

## ABSTRACT

Title of Thesis: YOUNG ADULTS SEEKING,  
ENCOUNTERING, AND EVALUATING  
SEXUAL HEALTH INFORMATION  
ONLINE

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Studies

Although earlier studies have examined the online sexual health information seeking and evaluation skills of young adults, the majority of them are at least five years old and few have utilized inclusive, LGBTQ+-friendly language in their data collection instruments. This online survey study aimed to fill these gaps in the literature by conducting a more up-to-date study incorporating inclusive language, with the goal of using these findings to support the improvement of information literacy instruction. The findings suggest that the most popular online health information evaluation strategies amongst young adults may be unreliable and, while this population may understand reliable methods for evaluating online information in an academic context, they appear to struggle to apply the same critical information evaluation skills to their everyday life information seeking, thus providing support for an argument towards improved and updated information literacy instruction.

YOUNG ADULTS SEEKING, ENCOUNTERING, AND EVALUATING  
SEXUAL HEALTH INFORMATION ONLINE

by

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## Introduction

Today's young adults have grown up with the Internet, and it has likely played a large role in their lives. As a result, they are often assumed to have developed natural online information seeking skills. However, research has shown that, generally, while this age group may be able to find information, they are often unable to effectively evaluate the resources that they find (Basch et al., 2018; Rennis et al., 2015; Senkowski & Branscum, 2015). This is an issue, but it is particularly significant when this information seeking is performed for the sake of one's personal health, and more specifically, one's sexual health. Young people who don't get proper, robust, or relevant health information instruction in high school will have a gap in their knowledge that can have serious health consequences. For example, abstinence-only sexual education and the omission of different sexual orientations and gender identities within school-based sex education likely leaves many young adults with unmet information needs. Many young adults, therefore, are turning to the Internet for answers (see, for example, Basch et al., 2018; Mitchell et al., 2014; Senkowski & Branscum, 2015). Ensuring that young adults can find accurate health information on these subjects is a matter of their health and well-being, and their current state of information literacy may pose a barrier that information literacy instruction may help to address.

In their 1989 report, the American Library Association's (ALA) Presidential Committee on Information Literacy described information literacy and its long-term impact:



To be information literate, a person must be able to recognize when information is needed and have the ability to locate, evaluate, and use effectively the needed information. Producing such a citizenry will require that schools and colleges appreciate and integrate the concept of information literacy into their learning programs and that they play a leadership role in equipping individuals and institutions to take advantage of the opportunities inherent within the information society. Ultimately, information literate people are those who have learned how to learn. They know how to learn because they know how knowledge is organized, how to find information, and how to use information in such a way that others can learn from them. They are people prepared for lifelong learning, because they can always find the information needed for any task or decision at hand. (*Presidential Committee on Information Literacy*, 1989)

In other words, information literacy instruction is a key element of creating an information literate population but, as technology has rapidly advanced over the past few decades, how one seeks information has fundamentally changed. As a result, information literacy instruction has also transformed and will need to continue to be updated in order to remain relevant and effective.

Along with the rapid advancement of technology, the language we use to describe the skills required for effectively navigating the online space has evolved. When the ALA Presidential Committee on Information Literacy wrote the definition of information literacy (quoted above) in 1989, they may not have anticipated how the Internet would deeply impact information seeking and the need for information

literacy. The Internet's role in our lives and searching for information led to the introduction of other terms, such as "digital literacy," which describes a set of skills that are different from but related to information literacy. The ALA Digital Literacy Task Force defines digital literacy as "the ability to use information and communication technologies to find, evaluate, create, and communicate information, requiring both cognitive and technical skills" (ALA's Literacy Clearinghouse, 2017). Because so much recent information seeking and evaluating happens online, these two terms, information literacy and digital literacy, are often intertwined. For consistency's sake, "information literacy" will be used as an umbrella term throughout this paper.

This study aims to add to the current literature on the online sexual health information seeking and evaluation skills of young adults ages 18-24 by gauging where their current skills lie, with the ultimate goal of using this information to help inform information literacy instruction for this population. The research questions driving this study are:

RQ 1: How do young adults aged 18-24 seek and/or encounter sexual health information online?

RQ 2: How do these young adults evaluate the credibility of the sexual health information that they find or encounter online?

RQ 3: How can we draw on the findings relating to the first two research questions to better tailor information literacy instruction for this population?

Understanding this population's current information seeking and evaluation skills is an important first step towards improving how information literacy skills are

taught. And, as the Internet has become more important in the everyday lives of many people, knowing how to find and use good information online has increasingly become an essential life skill in the classroom and beyond. And, as not every young adult grew up with access to the Internet, with 94% of American children and young adults ages 3-18 having access to the Internet at home in 2018 (National Center for Education Statistics, 2020), and only one third of children and young adults worldwide having access to the Internet at home (UNICEF Data, 2020), it is even more essential that we prepare our young people to effectively navigate a digital landscape.

In the following section, I review literature relevant to young adults' online health information seeking skills, young adults' online health information evaluation practices, and the current state and challenges related to information literacy instruction. Next, I describe the methodology used for this study. I then share the results of the study and move into a discussion of my results, comparing and contrasting them with those of earlier studies that investigated young adults' online health information seeking and evaluation, and information literacy instruction. In conclusion, I describe the limitations of this study and offer recommendations for future research in the area of young adults' information seeking and evaluating, and how those results can inform the improvement of information literacy instruction.

## Literature Review

This literature review explores studies across three major themes: young adults' online health information seeking behaviors, young adults' online information evaluation skills and practices, and the current state and challenges related to information literacy instruction. The first section discusses where, why, and how frequently young adults search for health information online. The second section covers how young adults pick the information they choose to use, how often they evaluate the information they find online, by which standards they evaluate online information, and which evaluation practices are recommended by experts. The third section provides a general overview of the current state of information literacy instruction, its standard practices, what subjects and/or skills are currently covered, and challenges with current information literacy instruction practices. The final sections will summarize the overall literature review, identify gaps in the literature, and outline the research questions guiding my study.

### *Young Adults' Online Information Seeking Behaviors*

It may come as no surprise that young adults in the United States, especially college students, use the Internet more frequently than other U.S. populations (Buhi et al., 2009; Senkowski & Branscum, 2015), and it is incredibly common for this population to utilize the Internet to attempt to fulfill their health information needs (Basch et al., 2018; Mitchell et al., 2014; Senkowski & Branscum, 2015). In fact, searches regarding sexual health are some of the most common health-related online searches performed by young adults ages 16-24 (Buhi et al., 2009; Magee et al., 2011).

Studies have shown that Google is, by far, the most common starting place for young adults' (ages 18-24) health information searches (Bartlett, 2020; Bartlett et al., 2019; Buhi et al., 2009; Lantzy, 2016; Lawrence, 2015; Senkowski & Branscum, 2015). These studies indicate that instead of navigating directly to a trusted online source for health information, young adults are more likely to perform a Google search and choose which information to use from Google's results list. However, after performing an online search, some young adults may become frustrated or overwhelmed by the amount of information with which they are presented (Buhi et al., 2009), or the dearth of relevant information in their search results due to their lack of understanding or their lack of a relevant vocabulary to describe their actual information need. In other words, their search results may be negatively impacted by the fact that they were searching with what traditional library reference services call an "ill-informed query" (Dewdney & Michell, 1996, p. 521).

Dewdney & Mitchell's 1996 article, *Oranges and Peaches*, details communication issues within traditional library reference interviews and is a formative work on reference interactions within library and information science. Many of the concepts related to these types of communication issues, such as ill-informed queries, can be applicable to searching in an online environment. That is, instead of bringing a question to an expert, such as a librarian or a medical professional, a young adult may instead pose their question to Google. In fact, Basch et al. (2018) point out that young adults ages 18-20 are more likely to search for health information online than to consult with a medical professional. Research has shown that young adults tend to search for health information, and sexual health

information in particular, online because it is private (Mitchell et al., 2014; Selkie et al., 2011), anonymous (Charest et al., 2016; Mustanski et al., 2012), and accessible (Charest et al., 2016; Selkie et al., 2011). Many young adults tend to search for health information online because they feel uncomfortable discussing their health information needs with others (Bartlett, 2020; Bartlett et al., 2019; Buhi et al., 2009; Delmonaco et al., 2020).

While a traditional reference interaction would involve a reference interview to try and resolve any communication issues (Dewdney & Mitchell, 1996), Google will provide results based on whatever is entered into its search bar. Meaning, if a person did not fully understand how to express their information need or explain what type of information they are looking for, their Google search results may not be applicable to their actual information need. This is an issue, especially in the case of health information, because health misinformation could lead to actual harm.

A particular subset of this population, LGBTQ+ young people, in particular those on the younger side (ages 13-18), typically search for sexual health information online due to a “lack of alternatives” (Mitchell et al., 2014, p. 147). That is, sexual health education in U.S. high schools is typically more applicable to cisgender and heterosexual students, frequently leaving LGBTQ+ young adults with a lack of access to *relevant* sexual health information compared to their peers, continuing as they age into their late teens and early twenties (Charest et al., 2016; Delmonaco et al., 2020; Magee et al., 2011). The Center for Disease Control and Prevention’s (CDC) 2018 School Health Profile indicates that some schools cover sexual orientation and gender roles, gender identity, and/or gender expression within their health education

curricula; however, an average of just 61.7% of schools across states (SD = 17.9) and an average of 88.0% of schools across large urban school districts (SD = 7.6) cover sexual orientation in health classes for grades 9-12, while an average of just 62.4% of schools across states (SD = 16.9) and an average of 86.9% of schools across large urban school districts (SD = 9.1) cover gender roles, gender identity, or gender expression in health classes for grades 9-12 (Centers for Disease Control and Prevention, 2019, p. 108-109). Thus, LGBTQ+ young adults, particularly those attending schools in smaller, less urban school districts, may turn to the Internet to fulfill their sexual health information needs because it is likely that the sexual health education they received in high school was not applicable to their specific needs. However, while this population may increasingly turn to the Internet to answer their sexual health questions, there is a stigma associated with performing these types of online searches and some individuals may fear being caught mid-search (Magee et al., 2011).

#### *Young Adults' Online Health Information Evaluation Skills and Practices*

Research has shown that young adults also struggle with reviewing and evaluating the information they find online. Multiple studies have found that young adults (ages 18-25) tend to overestimate and have unearned confidence in their online information evaluation skills (Charest et al., 2016), often due to their extensive familiarity with the Internet (Bartlett et al., 2019; Lantzy, 2016). Many studies have found that young adults tend to pick resources to use based on where in the search results the resources appear. That is, they are more inclined to choose a resource that is amongst the first on the results list or, at the very least, on the first page of results

(Bartlett et al., 2019; Buhi et al., 2009; Lantzy, 2016; Senkowski & Branscum, 2015).

