ELIZABETH MICHAEL MADISON
On-line Moms: Exploring Current Uses Of Internet-based Pediatric Health Information
(Under the Direction of LAURA McCORMICK)

Computers have shown great promise in the area of health promotion. Never before has there been a medium that could disseminate such a large amount of health information so rapidly. In recent years, the Internet has shown enormous potential for educating people about health. This project was designed to explore how parents of young children use the Internet for pediatric health information and to make recommendations for developing effective World Wide Web (WWW) sites to deliver pediatric health information to parents. Twenty mothers of young children (N=20) participated in focus groups which explored their Internet use with regards to pediatric health information using principles of McGuire’s Communication Input/Output Matrix (1989) and Petty’s & Cacioppo’s (1986) Elaboration Likelihood Model. Recommendations are made for the development of Internet-based health communication messages as well as for future research in this emerging field.

INDEX WORDS: Internet, Health communication, Parents, On-line health information
ON-LINE MOMS: EXPLORING CURRENT USES OF
INTERNET-BASED PEDIATRIC HEALTH INFORMATION

by

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PARENTS ON THE WEB: EXPLORING CURRENT USES OF
INTERNET-BASED PEDIATRIC HEALTH INFORMATION

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CHAPTER 1

INTRODUCTION

Internet and health promotion

Computers have shown great promise in the area of health promotion. Never before has there been a medium that could disseminate such a large amount of health information so rapidly. In recent years, the Internet has shown enormous potential for educating people about health. This project was designed to explore how parents of young children use the Internet for pediatric health information and to make recommendations for developing effective World Wide Web (WWW) sites to deliver pediatric health information to parents.

More than half of the homes in the United States now have access to the Internet. Almost 90 million people “surf” the Web at least once a month (Cable News Network, 2000) and 50 million log on daily (Pew Internet & American Life Project, 2000a). One of the most common topics people search for is health information. According to one study, 55% of Internet users in the United States have looked on-line for health information (Pew Internet & American Life Project, 2000b). Many of these information seekers are parents, and the growth of commercial sites such as iVillage.com and babycenter.com are catering to their information needs. As the Internet continues to grow, it will be increasingly important for researchers to determine which parents are using the Internet, how they are using it, and which Web sites they like and find useful. This study addressed these questions using infant sun protection as a case study.
Parents and health

Parents, especially mothers, provide the majority of health care for young children. Until recently, parents seeking health information used mass media, such as television and magazines, as a major source of health information for their children. Their considerable desire for such information is evidenced by the dozens of magazines devoted to parenting and infant health that provide advice from health professionals (Izenberg & Lieberman, 1998). Limitations exist, however, to health information on television and in magazines. Such information rarely is interactive, personalized, or tailored, and parents have little or no control over what issues receive coverage. Now parents are increasingly turning to the Internet to gather health information. Despite its potential, little is known, about parent’s Internet use, including issues about trust, sources, and attitudes towards on-line information.

Theoretical support: McGuire Input/Output Matrix and Elaboration Likelihood Model

Although the Internet is rapidly changing how people communicate, the basic method of communication is unchanged. The message is being created and transmitted by a source, over a channel, to a receiver for some specific purpose (McGuire, 1989). In more traditional forms of media, such as television or magazines, these roles were all quite well defined. The Internet poses some new and unique challenges to communication, but McGuire’s basic principles still apply.

The McGuire Input/Output Matrix identifies five independent, communication variables, or inputs, that exist in an information transaction: source, message, channel, receiver, and destination. These five constructs are used to describe the parts of a
persuasive communication. However, the input variables are only half the story. McGuire also identifies twelve dependent or output variables, “the behavioral substeps that the communication must invoke in the target person for the behavioral impact to occur” (p.44). First, the receiver must be exposed to the message, must attend to it, like it, and understand it. Next he or she must learn how to change the behavior, must change his or her attitudes towards the behavior, and must remember the information. Lastly, the receiver must be able to recall the message and the behavior change, implement the behavior change, be reinforced for the change, and then proceed with the behavior change as the new norm. This matrix of five input and twelve output variables gives health communicators a basic “worksheet” for message construction. See Figure 1 below:
<table>
<thead>
<tr>
<th>INPUT: Independent variables</th>
<th>OUTPUT: Dependent Variables</th>
<th>SOURCE</th>
<th>MESSAGE</th>
<th>CHANNEL</th>
<th>RECEIVER</th>
</tr>
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<tbody>
<tr>
<td>*number</td>
<td>*type appeal</td>
<td>*modality</td>
<td>*demographics</td>
<td>*directness</td>
<td>*demographics</td>
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<td>*unanimity</td>
<td>*type information</td>
<td>*inclusion/</td>
<td>*demographics</td>
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</tr>
<tr>
<td>*demographics</td>
<td>*inclusion/omission</td>
<td>*organization</td>
<td>*personality</td>
<td>*credibility</td>
<td>*personality</td>
</tr>
<tr>
<td>*attractiveness</td>
<td>*organization</td>
<td>*repetitiveness</td>
<td>*lifestyle</td>
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<td>*credibility</td>
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</tr>
</tbody>
</table>

1. Exposure to communication
2. Attending to it
3. Liking, becoming interested in it
4. Comprehending it (learning what)
5. Skill acquisition (learning how)
6. Yielding to it (attitude change)
7. Memory storage of content and/or agreement
8. Information search and retrieval
9. Deciding on basis of retrieval
10. Behaving in accord with decision
11. Reinforcement of desired acts
12. Post-behavioral consolidation

Figure 1. Excerpt from McGuire’s (1989) Input/Output Matrix (p.45)

McGuire’s input constructs inform the proposed examination of how and why parents seek pediatric health information on the Web. Also important is determining what people find persuasive and useful on the Web and how they make those decisions.
McGuire (1989) tells us that if receivers do not attend to a message, like the message, or find it persuasive, then behavior change will likely not follow. Petty & Cacioppo (1986) provide some insight as to how those first three steps happen with their Elaboration Likelihood Model (ELM). This model identifies a receiver as having two possible processing approaches to a given message: central or peripheral. Central processors are people who cognitively process message for the actual content. They tend to be highly involved and interested in the message’s topic. Peripheral processors, on the other hand, are not as interested in the topic and can therefore be affected by the heuristics of the message (i.e., colors, physical presentation, etc.). Every day, people unconsciously process huge quantities of information using both processing routes. The challenge to message developers is to identify how the intended receivers are likely to process information and then craft the message to fit their requirements. The World Wide Web provides exciting opportunities to be able to accurately gauge people’s likely route of processing a topic and create messages that are appropriately aimed.

**Sun protection information as case study**

Skin cancer is the most common type of cancer in the United States (Rossi, Blais, & Weinstock, 1994). Whereas most skin cancers are not life threatening, there are serious implications regarding quality of life, including hospitalization, surgery, and in some cases, death. Some risk factors for skin cancer are not widely controllable, such as one’s race or area of residence. Sun exposure, however, is a major risk factor for all types of skin cancer that is controllable (Rossi, Blais, Redding, & Weinstock, 1995).

Children and adolescents are the best targets for sun protection interventions for several reasons. First, the majority of skin-damaging sun exposure occurs before age 20
(Buller & Borland, 1998). League sports, school recess, and summer vacations contribute to the countless damaging hours spent in the sun. It is equally important to establish healthy behaviors, and their antecedents, in children because attitudes and beliefs have been found to influence sun protection behavior (Hillhouse, Stair & Adler, 1996). It is easier to change habits or, preferably, form good habits in children than in adults. For example, young children often do not have the fine motor control to correctly brush their teeth, but the American Dental Association (2000) recommends cleaning their gums even before they have teeth to “establishes at an early age the importance of oral hygiene and the feel of having clean teeth and gums.” It stands to reason that similar attitudes could be formed about skin protection by promoting it early and often.

Currently, most prevention efforts are aimed at educating children and adults about proper use of sunscreen, staying out of the sun, and wearing protective clothing. The incidence of skin cancer, over a million new cases a year, shows that these prevention efforts are falling short (Skin Cancer Foundation, 2000). This is especially troubling with regard to infants and young children. Although the ages 0-4 are crucial years for preventing sun damage, 53% of surveyed parents reported sunburns in their infants and young children (Foltz, 1993). Parents must understand not only how to prevent such damage, but why it is so important to protect their children. The Internet has capabilities for providing not only the knowledge and skills, but also the motivation necessary in skin cancer prevention.

**Purpose of the study**

This study used focus groups to explore how parents of young children seek out health information on the Internet, and especially the World Wide Web. Sun protection
sites were used as a “case study” to allow detailed questions about preferences and message processing. Little is known about how and why parents are using the Internet to seek health information for their children, how they identify acceptable sites, and how they use that information. The proposed research questions use constructs from McGuire’s Input/Output Matrix (1989) and Petty & Cacioppo’s Elaboration Likelihood Model (1986) as a frame for the major inquiries.

Research questions

1. What Internet channels do parents use to get pediatric health information?
2. What receiver characteristics are associated with different patterns of Internet use?
3. When do parents (receivers) use the Internet to get pediatric health information?
4. Where on the Internet do parents (receivers) seek pediatric health information?
5. What sources of pediatric health information do they prefer on the Internet?
6. What types of pediatric health information messages are parents seeking on the Internet?
7. How do parents process pediatric health information on the Internet?
CHAPTER 2

REVIEW OF THE LITERATURE

Overview

The proposed research reflects the integration of several topics in the literature, which are reviewed below. First the history and characteristics of the Internet are presented, along with information about who currently uses the Internet to seek out health information. Next, a review of the current research about the Internet and health communication is offered, followed by two health communication theories that relate to the Internet. The last two sections of this chapter review the literature surrounding structural elements of this study: sun protection behavior and focus group methodology.

History of the Internet

The Internet, originally known as ARPANET, was commissioned in 1969 by the Department of Defense (Internet Society, 2000). In the 1970s and 1980s applications such as email, chat rooms and bulletin boards provided people with ways to communicate and exchange information. The World Wide Web as we know it today came into existence in 1991 when the National Science Foundation lifted the ban against commercial traffic on the Internet (Public Broadcasting Service, 1998). Information on the Web is written in a universal computer language, Hyper-Text Markup Language (HTML), and is available through specific and unique URL (Universal Resource Locators) “addresses.” Health communication occurs in all areas of the Internet and has been studied in its various forms (Lieberman, 1992, Mandl, Feit, Pena, & Kohane, 2000).
Current Internet users

The Internet is rapidly changing the way that many people communicate about a wide variety of topics. While it is probably not the most frequently discussed topic on the Internet, health information is being widely researched, shared and sold on the World Wide Web. The Web offers an attractive mix of the inexpensive nature of mass communication and the more effective ways of interpersonal communication about health (Cassell, Jackson, & Cheuvron, 1998).

Nua Internet Surveys estimate that over 330 million people were online as of March 2000, with almost half (150 million) of those in the United States and Canada (Nua Internet Survey, 2000). In the United States, the average Internet user is 41 years old, is equally likely to be male or female, has 2.81 children, and uses a PC at work (Nua Internet Survey, 2000). The so-called “digital divide”—the disparity between access to the Web of high income people versus low income people is shrinking. As of October 2000, 36% of the African American population and 44% of Hispanics population were online, compared to 50% of European Americans. African Americans still lag behind others in home Internet access, although they mirror European American’s gender based Internet usage differences (Pew Internet & American Life Project, 2000c). Men and women of both races use the Internet in different ways: men are more likely to have purchased items, and to have sought sports and financial information on line; women are more likely to have researched job and health information (Pew Internet & American Life Project, 2000a).

A vast number of people and organizations are using the Internet to provide health information, and the majority of those on-line have searched for such information.
According to the Pew Internet & American Life Project (2000b), 56% of those on-line have looked up health information at some point, making it the 11th most popular activity. On a typical day, 7% of Internet active people will search for health or medical related information (Pew Internet & American Life Project, 2000a). The information available to users is nearly limitless and ranges from the most general of health sites to sites concerning very specific medical conditions (Izenberg & Lieberman, 1998). Unfortunately, the research community has not been able to keep up with the enormous growth of on-line information (Cassell, Jackson & Cheuvront, 1998).

**Internet and health promotion**

For such a new medium, there has been a considerable amount of study about health communication on the Internet. The Internet, and particularly the World Wide Web, has many characteristics that make it an effective choice for health communication. Researchers have investigated many areas concerning Internet use, including frequency counts and content analyses, and have examined the interactive quality of the media and how that quality makes personalization and tailoring of health information more feasible.

