Assessing the Interactive Health Literacy of Preadolescents in an Inner City Elementary School in Vancouver

**Abstract**

*Background:* The preadolescent period is a time when children have a growing number of questions about health, sexuality and relationships. Developing interactive health literacy among preadolescents is critical, as research shows that health-literate adolescents are more likely to have positive health outcomes.

*Methods:* Youth aged 11-13 were surveyed over the course of two, one hour visits at an inner city elementary school in East Vancouver. The survey was designed to provide insight into the current level of interactive health literacy among this age group: the comfort level of students’ in finding health information; and how participants accessed sources of health information. The second visit involved an interactive session with a family physician who answered health related questions that the students submitted anonymously during the first visit.

*Results:* Of the 22 participants, 9/22 participants were uncomfortable obtaining health information on their own and used the internet as a primary source of health information. 12/22 indicated they were uncomfortable discussing sensitive health related issues with a physician, 9/22 were uncomfortable discussing these issues with a parent/guardian, and 1/22 participants said they were comfortable determining the credibility of an online health source.

*Conclusion:* Many of the preadolescents surveyed do possess basic interactive health literacy skills. Our findings suggest that programs such as *Talk to Your Doc –* designed to help improve communication between adolescents and physicians *–* can be beneficial for preadolescents.

**Background**

Health literacy refers to a set of skills that individuals employ to effectively use health care systems (Berkman, Sheridan, Donahue, Halpern, & Crotty, 2011, p. 104). It has been reported that 36% of adults in the United States have basic or below basic levels of health literacy (Kutner, Greenburg, Jin & Paulsen, 2006). Low health literacy levels correlate with non-ideal health practices, including decreased immunizations, improper medication usage, and decreased mammography screening (Berkman et. al., 2011, p. 104).

Health Literacy can be broken down into three distinct levels. “Functional health literacy” (classified as level 1) focuses solely on the “communication of factual information on health risks and how to use the health care system” (Nutbeam, 2000, p. 265). However, “interactive health literacy” (level 2), and “critical health literacy” (level 3) skills result in better health outcomes (Sørensen et. al., 2012, p. 8). Interactive health literacy skills provide individuals with the capacity to independently obtain credible health information from a variety of sources and make educated health-related decisions, while critical health literacy skills enable individuals to act on social and economic health determinants.

Currently, Health education is a marginal component of the educational curriculum in British Columbian (BC) elementary schools. Current frameworks of health education in the BC Health and Career Education K to 7 Integrated Resource Package 2006 (IRP) are focused around functional health literacy (“health and career education”, 2006). Efforts have been made in Vancouver to improve the interactive health literacy of teenagers. Programs such as *Talk to Your Doc* focus on improving communication skills between high school students and physicians as well as helping students build independence when navigating the healthcare system (Towle, Godolphin, & Van Staalduinen, 2006, p. 189). Talk to Your Doc has been reported to be very effective at informing teenagers about their health care privileges, as well as providing guidance for discussing awkward topics with a physician (Towle, Godolphin, & Van Staalduinen, 2006, p. 190).

Although Talk to Your Doc has been effective at developing interactive health literacy among teenagers, little progress has been made in establishing programs that develop these skills in preadolescents. Wyckoff suggests that preadolescence may be the optimal time for parents to discuss the risks of sexual activity, due to the strong influence parents have during this time of development (Wyckoff et. al., 2008, p. 659). Additionally, there is evidence that a proportion of preadolescents are engaging in sexual activity (Wyckoff et. al., 2008, p. 650), as well as using illicit drugs and alcohol (Johnston et. al., 2009, p. 8), identifying a need for health literacy skills to be developed in this younger demographic. Furthermore, adolescents who gain an understanding of health literacy at a young age will be more likely to remain health literate into adulthood, leading to a generation of adults with a higher level of health literacy (Ghaddar, Valerio, Garcia, & Hansen, 2012, p. 28).  
 We set out to investigate the current status of interactive health literacy among preadolescents between the ages of 11-13 at one inner city school in Vancouver. Participants were asked to report where they obtain the majority of their health information, as well as identifying their comfort in obtaining and discerning credible health information online. We also asked participants to gauge their comfort level discussing health-related topics with physicians and their parents. By addressing these questions, the interactive health literacy skills of these preadolescents can provide an insight into their ability to obtain credible health information and interact effectively with the health care system.

**Methods**

**Ethical Considerations**

Ethics approval was obtained through the Behavioral Research Ethics Board of the University of British Columbia prior to conducting the study. Permission was also granted by the Vancouver School Board.

**Sample**

Research participants included two classes of grade six/seven students between the ages of 11-13 from an elementary school located in the inner city district of East Vancouver. Participants in this age group increasingly use the internet in their everyday lives, are going through puberty (Euling et. al., 2008, p. S179, S182), and transitioning into high school. These particular factors heavily influenced the rationale for choosing this age group. There were 22 participants in total; each had parent/guardian consent to have their child participate in the study.

