Using texts for safe sex: technology in adolescent sexual health

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Risky sexual behaviour among adolescents is a significant cause of infection and morbidity, as well as unwanted pregnancy. In the United States, 25% of females between 14-19 have acquired a sexually transmitted infection (STI) and adolescents between 10-24 account for more than 20,000 new cases of HIV/AIDS annually. While many STIs are easily treatable, they can also lead to pelvic inflammatory disease, chronic pain, or cervical cancer and infertility. As well, there are over 745,000 teenage pregnancies in the US every year. Therefore, promoting sexual health through youth-specific interventions is an important topic of research and concern.

In the past, sexual health promotion interventions (SHPI) have been provided through school programs and sexual health clinics. Through this medium, information is typically given face-to-face by health care workers and is complemented by print materials. While these strategies have shown moderate success, they are limited by cost, time, and accessibility. Face-to-face SHPI have not been shown to substantially impact STI infection rates, unplanned pregnancy rates, or number of sexual partners, although they have been shown to increase knowledge about sexual health and condom use. The introduction of new technology allows for a less expensive and more efficient way of promoting sexual health to the largest number of people. The most successful technology-based SHPI to date have involved either internet-based interventions or text-messaging-based interventions. Since 93% of US adolescents have a computer at home and 85% of 14-18 year olds own a cell phone, these media provide excellent access to the adolescent population. Technology-based SHPI have not only been shown to reduce risky sexual behaviour and increase knowledge of sexual health, but can reduce costs and time spent by healthcare workers by shifting the burden to more automated technologies.

Sexual health promotion consists of providing individuals with the tools to make informed decisions about their sexual well-being. The overall goal is to improve the sexual health of a population through community-based interventions. In order to do so, however, one must first identify the reasons that individuals, especially adolescents, engage in risky sexual behaviour. Recent research into adolescent motivation found that the four main factors that contribute to these behaviours are: low perceptions of risk, lack of confidence, the influence of social norms, and inaccurate knowledge. Most interventions aimed at adolescents focus on this last factor by providing information on STIs and contraception; however these strategies have shown only marginal success. Sexual health promotion interventions must not only focus on biological outcomes, such as STI incidence rates or teen pregnancy, but on behavioural and emotional outcomes – increased self-efficacy, motivation to change, and confident decision-making.

Technology-based strategies can incorporate this research by providing population-specific interventions that touch on multiple aspects of sexual health. Studies have shown that interventions are more effective when they are based on behavioural theories and address the social and psychological causes of risky sexual activity. Internet-based and text-messaging-based interventions have the ability to promote behavioural change by using the convenience, speed, and ubiquity of these technologies to access at-risk adolescents.

Internet-based SHPI are promising because they allow for anonymous, repeatable, convenient, and inexpensive interventions that can reach populations that are more resistant to mainstream medical care. Almost 50% of youth surveyed have already used the Internet to search for sexual health information. A recent Cochrane Review meta-analysis of interactive, computer-based SHPI found significant effects on both behavioural measurements, such as condom use, and psychological measurements, such as confidence and self-efficacy. Fifteen RCTs with 3917 participants were reviewed. In keeping with previous findings on the importance of motivation and decision-making in behaviour modification, the review focused only on interventions that required user contribution and provided personalized feedback. The most successful interventions were tailored to an individual’s level of knowledge and involved role-playing or situational exercises. Studies that focused specifically on adolescents were also more successful if they avoided negative messages and scare tactics, and targeted specific behaviours. Many of these interventions exemplify the principles of health promotion because they not only educate, but also provide users with the confidence and motivation required to make safe decisions in the future. Other websites provide users with anonymous and accessible ways of improving sexual health via mail-in STI tests or online contact-tracing after STI diagnosis.

Using text messaging to promote adolescent sexual health has many advantages. Text messages are fast, convenient, and inexpensive; they can be sent to multiple individuals at the same time; they are very popular among adolescents, and text messaging rates are similar between socioeconomic groups. Text messaging has been incorporated into sexual health care in numerous ways, with encouraging results. Sexual health clinics in the UK have begun providing results of STI tests via text message if desired – 70% of adolescents preferred this to booking a follow-up appointment. The UK has also begun a text messaging “Grab a Condom” campaign, where individuals can request condoms and have them home-delivered. Other clinics have begun providing daily text message reminders to patients about taking oral contraceptives, and have seen a significant improvement in reported compliance. The most promising intervention, implemented in San Francisco, allows individuals to text “SEXINFO” from any mobile phone and receive
information about sexual health, relationships, and nearby clinics. In the first 6 months, SEXINFO received more than 4500 text messages and those who remembered seeing advertisements for the service were significantly more likely to be concerned about STIs. While not yet widely used, text messaging shows promise as an effective SHPI that can be used to target adolescents directly.

The use of technology-based SHPI is relatively new, although their effectiveness has been demonstrated in numerous studies. However, there are still concerns that these strategies may be saving time and money at the expense of accuracy and holistic care. A recent study of 177 sexual health websites showed that 17% contained one or more medical errors, and the number of errors was correlated with the complexity of the topic at hand. Sexual health websites focus strongly on STIs and contraception, but often only contain a cursory treatment of how to express sexuality, body image, and the positive aspects of sex. A recent study of 30 “Positive Youth Development” interventions – those that focused on empowerment of disadvantaged youth – showed that all successful interventions involved a supportive environment containing parents, teachers, or health care providers. Can technology-based interventions provide this same level of support and intimacy? Nearly half of teenagers cited their parents as the people with the most influence in their sexual decision-making, yet very few of the internet- or text messaging-based interventions encourage parental involvement. Moreover, providing STI results via text messaging led to a decrease in follow-up visits, which was hailed as a success by the UK sexual health clinics involved. However, if these interventions lead to fewer conversations between adolescents and their health care providers, is this really something to celebrate?

Media and communication technologies, like Internet and text messaging, have the potential to be used as far-reaching and cost-effective methods of promoting sexual health among adolescents. Initial studies demonstrate that these interventions can successfully provide knowledge, motivate people to change behaviour, and encourage adolescents to seek medical care when necessary. However, few studies have measured their effects on long-term outcomes, such as STI infection or pregnancy rates. As well, some concern remains that technology-based SHPI cannot fully address the emotional needs of adolescents in the same way as face-to-face conversations with a healthcare provider. Nevertheless, it is thought that reaching adolescents "on their own turf", by using media they are comfortable and familiar with, may encourage them to seek care when necessary and feel more motivated to practice safe sexual practices.

REFERENCES