One of the most common areas of Internet research has been Web-based content analysis. Many studies have reviewed the available content of Web sites about a specific health topic and these analyses usually fall into one of two types: reports or critiques. Report analyses simply state what information is available on each site. For example, Anderson & Anderson (1997) identified fourteen sites they saw as having potential benefit to parents of children with disabilities. They then noted whether each site had information or services such as advocacy, educational information, or contact information for parents of children with a similar disability. Izenberg & Liberman (1998)
investigated the broader context of health information on the Internet and reported specific content on a number of subjects including search engines, metasites and news sites.

Critical analyses are more interested in determining the accuracy of information available on a particular topic, usually as measured by some nationally recognized benchmark. Pandolfini, Impiccaitore, & Bonati (2000) used policy statements from the American Academy of Pediatrics and the World Health Organization to determine the accuracy of information presented on Web sites about cough management. These researchers, along with a colleague, also examined advice to parents on the Web for managing fevers (Impiccaitore, Pandolfini, Casella, & Bonati, 1997). In both cases they found numerous sites devoted to the particular topic, however, the information was often out-dated or inaccurate.

Another area of interest for researchers has been the interactive nature of the Internet. The American Journal of Preventive Medicine has dedicated “theme” space twice to the subject, and other journals have also featured articles on this topic. Interactive health communication, including interactive Web sites, is quickly growing (Patrick, Robinson, Alemi, & Eng, 1999). A possible explanation is that, besides the general growth of computer mediated technology, is that the Web offers a didactic environment where two-way communication is possible, or even expected, between strangers (McMillan, 1999).

Probably the most significant outcome of interactivity is the ability for providers of health information to deliver targeted and tailored messages. Targeted messages are those that focus on one or more demographic characteristic to help provide more relevant
information. Tailoring takes that concept a step further, and allows the individual to determine, at least to some degree, what information he or she receives. Marcus, Nigg, Riebe & Forsyth (1999) see the Internet as “an ideal avenue for tailored, interactive intervention delivery” (p. 121). They expect that these qualities will help increase recruitment, retention and efficacy in physical activity promotion. It is the combination of modern software on both the sender’s and the receiver’s ends that make this rapid-response tailoring possible (Fotheringham, Owies, Leslie & Owen, 1999). High-end servers, database programs, and HTML editors and readers make nearly instantaneous feedback possible.

Of course, not all Web sites are interactive. McMillan (1999) found that non-profit and government Web sites were more likely to be interactive, while commercial sites are less so. “An archetypal example of these sites (commercial ones) might be a site created by the purveyor of an alternative medicine remedy who attempts to educate consumers about the value of the remedy and to conduct online commerce” (p.389). One area that needs further exploration is how parents feel about on-line interactivity, and whether they would prefer to see more or less of it when they seek pediatric health information.

Health communication theories

McGuire’s Input/Output Matrix (1989) will be used to inform the research questions in this study, as well as to develop codes by which the data are analyzed. These variables will be discussed in the order they appear in the research questions: channel, receiver, source and message. McGuire’s fifth input, destination, is not being focused on in this project. Destination, which involves the type of target behavior (e.g.
short term vs. long term) the communication is intending to address is not particularly relevant to the inquiry of how and why parents are using the Internet to research pediatric health information.

When discussing Internet use it is important that the channel under discussion is accurately identified. While often used interchangeably, “Internet” and “the World Wide Web,” (or just “the Web,”) mean different things. The Web is a subset of the larger Internet, a smaller network made up of hyper linked documents. McGuire (1989) identifies three factors that affect channel choice: modality, directness, and context. Sensory modality considerations include whether to present the information aurally, visually or both, whether to use verbal or non-verbal clues, or immediate or mediated messages. How direct or complex the message is will also affect the channel selected, as will the context (heuristics, tone, etc.).

The second important construct in this exchange is the message receiver. McGuire (1989) recognizes several important characteristics of message receivers that may influence how effective the message will be. These include demographic information, the ability of the receiver to participate in the behavior, and the personality and lifestyle of the intended recipient. Compared with traditional mass media, the receiver’s role that has been changed somewhat with the advent of the Web. Previously, receivers of mass media messages were passive recipients of information, having little control over what topics were being presented, how much information was being presented, and unable to ask questions or provide feedback in a very efficient manner. With the Internet, the receivers are able, and indeed are often asked, to take a much more active role (McMillan, 1999). By virtue of the vast quantity of information, Internet
message receivers are able to select what information they would like to receive. If the
topic they pick is popular, they will further be able to select from many different
available messages, and they can ask questions and provide feedback to the creators of
the Web page. Even more traditional forms of media are getting direct feedback via the
Web. For example, on the official Web sites of National Broadcasting Company’s
(NBC’s) television shows, there is an opportunity to provide feedback to the network on
their shows—both currently airing and recently canceled
(e.g., www.nbc.com/thewestwing).

The third input variable is the message’s source, or “the perceived communicator
to whom the message is attributed” (McGuire, 1989, p. 46). Within this category,
McGuire includes the perceived demographics of the sender (age, race, gender) and
number of senders as well as their perceived attractiveness and credibility. Because of the
relatively open access to the Internet, nearly anyone with a computer and an Internet
Service Provider can post a Web page. In the past, trust and reliability of information
from the media has come from “big name” sources, which were manageably few. Now
many thousands of people post Websites about specific topics, and thus the reliability of
the sender’s information is called into question. Possibly further complicating the issue is
that anyone with a Web site can register it with the major search engines, which has the
potential of giving the reader an impression of credibility that may not intended nor
deserved. Understanding how parents feel about the source of pediatric health
information on the Internet will help to inform more attractive and credible Internet
pages.
The final input variable that the Internet significantly changes is that of the message. To McGuire, this category “provides the richest sublist of input variables for persuasive communication” (McGuire, 1989, p. 46). As an example, when designing a message, the sender must decide what type of appeal he or she wants to send (e.g. fear vs. informational), what type of information would be most appropriate (e.g. statistics vs. a case study), and how he or she wants to organize the information. Additionally, the sender had to design a message that would also be affordable to transmit, often an expensive proposition in most mass media channels.

The Web has enormous potential for creating appropriate and effective messages. Due to falling costs and increasing ease of use, a relatively inexperienced Web author can create and post pages that only a few short years ago would have been the work of professionals (Fotheringham, Owies, Leslie & Owen, 1999). Within the last several years, the Web has changed from a place where mostly text messages were posted to a multimedia extravaganza. Now text coexists with pictures, graphics, video and audio clips. The messages are also multi-layered in a way that was never possible before. A single page can provide links to an infinite number of further pages, which the user can examine in any order, and to the extent he or she wishes. Now that they are freed from many of the former constraints placed upon them by traditional mass media, Internet message senders need to understand what types of messages parents find effective and persuasive.

The Web has potential for delivering messages that positively affect the output variables in the McGuire Input/Output Matrix (1989). As discussed above, the output side of the matrix describes how the receiver in the communication exchange reacts to the
message. For the desired behavior change to occur, the receiver must first be exposed to the message, attend to it, and have a positive attitude towards it. The proposed research is concerned with how and why these steps occur.

The process by which those steps are ultimately achieved can be understood through Petty & Cacioppo’s Elaboration Likelihood Model (1986). Receivers process messages they receive either centrally or peripherally, depending on their initial level of interest in the message. Senders of traditional mass-mediated messages were forced to choose which type of message they wanted to send: a high-involvement message that only central processors would likely be interested in, or a low-involvement message that would appeal more to peripheral processors, but might not satisfy central processors. The Web, however, offers the ability to senders to create both kinds of messages, and offers the choice to receivers of which message they would prefer. For example, relatively “no-frills” Web pages with mostly text messages and the availability of large amounts of information are likely to appeal to central processors, but seem overwhelming to readers with lower involvement who would be better reached with more involved heuristics such as color, sound, and attractive message sources. The Web greatly reduces the time needed to exchange such preference information. Now health communicators can create Web pages that will ascertain a reader’s interest in a subject with a few responses from the reader to pertinent processing questions, and then present the reader with a page designed specifically to match his or her interest level. This concept of presenting receivers with unique, or tailored, printed information has received significant attention from health researchers (Cassell, Jackson, & Cheuvront, 1998; Fotheringham, Leslie, & Owen, 2000; Fotheringham & Owen, 2000). While tailored messages are not
universally more effective, they have been found to be an improvement over non-tailored messages that were only a moderate or poor fit to the kind of information the receiver wanted to receive (Kreuter, Oswald, Bull & Clark, 2000). However, the appropriateness and effectiveness of tailored communications has not been explored using the Web, leaving health communicators without important message design information.

**Sun protection behaviors for children**

Because of the enormous volume of pediatric health information topics on the Internet, the proposed research will put a specific emphasis on the World Wide Web as a resource for parents. The proposed research will use pediatric sun protection information as a “case study” of information on the Web.

Only 47% of people practice one of the identified sun protection behaviors (sunscreen, protective clothing, or limiting sun exposure) according to the Department of Health and Human Resources (2000). This falls short of the goals set in Healthy People 2010 that 75% of people will use at least one sun protection method. Specific epidemiological data are not available specifically for sunscreen use, but Hill and Dixon (1999) reported that exposing children to excessive amounts of sunlight is a risk factor for skin cancer.

According to Buller & Borland (1999), use of sunscreen in infants and toddlers would reduce the risk of them developing non-melanoma skin cancers by half. Numerous studies have proven that safe sun exposure programs have increased awareness and helped change intentions and behaviors. Australia has a particularly high incidence of skin cancer (Melanoma Foundation of Australia, 1987) resulting in a number of published programs (Buller & Borland, 1998; Cody & Lee, 1990). In the US there
have also been numerous studies examining everything from sunbathing (Turrisi, Hillhouse, & Gerbert, 1998) to youth soccer teams (Parrott, et al., 1999), including a few studies specifically examining sun damage prevention in young children to daycare centers (Crane, Schneider, Yohn, Morelli, & Plomer, 1999; Grant-Petersson, Dietrich, Sox, Winchell, & Stevens, 1999). All of these studies have focused on reducing exposure to ultraviolet rays of the sun through a variety of techniques including sunscreen, protective clothing, and limiting exposure during peak hours.

**Qualitative methods**

Research in health promotion is a job likely never to be completed. Every question answered and every topic explored simply generates more questions and more topics to be investigated. Historically, research in this field was conducted in a mostly quantitative, experimental or quasi-experimental tradition (Cook & Reichardt, 1979). However, within the last two decades that has begun to change. Researchers today have numerous tools available to them, not only to help them conduct their research, but to shape and frame their basic ideas and philosophies on doing research (McLaughlin, 1994).

One way to conduct research involves the use of a qualitative methodology. “Qualitative methods” is a general term for many research methods that share some common qualities. McLaughlin (1994) describes these qualities as, “an emphasis on process, or how things happen, and a focus on attitudes, beliefs, and thoughts—how people make sense of their experiences as they interpret the world” (p.174). Reichardt & Cook (1979) describe qualitative methods as interested in “phenomenologism and
vershen,” as “naturalistic and uncontrolled observation” and as interested in “‘real,’ ‘rich’ and ‘deep’ data” (p. 10).

As discussed above, much of the research being conducted on the Internet and health promotion/communication focuses on frequency counts and content analysis. While those largely quantitative studies tell us to some degree who is using the Internet and what messages are available for them to see it doesn’t tell us how or why people are using the Internet, what their attitudes, beliefs or thoughts are about what they are seeing, or what it is they would like to see. Using a qualitative methodology, researchers can “seek to make sense of personal stories,” in this case, of Internet use and the search for pediatric health information, and to understand “the ways in which they intersect,” all in the pursuit of better health communication messages (Glesne, 1999, p.1).

A second, but related, reason for selecting a qualitative methodology for this research is that they are particularly suited for formative, exploratory work. Because of the lack of research with parents about their attitudes, beliefs and thoughts about their Internet use, it would be difficult to form or test hypotheses about their Internet use. Qualitative methods are particularly suited to areas where hypothesis have yet to be generated or the appropriate questions have yet to be asked (McLaughlin, 1994; Reichardt & Cook, 1979).

So while the methodology is decided, the selection of method remains. The framework of “qualitative methodology” contains numerous methods: observation, interview (both individual and focus group), case study, ethnography, etc. (Crotty, 1998). For this study, focus groups were selected as the most appropriate way of obtaining this
project’s goals. The following section will discuss the history of focus groups, their use in health promotion research, and their appropriateness as a methodology for this project.

**Focus groups**

Focus groups became recognized data-gathering tools in the later-half of the twentieth century. During World War II, focus groups were held to determine the effectiveness of pro-war propaganda. Robert Merton used focus groups to gauge the effectiveness of Army training films. This ushered in an era of focus groups being used for mostly marketing research (Morgan, 1998, Frey & Fontanna, 1993) and led to a paper and a book describing the techniques and methodology of focus group interviews (Stewart & Shamdasani, 1990). Throughout the post-war period, Merton’s strategies were used primarily to provide marketing information to companies. For instance, boxed cake mixes became available during this time, but were selling poorly. Focus group participants told researchers that they felt that they should be working harder to bake a cake and, thus, today we must add an egg to the cake mix. This kind of information led to the popularity not only of boxed cake mixes, but of focus groups as a marketing tool (Morgan, 1998).