These studies suggest that young adults value efficiency and convenience in their online searches, and that they tend to rate these factors (efficiency and convenience) as more important than the trustworthiness of the information (Lantzy, 2016; Lawrence, 2015). However, this may also be due to students' overwhelming trust in Google and its algorithm to answer their questions and "anticipate their every need" (Lawrence, 2015, p. 90) within the first few results. Buhi et al. (2009) found that few students in their study, consisting of first-year undergraduate students who were "experienced Internet users" (p. 104), verified the credibility of the health information they found online. In addition, within the same study, participants who used Wikipedia as a source expressed hesitation about its reliability, but only one participant went the extra step to verify the information they found there.

When young adults ages 18-24 do evaluate the information they find online, they most commonly assess the following factors: the domain of the website (.com, .org, .gov, etc.) (Buhi et al., 2009); the source of the information (Buhi et al., 2009), with adolescents and young adults ages 14-19 looking to see if that information is from a "trusted" or recognizable website like WebMD (Selkie et al., 2011); the author's credibility (Buhi et al., 2009; Rennis et al., 2015); the research behind the information (Buhi et al., 2009); how current the information is (Buhi et al., 2009; Rennis et al., 2015); whether or not other sources confirm what a particular source presents (Basch et al., 2018; Buhi et al., 2009; Rennis et al., 2015); and the presence of scientific jargon, taking it as a sign of credibility (Rennis et al., 2015). However,



Bartlett (2020) suggests that young adults may not have a “systematic approach” to assessing online information (p. 113).

The National Library of Medicine (NLM) provides specific recommendations for evaluating online health information and, while the findings from the aforementioned studies do show that young adults are following some of these recommendations, they are likely still missing some key evaluation skills. Rennis et al. (2015) outline the recommendations from the National Library of Medicine as accuracy (“whether the site provides references to scientific literature”); authority (“the fact that the information comes from a credible source”); bias (the disclosure of “who pays for the site” and the clear labeling of sponsored content or advertisements); currency (“whether dates are indicated on the material and how current the dates are”); and comprehension (“whether the information is easy to understand and whether the site is easy to navigate”) (p. 9).

The differences between young adults’ standards for evaluating online health information and the recommended standards from a trusted organization such as the NLM indicate that there are important gaps in young adults’ online information evaluation skills, which information literacy instruction can help to solve. Figure 1 shows the NLM-recommended evaluation strategies for online health information in comparison to the online health information evaluation strategies utilized by young adults according to the previously reviewed studies. While young adults do appear to be utilizing some of the NLM-recommended strategies for evaluating online information, such as authority and currency, and they do appear to use additional effective strategies beyond the NLM recommendations, such as cross-verifying the

information they find online, the real issue lies with their utilization of questionable evaluation strategies, most significantly, website domain.

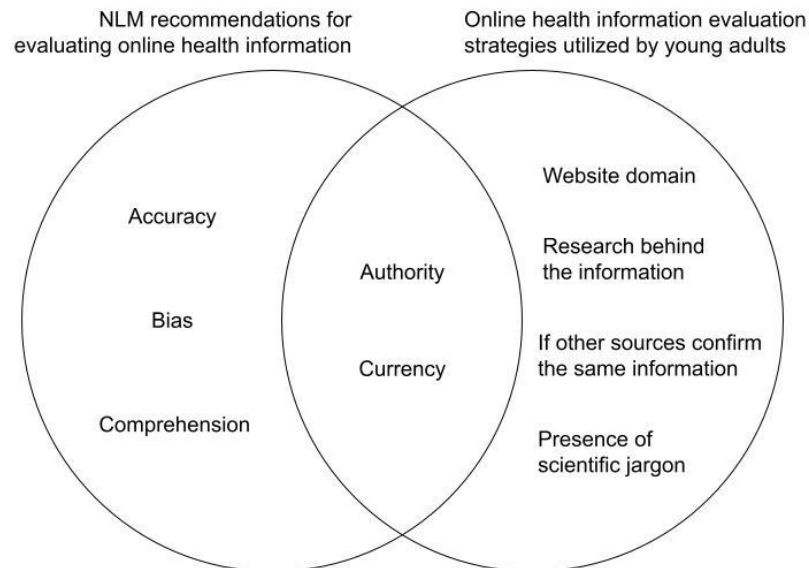


Figure 1. NLM recommendations (Rennis et al., 2015) for online health information evaluation vs. the evaluation strategies used by young adults (Basch et al., 2018; Buhi et al., 2009; Rennis et al. 2015)

### Current State of and Challenges Related to Information Literacy Instruction

Traditional information literacy instruction is typically performed in an academic context (Head & Eisenberg, 2011), which may help to explain the gap in young adults' health information evaluation skills, as health-related information seeking is typically performed not for academic purposes, but for their own personal, everyday life information needs. The Association for College and Research Libraries (ACRL) published the *Framework for Information Literacy for Higher Education* (2015) which, as the name suggests, provides a framework for information literacy instruction in higher education, encouraging students to engage with the creation, organization, and ethical use of information. The six frames are: “authority is constructed and contextual”, “information creation as process”, “information has

value”, “research as inquiry”, “scholarship as conversation”, and “searching as strategic exploration” (*Framework for Information Literacy for Higher Education*, 2015).

However, Julien et al. (2018), in their survey of information literacy instruction practices among 381 librarians who teach information literacy at colleges, technical institutes, universities, and other institutions, found that typical information literacy instruction is only “partly informed” by the *Framework* (p. 187). This study by Julien et al. (2018) is key for understanding the standard practices in information literacy instruction and the major challenges that these instructors face in developing and teaching information literacy sessions.

Julien et al. (2018) note that the major challenges with information literacy instruction almost all have to do with time (or, more accurately, a lack thereof), which may explain why only part of the *Framework* is used in instruction. That is, many information literacy instruction sessions are limited to one-shot sessions and the content of those sessions are often directly applicable solely to a specific assignment, usually per faculty request, leaving very little time to dedicate to aspects of the *Framework* which are not directly applicable to that specific assignment but that may be more broadly applicable within students’ everyday lives (Latham et al., 2019). Other timing considerations which may affect the content and effectiveness of information literacy instruction are the frontloading of library teaching sessions at the beginning of the academic year, as well as the frontloading of library teaching sessions within a students’ academic career, typically within their first or second year at a higher education institution (Julien et al., 2018). As such, less than half of library

instructors feel they are meeting their “instructional objectives” (Julien et al., 2018, p. 186).

### Summary

In summary, young adults using the Internet to seek health information, and sexual health information in particular, often turn to Google. They tend to prefer searching online for privacy reasons and/or because they lack alternatives for obtaining sexual health information that is relevant to them. However, despite their Internet-savvy skills, they often lack the critical evaluation skills needed to check the validity of the information they find, which may be due to information literacy instruction’s emphasis on developing students’ evaluation skills solely in an academic context, rather than more broadly for their everyday life information needs.

### Problem Statement

Within the literature reviewed here, there are two major gaps which are important to address. The first relates to the age of existing studies focused on young adults’ online health information seeking and evaluating behaviors. More than half of the studies reviewed here are at least five years old (as of this paper’s submission), indicating that an updated study is needed. As technology and the Internet continue to rapidly evolve, an updated study will help to provide a clearer picture of the information seeking and evaluation behaviors of this population today.

The other major gap within the literature has to do with the often limited demographic profiles of participants in earlier studies compared to the broader young adult population and the differing health information needs of the LGBTQ+ population, particularly due to their lack of relevant sexual health education in high

school. That is, while some of the studies reviewed here were dedicated specifically to examining the information behaviors of the LGBTQ+ population, the studies that were not had overwhelmingly heterosexual participants. In addition, when collecting gender-related demographic information, some studies did allow participants to self-identify as transgender, but there were no response options offered to enable non-binary individuals to accurately self-identify. Conducting a more up-to-date study with more inclusive and welcoming language throughout all of the survey questions and the response options offered can help researchers to more accurately and more comprehensively understand the information behaviors of a more diverse set of young adults, including this often underserved subset of the young adult population.

This updated study will add to the existing information seeking literature by providing a more recent look at young adults' sexual health-related online information behaviors and by using more inclusive language to make the survey more accessible and applicable to, and inclusive of, the LGBTQ+ community. However, this study will also build upon the existing literature by examining how the one-shot, academic-focused information literacy session may not be serving our students well long-term and make recommendations as to some specific steps we can take to better prepare young adults to apply their information literacy skills to their everyday life information seeking.

### *Research Questions*

In order to begin to fill these gaps, my study aimed to address the research questions listed below, purposefully recruiting a more diverse participant pool (as described more fully in the next section).

RQ 1: How do young adults aged 18-24 seek and/or encounter sexual health information online?

RQ 2: How do these young adults evaluate the credibility of the sexual health information that they find or encounter online?

RQ 3: How can we draw on the findings relating to the first two research questions to better tailor information literacy instruction for this population?

# Research Design

## Design

This exploratory study utilized a cross-sectional survey design to investigate the ways in which young adults (aged 18 to 24) perform sexual health related information seeking online, why they do so, how they make decisions about what information to use, and how they evaluate the information that they find online. This study was implemented using an online survey because it allowed easy and widespread distribution, it allowed people to participate anonymously (which is an advantage given the potentially sensitive nature of the subject matter being studied), and it could be conducted remotely during the COVID-19 pandemic. The survey was designed in order to answer RQ1 and RQ2, while an analysis of the findings in relation to these two questions will provide guidance towards answering RQ3. Approval from the University of Maryland's Institutional Review Board (Appendix A) was received before recruitment for the study commenced.

## Recruitment

Young adults ages 18-24 who have previously searched online for sexual health information were selected as the sample for this study. This age range was chosen in particular because it marks a formative time of health independence for American young adults, as the legal age of adulthood is 18 and, therefore, the people who fall in this age range may be in charge of their own health for the first time in their lives.

In order to recruit a large and diverse sample, the recruitment email (see Appendix B) was sent out via eight University of Maryland listservs and one

University of Michigan listserv. The listservs selected for participant recruitment were picked because of their wide range of recipients and the diversity of those who would likely receive the recruitment information. The recruitment message also utilized snowball sampling by asking participants to forward the recruitment information to other people who might also fit the sample criteria in order to potentially increase the overall number of participants. The first recruitment listserv emails were sent out in November 2020, and the same recruitment message was resent to the same listservs in January 2021. The survey was closed in February 2021.

