6. If you have had a boyfriend or girlfriend, what's the longest time that you have gone out with someone?

_____

Please answer each of the following questions as accurately as possible.

1. With whom did you live in during high school?
a) Two parents
b) Mother only
c) Father only
d) With mother half the time and father half the time
e) Someone other than a parent (e.g. Relative, friend)
f) Foster parent or group home
g) On my own.

2. My mother/stepmother completed:
a) Elementary school
b) High school
c) Community college, technical school
d) University
e) I don't know

3. Did your mother/stepmother work outside of the home during high school?
a) No
b) Yes

4. My father/stepfather completed:
a) Elementary school
b) High school
c) Community college, technical school
d) University
e) I don't know

5. Did your father/stepfather work outside the home during high school?
a) No
b) Yes

The study is complete. Thank you for your participation.

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