In the 1970s and 1980s, the principles that had served marketers so well were beginning to be used in social science research. Focus groups are increasingly being used to explore health topics. Witte et al. (1998) used a focus group methodology to examine how African Americans perceive health risks from radon gas. Focus groups have been use to study difficult to obtain information, such exploratory work to learn people’s perceived risk of colorectal cancer (Beeker, Craft, Southwell, & Jorgeson, 2000), to study sensitive topics such as attitudes towards cosmetic surgery in Japanese men (Nakamura,
Mulliken, & Belfer, 2000) and to evaluate services to vulnerable populations, such as teenagers (Walker, Oakley, & Townsend, 2000). The studies are usually not large enough to be representative of a larger population, but offer valuable information that generally cannot be obtained in other ways.

The usefulness of this once commercial marketing tool in health promotion/communication is widely accepted. In this project, focus groups provide the researcher with an opportunity to explore in depth the participant’s attitudes, thoughts and beliefs about Internet use and also provide the opportunity to observe group discussions about Internet use. By observing the conversations of women in the context of group discussions with other members of their cohort, the researcher hoped to be able to understand, as fully as possible, how and why the participants use the Internet to obtain pediatric health information.

Conclusion

A review of the literature demonstrates the importance of investigating how parents use the Internet to find pediatric health information, and that focus groups are an appropriate way to begin this investigation. Heretofore, much of the research has focused on frequency counts and content analyzes of specific topics discussed on the Internet. Parent’s use of the Internet to seek pediatric health information is sufficiently widespread to merit an investigation of what they like and what they find persuasive on the Internet, as well as how they process information.
CHAPTER 3

METHODS

Overview

This study used focused group interviews, or focus groups, to explore how parents of young children seek out health information on the Internet, and especially the World Wide Web. Sun protection sites were used as a “case study” to allow detailed questions about preferences and message processing. Infant skin protection was selected as a case study for the project to give the discussion about Websites a consistent topic, as opposed to investigating specifically parent’s knowledge and opinion on sun protection. In other words, infant skin protection Websites were shown so that the participants were talking about “apples and apples” when comparing Websites, and that their opinions of the Websites would not be influenced by presentation of topics that might have varying levels of interest to them. Stewart & Shamdasani’s (1990) guidelines for conducting focus group interviews were used to explore parental use of the Internet for pediatric health information.

Participants

The participants for this study were drawn from the Athens-Clarke County, Georgia area. Because women are twice as likely to seek health information for their children (Pew Internet & American Life Project, 2000b), only mothers were recruited for this study. The participant mothers recruited had to be at least 18 years of age, and had to have at least one child between the ages of 0-4, and had used the Internet in the past six months. Volunteer participants were recruited from three area child care centers. The
first child care center was the Athens Mother’s Center (AMC). AMC provided child care several hours a week while the participating mothers had social time and took classes. AMC meet twice a week in the morning, and was attended primarily by mothers who did not work outside the home. The second center that was used for recruitment was the Lifespan Center. Lifespan was associated with the Environmental Protection Agency. This day care’s clients represented a greater range of race, socioeconomic status, and employment status than the participants at the Athens Mother’s Center. Adequate numbers of mothers who worked out side the home could not be recruited there, so a third site, Young World, was added. The combination of these three sites led to adequate recruitment. Below is a table summarizing the relevant demographic characteristics of the participants:

<table>
<thead>
<tr>
<th>Number:</th>
<th>20 participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mean Age:</td>
<td>34.5 years</td>
</tr>
<tr>
<td>Race:</td>
<td>17 White</td>
</tr>
<tr>
<td>Number of Children:</td>
<td>1 Child=10</td>
</tr>
</tbody>
</table>

Figure 2: Demographic information

**Recruitment**

Participants were recruited at all three centers by flyers given to the parents, either given directly or placed in their mailboxes at the daycare center, and by word of mouth. These flyers briefly described the project and the delimitations, and contained a phone number for interested parents to call to sign up or ask additional questions. Parents were given an opportunity to sign up for a pre-scheduled session at the time of recruitment, or given the option to sign up at a later date. Parents who were unsure of their schedules, or unsure of their interest in the project were given the opportunity to supply the primary
researcher with their contact information, so the conversation could be continued at a later date. Individual email and phone calls, where such information was available, were made to confirm arrangements. Seven or eight women were recruited for each group, with a minimum of five women participating to be considered a group. Two groups were scheduled for mothers who did not work outside of the home, and two groups were scheduled for mothers who did work outside of the home at least half-time (20 hours per week). Study participants were provided with an incentive ($15), light snacks during the focus groups, and daycare for their children during the focus groups at no cost.

Settings

Focus groups were held in a conference room at the University. This setting provided for both audio and video taping of the conversation, as well as for computer projection of various Websites. The room was adjoined by another conference room in which childcare was provided.

Moderator guide

A moderator guide was developed and pre-tested with parents of young children. The guide was developed around the “funnel approach” by beginning each discussion with less structured interview questions (free association, general impressions, etc.) and moved to more focused questions and probes as the discussion continues (Morgan, 1997). This technique was selected to help capture both formal, cognitive ideas about health information on the Internet and less formal impressions, feelings and preferences. The moderator guide was built around the project’s research questions and included questions about which channels of the Internet the parents used, what sources they used, liked and
trusted, how they sought out and used pediatric health information and questioned specifics of what kinds of messages they preferred. See Appendix B for the moderator guide.

**Data collection**

The primary researcher, along with an assistant providing child care and an assistant to take notes, conducted the focus groups between mid-February and mid-March, 2001. When parents arrived to the groups, they were welcomed by the primary researcher, who showed them to their seat and explained the informed consent form and the brief demographic survey. Participants were asked to complete both of the forms before the discussion began, as well as to sign a form acknowledging receipt of their financial incentive.

The data collection session was divided into two parts, per the moderator’s guide. First, focus group participants were asked about their general Web usage, then about how they used the Web for gathering health information, and lastly about how (or if) they used the Web for gathering skin cancer prevention information. In the second part, participants were shown several Web sites about skin protection. These Websites had been previously downloaded and were shown “off-line” so that all groups were shown exactly the same material. The Web sites were projected using an LCD projector on to a wall screen. Participants were questioned about their beliefs and attitudes towards the available information, both in regards to preferences and processing, as per the moderator guide. The discussions were both audio and video taped and transcribed and an assistant took detailed field notes. After the focus group discussions, the moderator and the note taker reviewed the conversation. These “debriefing” sessions were used to identify
themes of the discussion and confirm impressions, as well as to identify any slight modifications in procedure necessary for the subsequent groups. All tapes, field notes, and other identifying information are kept in a locked file cabinet and will be destroyed after the data analysis and resulting papers are complete.

**Data analysis**

Data gathered in this project were analyzed both deductively and inductively. The relevant constructs from McGuire’s Input/Output Matrix (1989) were used as codes for the deductive portion. In addition to the pre-established codes, the data were analyzed using Stewart & Shamdasani’s (1990) “cut and paste” technique. The primary researcher, using the research questions, identified possible deductive codes for each research question. Copies of each transcript were made for analysis by research question—seven sets of each of the four transcripts. Each set of transcripts was then read and analyzed for information pertaining to the relevant research question. A list of codes was developed, using both the relevant deductive and the emerging inductive codes and then the transcripts were re-read and the appropriate codes placed on the transcript, using The Ethnograph (Qualis Research Assoc, 1999) to manage the data. Reports were then run on each code, within each research question. For research question Number 2, pertaining to the characteristics of the participating mothers, the information gathered from the demographic surveys and (managed in Microsoft Excel) was also analyzed for information.

It should be noted that the primary researcher was acquainted with some of the participants drawn from the first study site. Due to the non-controversial nature of the
topic, this was not foreseen to be problematic, nor to have an effect on the information gathered (Morgan, 1998).
CHAPTER 4

RESULTS

Overview
The purpose of this research was to investigate how mothers of young children use the Internet to seek out pediatric health information. Focus group discussions were used to help the researcher gain an understanding of when, why and how mothers were using the Internet for pediatric health information, what sites they use and how they process the information they received on line. Four focus groups were held with mothers to explore their perceptions and experiences of on-line pediatric health information. The first two groups were held with mothers who primarily did not work outside the home, or worked minimally. For purposes of analysis, these mothers will be referred to as “stay-at-homes.” The last two groups were held with mothers who did work outside the home, mostly full time. These mothers, for purpose of analysis, will be referred to as “working mothers.” The descriptive information, field notes, and verbatim transcripts were coded, categorized, and analyzed. The relevant findings are reported in this chapter. Where appropriate, supporting quotes from participants are presented, with the participant’s identification number following the quote. Participant numbers that begin with ‘1’ denote those in the stay at home groups; participant numbers that begin with ‘2’ denote working participants. The results are organized around the original seven research questions, reported in order with the exception of research question 2, “What receiver characteristics are associated with different patterns of Internet use?” As the data were analyzed, it became apparent that important differences in Internet use occurred throughout the topics investigated. Accordingly, the results of that inquiry are located both in the study population section below, and throughout this chapter, and will be summarized and discussed in the following chapter.
Description of study population

At the beginning of each respective focus group, the participants completed personal data forms. Participants provided demographic information, as well as information on their Internet use, both in general and specifically about pediatric health information. There were 20 participants in total, spread amongst 4 groups. Each group had five participants, and were held approximately one week apart, with a two week break between the second and third groups. In total, the data collection process took approximately six weeks.

Age. The mean age of the participants was 34.4 years of age, (SD= 4.95) with a range of 22 years to 42 years of age. Race/Ethnicity. Seventeen (85%) of the participants identified themselves as White, 2 (10%) as Black and 1 (5%) as Asian/Pacific Islander. None (0%) identified themselves as having Hispanic ethnicity. Number and sex of children. Ten (50%) participants reported that they had 1 child with 9 (90%) of them 2 years or younger. Eight (40%) of the participants reported having 2 children, ranging in ages from 3 months to 6.5 years and 2 (20%) of the participants reported having 3 or more children, ranging from 4 months to 7 years. In total, the participants had 19 boys and 15 girls. Work Status. Fifteen (75%) of the participants reported that they worked outside the home at least some of the time. Of the 10 participants from the first two groups, 5 (50%) reported working outside the home, 4 of them working minimally (6 or fewer hours a week) and one of them working 22 hours a week. None of the participants in this group worked full-time. Of the 10 participants in the third and fourth groups, 6 of them reported working 40 or more hours a week (full-time), one of them 20 hours a week, and 3 reported some, but unspecified, work time. Internet access. All 20 (100%) of participants reported having Internet access. Eighteen (90%) of participants reported having access at home. 8 participants (all from the working mom groups) reported access at work. One participant noted that she accessed the Internet at her husband’s office and from the library.
Internet channels

To answer the first research question posed, “What Internet channels do parents use to get pediatric health information?” participants were asked to identify, both on the intake survey and in the course of the discussion, which of the following channels they had used, and how many years they had been using them: email, World Wide Web, chat rooms, bulletin boards, newsgroups and/or instant messenger. All participants reported using both electronic mail (“email”) and the World Wide Web (“the Web”). All of the participants were fairly experienced email and Web users, with all reporting at least 1-2 years of experience. The majority of them reported 3 or more years experience with both.

Nearly all the participants cited email as their introduction to the Internet, and most have very positive feelings towards it. “The first thing I found out about was email and I thought it was great” (114). “I started out with email, and it’s fantastic” (230). “I started out with email…” (226). The mothers reported two general uses of email: a didactic communication, such as a conversation between themselves and family members or friends, or as a way to receive mass-communicated email from commercial information sites such as Babycenter.com. While the participant’s feelings towards email were generally positive, some acknowledged that they saw a down-side to the medium. “I think you get… a lot of email stuff where people send things around but it’s just like an urban legend or something” (106). “Email has its uses and there’s some things it doesn’t work for” (114).

All participants identified the World Wide Web as another Internet channel they used. Sixteen of the participants said that they had been using the Web for three or more years, with the remaining four reporting one-to-two years of use. More than half of the participants described times they had been on the Web looking specifically for pediatric health information. The participants used other Internet channels much less frequently. Four participants reported using chatrooms or bulletin boards. To the mothers who did not use them, they seemed time consuming and a little intimidating. “Your time gets
more limited in terms of ability to surf and explore and I just found that chat rooms, for me… I just didn’t make it a priority” (110). “I’ve gone to [bulletin boards]. They are harder to read… it takes more time for me to go to each question” (221). Eight participants said that they had used newsgroups, and six had used “instant messaging” such as available on America Online, however, these generated little discussion. It should be noted that the participants from the stay-at-home groups had a listserv through their daycare. This listserv enabled email based discussions amongst the members of the mother’s center with email addresses, and was used to ask questions, exchange information, and schedule meetings. One mother described it as a “forum where I know if I bumped into another mother…I might like tap her on the shoulder by email and [ask for advice]” (114).