### Data Collection

The survey for this study was designed to address three main online information behaviors pertaining to sexual health information: information seeking, information encountering, and information evaluation. In order to best compare the results of this study to the results of previous studies, the findings of previous studies and reports were used to help inform the development of the response options to some closed-ended questions. For example, when developing the closed-ended choices for Q25 “Why do you use the Internet to search for sexual health information? Select all that apply”, some of the studies used to generate the response options for this closed-ended question were: Buhi et al. (2009); Charest et al. (2016); Magee et al. (2012); Mitchell et al. (2014); and Selkie et al. (2011). Similarly, the closed-ended response choices provided in Q16, “Which specific health topics were covered in your high school health education? Select all that apply,” were developed using the sexual health education topics outlined in the CDC’s *School Health Profiles 2018: Characteristics of Health Programs Among Secondary Schools* (2019). Additional



studies used to generate closed-ended question responses include Bartlett et al. (2019) [Q19, Q21, Q22, Q49, Q50, Q51]; Basch et al. (2018) [Q21, Q40, Q50, Q51]; Delmonaco et al. (2020) [Q49, Q50, Q51]; Rennis et al. (2015) [Q49, Q50, Q51]; and von Rosen et al. (2017) [Q49, Q50, Q51].

In the first section of the survey, dedicated to information seeking, participants were asked to look at a Google screenshot and answer some questions about the simulated search from that screenshot. In order to make the survey accessible to screen readers, participants had the option to view a plain text version of the screenshot and were prompted to answer the exact same questions as participants who elected to view the image of the screenshot. This was achieved using skip logic in Qualtrics and, as a result, the same set of questions appears more than once in Appendix D. In order to differentiate these sections, the plain text version of the Google screenshot and ensuing questions have been highlighted with **dark red text** in Appendix D: Survey.

The final section of the survey, dedicated to assessing the online sexual health information evaluation skills of the participants, included three situations where participants were asked to visit three different webpages and indicate their likelihood to trust and/or act upon the recommendations from that specific webpage. The webpages chosen for this part of the survey, webpages from the CDC, HealthyChildren.org, and MedBroadcast, were picked because they presented information on the same sexual health topic, STIs and STDs, and represent the types of typical results one might get after performing a Google search query on “STI prevention.” However, each of these three websites presented similar information on

STIs in different ways, such as presenting it from a perspective emphasizing abstinence or with an intended audience of parents. These three websites were selected because of these differing methods of presentation in order to see how the participants would judge the quality of information when it is presented in different ways and in different venues. As of the publication of this paper, none of these webpages present factually incorrect information, they just present the information in different ways and through different venues and were picked for this section of the survey in order to see how participants would react to the type of information presented on these three distinct pages.

The initial survey was pilot-tested by 10 librarians and library science students in order to elicit their feedback on the overall survey design and to clarify questions. The pilot testing feedback allowed me to clarify the phrasing of certain questions, add additional response options, and check the functionality of the images and links embedded within the survey.

This study received Institutional Review Board approval from the University of Maryland (Appendix A) before data collection commenced. When participants received and clicked on the participation link in the recruitment email (Appendix B), they were shown a consent form (Appendix C). The consent form described the goals of this research. Once participants agreed that they were at least 18 years old, had read the consent form, and that they voluntarily agreed to participate in the study, they were taken directly to the next question in the survey. Participants who did not agree were immediately routed out of the survey.

The survey consisted of 62 questions, though not every participant was required to answer every question due to skip logic, and was conducted completely online using Qualtrics. The survey questions were a mix of open-ended and closed-ended questions, multiple choice and select all that apply, and at various points participants were asked to answer questions using a Likert scale. In deciding the order in which questions were presented, open-ended questions prompting participants on their current behaviors were always presented before closed-ended questions on the same behaviors to prevent bias in their responses due to question order effects. The only question which participants were required to answer was the very first question, which confirmed their consent to participate in the survey. Additionally, Q20, asking whether or not participants had previously searched for sexual health information online, was included to confirm participants' eligibility for the study. Any participants who indicated that they had not previously searched for sexual health information online were excluded from analysis. See Appendix D for the complete survey.

### Data Analysis

When the survey closed, the survey data were exported from Qualtrics to Excel for analysis. For responses to closed-ended questions, descriptive statistics were calculated. Responses to open-ended questions were coded inductively using content analysis and analyzed qualitatively. The resulting thematic codebook is shown in Appendix E.

## Results

This section details the results of the survey study in three parts. The first part describes the final participants of the study, including a discussion of how incomplete responses were removed from the data for the final analysis process. The second part discusses results relevant to RQ 1: “How do young adults aged 18-24 seek and/or encounter sexual health information online?”; and the third part discusses results relevant to RQ 2: “How do young adults evaluate the credibility of the sexual health information that they find or encounter online?”. I then close this section with a summary of my findings relating to RQ 1 and RQ 2. The final research question, RQ 3, “How can we draw on the findings relating to the first two research questions to better tailor information literacy instruction for this population?”, will be addressed in detail in the next section (“Discussion”). It is important to acknowledge that all results reported here are based on participants’ self-reported data. There may be a gap between what participants report that they do versus what they actually do in practice. See “Limitations” for further discussion of this point.

### Participants

The survey recruitment message was sent to eight University of Maryland listservs (including the College of Information Studies’ undergraduate listserv, the LGBT Equity Center listserv, and the Honors College listserv) and one University of Michigan listserv (the University of Michigan School of Information open discussion listserv). There were 107 unique participants; however not all participants filled out the survey to completion. Data analysis was limited to the responses from participants

who completed at least 75% of the survey questions (up through Q38, which begins the section focusing on information evaluation), as these responses will provide a more robust picture of the information seeking, encountering, and evaluation of this group. In addition, one participant's responses were also excluded from analysis because they indicated in Q20 that they had not previously searched for sexual health information online, which was one of the requirements for the study. Thus, the responses from 65 (61%) participants were analyzed.

After dropping surveys that were not completed through Q38 and the one participant who did not meet the participation requirements, there still was some drop-off in participation from Q38 on. The section asking participants to analyze the CDC webpage had two participants drop out, the HealthyChildren.org section had two additional participants drop out, the MedBroadcast section saw another three dropouts, and one additional participant dropped out in the final evaluation section. In total, 8 participants out of 65 (12%) dropped out in the last quarter of the survey, meaning that 63 participants completed the survey through the CDC section, 61 completed the survey through the HealthyChildren.org section, 58 completed the survey through the MedBroadcast section, and 57 completely finished the survey.

Table 1. Last quarter survey drop-off

Point in survey	Number of participants	Dropouts	
		#	%
Agreed to participate and answered at least one question, but did not answer all of the first 37 questions	107	41	38%
Q38 (CDC)	63	2	3%
Q41 (HealthyChildren.org)	61	2	3%
Q45 (MedBroadcast)	58	3	5%
After Q45	57	1	2%
<b>Total Dropouts (beyond Q37)</b>		<b>8</b>	<b>12%</b>

Of the 65 participants, 14% ( $n = 9$ ) were male, 77% ( $n = 50$ ) were female, and 9% ( $n = 6$ ) were non-binary or a third gender. The sexuality breakdown of the participants is as follows: 52% heterosexual ( $n = 34$ ), 25% bisexual ( $n = 16$ ), 9% questioning ( $n = 6$ ), 6% queer ( $n = 4$ ), and 5% homosexual (gay or lesbian) ( $n = 3$ ); one participant was pansexual, and one participant chose to self-describe as “bi-curious.” For the purposes of this study, participants who self-identified as non-binary or a third gender and/or who reported a sexuality other than heterosexual will be classified as LGBTQ+ and, as such, 48% ( $n = 31$ ) of the participants were LGBTQ+. The participants ranged in age from 18 to 24, with a mean age of 20 ( $SD = 1.67$ ) and a mode of 19. Participants varied with regard to their current year at the University: 29% ( $n = 19$ ) were juniors, 23% ( $n = 15$ ) were sophomores, 22% ( $n = 14$ ) were seniors, 14% ( $n = 9$ ) were first-years/freshmen, 8% ( $n = 5$ ) were Master’s students, and 5% ( $n = 3$ ) selected “Other”. With regard to university/College affiliation, the largest number of participants ( $n = 11$ ; 17%) were affiliated with the University of Maryland College of Information Studies.

*RQ 1: How do young adults aged 18-24 seek and/or encounter sexual health information online?*

When searching for sexual health information, 89% ( $n = 58$ ) of participants indicated that they prefer searching online. The majority of participants said that they tend to begin their online searches for sexual health information on search engines ( $n = 54$ ; 83%), while others indicated that they turn to the websites of nonprofit organizations like Planned Parenthood ( $n = 5$ ; 8%), medical websites like WebMD or Mayo Clinic ( $n = 4$ ; 6%), or government websites ( $n = 1$ ; 2%). More than two-thirds of the participants ( $n = 44$ ; 68%) reported that they tend not to have any particular website to which they regularly turn for sexual health information; however, 20 participants (31%) did indicate a preference. Of those who indicated a preference, Planned Parenthood ( $n = 7$ ; 35%), Mayo Clinic ( $n = 4$ ; 20%), the CDC ( $n = 3$ ; 15%), and Reddit ( $n = 2$ ; 10%) were the most popular choices.

Additionally, 62% ( $n = 40$ ) of the participants responded that they have encountered sexual health information online without intentionally searching for it, with the majority of these participants ( $n = 36$ ; 90%) encountering sexual health information on social media websites. When asked about the frequency with which they intentionally searched for sexual health information versus encountering it, 35% ( $n = 14$ ) of the participants who responded to this question ( $n = 40$ ) indicated that they intentionally search for sexual health information more frequently than they encounter it. Another 38% ( $n = 15$ ) indicated that they search for and encounter sexual health information at similar rates, and 25% ( $n = 10$ ) said that they encounter

sexual health information more frequently than they intentionally search for it. A total of 25 participants (38%) did not respond to this question.