**Procedure**

The study was conducted over the course of two, one hour visits to the elementary school in 2015. The first visit introduced the study and focused on collecting survey data under two key overarching themes:

1. the comfort level of participants in finding health information; and
2. how participants accessed sources of health information;

The purpose of the second visit was to respond to the health-related questions participants anonymously submitted in the first visit. The participants were given an evaluation form including additional survey questions and follow-up questions on the project’s effectiveness. A detailed description of what took place during each visit is presented below.

**Visit One**

Participants were provided a brief introduction to the study and an assent form confirming their willingness to participate. In order to ensure anonymity, participants were instructed to refrain from including any identifying information on the survey.

Participants were asked to identify their comfort level on a scale of 1-10, (10 being extremely uncomfortable and 1 being extremely comfortable) with respect to:

1. finding health-related information online;
2. speaking to a doctor about sensitive health topics; and
3. speaking to their parents about sensitive health topics.

The survey allowed each participant to anonymously submit up to three health-related questions that they would like answered by a physician. Once surveys were completed and collected, a 20-minute education session was provided to inform students on how to discern credible health information online.

**Visit Two**

Prior to the second visit, a family physician was invited to review the anonymous health questions from the participants. They then attended the class to respond to the anonymous questions and other questions that arose. Participants were then given a follow-up survey designed to assess the project’s overall usefulness in relation to helping the preadolescents learn how to obtain credible health information and develop greater comfort in speaking with a physician about their health concerns. Participants were given a list of resources to take home which included telephone numbers of various youth helplines, and a list of credible health-related websites.

**Results**

Consent was received from 22 out of 24 potential participants. All who obtained consent from a parent or guardian assented to participating in the study. The primary sources of health information for the 22 participants were: (i) parents (10/22), (ii) internet (9/22), (iii) doctors (5/22), (iv) friends (3/22), and (v) siblings (2/22) (table 1). Of the participants citing more than one primary source of health information, one participant indicated both physician and parents and two participants indicated internet, parents, friends and siblings.

Of the 22 participants surveyed, 12/22 indicated being uncomfortable discussing sensitive health related issues with a physician and 9/22 were uncomfortable discussing the same with a parent/guardian (table 2). 9/22 participants reported being uncomfortable obtaining health information on their own (table 4). Only 1/22 participants indicated being comfortable determining the credibility of an online health resource (table 3). Lastly, 17/22 participants indicated that having a physician answer their anonymous questions was helpful (table 3).

16/22 participants submitted at least one anonymous question for the physician, and 12/22 submitted more than one question. Particularly insightful questions participants asked anonymously included: “Am I allowed to go to the doctor by myself?” and “What if I am not comfortable with a male doctor doing checkups?” These qualitative observations suggest that some preadolescents are not aware of their rights when trying to gain access to medical information from a professional.

**Discussion**

The data we collected demonstrates that the preadolescents who participated in this study have minimal interactive health literacy skills. Research conducted by public health experts indicates fear of embarrassment and a lack of confidentiality to be common barriers that teenagers encounter while interacting with physicians and are therefore less likely to seek health advice from a physician (Gray, Klein, Noyce, Sesselberg, & Cantrill, 2005a, p. 1474-1475). Central to the concept of interactive health literacy is the ability to obtain health information from a credible source and also, the confidence to discuss health-related issues with healthcare providers. The prevalence of the internet as a primary health source for a large percentage of preadolescents in our sample, combined with the reports of discomfort discussing sensitive health topics with parents and physicians, suggest that preadolescents are heavily relying on the internet for health information. Developing interactive health literacy skills among preadolescents can change this. The overwhelming majority of preadolescents sampled reported that they could not or were not sure if they could determine the credibility of an online health resource, indicating an inability to obtain credible health information and further demonstrating weak interactive health literacy skills.

Similar research has identified that an increasing number of adolescents use the internet as a primary source of health information (Gray, Klein, Noyce, Sesselberg, & Cantrill, 2005b, p. 243.e1), and many adolescents lack the ability to determine the credibility of an online health resource (Jain, & Bickham, 2014, p. 437). Our findings are the first to suggest that preadolescents have similar shortcomings with regards to acquiring interactive health literacy skills as adolescents. Due to the reports of sexual activity (Wyckoff et. al., 2008, p. 650) and illicit drug and alcohol use among some preadolescents (Johnston, O'Malley, Bachman, & Schulenberg, 2009, p. 8), it is crucial that preadolescents are educated in the fundamentals of interactive health literacy so they can better communicate with caregivers and health professionals.

With the ubiquitous reports of progress in developing skills central to interactive health literacy among teenagers through programs like *Talk to Your Doc*, (Towle, Godolphin, & Van Staalduinen, 2006, p. 189-190) we suggest that efforts be made to extend similar programs to preadolescents. Our research has indicated that preadolescent agency surrounding this opportunity is a key indicator of the potential of such programs.

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