One channel that generated a lot of discussion, even though it was not part of the Internet, was that of traditional print media, such as books or magazines, which some of the mothers used as a benchmark against which to measure on-line information. In this area, the stay at home moms, especially those who are a little older than the mean—clearly preferred print media over electronic.

I’ve never looked up feeding information… I’ve read enough in magazines (104).

It’s (the Internet) not like having a book. For me, I like having those books at the head of the bed. Because you have your little light on while your spouse is sleeping and you can look at stuff. With the computer it’s like… I still find the computer to be like, yuck. It’s not something you can cuddle up with (114).

I might be too tired to go on-line, so I often times will look at the American Academy of Pediatrics book or a similar one sitting in bed before I go to sleep (110).

**Times of Internet use**

The next topic covered in the focus group discussion was in answer to the third research question, “When do parents (receivers) use the Internet to get pediatric health information?” The discussion of time and the Internet contained three major themes: the actual, literal time it takes to go on-line, stages of the child’s development, and situations
in which the participants use the Internet. These three points will be examined below.

The participants overwhelmingly perceived that they had little time to be on the Internet, regardless of how many children they had or job status. Comments such as “I find I don’t have much time to be on the Internet” (104) or “the baby takes up all the time” (103) were common, and similar thoughts were expressed in all the groups. Some of the stay-at-home moms made comments about women who worked outside the home having more time to research topics on line, either because of faster Internet access, or because they would be “in front of a computer all day” (101) and “dreaming topics to look up” (103). While most of the women acknowledged that they used the Internet to look up information at work, there was a feeling that they had “a really busy job” (230).

One area of time management that got very positive reviews from several of the women was the constant availability of information on the Internet, regardless of time of day. When asked about positive aspects of the Internet, many participants noted the convenience of having access to information when they were ready to seek it, without having to leave their homes. One mother’s comment was typical of the opinions expressed by most of the participants:

I think you have a time issue because if you want to look something up at 8:30 at night you don’t have to worry about the library closing or you know if … for example if my husband is out of town and I want to look something up I have it right there. I don’t have to find somebody to watch the kids or haul everybody to the library, because when I haul everybody to the library I don’t look up anything. So it’s those kind of things …and you have the luxury of being able to access information whenever it’s convenient for … for me. And so if I want to do it at lunchtime or if I want to do it in the middle of the night or really early in the morning I think that’s the greatest about the Web. It is essentially instant information whenever I want that information and that’s not something that you can get from a library (108).

Another time participants reported using the Internet a lot is when they were interested in their child’s development, and they described different patterns of Internet use depending on when in their child’s life they were using it. For example, the participant’s Internet use, and the time it takes, seems to change throughout pregnancy,
birth, and the baby’s development, especially if it a first or subsequent child. Participants made many statements that pregnancy, especially a first pregnancy, is a time of frequent quests for information, usually about the child’s development within that week of pregnancy. Many of the mothers reported getting week-by-week email updates from commercial information sources such as babycenter.com or going to one of the on-line pregnancy calendars. For the first time mothers it was a source of reassurance and information. Said one participant:

That Website was very helpful in that way because I’m a young mother and I was so scared and you know I would go to this Website every day and just look at it…for, like, 10 minutes straight and I just found so much helpful information when it came to…being scared and not knowing what to expect (226).

Another time in pregnancy when participants turned to the Web was when there were problems with the pregnancy. Participants mentioned finding information on ectopic pregnancies (110), heart malformations (106) and in-utero kidney failure (103). No one mentioned using the Internet to help prepare her for the baby’s birth, or as a resource for birth planning.

Beyond pregnancy, the women reported turning to the Internet for developmental information. Again, participants reported receiving regular updates from commercial information sites, this time month-by-month rather than weekly. Besides passively receiving mass emails, the mothers reported actively searching for developmental information such as ADHD in twin boys (227), nutrition for picky eaters (109), tips on getting babies to sleep through the night (225), and potty-training (230).

When the participants were asked how they thought their Web usage would change in the future, those who had an opinion felt that it would increase, especially as their children became teenagers. One mother of five said:

I would think more as my daughters start to approach puberty. Issues dealing with those kind of things I think could be very … you are armed with information maybe before questions, questions come up. I would anticipate using it for more those type of things (108).
Others saw their use changing to encompass a wider variety of topics, such as speech development (226), or educational activities (229).

The last findings are about what situations the participants have used the Internet. These situations fall largely into two categories: illness/conditions and support/reassurance. Both will be discussed in greater depth below.

*Illness/conditions*

Nearly every mother reported using the Internet at some time to look up an illness or health condition that her child had. These illnesses or conditions fell into one of two categories: chronic or acute. Participants reported using the Internet (specifically the Web) to investigate topics ranging from recurrent ear infections (104 and 227), birth defects (112), nursing concerns (114), and allergies (227). In many of these cases, the mothers were looking for information to supplement what they had been told by their doctors, or to help make a decision about treatment. Regarding a reoccurring ear infection problem one mother said:

That's more of a … gee I wonder what I should do after the 5th ear infection or should I wait until after the 7th to start thinking about the tubes. I mean I ask my pediatrician that but if its I think we're having our next ear infection and I kind get an idea of where I am heading with the doctor (227).

Another participant with a child with chronic ear infections described her experience this way:

My son had adenoids and tonsil problems … and no doctor or ear nose and throat doctor can adequately explain the pros and cons of getting tubes or leaving it the way it is… I found so much information about how these things happen which wasn't explained to me by his doctor. So I found that very informative and felt like I knew as much or more than his pediatrician on the subject…And it has been very reassuring to me to know that there is information that I can …if I do a little work I can be much better informed about my children's health (104).

While most participants expressed positive feelings for the Internet as a resource for chronic illnesses or conditions, some were less apt to turn to it in more acute situations. Specifically, mothers who were a little older or who had more than one child were not as likely to use it for situations like croup, high fever, or to see when it was time
to call the doctor, preferring instead to turn to books or their physicians as a first line of information. More first-time mothers, on the other hand, reported using the Web as a resource, for example, if the baby spiked a 103 degree fever in the middle of the night.

I’ve looked up what symptoms you have to have before it’s worthwhile to call the emergency room (101).

It was like “let me look up croup real quick” and I did. Looked up croup in the middle of the night. Keep her in the bathroom with the steam and don’t move. And that’s basically it (103).

We looked up unknown rashes, like I said with chicken pox, we looked that up (108).

Not everyone, however, was sanguine about the Internet as a resource for acute problems. These mothers tended to have more children, and thus more experience with common acute problems that the first time mothers were seeking information on, or did not see the situation as an appropriate time to seek such information on line.

And in a city like Athens I mean if you’re pediatrician is closed I mean you can call the service and talk to someone. Ben recently had an acute allergic reaction and it was so quick. It wasn’t the sort of thing that I would go to the Internet first to try to learn about. I would seek what I knew to be well-qualified medical … real opinion and help (110).

And for most acute things…they are fairly run of the mill. With my [five] children, I’ve not had a lot of experiences where you would want a lot of extra information (108).

If it was at night and I’m wondering about [fever]… now is it 102 or 103 that I need to call I’m looking at a book. I’m not logging on for that kind of thing (227).

Support/reassurance

The second situation in which participants reported a lot of Internet use was when they were looking for social support or for reassurance. The stay-at-home participants mostly did not speak of the Internet as a place they received social support, possibly because they were receiving it in more traditional face-to-face meetings at their mother’s center. In contrast, several of the working mothers noted that they used the Internet to solicit specific advice or share stories with other mothers who they either knew
personally, or only electronically. “It’s nice to have all of that feedback from these other people so that you don’t feel like you’re alone” (221). “You’re in the same boat with a lot of other people and then it’s nice to know how they feel about things” (218).

While the stay-at-home participants did not report using the Internet for a lot of social support, overall the participants did identify looking for reassurance as one of the reasons they used the Internet. Mostly the participants reported that they were looking for reassurance that their child was “fine” or “normal” but also as a way to confirm that their ideas about parenting were correct, or at least acceptable, even if it was not what they were hearing from their doctors.

Well like the pediatrician will say well you know children might become too attached for nursing after a year. You’re like … how true is this and you kind of have to … you’ve got to get the parent base that will tell you … well no my child turned out just like children who were on their own…stopped nursing at 9 months. They were just as able to be independent. So I really think that … that forum, the Internet forum for some stuff is really good (114).

The doctor would say, “Oh she is fine.” And I would go on the net just to find out if it really was ok for the children not to eat as much as I thought she wasn’t eating (109).

**Where information is sought**

Understanding where on the Internet parents seek pediatric health information is also important. In answer to the fourth research question, “Where on the Internet do parents (receivers) seek pediatric health information?” several issues arose, both from direct questioning and in the natural course of the focus group discussion. The discussion ranged from general topics such as domain names to how they find sites that they trust to specific sites that the participants had used in the past. In this section participant’s reactions to the topics of domain name, how they are introduced to new sites, and specific site choices they make are reported.

**Domain Name**

When asked about how much the top level domain name (the .com or .org or .gov) means to them when assessing how much they like or trust a site, some of the mothers
indicated that they felt more confident with a .org or .edu. These domain names typically indicate that the page is sponsored by a non-profit organization (.org) or an institute of education (.edu), as opposed to a commercial venture (.com), though there is no formal review process to assign domain names.

I am little bit more leery of .coms and I look at what the advertisers are. If it is just like a credit card or something to me that's less benign then say it was a Website regarding health and there were pharmaceutical sponsors then that would send up a red flag for me versus .org. My prevailing assumption would be it’s a nonprofit and so they are sharing the information cause out of a non-money generating interest. But like [another participant] was saying, you can have perfectly legitimate .com sites with reputable information (110).

However, there was widespread recognition amongst most of the mothers that those indicators were not guarantees of credibility, nor are there was any regulation of which sites used which domain classifications. So while some moms noted the top level domain in the URL, it did not seem to make much difference to them in their selection of sites.

It really doesn't make a whole of difference as far as information is concerned. I mean there are a lot of Websites that still give similar kind of information and it doesn't really mean that when it is a .org. It is better than a .com when they still have the same information (109).

**How sites are found**

The focus group discussions yielded much information about how participants discover or find a particular site. There seemed to be three major ways that the participants were introduced to a site. Participants reported using search engines, sites that were recommended to them, or sites they saw hyper-linked off of sites they already visited.

Search engines were the most popular method of finding information that the participants did not know how to find directly. Eighteen (90%) of the participants reported using search engines at least some of the time. Participants often reported starting with search engines if they had a specific health complaint to research and had
not been able to find what they wanted on sites they are already use. While there was not
enough data to support a definite conclusion, the stay at home moms seemed to be
savvier in their search strategies—using meta-search engines and having more varied
search strategies—while the moms who worked were more likely to mention yahoo.com
or which ever search engine their browser chose for them.

When asked about how they are first introduced to a site some of the participants,
especially the stay at homes reported that they liked to use sites that were recommended
to them by another mother, or a more traditional information source e.g., referred to in a
book or magazine.

I guess I just go with … I get an address. I don't really go in and … I might go
and play around once I have an address but first of all I start with an address, a
given address that has been recommended to me or I've seen in an article in the
newspaper, something like that. I will start with that figuring that whoever had
that address in print like in the Journal Constitution or whatever, that person
probably … I can trust them enough to start… (114).

Magazines, like Parents magazine or like Babytalk or something like that. They
have a lot of Websites that usually I will tear out the page and keep it (109).

In contrast to the participants’ rejection of the domain name as a measure of a site’s
credibility, many of the mothers indicated that they liked and trusted sites that are linked
to sites that they already liked and trusted. Sites that provided them with a lot of links
were seen as being useful.

Well they have so many links. That's why I go to Baby Center cause there is a lot
of other links so I can go into … its just useful (102).

[Regarding] the linking… there is also some kind of issues back and forth
between the sites. I don't know how true that is but that's the assumption that I'm
going on that if they are linked, they've communicated and they trust each other
and I can trust the referral (114).

Specific Site Choices

The specific sites that the participants mentioned basically fall into four
categories: non-profit organizations/universities, commercial information, commercial
product, and reference. Below is a summary of participant’s feelings about each category,
when expressed, with differences in preferences noted by groups (e.g. stay at home moms vs. working moms).