When asked why they use the Internet to search for sexual health information, many participants indicated that it is easy to access ( $n = 63$ ; 97%), it is easy for them to find the information that they need ( $n = 56$ ; 86%), it's private ( $n = 42$ ; 65%), and/or that it enables them to satisfy their curiosity ( $n = 39$ ; 60%). See Table 2 for the complete list of results. Four (6%) participants chose to write in additional reasons why they search for sexual health information online. Their responses included feeling ostracized, belonging to a religious and conservative community, having a need to research a specific condition, and searching for others with similar experiences on forums, such as Reddit. It is also relevant to note that 33 (51%) participants indicated that their high school health education did not cover their sexual health information needs. This is supported by their responses to a subsequent question that asked how useful they had found the sexual health education they received in high school, with the largest proportion of participants finding it just somewhat useful ( $n = 27$ ; 42%). Additionally, 20% of participants ( $n = 13$ ) found the sexual health education they received in high school somewhat not useful, 14% ( $n = 9$ ) were neutral, and 5% ( $n = 3$ ) found it not at all useful. Just 5% ( $n = 3$ ) found their high school sexual health education to be useful.



Table 2. Reasons for searching for sexual health information online

<b>Reasons for searching for sexual health information online (select all that apply)</b>	<b><u>n</u></b>	<b><u>%</u></b>
It's easy to access	63	97%
It's easy for me to find the information that I need	56	86%
It's private	42	65%
To satisfy my curiosity	39	60%
My high school sexual health education did not cover my sexual health needs	33	51%
I would be uncomfortable asking someone for sexual health information in person	30	46%
I don't want people to know what I'm searching for	30	46%
I would not feel safe asking about sexual health in person	10	15%
I have no one I can turn to for this type of information	8	12%
Other (please describe): _____	4	6%

*RQ 2: How do young adults evaluate the credibility of the sexual health information that they find or encounter online?*

Around the midpoint of the survey, participants were asked to look at a simulated search using a screenshot from Google. The simulated search was for “STI prevention” and participants were asked to look at the first seven results on the first page of Google results and indicate which link they would be most likely click on first, and which link they would be least inclined to click on first. The majority of participants ( $n = 44$ ; 68%) indicated that they would be most inclined to click on the first link: a page from the Centers for Disease Control and Prevention (CDC) on preventing STDs. When asked to describe why they would choose to click on a particular search result first, some participants described trust ( $n = 16$ ; 25%) and reliability ( $n = 13$ ; 20%) as important factors; however, the largest proportion of participants indicated that they selected the CDC link because it was the first search result listed on the page ( $n = 21$ ; 32%). Interestingly, multiple participants, in

describing their rationale for picking the first result, also discussed the credibility and reliability of the source in relation to its presence as the first link on the page.

Participants wrote:

- “It was first on the list, so it is likely to be accurate and relevant” (R6)
- “It’s the first result and probably the most relevant” (R60)

When discussing the link that they would be least likely to click on first, participants again pointed to reliability ( $n = 9$ ; 14%) and trust ( $n = 6$ ; 9%), as well as to the domain of the website (ex. .com, .gov, .org, etc.) ( $n = 14$ ; 21%), as the most important factors, often conflating them as related. That is, participants seemed to mistrust the reliability of websites which end in “.com,” and some participants indicated that they would be more likely to trust a website ending in “.gov” or “.org”.

For example, one participant wrote:

They [the website they would be least likely to click on first] have a .com rather than .gov or .org which makes them less reliable (R27)

When asked how they evaluate the credibility of the sexual health information they find online, participants were provided with a list of criteria, including an open-ended response option of “other” (see Table 3), and were instructed to select all the factors that they check. Of the 65 responses, 57 (88%) participants selected at least one factor. Of the evaluation criteria provided, checking the website domain was one of the most popular choices ( $n = 52$ ; 91%), along with whether or not the same information appears on multiple webpages ( $n = 52$ ; 91%), and the expertise of the person or organization who wrote the information ( $n = 48$ ; 84%). Of those who selected “other,” their written-in responses included “whether the agenda clearly

focuses on abstinence only/monogamy only” (R12), “if it’s gender-inclusive and queer-affirming” (R58), and “the author’s intentions in writing the information” (R61).

*Table 3. Information evaluation criteria used by young adults*

<b>Evaluation Criteria (select all that apply)</b>	<b>n</b>	<b>%</b>
If the same information appears on multiple webpages	52	91%
The website domain (ex. .com, .gov, .org, etc.)	52	91%
The expertise of the person or organization who wrote the information	48	84%
When the information was published	42	74%
Whether the information references scientific literature	42	74%
Whether the information is easily understandable	34	60%
Who paid for that information to be published	21	37%
Whether the information was peer-reviewed	17	30%
The presence of scientific jargon	13	23%
Other (please describe)	3	5%
I do not evaluate the credibility of the sexual health information I find online	0	0%

Participants were then asked to choose, of the evaluation methods listed, which one they use most often and which one they consider to be the most effective. Of those who responded ( $n = 57$ ; 88%), the evaluation methods used most often amongst the participants were the expertise of the person or organization who wrote the information ( $n = 17$ ; 30%), if the same information appears on multiple webpages ( $n = 17$ ; 30%), and the website domain ( $n = 15$ ; 26%). (See Table 4 for complete results.)

Table 4. Information evaluation methods used most often

<b>Of these information evaluation methods, which do you use the most often? (select one)</b>	<b>n</b>	<b>%</b>
The expertise of the person or organization who wrote the information	17	30%
If the same information appears on multiple webpages	17	30%
The website domain (ex. .com, .gov, .org, etc.)	16	28%
Whether the information is easily understandable	3	5%
Whether the information references scientific literature	2	4%
Other (please describe)	2	4%
Who paid for that information to be published	0	0%
When the information was published	0	0%
The presence of scientific jargon	0	0%
Whether the information was peer-reviewed	0	0%
I do not evaluate the credibility of the sexual health information I find online.	0	0%

In terms of which evaluation methods they considered to be the most effective, the expertise of the person or organization who wrote the information (n = 16; 28%), whether the information references scientific literature (n = 15; 26%), and if the same information appears on multiple webpages (n = 12; 21%) were the most popular choices. (See Table 5 for complete results.)

Table 5. Perceptions of the most effective information evaluation methods

<b>Of these information evaluation methods, which do you think is the most effective? (select one)</b>	<b>n</b>	<b>%</b>
The expertise of the person or organization who wrote the information	16	28%
Whether the information references scientific literature	15	26%
If the same information appears on multiple webpages	12	21%
The website domain (ex. .com, .gov, .org, etc.)	7	12%
Who paid for that information to be published	3	5%
Whether the information was peer-reviewed	2	4%
Whether the information is easily understandable	1	2%
Other (please describe)	1	2%
When the information was published	0	0%
The presence of scientific jargon	0	0%
I do not evaluate the credibility of the sexual health information I find online.	0	0%

One of the final sections of the survey asked participants to visit three different websites containing sexual health information. The first link they were asked to visit was from the [Centers for Disease Control and Prevention \(CDC\)](#) (*How You Can Prevent Sexually Transmitted Diseases*), a U.S. government health organization; the second was from [HealthyChildren.org](#) (*Sexually Transmitted Infections Prevention*), a website from the American Academy of Pediatrics; and the third was from [MedBroadcast](#) (*Sexually Transmitted Infection*), a subset of MediResource, a HIPAA-verified Canadian health website. All three of these sites discussed sexually transmitted diseases and/or infections. Participants were asked to rate the extent to which they would trust the information presented on each page and explain their reasoning behind their trustworthiness rating. They were also asked to rate how likely

they would be to act upon recommendations from each webpage and explain why they would or would not act upon the recommendations. See Figure 2 for a summary of participants' ratings regarding the trustworthiness of each site, and Figure 3 for their responses regarding their likelihood of acting upon the recommendations they found on each site.

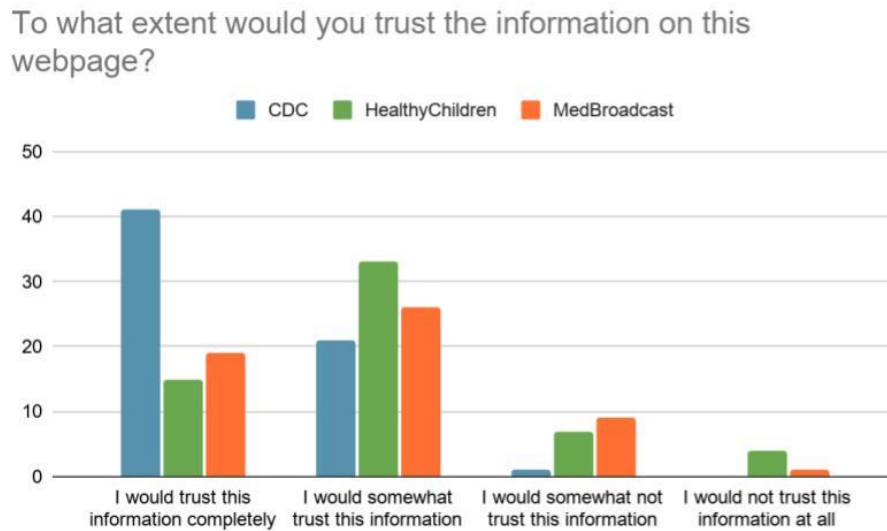


Figure 2. Trust in the CDC, HealthyChildren.org, and MedBroadcast webpages

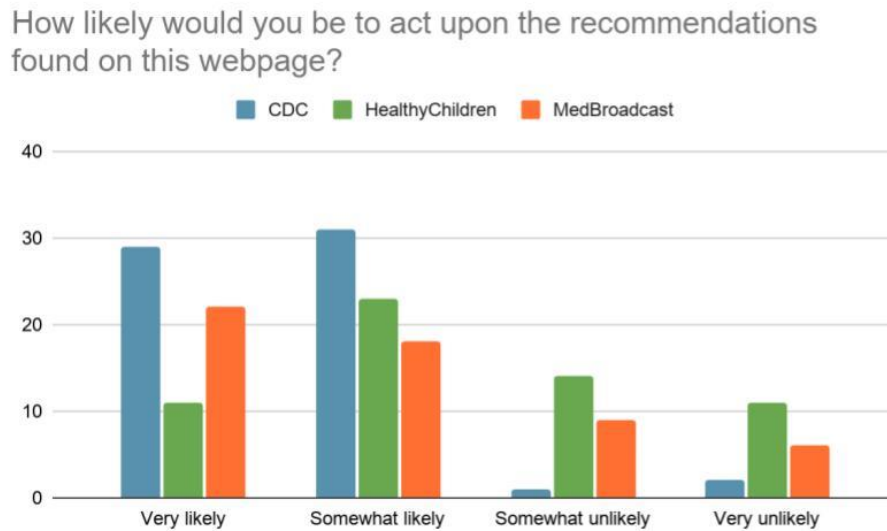


Figure 3. Likelihood of acting upon the recommendations in the CDC, HealthyChildren.org, and MedBroadcast webpages