**Non-profit organizations and Universities**

Non-profit organizations and universities are generally seen as having high credibility and accuracy with the participants. Stay at homes frequently mentioned them as places for reliable, though not infallible information. Specific sites mentioned included the American Lung Association, the March of Dimes, the American Academy of Pediatrics, the LaLeche League, the American Cancer Society and The University of Georgia.

**Commercial Information Sites**

These sites are still relatively new on the Internet, but gaining rapidly in popularity. Offering information and advice, shopping and discussions these sites, often backed by famous medical personal, such as former US Surgeon General Dr. Koop, were highly popular with many of the participants. Nearly all participants spoke of commercial information sites (Baby Center, Parents Place, Web MD etc.) when asked about where they sought pediatric health information. While there was some recognition that these sites were for-profit, they did not offend the mothers, especially the stay at home moms in the same way that the commercial product sites did. Said one participant: “The purpose of Baby Center I think is to sell you stuff but they have questions… you know they answer questions and it seems to me like that information sounds right” (101) and none of them expressed the same outright rejection of them that they had for commercial product sites. Generally the mothers perceived these sites as being trustworthy, comprehensive and convenient, providing them with both useful, timely information, and the ability to shop, socialize, and research a wide range of topics. These sites, while perhaps seen as slightly less credible than research/non-profit sites, are where several participants reported actually going as their “jumping off” point. It should be noted, however, that within even one particular site such as babycenter.com, there are hundreds of individual pages, and the participants are not equally pleased with all of
them. So even with a site that is generally liked, there may be areas, such as the parent’s posting boards, where the participants are less likely to go.

Commercial Product Sites

Commercial product sites are those sites maintained by companies who sell products they manufacture or market directly to parents. While overwhelmingly the mothers spoke of the need to be mindful of a site’s true intention, the working moms were much more likely to say that they would get information from a site that was associated with a for-profit product, such as Gerber, Pampers or a pharmaceutical company, than the stay at home moms. Half the participants (50%) from the working mom groups identified commercial product sites they either visited or received email from, as opposed to one (10%) participant in the stay at home groups who noted that while she had received information from a commercial product site she didn’t “pay attention to it” (103). The following is typical of the opinions expressed by the stay at home moms: “Yeah, if Gerber sponsors it, oh well, they just want to sell this stuff to me.” (102)

Traditional reference sources

The last category of sites participants discussed was that of traditional reference sources that are now available on-line. While these sites were not the most often mentioned, a couple of the mothers indicated that they prefer the on-line versions of traditional information sources, such as the Atlanta Journal-Constitution, or the Encyclopedia Britannica.

Message source choices

To answer the fifth research question, “What sources of pediatric health information do mothers prefer on the Internet?,” participants were asked, both in the general discussion and also in the discussion about specific sun protection sites, about what sources for pediatric health information messages they preferred. Three major sources emerged: medical personnel, other parents, and researchers; however, none of these sources are seen as perfect, and participants often described a process of looking for
the least objectionable source for particular information. Overwhelmingly, the participants expressed preference, but not total trust or favor, for each of these sources in different situations, and also noted that they would not continue looking at a page once they ascertained that it was not written by the proper source.

Medical personnel

Participants stated that in most situations when they are looking for pediatric health information, they want the advice of a doctor or a nurse. One mother called pediatricians “the most helpful resource,” (103) and another simply stated, “If I’m looking for health information, I want a medical doctor” (221). One positive description of a site was “answers from a real doctor” (101). As an example, one participant said, “If it is something like an ear infection or pink eye…I want to hear from a nurse or a doctor” (230). However, some mothers, especially stay-at-homes, expressed reservations even about medical information from medical personnel:

Yeah but even experts that you know are experts you don’t agree with them so you don’t know if its true because you know they say its true and this works but its like … there’s Dr. Sears and then there’s a doctor, the Timewise doctor, Babywise doctor, and then there’s all of these other doctors and the thing is all of these pediatricians are basically contradicting themselves and they are experts. So if they’re experts, why should we listen to them when they are contradicting each other. But that’s one thing good about the Internet. You get on and you see all of these different ideas and you realize these guys aren’t real experts. It makes you feel better as a mom (102).

I don’t trust anything on the Internet really unless it is really logical and they can back it up (101).

Other Parents

In general, participants reported seeing other parents as a valuable resource, but only in specific situations. Many participants reported perceiving other parents, either by bulletin board postings, email, listserv or personal Web sites as good sources of support, reassurance, and help with behavioral issues. However, here again, information from parents was rejected on some topics, especially those perceived as medical or scientific. When questioned about specific medical information (sun protection) the mothers did not
see other on-line parents as an appropriate resource. Below is an excerpt from a

conversation about a HTML-based bulletin board posting by parents about infant sun

protection.

This page seems like a waste of time. (101)
I think so, too. (102)
On this topic[infant sun protection], I don’t think what other parents have to say is

of any use to me. On other things I think it is but not on this subject. (104)

The “other things” that the participants would be interested in are more on-line support or

behavioral information. The conversation continues, with a clarifying question from the

moderator:

Like teething, or things you are looking for advice more than information I think

it works better. (106)

[MODERATOR] So if there was a page for “how to keep the hat on the baby

when you take her outside”?
Yeah (104, 104, 101)
Like, what kind of hat will stay on…. (102)

This sort of distinction—medical verses more practical or behavioral information—was

expressed in every group. Another clear theme from the discussions was that the

participants had a clear idea about what kind of source she was interested in for a

particular information search, however she was not going to substitute information from

even that “acceptable” source for her own judgment.

University/Research centers

As discussed above, the participants reported that they perceived research
centers, hospitals, and universities as very credible sources of information. Again, here,
participants reported not always being happy with information from research centers.
Despite their credibility, or perhaps because of it, a few mothers noted that sometimes the
information they received on research-sponsored Websites was at too scientific a level.
“Not being able to find what you’re looking for and the frustration at ending up in journal
level detail when you’re wanting mom level detail but you want mom level detail from an
expert kind of thing”(227).
Information processing

Of all the topics investigated, describing how participants responded to the sixth research question, “How do parents process pediatric health information on the Internet?,” was the least precise. Universally, the mothers indicated that they approach health information on the Web with a high level of interest and scrutiny. Much of the women’s time on the Internet (for their children) is spent seeking specific health information. The process of seeking information on the Internet is an active one, and lends itself to central processing. Time and again, the participants identified their motive for being on-line as “looking for information” (108), “looking up information” (217), or “to gather information” (219, 226). As another participant described it, “I like facts” (218). The participants were willing to read lengthy, scientific articles; if it contained information they were seeking. When examining a text-heavy site, one participant noted that her husband would think it was too much reading. “But for me it’s not…because if that’s what I’m going there for that’s what I want to see. That’s what I want to read” (219). More peripheral sites, such as on-line quizzes, received mixed reviews. While some of the participants thought they were “fun,” there was general agreement that they weren’t the first choice for information gathering. An excerpt from a discussion about an American Cancer Society quiz page:

[MODERATOR] So this kind of interaction isn’t …
Helpful. (110)
That’s not why I’m on the Internet. (108)
No. I can do that anywhere. (114)
Not for this kind of information. I’ll do polls sometimes but not when I’m wanting to get information. (112)

When looking at a site, the participants described a complex process of evaluation: evaluating the authors, their motivations, the design of the page, and most importantly,
the information presented. Their level of analysis applied to each site depends partly on
the topic’s perceived importance. For example, several participants described searching
for everything and anything they could find on a life-threatening ailment, but only going
to one source to find out something of less importance, e.g., finding out if it was too cold
to let their child go outside to play. For purposes of analysis, the question of how this
processing occurs will be divided into four components: source analysis, filtering,
triangulation, and trust.

Source analysis

A site’s author—or perceived author—is an important part of how participants
process a site. Depending on an individual’s intentions and source preferences, decisions
about a site’s credibility can be made almost instantaneously. Participants, especially
those in the stay at home groups, almost instantly rejected information on the two
commercial product sites shown to them simply because the product’s name appeared in
the URL. “It’s an ad. I wouldn’t go any further than this,” (103) said one participant of
the Banana Boat site. Participants were more favorable to the second product site, which
was almost entirely text based and provided one very detailed, scientific graphic of
human skin layers. “It’s not selling us anything, so I guess it’s ok,” (109) but even that
page’s legitimacy was tenuous. “I would go to the American Cancer one first” (110).

Not all participants were so leery, however of a commercial site, particularly the
working moms. When asked how they decide if a site is legitimate or not, one participant
answered.

It was like you said if it was sponsored by a certain pharmaceutical company who
might want to promote their drug or whatever you know and you have to ... they have a
certain slant you know. But I would just say “who is promoting this site?” That’s who
I go by (218).
These moms don’t seem to mind trying to separate fact from bias, and often assume that
information they get from other, non-Internet sources is as likely to be biased.

I don’t really have enough experience to know if I prefer one site over the other. I just
read it and decide if I buy it or not. You know … I do the same way with books and
stuff. Ahhh if I don’t agree with that I don’t buy it. Or if it sounds like it’s reasonable.
I mean everything you’ve just got to try because it is different for every kid (227).

Filtering

One of the words that the participants used most often when describing how they
process PHI found on the Internet was “filter.” In fact, 6 participants (30%) used the
word in discussion, and the many of the other participants described a similar analysis
process. The participants noted that they spend much of their time on the Internet sorting
through the vast amount of information they receive. The mothers recognized that the
Internet does not self-screen the kinds of information available, especially when they are
using general search engines, and that they have to do it themselves. They are screening
not only for false or dangerous information but also processing how well the information
applies to their children (e.g. developmental appropriateness). The following exchange
was typical:

So I get my little update. I find out she should be saying…more verbal and all of
this explosion of vocabulary…yeah that’s happening. And also there is something
on sale over here, let’s click on that. But I have also gone to other things like how
to start your baby potty training and all of this other information they have. So it’s
just a lot of information. I don’t always read it all but every month, actually it
seems like it is every two weeks that I get something from them (102).

So do I. You know “Tommy should be running by now.” *Delete* (101)!
[LAUGHTER]

[MODERATOR] Do you get information … developmental information that sort
of makes you proud or nervous depending on ….?

The average. Did Gerber send you guys some of the pamphlets? Gerber seems to
send me stuff like that all of the time but it’s just pamphlet kinds of stuff. I think
you shouldn’t pay attention to it because … they are averages and you may be
way out here or way over here (103).
Right (106).

I put the filter on. I'm proud of him if he's good or ahead of the game or average but he's behind in some ways too and I just ignore it (101).

I think that's a good thing (103).

Other filtering techniques were reported. Several of the participants noted using the URL as a way to help them filter out bad information. Clicking back to a site’s homepage to verify that it is the actual organization they intended to view (as opposed to a look-alike) or at least looking for a .org or .edu makes them more comfortable. However, even all the safe-guards and checks do not seem to satisfy them. One mothers comment summed up the various discussions: “I’m still siphoning what’s there” (227).

Trust

Related to, though not a substitute for, filtering is the idea of trust. The mothers reported going to sites that they trusted, or at least sites that they trusted as much as they did any other information source. Again here, the idea of active processing is never far away. “I don’t trust anything on the Internet unless it is really logical and they can back it up.” (101) These comments about lack of trust may be somewhat deceiving; nearly all the participants talked about Websites they used on a regular basis, and most assumed that they would continue to use the Web for pediatric health information. The participants described sites they trusted and what helped them decide to trust them. Three basic themes emerged: name recognition, perceived lack of commercial interest, and the development of a “relationship” with the site over time lead to the moms trusting the site.

Name recognition

Some participants, usually those who were less wary of information on the Internet in general, reported trusting sites that they had heard about from other names
they recognized. “I will start with figuring that whoever had that address in print, like the Atlanta Journal Constitution…I can trust them to start” (114), Another mother said, “I’ve really just stayed mostly with Yahoo… I guess I feel like I can depend on whatever information is on there to be fairly accurate (219).

Perceived lack of commercial interest

While most of the participants agreed that commercial sources of information were especially prone to bias and possibly less trustworthy, the stay at homes particularly noted a lack of commercial intent as a factor towards trusting a site. “I’m more likely to put my trust in them [non-commercial sites]. I’m not so into the sites that are promoted by magazines and TV shows… because they’ve usually an ulterior motive” (104).

Another participant noted: “A university setting I think…has more truth than a .com” (103).

Developing trust

The development of trust between the participants and a site takes time. For general information, that trust may not need to run very deep, and may be developed in fairly subtle way. When viewing a Web page with an answer from a doctor on parentsplace.com, the presence of a small picture of the author seemed to allay a lot of concerns. One mother noted that she had seen the doctor’s answers to other questions, and that the picture helped her remember him.

It does help I think because well if you use a site like I use it a lot and I recognize him and his name because I read a lot of stuff that he writes its almost like another pediatrician to have available and I get to know him the same as you would have your own personal relationship (221).

Triangulation
The fourth and final category of how the participants reported processing pediatric health information on the Internet is the idea of information triangulation. 

Triangulation is a term usually used to describe a method of validating research data (McLaughlin, 1994; Glesne, 1998; Seale, 1999; Shih, 1998). The term is used with considerable differences in nuance throughout research, however in all fields it describes a process of collecting data from multiple points to increase the accuracy of the data (McLaughlin, 1994). The concept of triangulation originated with surveying and ship navigation. With two data points, a ship could identify its position as being somewhere on a line, but it requires three data points to precisely identify its exact position. Later on, this technique was applied to validating social science data. (Glesne, 1998, p. 31). This validation process can occur in numerous ways. For example, Shih (1998) identifies four methods of including triangulation techniques in nursing research: data (source triangulation) where the researcher collects information from different times, places, and people; theory triangulation where researchers apply different theories to a particular topic in order to determine which is most appropriate; methods triangulation, which employs more than one method of collecting data; and unit of analysis triangulation which examines phenomenon at different levels in an ecological framework (ie, individual verses interactional levels). While the technique may vary, the basic motivation of validating a conclusion by collecting data in multiple ways or from multiple sources or times is present in all manifestations of triangulation.

Even though, as explained above, the term “triangulation” is often used to describe a research method, it also accurately describes a behavior the participants reported about searching for pediatric health information. Participants in this study
described validating the information they gathered on the Internet that informed their actual behaviors and health decisions. In numerous cases, participants reported that information they received repeatedly on a particular health topic was regarded to be highly credible and trustworthy. This use of multiple data points, largely from different sources, is characteristic of the research method of triangulation.

Participants reported using triangulation to try to find true and relevant information on the Internet. As reported above, there is often a high level of distrust toward any one source, author or site. However, the nearly all the participants reported more positive feelings towards information that they found on several sites on the Internet—within the constraints of acceptable sources and sites.

I like that I can compare the information that I get from different sites. You know like on one skin thing there was someone in India, a site from India that I read and a site from all over the United States, teaching hospitals. Seeing where they are the same or where they differ, the different disease they talk about. I just think that's helpful being able to read a lot of different things and compare them (104).

So I think you just have to… collaborate the information with several different…searches. If you can find it in five or six spots… in my mind it is more likely that it is probably valid than if you read it in one place but then no one else is corroborating that or agreeing with it (108).

Triangulation was also reported with other reference points outside of the Internet. Three other reference points most often reported were traditional print media, doctors, and peers. Again, nearly all the participants reported feeling that something was more likely to be true if they were seeing on the Internet, hearing it from their doctor, and from other parents, which is similar to Shih’s (1998) category of source triangulation. Whether or not they go to the Internet first or later on in the information gathering process, the information they find there is factored into that they receive from other
trusted sources, but is not likely to supercede the information given by a first hand source.

I tend to use books first and talk to people second like mothers center or relatives and then thirdly either go to the Web first to try to find more complimentary information and then check with the pediatrician (110).

Like anything you look at several sources of information and see if you feel comfortable with the information that you have. And I think you have already made the point, at least for me, it doesn't matter what I read in a book or what I look up on the net, I'm going in the end if it's a health issue, I go ask my doctor. And if I don't like his answer I'll ask another doctor. So I think that … because there is so much information out there that you are always you know processing and finding out more information until you are comfortable (230).

**Pediatric health messages**

To answer the seventh research question, “What types of pediatric health information *messages* are parents seeking on the Internet?” participants were shown seven Websites and questioned about their thoughts and opinions of each. The sites were selected to provide a sample of the types of messages available to parents looking for pediatric health information, including differences of Elaboration Likelihood Model processing level, authorship, and format. Again, Websites with the topic of skin protection were selected so that participants’ opinions on the site characteristics could be discussed without the influence of different topics that might have carried different levels of interest or importance with participants. In general, participants within a group expressed like-minded thoughts about the Website, with some notable differences. The Websites will be discussed below, first by identifying their defining characteristic(s), and then the participant’s reactions to and comments about the site will be reported. For clarity, a chart summarizing the sponsoring Website’s name, defining characteristics, and the participant’s general reaction to each site is presented below:
<table>
<thead>
<tr>
<th>Website Number</th>
<th>Host Agency</th>
<th>Selected characteristics</th>
<th>General reaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Banana Boat</td>
<td>Low (peripheral) involvement. Photographs, several internal links, little text.</td>
<td>Very negative</td>
</tr>
<tr>
<td>2.</td>
<td>Hawaiian Tropic</td>
<td>High involvement. Bright background color. Text heavy, few graphics. Q&amp;A format. No links</td>
<td>Mixed</td>
</tr>
<tr>
<td>3.</td>
<td>American Cancer Society</td>
<td>Medium involvement. Several internal links, “kid-friendly” graphics.</td>
<td>Generally positive</td>
</tr>
<tr>
<td>4.</td>
<td>Parents Place—Doctor</td>
<td>Authored article by a doctor, with photograph. Q &amp; A style with 2 sidebars of internal links and external advertisements.</td>
<td>Positive</td>
</tr>
<tr>
<td>5.</td>
<td>Baby Center--parents</td>
<td>Bulletin board style postings by parents. One sidebar with internal links and external advertisements, no other graphics.</td>
<td>Generally negative</td>
</tr>
<tr>
<td>6.</td>
<td>Baby Center—no author</td>
<td>Unsigned article. 2 sidebars External links in-text including AAP.</td>
<td>Very positive</td>
</tr>
<tr>
<td>7.</td>
<td>American Cancer Society—quiz</td>
<td>Bright orange background with stylized graphics. 7 true/false questions with pop-up hints and scoring at bottom</td>
<td>Generally negative</td>
</tr>
</tbody>
</table>

Figure 2. Website characteristics chart

**Website 1—Banana Boat**

The first Website shown to participants was a product promotion site for Banana Boat products including sun screens, tanning oils, and other sun related skin products. The site shown had little text, many pictures, and many bright colors, both in the background and in the text. The page presented several links about the company’s products, information on SPF (sun protection factor), health and beauty tips, and the company’s current vacation promotion. The message characteristics are typical of those aimed at peripheral processors, and proved not to be attractive to the participants. Many of the participants perceived this site as being an advertisement.
The first thing I noticed was that it is Banana Boat so they’re selling sunscreen and that would not have been the one I picked (108).

I would think they’re trying to sell me suntan lotion and less of why I need it or what level is appropriate or something like that (229).

The participants unanimously rejected the content of the site; what few good things they had to say revolved around the site’s layout and design. The participants noted here, as they would in other places, that they appreciated layouts that did not require them to scroll down to see the rest of the page, and links that took them to specific topics on other pages.

*Website 2—Hawaiian Tropics*

The second Web site shown to participants was also a page from a company that produced sun-related products: Hawaiian Tropics. However, unlike the Banana Boat site, this was an example of a high involvement site: text-heavy, with few graphics and no sidebars. The text and graphics were of a much more educational nature, explaining how sunscreen works, how the skin gets damaged by the sun, etc. This site generated much more positive comments, though there was widespread recognition that the page was from a company with commercial intent. One participant described it as “It’s not so much an ad as it is for information” (217). While many of the participants, especially the non-working mothers, liked having so much information, a few of the participants felt like it was too much text. “It’s boring” (230). “A lot of text” (225). On this high-involvement page, the high-involvement graphic, a detailed cross section of human skin, was admired. One participant noted that she might even print the page, to show her husband because of the graphic. However, the other low involvement graphics of sunbathers and beach balls did not generate much interest. As one mother put it, “Whatever” (114).

The layout of the Hawaiian Tropic page generated the most discussion. The page had been laid out in a question-and-answer format without any links. Many of the participants noted that they liked the question-and-answer format, which helped them to find the specific information they were looking for. However, nearly everyone wished
that the questions had also been listed at the top of the page, after the heading and before the text, and that they were hyperlinked to the specific question and answer, so that they could “jump” to the one or ones they were interested in. This would help to reduce the amount of scrolling they had to do. Of final note, the site had a mirror site in Spanish, as noted at the top of the screen. At least one participant in two of the groups noted it, but when asked, it they said it wasn’t important to them.

**Website 3—American Cancer Society**

The third Website shown to participants was from the American Cancer Society. It exhibited characteristics attractive to both central and peripheral processors: simple, but colorful graphics, and a medium amount of text. It got high marks initially for its appearance; participants made comments like that it was “cute,” (102) and “uncluttered” (114). The site was created with a frame in the middle for the reader to scroll down to see the various “question links”—links to different pages with the answer to each question.

Participants again noted how much they like the question links:

I like that you can… instead of having changes in text, you choose the stuff you are interested in and it takes you there rather than having to scroll down through a bunch of questions that you might not be interested in (108).

I like having the topics so you can just quickly look and quickly go to (221). Right, it shows you what you want (217).

However, participants from three out of the four groups bemoaned having to scroll down to even see the question links. In fact, several of the participants did not even notice that there was an area to scroll down to see them, and would have missed the majority of text content on the page, if it had not been pointed out to them. One mother said, “I hate that scrolling idea” (221). Another participant described the page this way:

One thing that [another participant] mentioned is having to scroll and a lot for people don’t like to scroll. It’s really kind of frustrating. It looks like you don’t have to scroll. It looks like it’s a complete page in and of itself. I kind of like the page. It is kind of appealing. [But I would have] probably missed those questions too (229).
Website 4—Parents Place—Doctor

The fourth Website participants viewed was very well liked. This page, from the parentsplace.com Website, a popular commercial information Website aimed at parents, was an example of an authored article. The page was set up in a “Dear Abby” question-and-answer style, with the text in the middle of the page and a stock sidebar on either side. Sidebars are used on many Websites to provide viewers with links to other pages and topics the Website contains. They generally appear on every page of the site. At the top of the page was a question from a mother in large type, with a picture of the doctor answering the question and a little biographical information about him below that, and finally his (long) answer directly below that. The conversation about this page centered largely around two topics: the presence of his picture and information leading the reader to think that Robert Steele, M.D. wrote the answer to the question and the general layout of the page, specifically the presence of the two sidebars.

As established above, the participants wanted medical information to be presented by doctors. However, even an “M.D.” at the end of an authors name did not engender instant credibility with some of the participants. This parentsplace.com page, with its additional information about the doctor and a personal, conversational style, was appealing to the participants, who overwhelmingly appreciated having not only the author’s name and some biographical information about him listed before his answer, but also his picture. The small head shot of the doctor created a lot of positive feelings towards Dr. Steele, especially in the working mother groups:

It does help I think because… if you use a site…I recognize him and his name because I read a lot of stuff he writes. It’s almost like another pediatrician to have available and I get to know him the same as you would have your own personal relationship (221).

I think for me, psychologically, I like to see a person’s face, see what they look like, just because it helps me to decide if I trust them or not (217).

Besides Dr. Steele’s picture, the style of the article is conversational, using simple language. The column ends with a single sentence: “I hope this helps.” Nearly all the
groups commented on this, and everyone who did thought it was a very positive addition to the page.

This is kind of silly, but at the bottom of his answer he ended with “I hope this helps” and that just seems to personalize… what he is saying. It’s not just that he’s spouting back text, he’s answering the question (210).

The second feature on this page that participants commented on was the layout. This page, like many other “high-end” commercial information sites contained sidebars. The participants seemed to have a love-hate relationship with the sidebars. On the one hand, they found the pages with sidebars “busy,” (114) and “distracting,” (108) but many of the women reported use these pages often when looking for pediatric health information and seemed familiar with the site’s characteristics. They reported liking the layout, enjoying the range of topics available to them, and the availability of information from differing sources, all available to them on one screen.

If I was reading the question and answer I would scroll down to read more, but I don’t have to scroll down to go places. So this would be like the bookmark that I would go off from (227).

I like when I first look at the top of it I like that it has … I like pages like this with … just overfills you with information because I can filter through it real quick. I can go through it and see what they have to tell me. I am seeing everything that I would, all of their main topics. You know and I can say…ok well I don’t need to talk about fertility, pregnancy, baby but I have a toddler let’s go into toddlers and see what toddlers have. So I like it that I can see real quick because there are so many Websites on the Web I think they … I think every site needs that. The first impression this is a very good first impression. (103).