As shown in Figure 2, nearly all participants indicated that they would either completely trust ( $n = 41$ ; 65%) or somewhat trust ( $n = 21$ ; 33%) the information found on the CDC webpage, with the majority of participants indicating that they would be either somewhat likely ( $n = 31$ ; 49%) or very likely ( $n = 29$ ; 46%) to act upon the CDC webpage’s recommendations. When asked to discuss why they would trust the information on this webpage, “trust” was a key descriptor mentioned by many participants ( $n = 23$ ; 37%). The results were similar when participants were asked to explain why they would be likely (or unlikely) to act upon the information on the CDC webpage: 11 (17%) participants mentioned trust, 5 (8%) mentioned reliability, and 2 (3%) mentioned that it is a government website. Of the three participants (5%) who indicated that they would be either somewhat unlikely or very

unlikely to act upon the CDC's recommendations, most pointed to the CDC's heavy emphasis on abstinence or, as one participant put it:

[The] information page is not based in lived experience, but rather restrictions... [the participant] could tell that [the advice on the page] would not help with [their] actual experience and, therefore, it's not worth reading further. (R12)

With the HealthyChildren.org webpage, the majority of participants ( $n = 33$ ; 54%) said they would somewhat trust the information on the page. In addition, while many participants said they would be somewhat likely to act upon the recommendations from the HealthyChildren.org page ( $n = 23$ ; 38%), a similar number of participants ( $n = 25$ ; 41%) said that they would be either somewhat unlikely ( $n = 14$ ; 23%) or very unlikely ( $n = 11$ ; 18%) to act upon the recommendations found on this page. Commonly mentioned reasons for trusting the information on the HealthyChildren.org page included the website's approval by the American Academy of Pediatrics ( $n = 9$ ; 15%) and its domain as a ".org" ( $n = 5$ ; 8%). Other participants were less inclined to trust the information on this page because they found it "sexist and problematic," particularly because the webpage pushed for an abstinence approach and mainly used "she/her" pronouns when referring to talking to a teen about waiting to have sex (R84). Other participants found the tone of the page "condescending" (R54, R72), or felt that the target audience (parents and/or teens) didn't fit with their current status, with one participant mentioning that they are "not a teenager" (R69).



The participants reacted similarly to the MedBroadcast and HealthyChildren.org webpages in terms of indicating that they would trust the information on these sites and their likelihood of acting upon the page's recommendations. The majority of participants ( $n = 45$ ; 76%) indicated that they would either completely trust ( $n = 19$ ; 32%) or somewhat trust ( $n = 26$ ; 44%) the information on the MedBroadcast page. Similarly, the majority ( $n = 40$ ; 69%) reported that they would be either very likely ( $n = 22$ ; 38%) or somewhat likely ( $n = 18$ ; 31%) to act upon this page's recommendations. However, similar to the HealthyChildren.org page, the MedBroadcast page did not instill as much trust nor likelihood to act upon its recommendations as the CDC page. Many participants noted the layout of the MedBroadcast webpage as one factor that increased their trust of the page's information, along with the impartiality with which it presented the information. For example, one participant wrote:

I would trust the information because...the visual layout of the webpage makes the information readable. (R58)

Another participant mentioned the following about the MedBroadcast page:

Their information is delivered less like a clickbait article and more like a fact sheet. So far all their information looks good, accurate, and unbiased. (R31)

However, many of the criticisms of the MedBroadcast page had to do with its domain, with multiple participants noting that they would be less likely to trust this page on its own without double checking the information with another source, because its URL ended in “.com.” One participant noted:

This website seems less trustworthy due to the nature of it being a “.com” and not a “.edu,” “.gov,” or “.org.” (R54)

Other participants also mentioned the .com domain as a reason for mistrusting the MedBroadcast site and reported that they would want to double-check the information with another source before trusting it. For example, one respondent wrote:

I do not know the provider/publisher of this information, and it is a .com address, so I would not feel inclined to trust it 100% until I had reviewed all of it and compared it to what I already know from a reputable source. (R59)

### Summary

After removing responses from participants who did not complete questions 1 through 37 and the one participant who did not meet the participation requirements, a total of 65 responses of this study were analyzed. The sample was somewhat diverse in terms of gender and sexuality. Participants’ responses suggest that young adults are continuing to rely on the Internet for their sexual health information needs, whether they search intentionally or happen to encounter this information online.

Accessibility, ease of use, and privacy remain important factors in this population’s decision to search online. When it comes to information evaluation, whether or not the same information appears on multiple webpages and a website’s domain (ex. .com, .gov. .org, etc.) are popular factors that this population considers, and this was reflected when they were asked to evaluate the three different webpages included in the survey.

These results complement the results of the previously reviewed literature and provide an updated perspective on the current state of young adults' online health information seeking and evaluating behaviors. Additionally, this study used more inclusive language on the survey instrument in order to be more inclusive towards those of many genders and sexualities. In the following discussion section, these results will be analyzed in more detail, particularly in relation to those from previous studies. Additionally, I discuss how this data may help to inform the improvement of information literacy instruction for the young adult population.

## Discussion

As discussed previously in the literature review, much of the research reviewed here on young adults' online health information seeking and evaluation skills is at least five years old and is not necessarily inclusive of LGBTQ+ populations. This study aimed to be as inclusive as possible by offering multiple sexuality and gender identifiers in the demographics section of the survey and by using inclusive examples throughout the survey (e.g., The example searches provided in the survey addressed STIs/STDs because it is an example of a sexual health concern common between both cisgender/heterosexual young adults and LGBTQ+ young adults, instead of a search topic that may only be relevant for certain young adults, such as contraception). And, because technology continues to advance, it is important that this population's information literacy skills continue to be observed, and this study aims to report on their current state of knowledge. Thus, the results of this study and the following discussion may help to partially fill the gaps in the previous literature I have identified, particularly, their lack of currency and limited inclusivity, by providing an updated and a more LGBTQ+-inclusive picture of young adults' online health information seeking and evaluating skills and behaviors.

The results of this survey show that the majority of young adults continue to turn to Google as the first step in their sexual health information seeking journey, which supports the results of previous studies (Bartlett, 2020; Bartlett et al., 2019; Buhi et al., 2009; Lantzy, 2016; Lawrence, 2015; Senkowski & Branscum, 2015). This appears to be largely due to the Internet's ease of access, ease of use, and the

privacy it provides, also aligning with the results of previous studies (Charest et al., 2016; Mitchell et al., 2014; Mustanski et al., 2012; Selkie et al., 2011).

Additionally, previous research has shown that LGBTQ+ young adults are likely to search for sexual health information online because they lack access to relevant sexual health education (Charest et al., 2016; Delmonaco et al., 2020; Magee et al., 2012; Mitchell et al., 2014); the results of this survey provide further support for this finding. While the proportion of my cisgender/heterosexual and LGBTQ+ young adult participants selecting each of the reasons why they search for sexual health information online were similar, twice as many LGBTQ+ young adult participants indicated that they search online because their high school health education did not cover their sexual health information needs. The preliminary results from Delmonaco et al. (2020) also show that LGBTQ+ young adults utilize the Internet to address their sexual health information needs, which are often unmet at school. Additionally, the majority of the participants who indicated that they search for sexual health information online because they have no one else to turn to were LGBTQ+, which reflects similar findings from Mitchell et al. (2014). Thus, there is a clear unmet need for sexual health information among this young adult subpopulation, in particular.

Regardless of their status as cisgender/heterosexual or LGBTQ+, the results of this research indicate that young adults continue to struggle with evaluating the information they find online. The results from this study show that they rely heavily on convenience when it comes to their online health information seeking and they tend to select which search engine results to click on based on how highly the Google

algorithm has ranked them in the results list. This suggests a high level of trust in the ability of the Google algorithm to provide information relevant to their specific search and a high level of confidence in their ability to use Google. And, while this study did not ask participants to complete a unique search, but rather asked them to look at a screenshot of a sample search, it would be interesting to see if this population's inclination to pick the first search result(s) would change if they had supplied their own keywords for the search.

That is, the prevalent finding that young adults are overconfident in their evaluation skills (Bartlett et al., 2019; Charest et al., 2016; Lantzy, 2016; Mitchell et al., 2014) combined with challenges that have been identified in patron-information provider communication issues, such as those mentioned in “Oranges and Peaches” (Dewdney & Michell, 1996) (e.g., a patron asks for a book called “oranges and peaches,” when in actuality they misheard the title of the book and they are actually looking for Darwin’s *Origins of Species*), may lead to young adults unknowingly performing a search on a topic different than the one they had intended to. More specifically, a person’s idea of the information they are looking for and the actual search terms they use to find that information may not align. Google will provide the results most relevant to whatever search terms are typed into its engine, but it’s up to the user to determine whether the information returned is, in fact, relevant to their actual information need. And, if there is a disconnect between the information sought vs. the information found, a user may become misinformed and/or frustrated by their lack of success. I recognize that this study did not look at the development of search queries and communication issues within online information seeking and that this

aspect of the discussion is a slight detour, but it is a relevant and related issue within online information seeking overall. Future research on online information seeking would benefit from the study of how this population develops their searches and if/how this affects their overall search practices. (See “Recommendations for Future Research.”)

When it comes to sexual health information seeking, the results of this study show that young adults do utilize some of the online information evaluation criteria recommended by the NLM (Rennis et al., 2015), such as the expertise of the author and the currency of the information presented on the page; however, the most popular evaluation strategies, by far, were checking multiple webpages to see if they contained the same information and looking at the website domain (e.g., .com, .org, .gov, etc.). While the act of opening up a new tab or window to conduct further research on a subject is a sign of lateral reading (Wineburg & McGrew, 2017), an effective research and evaluation strategy, the most concerning aspect of these findings is the participants’ overwhelming emphasis on website domain. A full 91% of participants in this study indicated that they use website domain to evaluate the credibility of the sexual health information they find online.

Young adults’ continued reliance on Google and oversimplified evaluation strategies (such as basing their credibility assessments on website domain), indicate that information literacy instruction needs to be revamped. That is, if we want to produce a more information-literate population, we need to increase the time spent on teaching information literacy and its application within both academic and everyday life information seeking contexts. While introducing basic information literacy skills

at a young age is a good way to begin introducing these topics, and providing research-oriented instruction at the beginning of college may help a young adult kick off their academic career within higher education, there is still plenty of opportunity in the intervening years to address issues of information literacy that may go unaddressed.