Website 5—Babycenter--Parents

The fifth page the participants examined was from babycenter.com. It was an example of a parent’s posting page. The center column was just black text on a white background, with ever other comment shaded in gray to help make the reading easier. It featured one sidebar, and a top navigation bar, but other wise was plain with no graphics. It was a very long page, requiring much scrolling to read every comment. It was also universally disliked, not only because the participants didn’t want information about
sunscreen from other parents, but also because of the message design. Even though there was no right sidebar, the comments did not go across the screen fully, as though leaving a space for the side bar. One parent noted that that space could have been used to carry over each posting, reducing the amount of scrolling. Several of the participants did note that they preferred having just the one sidebar, but that was the only positive comment about the page.

*Website 6—Babycenter—No author*

The sixth Website shown to the participants was also from babycenter.com, but more closely resembled the page written by Dr. Steele from parent’s place. It featured two sidebars with a middle column, and an unsigned article. This article contained several in-text links to other sites, most notably a prominent link to the American Academy of Pediatrics, which seemed to engender a feeling of trust. In fact, participants from all of the groups remarked on the one in-text link:

> I mean you have the American Academy of Pediatrics and so you click on that you know it goes to that …seems like it’s pretty legit. And you know that they will be around so if they’re telling people falsehoods…seems like you know they have a more vested interest in making sure the information is accurate I think (102).

> It has the questions there and then it had a concise answer and then there was some accreditation…it has the American Academy of Pediatrics so you know that the information is from a credible source (218).

The topic that generated the most discussion on this page was the ever-increasing use of customized information on the Web. This customization potentially provides the viewer with information better suited to their needs and wants than non-customized messages. However, the user must input personal information. This can either be done each time the page is viewed or one time, with the information being saved on the host computer and accessed either through a login or through a “cookie.” Cookies are bits of information sent from a server to a person’s computer and stored on the computer’s hard drive. This information can help the server to identify certain characteristics of a particular user, such as login name and password. This approach to delivering
information is especially popular on the commercial information sites like babycenter.com and parentsplace.com. The information is often tailored to the child’s age and the graphics may also be thusly tailored. None of the participants seemed to be surprised at this trend, and several reported having entered information about their children on similar Websites. None of the participants reported liking having to enter such information but some data they were willing to enter as a matter of course. Most felt that they would submit non-identifying information such as their child’s gender, age or weight, but wouldn’t want to enter their name, address, or social security number unless there was an express reason for doing so—such as delivery of retail products.

Website 7—American Cancer Society—quiz

The seventh and final Web site shown was an interactive quiz site hosted by the American Cancer Society. This page featured a bright orange back ground with very simple, stylized graphics, and several “true or false” questions about sun protection, along with a “hint” button for each. While a few participants initially responded favorably to the idea of a quiz, there was general consensus that this page was not well liked. Several participants reported using other interactive quiz-type sites such as ivote.com or imode.com, but no one thought that this was a good way to get health information. Below is an excerpt from the conversation when the moderator asked if any of the participants would be interested in answering the questions on the quiz:

No, I mean, give me a break (114).
I don’t do diagnoses on line either. I’m looking for information. I’m not looking to find out if I’ve got some kind of, you know, disease or problem or social behavior (108).
[MODERATOR] So this kind of interaction isn’t…
Helpful (110).
That’s not why I’m on the Internet (108).
No, I can do that anywhere (114).
Not for this kind of information. I’ll do polls sometimes, but not when I’m wanting to get information (112).

The participants also objected to the design of the site. Participants in both of the working mom groups noted that the page had a different color scheme, graphics and
general look from the previous American Cancer Society page they had viewed. One participant noted that the inconsistent style made them wonder if “they have a volunteer creating these Web pages for them” saying that the differences “takes away legitimacy” (221). Another noticing the difference said:

It says the American Cancer Society. There is a sunshine but it doesn’t look anything like the sunshine on the other page. To me this looks like you’ve gone to another site… If every page looks different then, did they same people create this or is it just pieced together (229) ?

Summary

The four focus groups held with mothers of young children yielded a wealth of information about their opinions and uses of on-line pediatric health information. The results were presented in this section based around the original research questions. Due to the exploratory nature of the project, the focus group discussions uncovered in-depth information on a variety of topics ranging from Internet channels most often used to preferences in source and message design. In many cases, the data reveal consensus or near-consensus opinions regarding the research questions; in other areas differences in opinions were expressed, often with work status or number of children being a key factor.

In brief review, by research question,

- The most preferred Internet channels were the World Wide Web and email.
- Times of Internet use among the participants varied. The working women often had Internet access at work as well as at home.
- Participants noted using the Internet more for acute illnesses when they were new mothers, and more for chronic or serious illnesses or for behavioral or developmental issues when they gained child-rearing experience.
- Participants identified 3 issues related to times of Internet use: time it takes to access information, the chronological/developmental age of their children, and when they are looking for information of acute versus chronic/developmental information.
- Participants are more likely to report use and trust of commercial information
Web sites, government or research Web sites than commercial product Web sites for pediatric health information.

- No sources were universally liked or trusted for pediatric health information, though participants noted preferring medical personnel for medical issues and other parents for behavioral or more “practical” advice.

- Participants universally described a high level of information processing for matters of pediatric health information that they deemed important.

- Participants described some clear preferences for message presentation including professional looking design, ease of loading/viewing, both internal and external cross-referencing links as well as question-and-answer style links within each page.
CHAPTER 5

DISCUSSION

Overview

The importance of understanding parents’ quest for online health information cannot be understated. According to the Internet & American Life Project’s report, The online health care revolution, fifty-two million Americans have used the Internet to get health information (Pew Internet & American Life Project, 2000b). Over a third of those people were looking for information for someone else and said that the information they found directly affected their medical decisions on behalf of that person. Parents using the Internet are one of the most active groups of on-line information seekers. Fifty-nine percent of parents with Internet access are looking for information related to health, and 45% of those on-line are searching for health information for someone else—often a child (Pew Internet & American Life Project, 2000b).

There is a clear need to better understand the Internet preferences and habits of parents. This study sought to answer related questions by using focus group discussions with mothers of young children. The results of this study are intended to shed some light on the complex communication process of using the Internet to obtain—and exchange—pediatric health information. Below, these results will be discussed as they pertain to improved message creation, the limitations of the study, and suggestions for future research.

Channels

All participants in this study reported the use of email and the Web for at least one to two years. This finding confirms other studies (Pew Internet & American Life, 2000a, Spooner, 1999) that these are the two most frequently used of all the Internet channels. While some participants noted use of other Internet channels, they were not considered primary sources for health information. The data suggest that Email and the Web serve slightly different purposes in the search for pediatric health information. The participants
described two uses of email. One use is as a substitute for other means of information gathering: they would write their sister or friend an email with a question rather than telephoning her. The second use is as a passive way to receive information specific to their child’s developmental age. The participants reported their Web use to be much more active. Participants stated that they would log on looking for information about a particular health issue or developmental stage. This pattern of Web browsing is consistent with findings from the Pew Internet and American Life Project (2000b) that found that 91% of those seeking health information on-line have looked for information about a particular physical illness or condition. Future research should explore how the various characteristics of Internet channels affect the delivery of health communication messages. In addition, there is every reason to believe that the very nature of the Internet will continue to change and grow; therefore, the current heavy use of Email and the Web may change as different channels become available.

Source

The participants consistently expressed throughout the focus group discussions that there is no perfect source for pediatric health information. Rather, they stated that they are looking for a source that makes them feel less uncomfortable than others. This was especially true with the stay-at-homes, who expressed strident objections to any and all sources and felt that all must be evaluated with some degree of skepticism. One possible explanation for the strong opinions expressed on this subject is that that some of the participants perceived, to some degree, a social desirability to reject all on-line sources. Many stories and items in the media have stressed the number of unreliable sources on the Internet and urged caution when reviewing information. Therefore, it is possible that the participants were at least in part trying to demonstrate their knowledge of this unreliability.

Despite the skepticism, some preferences did emerge. Most participants stated that medical and or scientific information should be presented from medical personnel (e.g., doctors, nurses, midwives, etc.) or from scientists (e.g., Ph.D.s) associated with
recognizable universities or research centers. Some participants reported that other
parents are seen as a preferred source for practical or experiential information. For
example, participants stated that if they were having a specific behavioral or
developmental problem or question, that they would seek the advice of other parents who
may have experienced the same problem with one of their children. Additionally, for
matters of opinion, such as whether or not the family bed is a good idea, parents were
seen as preferable sources. This issue would be one that parents might prefer to hear
from other parents compared to “experts” because of the perception that other parents are
going to be able to offer a more holistic explanation of their opinion rather than the small
statistics their pediatrician might have gathered in his or her practice. Future research
should more carefully examine source preference with respect to specific message
development and specific message subjects, as well as investigate how a combination of
sources affects message development.

**Times of use**

The concept of time as it relates to Internet use is complex. In this study, several
issues arouse around the idea of time: actual, measurable time (i.e., hours and minutes),
time, as in period, in a child’s life, and times of illness. The participants stated
unequivocally that one of their favorite things about the Internet is that it is always
available, night or day. This finding concurs with The Pew Internet & American Life
Project (2000b) that one of the best things about the Internet is the every day, all day
access to information that it provides. When asked about positive qualities of the
Internet, nearly all of the participants stated that having the information available for
access on demand—during a child’s nap, or at 3:00 in the morning— is of great comfort
to them.

Time in the second sense, the developmental stage the child is in, is another
important concept. Young children’s lives are defined by time. For example most
women describe their pregnancy by how many weeks it has been from conception, and
children’s ages are measured first in weeks, then months, and finally in years. A large
percentage of the health information available on the Internet is also divided into these
temporal categories, and participants reported Internet use based on these widely
accepted categories of time. For example, during pregnancy, participants reported
visiting fetal development pages “week-by-week.” After the baby was born, some
participants reported receiving emails on a by-weekly or monthly basis with
developmental and health information for those weeks or that month. A survey of three
of the sites the participants most often mentioned, babycenter.com, parentsplace.com, and
pampers.com shows that those Websites organize their information in this manner.

The third manifestation of time in this study is best framed by the question asked
in the focus groups: “When do you use the Internet to get pediatric health information?”
Almost universally this was interpreted as meaning “In what situations do you use the
Internet?” Participants answered the question by stating that they went to the Internet
when their child had a specific ailment: colds, allergies, sunburns, and more serious
maladies were described, suggesting that they use the Internet when they encounter a
situation that they don’t have enough experience to handle. A possible application of this
finding is that a first time mother with little experience is likely to use the Internet a lot,
for nearly everyday she may experience something new, and thus would want a wide
variety of information available to her. Likewise, it is possible that mothers with more
than one child, or simply a lot of previous child care experience or a lot of support are
likely to not encounter quite so many new experiences and thus might go to the Internet
only when they want information about either chronic or serious health problems or
broader developmental issues about which they feel they can benefit from other’s
experience. Additional research is needed to better understand what characteristics
determine frequency of Internet use, and to understand when parents want information
from the Internet.

Types of messages preferred

One of the most important areas of inquiry in this project was that of message
design preferences. Although commercial product and information Websites may be
evaluating Web designs with the public, that information is not publicly available. Thus
most message developers do not have access to the results of formative evaluation data
that the companies have collected and do know why the company designed the pages as
they did. Furthermore, many design rules that apply in traditional media remain untested
in a Web-based setting (Eysenbach & Diepgen, 1998). Thus, gaining understanding of
what kind of designs appeal to parents was a critical facet of this project.

One conclusion reached from the participant data related to message preferences
was that participants would put up with a less than perfect Website design if the
information they were looking for was deemed important enough. Most participants
provided positive feedback about the information on one commercial product site even
thought the overall appearance of the site was rated poorly. However, participants
expressed clear preference for consistency throughout all the pages of a site—a common
color scheme, or a common header bar, logo, graphics, anything to make the site look
professionally done and consistent. In a few instances, participants expressed an
expectation that organizations, universities and government sites might be less attractive
and more text-heavy. Again, if the information was deemed important enough, they
would wade through these less attractive sites because of the credibility they assigned
them.

All though some participants protested that the commercial information sites were
too busy, nearly all reported using them. The appeal of this design was further supported
by participants’ comments that they liked having options presented on sidebars leads to
the conclusion that these sites are probably the best design model.

Another design issue that was discussed relates to links, both internal and external
to the site. The participants only had positive things to say links and saw them as a
valuable tool for navigating a page, a site, and the Web in general. While viewing
several sample pages, the participants described that they liked links that were worded as
questions. This is consistent with Izenberg & Lieberman (1998) findings that frequently
asked question (FAQ) sections of Websites are popular with users. This finding suggests
that an improvement might be the use of hyperlinked questions at the top of the page. For example, if a receiver is interested in the third question on the list at the top of the page, he or she can click on it and the computer automatically scrolls down to that answer. Similarly, one of the characteristics of the commercial information sites that the participants rated highly was the presence of many internal links, which are links to other pages in the site. Additionally external links, or links to other Websites, were associated with a higher level of trust for some participants. Those who expressed an opinion stated that they represented a relationship between sites or, at a minimum, that the site was not trying to hide anything. However, research on the presence of links within sites found that the number of links to a site did not reflect the quality of the content (Sandvik, 1999). Additional research should examine relationship between links, trust, and reliability as well as the larger issue of message design preferences.