Information literacy instruction within the context of school research is certainly important; however, it is just as important to remember that young people will not be in school for their entire lives and they need to know how to use the same critical thinking skills they are taught to apply to their academic work when performing everyday life information seeking, such as seeking sexual health information. The results of this study demonstrate that this population is using some effective strategies in seeking and evaluating the sexual health information they find online, but that some less reliable evaluation strategies, such as checking a website's domain, remain popular. However, it is important to note that, when asked to pick which online information evaluation strategy they thought was most effective, the majority of participants did choose at least one of the NLM-recommended strategies, such as whether the information references scientific literature or the expertise of the person or organization who wrote the information, despite gravitating towards less effective strategies in their actual practice (such as checking the website domain). These findings suggest that young adults may very well be aware of effective information literacy strategies, but they may not be using them as often as the strategies they perceive to be more convenient. This is one key example of the



disconnect between academic information literacy and everyday life information literacy.

Information literacy instruction as it exists today mainly addresses how information literacy can be used “in the context of formal learning environments” (Head & Eisenberg, 2011, p. 3). This is in part due to the time constraints of these typically one-shot sessions (there is an “expectation that what [information literacy instruction librarians] have to teach can be communicated over the course of an hour” (Julien et al., 2018, p. 187)). Therefore, there may be little to no time to discuss how similar skills can be used when evaluating information outside of the classroom. The participants in this study likely knew that the evaluation strategies they identified as effective are effective because it is how they are taught to evaluate information for their academic assignments, but there seems to be a gap in applying similar evaluation strategies to their everyday life information seeking.

In order to effectively prepare our students to be information literate both inside and outside of the classroom, this gap needs to be closed through information literacy instruction that encourages students to explore how their information literacy skills can be applied within multiple contexts, including in their everyday life information seeking. One of the major ways that information literacy instruction can be improved to close this gap is to ensure that information literacy skills are not exclusively taught in one-shot library sessions. That is, the long-term incorporation of information literacy skills within the everyday curriculum of elementary and secondary school students would help to introduce these concepts at an early age and teach them how they can be applied over multiple contexts.

For example, while introducing the difference between .com, .org, .gov, etc. websites is a good way to introduce children to the different types of information they may find online, this discussion should carry through and more nuance should be introduced over time. So, as children get older and are able to understand more complex ideas, introducing issues of authority, expertise, and bias may help students more fully understand how the information they find online is generated, and they may be less likely to fall back on the crutch of solely looking at a website's domain. Additionally, in high school health education classes, it might make sense to incorporate a unit on how to make informed health decisions and encourage discussion on effective strategies for searching for health information online, including how to judge the trustworthiness of an online resource. By the time these students reach higher education and the age of young adulthood, they will be better prepared not only for a higher level of research in their classes, but also will have the skills necessary to make informed everyday life decisions which will become increasingly necessary with their newfound independence.

### Limitations

The limitations of this study stem from the research design and the specific recruitment and data collection techniques employed. Participants were recruited through purposive and snowball sampling, rather than through probability sampling. Thus, the results of this study cannot be generalized to the larger population of young adults aged 18-24. In fact, the sample is quite biased, as it is mainly comprised of college-educated young adults residing in the Mid-Atlantic and Midwest regions of the United States. Due to the recruitment methods used, participation was limited to

people who were members of particular listservs and to those who were reached via those members through snowball sampling.

The final sample size was 65, which allowed for statistical analysis, but a larger, more diverse sample size may be able to give a clearer and more generalizable picture of the behaviors of this population. In addition, self-selection bias likely influenced the findings, as participants voluntarily completed the survey study (or elected to drop out during the process) based on their own desire and motivation to participate. Lastly, due to the sensitive nature of the subject matter examined in this study (sexual health), potential participants may have declined to participate.

One of the major limitations of this study is that it was conducted during the COVID-19 pandemic, therefore limiting the survey distribution to online means only. Thus, participants were only aware of the study if they opened the recruitment emails, which may have limited the overall sample size. And, due to the nature of the survey distribution, only those with access to the Internet were able to participate. In addition, the nature of this study as a virtual survey means that there was no opportunity to clarify questions for participants nor to follow up on their answers with them.

Participants may have also been deterred from participating due to the length of the online survey. Thus, some participant data was incomplete, as Qualtrics does allow incomplete data to be observed. Additionally, social desirability bias (“the tendency to underreport socially undesirable attitudes and behaviors and to over report more desirable attributes” (Latkin et al., 2017)) may have also played a role in how participants completed the survey, and the answers they provided within the

survey may not actually be accurate or representative of what they actually would do in a real-life scenario. The results of this study are based purely on self-reported data and due to factors like social desirability bias, the data may not be completely accurate nor comprehensive.

## Conclusion

The results of this study show that while many young adults ages 18-24 continue to turn to the Internet for their sexual health information needs, they do not appear to regularly use effective information evaluation strategies, often relying on convenience over credibility. As young adults in this age range are emergent adults and, thanks to the legal age of adulthood in the United States, may be in charge of their own health for the first time and as a substantial subgroup of this population may lack experience using the internet (National Center for Education Statistics, 2020; UNICEF Data, 2020), it is important that they have the skills to make informed choices about their health, and that includes online information literacy skills. That is, because not all young adults may feel comfortable asking another trusted adult, such as a parent or a healthcare provider, about sexual health topics, they need to have the skills and understanding to perform that information seeking independently so they can make an informed choice.

While the spread of mis- and disinformation and an uninformed public can have definite social and political consequences, mis- and disinformation regarding health can be, quite literally, a matter of life and death. We need to improve information literacy instruction around everyday life information seeking topics to adequately prepare future generations to take care of themselves and take control of their health. The results of this study indicate that the one-shot, academic-focused information literacy instruction session is likely not serving our students well, and the incorporation of information literacy skills within the regular curriculum may be one way to address this issue.

### *Recommendations for Future Research*

I plan to follow up on these survey results with an interview or observation study during doctoral research to delve deeper into this population's skills, motivations, and thought processes while performing online sexual health information seeking. Such an interview or research study would provide me with the opportunity to clarify questions and probe participants for additional information, which was not achievable in this study due to the remote nature of its implementation. In addition, an interview or observational study will allow me to understand how and why this population performs a search from start to finish, including which search terms they use, how they select among search results, and how they actually evaluate online information.

Further observational or interview study may also open the doors to discussing information literacy within broader everyday life information seeking contexts. Expanding future research to include everyday life information seeking in general will provide an excellent jumping off point to try and address the aforementioned gap between academic information literacy and everyday life information literacy. Additionally, it may also be prudent to examine the everyday life information skills of a younger population. While young adulthood is a pivotal moment in terms of health independence, basic information literacy skills are likely introduced at a younger age. Determining if, how, and when these skills are first introduced may help in the reevaluation of information literacy curricula. Future research questions to consider to address these issues include: "How do children and/or adolescents search for information online?"; "Why might children and/or

adolescents search online?"; or "How do children and/or adolescents evaluate the information they find online?"

Lastly, future research on this subject should use broader and more diverse samples. That is, studies examining the online sexual health information seeking of non-college educated young adults, as well as young adults in different regions of the country, may provide a more robust picture of this age group's overall information behaviors. Another subset of the population which would benefit from further study are LGBTQ+ young adults. As was discussed in the literature review, this population rarely receives sexual health education in high school that is applicable to their needs, so their online sexual health information seeking behaviors may be quite different from those of their cisgender and/or heterosexual peers. A study comprised of a larger LGBTQ+ sample size may be able to determine whether there are such differences, and if any, how specifically their information seeking behaviors diverge from their cisgender and/or heterosexual peers. Future research questions to address this issue might include: "What unique sexual health information needs do LGBTQ+ young adults have?"; "How do LGBTQ+ young adult sexual health information needs differ from those of their cisgender/heterosexual peers?"; or "How do LGBTQ+ young adults go about finding sexual health information that will fit their needs?"

### *Concluding Remarks*

The results of this study suggest that young adults likely have the knowledge to find and evaluate the online sexual health information that they need, but they have trouble applying this knowledge effectively. Whether due to the Principle of Least Effort ("people seek the most convenient source to meet their needs, even when they

know the information might not be as good,” (Rubin, 2016, p. 378)) or the context-of-application gap between academic information literacy and everyday life information literacy, it is clear that information literacy instruction needs to be reevaluated to encompass everyday life information needs and seeking. As it currently stands, information literacy instruction “has no specific place in the curriculum...It’s everywhere and nowhere... [and] It’s everyone’s job, but nobody’s responsibility” (Fister, 2021). If we want to most effectively prepare the young Internet users of today (and of the future) to navigate the information around them, avoid misinformation, and make informed choices, information literacy instruction that addresses their needs for information in both everyday life and academic contexts needs a place in the curriculum, and it needs to be somebody’s responsibility.



## Appendix A: IRB Approval Letter



DATE: November 2, 2020

TO: Jane Behre  
FROM: University of Maryland College Park (UMCP) IRB

PROJECT TITLE: [1672183-1] Young Adults Seeking, Encountering, and Evaluating Online Sexual Health Information

REFERENCE #:

SUBMISSION TYPE: New Project

ACTION: APPROVED

APPROVAL DATE: November 2, 2020

EXPIRATION DATE: November 1, 2021

REVIEW TYPE: Expedited Review

REVIEW CATEGORY: Expedited review category # 7. Waiver of Written Consent Requested: 45CFR46.117(c)(1).

Thank you for your submission of New Project materials for this project. The University of Maryland College Park (UMCP) IRB has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a project design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

Prior to submission to the IRB Office, this project received scientific review from the departmental IRB Liaison.

This submission has received Expedited Review based on the applicable federal regulations.

This project has been determined to be a MINIMAL RISK project. Based on the risks, this project requires continuing review by this committee on an annual basis. Please use the appropriate forms for this procedure. Your documentation for continuing review must be received with sufficient time for review and continued approval before the expiration date of November 1, 2021.

Please remember that informed consent is a process beginning with a description of the project and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the project via a dialogue between the researcher and research participant. Unless a consent waiver or alteration has been approved, Federal regulations require that each participant receives a copy of the consent document.

Please note that any revision to previously approved materials must be approved by this committee prior to initiation. Please use the appropriate revision forms for this procedure.

All UNANTICIPATED PROBLEMS involving risks to subjects or others (UPIRSOs) and SERIOUS and UNEXPECTED adverse events must be reported promptly to this office. Please use the appropriate reporting forms for this procedure. All FDA and sponsor reporting requirements should also be followed.

All NON-COMPLIANCE issues or COMPLAINTS regarding this project must be reported promptly to this office.

## Appendix B: Recruitment Email

Have you ever searched online to answer a question relating to sexual health (e.g., questions about different methods of contraception, or issues of sexual or gender identity)? Are you between the ages of 18 and 24? Do you have about 20 minutes to complete a survey?

If you answered yes to all of these questions, please keep reading! I am a student in the Master of Library and Information Science program in the College of Information Studies. For my Master's Thesis research, I am conducting an online survey to learn how young adults look for and/or encounter sexual health information online and how they evaluate this information.

Your participation in this study is completely voluntary and your responses will be kept confidential. No personally identifiable information will be associated with your responses in any part of the data or research report. This study has been approved by The University of Maryland Institutional Review Board. If you have questions, please email me at [researcher's email address].

If you are interested in participating in the study, please click on this link to go to the survey: [link to survey]

Please forward this email to other people who might fit these recruitment criteria and be interested in participating.

Thank you very much for considering participating in this study!

## Appendix C: Informed Consent Form

**1. Project Title:** Young Adults Seeking, Encountering, and Evaluating Online Sexual Health Information

**Purpose of Study:** This research is being conducted by Jane Behre, an MLIS student at the University of Maryland, College Park. You are being invited to participate in this research project because you are between the ages of 18 and 24 and have looked for or encountered sexual health information online. The purpose of this study is to explore how young adults look for, encounter, and evaluate sexual health information online, with the goal of using the results to help improve information literacy instruction.

**Procedures:** The procedures involve answering questions in this survey about online sexual health information seeking, encountering, and evaluating. If you do not wish to answer a specific question, you may skip that question. This survey should take approximately 20 minutes to complete.

**Potential Risks and Discomforts:** There are no known major risks associated with participating in this study, with the exception of a breach of confidentiality. To minimize the possibility of a breach of confidentiality, all data will be kept on a password-protected computer and will only be available to researchers for this project. Due to the sensitive nature of the subject matter being examined in this study, some participants may feel discomfort with the discussion of certain topics. Participants may withdraw from the study at any time.

**Potential Benefits:** There are no direct benefits to participants. Participants may indirectly benefit from reflecting on their own information-seeking habits and by learning different methods for improving the effectiveness of their search skills. The findings from this study will be used to improve information literacy instruction for young adults so they are able to find relevant sexual health information more easily, efficiently, and effectively.

**Confidentiality:** This survey is anonymous and no personally identifiable information will be collected. To minimize the possibility of a breach of confidentiality, all data will be kept on a password-protected computer and will only be available to researchers for this project: the principal investigator on this study is Jane Behre and her faculty advisor is Professor Beth St. Jean. Any reports written about this research project will protect your identity to the maximum extent possible. Your information may be shared with representatives of the University of Maryland, College Park or government authorities if you or someone else is in danger or if I am required to do so by law.

**Compensation:** There is no compensation for your participation in this survey.

**Right to Withdraw and Questions:** Your participation in this study is completely

voluntary. You may choose not to take part at all. If you decide to participate in this research, you may stop at any time by exiting out of the survey. If you have questions, concerns, or complaints, or if you need to report an injury related to the research, please contact the investigator: Jane Behre, [jbehre@umd.edu](mailto:jbehre@umd.edu)

**Participant Rights:** If you have questions about your rights as a research participant or wish to report a research-related injury, please contact:

University of Maryland, College Park  
Institutional Review Board Office  
1204 Marie Mount Hall  
College Park, Maryland, 20742  
E-mail: [irb@umd.edu](mailto:irb@umd.edu)  
Telephone: 301-405-0678

For more information regarding participant rights, please visit  
<https://research.umd.edu/irb-research-participants>

This research has been reviewed according to the University of Maryland, College Park IRB procedures for research involving human subjects.

You may print a copy of this consent form for your records.

By clicking 'Yes' below, you indicate that you are at least 18 years of age, you have read this consent form or have had it read to you, your questions have been answered to your satisfaction, and you voluntarily agree to participate in this research study.

☐ Yes

☐ No

## Appendix D: Survey

2. How old are you?

- 18
  - 19
  - 20
  - 21
  - 22
  - 23
  - 24
- 

3. What is your current year at the University?

- ☐ First-year/Freshman
  - ☐ Sophomore
  - ☐ Junior
  - ☐ Senior
  - ☐ Master's student
  - ☐ Doctoral Student
  - ☐ Other (please describe):
- 

4. What is your major/field of study?

- Accounting
  - Additive Manufacturing
  - Administration, Supervision, & Curriculum
  - ...
  - Women's Studies
  - World Language Exploration
  - Youth Experience
-

5. What is your gender?

- ☐ Female
- ☐ Male
- ☐ Non-binary / third gender
- ☐ Prefer to self-describe:

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☐ Prefer not to say

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6. Do you identify as transgender?

- ☐ Yes
  - ☐ No
  - ☐ Prefer not to say
-

7. What is your sexual orientation?

- ☐ Asexual
- ☐ Bisexual
- ☐ Heterosexual (Straight)
- ☐ Homosexual (Gay or Lesbian)
- ☐ Pansexual
- ☐ Questioning
- ☐ Queer
- ☐ Prefer to self-describe:

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☐ Prefer not to say

[End of Block: Demographics]

[Start of Block: High School Sexual Health Education]

8. Did you receive sexual health education in high school?

- ☐ Yes
- ☐ No

[Skip To: End of Block If Did you receive sexual health education in high school? = No]

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9. Did you attend high school in the United States?

☐ Yes

☐ No

[Skip To: 10 If Did you attend high school in the United States? = No]

[Skip To: 11 If Did you attend high school in the United States? = Yes]

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[Display This Question: If Did you attend high school in the United States? = No]

10. In which country did you attend high school?

- Afghanistan
- Albania
- Algeria
- ...
- Yemen
- Zambia
- Zimbabwe

[Page Break]

[Display This Question: If Did you attend high school in the United States? = Yes]

11. In which state did you attend high school?

- Alabama
- Alaska
- Arizona
- ...
- Wisconsin
- Wyoming
- I do not reside in the United States

[Display This Question: If Did you attend high school in the United States? = Yes]

12. In which county did you attend high school?

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[Page Break]



13. What type of high school did you attend?

- ☐ Public
- ☐ Private (non-religious)
- ☐ Private (religious)
- ☐ Online high school (pre-pandemic)
- ☐ Other (please describe):  
\_\_\_\_\_

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14. How useful did you find the sexual health education you received in high school?

- ☐ Very useful
- ☐ Somewhat useful
- ☐ Neutral
- ☐ Somewhat not useful
- ☐ Not at all useful

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15. List the first three adjectives that come to mind when thinking about the sexual health education you received in high school.

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16. Which specific sexual health topics were covered in your high school health education? Select all that apply.

- ☐ Benefits of being sexually abstinent
- ☐ How to access valid and reliable health information, products, and services related to HIV, other STDs, and pregnancy
- ☐ Influences of family, peers, media, technology, and other factors on sexual risk behaviors
- ☐ Communication and negotiation skills related to eliminating or reducing risk for HIV, other STDs, and pregnancy
- ☐ Goal-setting and decision-making skills related to eliminating or reducing risk for HIV, other STDs, and pregnancy
- ☐ Influencing and supporting others to avoid or reduce sexual risk behaviors
- ☐ Importance of using condoms consistently and correctly
- ☐ Importance of using a condom at the same time as another form of contraception to prevent both STDs and pregnancy
- ☐ How to create and sustain healthy and respectful relationships
- ☐ Importance of limiting the number of sexual partners
- ☐ Preventive care that is necessary to maintain reproductive and sexual health
- ☐ The relationship between alcohol and other drug use and risky sexual behaviors
- ☐ How HIV and other STDs are transmitted
- ☐ Health consequences of HIV, other STDs, and pregnancy

- ☐ Efficacy of condoms (that is, how well condoms work or do not work)
  - ☐ How to obtain condoms
  - ☐ How to correctly use a condom
  - ☐ Methods of contraception other than condoms
  - ☐ Sexual orientation
  - ☐ Gender roles, gender identity, or gender expression
  - ☐ Other (please describe):  
\_\_\_\_\_
  - ☐ None of these
- 

17. How relevant were the topics covered in your high school sexual health education to your sexual orientation?

- ☐ Completely relevant
  - ☐ Mostly relevant
  - ☐ Somewhat relevant
  - ☐ Somewhat not relevant
  - ☐ Mostly not relevant
  - ☐ Not at all relevant
-

18. How relevant were the topics covered in your high school sexual health education to your gender identity?

- ☐ Completely relevant
- ☐ Mostly relevant
- ☐ Somewhat relevant
- ☐ Somewhat not relevant
- ☐ Mostly not relevant
- ☐ Not at all relevant

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18a. Were there any sexual health topics that you wished that your high school sexual health education had covered?

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[End of Block: High School Sexual Education]

[Start of Block: Information Seeking]

19. What is your preferred method for searching for sexual health information?  
(Sexual health information in this context includes information about sexually

transmitted infections (STIs), pregnancy, contraception, sexual orientation, gender identity, reproductive health, etc.)

- ☐ Searching online
- ☐ Reading a book
- ☐ Asking a healthcare professional, such as your doctor
- ☐ Asking a family member
- ☐ Asking a friend
- ☐ Other (please describe):  
\_\_\_\_\_

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20. Have you ever searched for sexual health information online?

- ☐ Yes
- ☐ No

[Skip To: 26 If Have you ever searched for sexual health information online? = No]

-----

21. When searching for sexual health information online, where do you tend to begin your search?

- ☐ Search engines (ex. Google)
- ☐ Social media sites (ex. Twitter)
- ☐ Nonprofit organization websites (ex. Planned Parenthood)
- ☐ Government websites (ex. Centers for Disease Control and Prevention (CDC))
- ☐ Medical websites (ex. WebMD or Mayo Clinic)
- ☐ Wikipedia
- ☐ Other (please describe):  
\_\_\_\_\_

[Skip To: 22 If When searching for sexual health information online, where do you tend to begin your search? =Search engines (ex. Google)]

22. What is your preferred search engine?

- ☐ Google
- ☐ Bing
- ☐ DuckDuckGo
- ☐ Yahoo
- ☐ Ecosia
- ☐ Other (please specify):  
\_\_\_\_\_

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23. Is there a particular website you prefer to use to obtain sexual health information?

☐ Yes (please specify):

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☐ No

[Display This Question: If Is there a particular website you prefer to use to obtain sexual health information? = Yes (please specify):]

24. Why do you prefer to use this specific website?

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25. Why do you use the Internet to search for sexual health information? Select all that apply.