**Types of sites used**

This study found that participants will select the type of Web site they feel is most appropriate for the type of information they are seeking. For health information, participants reported using Web sites hosted by commercial information companies (e.g., WebMD, Babycenter.com) and the Web sites of well-known non-profit organizations. The participants stated that these sites have both the professional design and the quality and depth of information that they desire. It is unclear from this study why participants were so skeptical of commercial product sites yet regarded commercial information sites as innocuous.

The type of Web site participants reported seeking in a particular quest depended on what kind of information they wanted. Although it varies from person to person, some general conclusions can be drawn about what kind of information parents of young children might require, based on their child’s age and/or the number of children they have. Below is a chart summarizing what kind of information participants reported most often seeking, based on different situations or stages in a child’s life:
Table 3: Information being sought

<table>
<thead>
<tr>
<th>Situation</th>
<th>Information being sought</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pregnancy</td>
<td>“Week by week.” Want information about fetal development, nutrition, exercise, everything about keeping them and their babies as healthy as possible.</td>
</tr>
<tr>
<td>First Child</td>
<td>• Time sensitive developmental info</td>
</tr>
<tr>
<td></td>
<td>• Acute health issues: fevers, colds, burns, etc.</td>
</tr>
<tr>
<td>Second or subsequent child</td>
<td>• Developmental information</td>
</tr>
<tr>
<td></td>
<td>• Chronic health problems: more serious health problems</td>
</tr>
<tr>
<td></td>
<td>• Long term health problems</td>
</tr>
</tbody>
</table>

Figure 3: Information sought in different stages of a child’s life

Processing

One of the findings of this study that best illustrates how parents seek out pediatric health information is the concept of triangulation. While mostly discussed in the literature as a research method in formal, academic studies, the participants reported using a very similar process in their daily lives to maximize the chances that they were acting on the most accurate or appropriate information (McLaughlin, 1994; Glesne, 1998; Seale, 1999; Shih, 1998). Nearly all the participants identified information on the Internet as one of their sources or “points” when researching information for their children’s health. Although the Internet has not replaced traditional sources of information (parents still professed a preference for physicians, books, and peers as data sources), participants did report turning to the Internet for either “quick” information—such as what to do for the croup as they waited for the pediatrician to call back—or for information to help them accept or reject the opinions of others. This finding that parents use the Internet as one data “point” is consistent with the Pew Internet & American Life Project’s (2000b) finding that 73% of those who use the Web to find health information for someone else (like a child) used Web resources in addition to a visit to a doctor. More research needs to be done to further understand the interaction between health
information received from the Internet, doctors, peers, and other resources of pediatric health information accessed and used by parents.

Understanding how the participants process Web messages is a very difficult task. On the one hand, they reported liking copious amounts of information, especially if the topic they were researching was one of personal relevance. This characterization would lead one to classify them as central processors. However, the sites that provided them with attractive sources and other heuristics (i.e., sidebars, graphics etc.), were reported to be more highly desired than text-heavy pages. These are characteristics that tend to attract more peripheral processors. One possible explanation for this is that the participants had compartmentalized expectations for different messages on the same page. For example, they may expect that the main message of the page provide them with a high level of pediatric health information, but also expect that the Web designers are sufficiently savvy to be able to add attractive graphics and other design elements to the page. This possibility is supported by comments made by many parents that they wanted highly credible health information, such as from a doctor, but were also mindful of the overall design cohesion of a Website, and their desire for a “professional” looking Website. In more traditional media, message designers had to choose which kind of processor they were interested in directing a message towards; now, it appears that characteristics attractive to both kinds of processors can be combined and presented in one message. This represents a major opportunity for health communicators and the potential to offer messages that will be attractive to a much wider audience. The didactic and variable nature of the Internet may create a need to rethink this long-accepted communication model. The very task of trying to decide if a Web page—not a site, but a single page—fits the characteristics of either a central or peripheral message is increasingly difficult as the technology grows. The concepts do not seem to hold exactly the same meaning when applied to interactive content, as opposed to one-directional content through more traditional media. It seems possible to combine highly involved, central processing message characteristics with lower involvement peripheral heuristics
and present it all in one single Web page, thereby addressing the needs of both kinds of processors with one message. This type of message development will require not only additional research, but also a willingness to examine the fundamentals of how communication is studied. More research needs to be done to further understand how mothers process pediatric health information on the Web, specifically examining both central and peripheral processing characteristics in order to design effective messages. In particular, it would be interesting to investigate how the constructs of central and peripheral information can be combined to create messages with maximum impact for the most numbers of receivers, as well as investigating how best to determine what mix a particular receiver would prefer. Furthermore, the additional research should investigate how parents process information received from various sources, including the Internet, to form their own opinions and reach decisions about health behaviors for their children.

**Limitations**

Several limitations should be considered when interpreting the data presented in this study. First, participants generally had a very high educational level. All participants had at least some college education and many had advanced research degrees. Although this somewhat reflects the general Internet population, it is also due to the location and recruiting methods. Women who were possibly lower education level may have self-selected out of study. Likewise, there was not much racial diversity. During recruitment, many African American women self-selected out of the project because they weren’t Internet active or were not the child’s mother (aunt, grandmother) and thus didn’t fit study population. While this is also somewhat reflective of the current Internet population, the Internet, at least in the United States, is becoming increasingly diverse and it is possible that these findings would not apply to members of other racial or ethnic groups. Finally, the study population was not large (N=20). Though there seemed to be a good bit of data convergence, it is entirely possible that some important opinions were missed.
**Recommendations for health communicators**

Several recommendations for designers and writers of Internet based health communication messages can be made. First, at this time, email and the Web seem to offer the best characteristics of all the Internet channels to provide pediatric health information to the largest group of parents on the Internet. Next, although no source is seen as perfect, medical or scientific information may be more credibly received if it comes from a doctor, and “practical” information on raising a child should come from other parents. In between “baby care” information may be best from a nurse, midwife, or other allied health professional. Information should be available on a wide range of pediatric health information, keeping in mind that parents of different aged and different number of children are looking for different types of information, and tone, information level, and content should be adjusted accordingly. While not fully understood, it seems that parents prefer the “professional” look of the large commercial information sites and that this type of design may add credibility to the information being presented.

Additionally, design ideas such as not adding a second sidebar unless there is completely different information in it, maximizing text space and strictly limiting the amount of scrolling are all suggestions Web designers would do well to heed. Finally, though they do not fit neatly in the pre-established central or peripheral processor categories, parents do approach information on the Web with a high level of interest and suspicion; a slick design and pretty graphics are not going to automatically garner trust. A recognized name may get people to the site the first time; what they find there will decide if they ever come back again. Building trust and credibility by having appropriate sources, cross-referencing information, presenting information in clear and easy to understand language and making the site’s design appear steady and reliable will help ensure that the site is popular—if you can get them to find it amongst the massive number of competing Web sites. However, even if all those requirements are met, Internet based pediatric health information is going to be just one of the many ways that parents get health information in the twenty-first century.
REFERENCES


Mandl, K.D., Feit, S., Pena, B.M., & Kohane, I.S. (2000). Growth and determinants of access in patient e-mail and Internet use. *Archives of Pediatric and Adolescent Medicine, 154*, 508-511.


www.pewinternet.org/reports/chart.asp?img=5_Activities.gif


APPENDIX A

INTAKE SURVEY

1. Name: ___________________________________________

2. Age: __________________________

3. Race: Black White Asian/Pacific Islander
(Please circle one) Hispanic Multi-racial Other

4. Number of children: 1 2 3 4 5 6+
(Please circle one)

5. Please list their sex and ages:
_________________________________________________
_________________________________________________
_________________________________________________
_________________________________________________

6. Do you work (for money) outside the home? Yes/ No

7. If “Yes”, do you work
Fulltime/ Part-time
Approx. hours per week:_________

8. Where do you access the Internet? Home/ Work/ Library/ Other
If “Other” please explain:

_________________________________________________
9. Please check below all that you use, and put the year when you started using (approximately):

______ Email 
Year first used: _____________________

______ World Wide Web 
Year first used: _____________________

______ Chatrooms 
Year first used: _____________________

______ Bulletin Boards 
Year first used: _____________________

______ Other ________________ Year first used: _____________________

10. Please list your highest level of education obtained: _____________________
APPENDIX B

MODERATOR GUIDE

NOTE: Probes will only be used when topic has not come up in general discussion, and will be used to adjust the length of the discussion.

I. Introduction and Icebreaker
   a. Possible probes:
      i. How did you find out about the Internet?
      ii. What were your early impressions?

II. What do you think of when I say the word “Internet?”
   a. Possible probes:
      i. How did you find out about the Internet?
      ii. What were your early impressions?

III. Have you ever used the Internet to look up health information for your kids?
   a. Possible probes:
      i. What parts of the Internet did you use to look up health information? (ie. the Web, email, chatroom, bulletin board)
      ii. Can you give an example?
      iii. Have you ever used any other parts of the Internet to look up health information for your kids? When? Where? Why? For what?

IV. We’ve been talking about a lot of different ways that people use the Internet, like email, chatrooms and bulletin boards. I’d like to focus on the Web for the rest of our conversation.
   a. Why did you look for health information for your kids on the Web?
      i. Possible probes:
          1. What were you looking for?
          2. Have you ever looked up information when they were sick? What about when they were healthy? When? Why?
          3. Have you ever looked up medical information “after hours” when you couldn’t talk to the doctor?
          4. Do you think you will use it more or less as your children get older? Why?

V. How do you decide what site to go to on the Web?
   a. Possible probes:
      i. What are some ways that you have found information on the Web?
      ii. Have you ever gone to a site that you’ve seen linked off another site? Can you give me an example?
      iii. What sites have you heard about from another person? Who? What was the site?
      iv. What search engines do you use?
      v. What sites have you seen advertised? What is the site for? Where was it advertised?

VI. Is the Web a good source for health information? Why? Why not?
   a. Possible probes:
      i. How much of the information you see on the Web is true?
ii. Have you had a specific experience where you have found untrue information on the Internet?

iii. How do you decide if a particular site has truthful information?

iv. Does the domain (the .com or .gov or .edu or .org ending on the address) make a difference to you?

v. Do you think information you look up on the Web is private? Confidential?

vi. How important is it to you that data on the Web be private? Confidential?

VII. Now let’s talk about what specific sites you like to get health information on the Web from, based on your experience. Do any of you have favorite sites?

a. Possible probes:

   i. What about that site do you like?

   ii. Who writes the information on the site?

   iii. Does it matter who writes the articles?

   iv. Would you rather read articles by a doctor, nurse, professor, parent? Why

   v. Have you ever been on a site that you really believed the information? Which one? What made you believe in it?

   vi. Have you ever been on a site that you really trusted? Which one? What made you trust it?

   vii. Have you ever been on a site that you really liked? Which one? What made you trust it?

VIII. Now let’s talk about what kinds of health information for your kids you look for.

a. Possible probes:

   i. What are topics that you have looked up?

   ii. Are there some topics that are easier to find than others on the Web?

   iii. What are some of the good things that you have found on the Web? Why?

   iv. What are some of the good things about using the Web to look for health information?

   v. What are some of the bad things about using the Web to look for health information?

IX. We’ve been talking a lot about all kinds of different health topics on the Web. Now we’re going to talk about sun protection for kids, just to give us an example of a health topic.

a. First of all, what comes to mind when I say “sun protection for kids?”

b. Have any of you looked up information on sun protection on the Web before? Where? Why? How?

X. Now I’m going to show you some examples of Web pages. You may or may not have seen these pages before. I’m going to project them up on the screen, and then let’s talk about what you think of them.

a. Show pages from:
i. Ivillage.com  
   (http://www.parentsplace.com/health/babycare/qa/0,3435,1039,00.html)

ii. Center for Disease Control’s skin cancer page  
    (http://www.cdc.gov/mmwr/preview/mmwrhtml/00053602.htm)

iii. American Cancer Society  
     (http://www.cdc.gov/mmwr/preview/mmwrhtml/00053602.htm)

b. Possible probes:
   i. What is the first thing you notice on the page?
   ii. Who wrote the information on this page? Is it clear?
   iii. What do you like about this page?
   iv. What don’t you like about this page?
   v. How much time would you spend on this page?
   vi. Would you like more or less text? More or less graphics?
   vii. Does this page seem interactive to you? Would you like it to be more or less interactive?
   viii. Does this page seem personalized to you? Would you like it to be more or less personalized?