- ☐ It's private
- ☐ It's easy to access
- ☐ It's easy for me to find the information I need
- ☐ I would be uncomfortable asking someone for sexual health information in person
- ☐ My high school health education did not cover my sexual health information needs
- ☐ To satisfy my curiosity
- ☐ I have no one I can turn to for this type of information
- ☐ I don't want people to know what I'm searching for
- ☐ I would not feel safe asking about sexual health in person
- ☐ Other (please describe):  

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[Page Break]



26. The following questions require looking at an image (a screenshot of a Google search). Will you require image description in order to proceed?

☐ Yes

☐ No

[Skip To: 27b If the following questions require looking at an image (a screenshot of a Google Search). Will you require image description in order to proceed? = No]

[Skip To: 27a If the following questions require looking at an image (a screenshot of a Google Search). Will you require image description in order to proceed? = Yes]

[Page Break]

27a. The next few questions will ask you to refer to the information below. The information below is simulating a Google Search screenshot.

In the search bar: sti prevention

Result #1

URL: [www.cdc.gov > std > prevention](http://www.cdc.gov/std/prevention)

Link text: Prevention - STD Information from CDC

Descriptive text: You have the facts; now protect yourself and your sexual partners.

Abstinence. Photo of hand holding. The most reliable way to avoid infection is to not have sex ( ...

Additional links: [Which STD Tests Should I Get? | STD Lowdown Infographic](#)

Result #2

URL: [www.healthychildren.org > sexually-transmitted > Pages](http://www.healthychildren.org/sexually-transmitted/Pages)

Link text: Sexually Transmitted Infections Prevention - HealthyChildren ...

Descriptive text: Nov 21, 2015 - Condoms are not a guarantee against STIs. The only way to truly prevent getting an STI is by not having sex at all. Condoms, however, can ...

Result #3

URL: [www.aafp.org > about > policies > all > prevention-sti](http://www.aafp.org/about/policies/all/prevention-sti)

Link text: Prevention and Management of Sexually Transmitted Infections

Descriptive text: Abstinence and the maintenance of a mutually monogamous relationship with an uninfected partner decrease the risk for all STIs. Consistent and correct use of ...

Result #4

URL: [my.clevelandclinic.org > health > diseases > prevention](http://my.clevelandclinic.org/health/diseases/prevention)

Link text: Sexually Transmitted Diseases & Infections (STD & STI ...

Descriptive text: Sexually Transmitted Diseases & Infections (STD & STI):

Prevention ... How can I protect myself from sexually transmitted infections (STIs)?.

Here are some basic ...

Result #5

URL: [www.uptodate.com > contents > prevention-of-sexually...](http://www.uptodate.com/contents/prevention-of-sexually-transmitted-infections)

Link text: Prevention of Sexually transmitted infections - UpToDate

Descriptive text: Thus, primary prevention of STIs needs to be given high priority.

The comprehensive approach to STI prevention is based on five major strategies [6]:.

-Accurate ...

Additional information: by K Rietmeijer - [\[link\]](#) Related Articles

Result #6

URL: [www.who.int > hiv > pub > prep > prevention-sti-prep](http://www.who.int/hiv/pub/prep/prevention-sti-prep)

Link text: Prevention and control of sexually transmitted ... - WHO

Descriptive text: Prevention and control of sexually transmitted infections (STIs) in the era of oral ... prophylaxis (PrEP) for HIV prevention, where high STI prevalence at the baseline ...

Result #7

URL: [www.hiv.gov > blog > stop-stis-six-steps-to-safer-sex](http://www.hiv.gov/blog/stop-stis-six-steps-to-safer-sex)

Link text: Stop STIs: Six Steps to Safer Sex | HIV.gov

Descriptive text: Apr 17, 2015 - Many STIs can be easily diagnosed and treated, and under the Affordable Care Act, STI prevention, screening, and counseling services are ...

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28a. If you were performing the search simulated above, which result would you be most inclined to click on first?

- ☐ Result #1: Prevention - STD Information from CDC
  - ☐ Result #2: Sexually Transmitted Infections Prevention - HealthyChildren ...
  - ☐ Result #3: Prevention and Management of Sexually Transmitted Infections
  - ☐ Result #4: Sexually Transmitted Diseases & Infections (STD & STI ...
  - ☐ Result #5: Prevention of Sexually transmitted infections - UpToDate
  - ☐ Result #6: Prevention and control of sexually transmitted ... - WHO
  - ☐ Result #7: Stop STIs: Six Steps to Safer Sex | HIV.gov
- 

29a. Why would you choose that result to click on first?

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30a. If you were performing the search simulated above, which result would you be least inclined to click on?

- ☐ Result #1: Prevention - STD Information from CDC
  - ☐ Result #2: Sexually Transmitted Infections Prevention - HealthyChildren ...
  - ☐ Result #3: Prevention and Management of Sexually Transmitted Infections
  - ☐ Result #4: Sexually Transmitted Diseases & Infections (STD & STI ...
  - ☐ Result #5: Prevention of Sexually transmitted infections - UpToDate
  - ☐ Result #6: Prevention and control of sexually transmitted ... - WHO
  - ☐ Result #7: Stop STIs: Six Steps to Safer Sex | HIV.gov
- 

31a. Why would you be least likely to click on that result?

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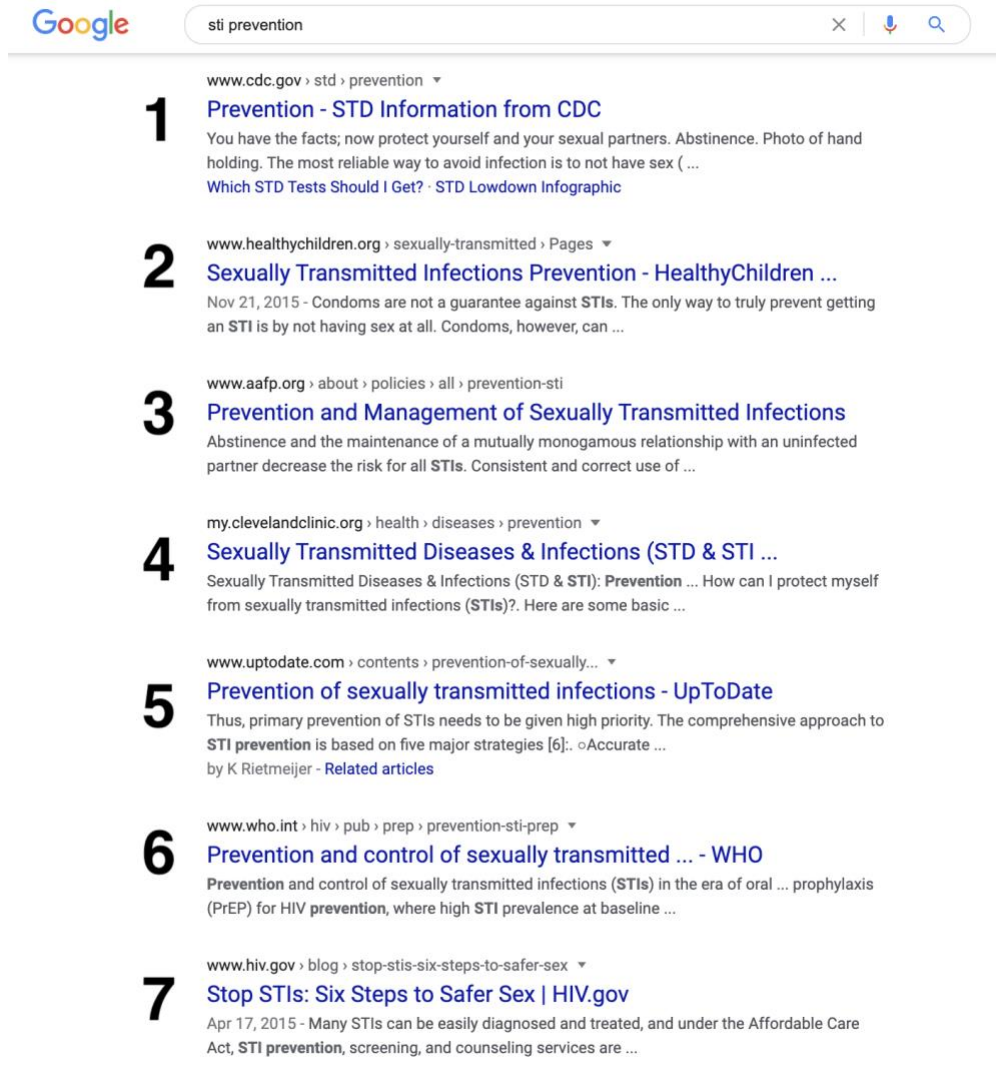
[Skip To: End of Block if Condition: Why would you be least likely to click on that results? Is Not Empty. Skip To: End of Block.]

[Page Break]

[Display This Question: If The following questions require looking at an image (a screenshot of a Google search). Will you require image description in order to proceed? = No]

27b. The next few questions will ask you to refer to the screenshot below.

If the image is not loading, please scroll down to the bottom of the page, select the button to go back to Question #26, and instead select "Yes" when it asks if you need image description. A plain text version of the information from the screenshot will be available and the questions about that information are the same.



[Display this question If The following questions require looking at an image (a screenshot of a Google search). Will you require an image description to proceed? = No]

28b. If you were performing the search simulated above, which result would you be most inclined to click on first?

- ☐ Result #1: Prevention - STD Information from CDC
- ☐ Result #2: Sexually Transmitted Infections Prevention - HealthyChildren ...
- ☐ Result #3: Prevention and Management of Sexually Transmitted Infections
- ☐ Result #4: Sexually Transmitted Diseases & Infections (STD & STI ...
- ☐ Result #5: Prevention of Sexually transmitted infections - UpToDate
- ☐ Result #6: Prevention and control of sexually transmitted ... - WHO
- ☐ Result #7: Stop STIs: Six Steps to Safer Sex | HIV.gov

[Display This Question: If The following questions require looking at an image (a screenshot of a Google search). Will you require image description to proceed? = No]

29b. Why would you choose that result to click on first?

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[Display This Question: If The following questions require looking at an image (a screenshot of a Google search). Will you require image description to proceed? = No]

30b. If you were performing the search simulated above, which result would you be least inclined to click on?

- ☐ Result #1: Prevention - STD Information from CDC
- ☐ Result #2: Sexually Transmitted Infections Prevention - HealthyChildren ...
- ☐ Result #3: Prevention and Management of Sexually Transmitted Infections
- ☐ Result #4: Sexually Transmitted Diseases & Infections (STD & STI ...
- ☐ Result #5: Prevention of Sexually transmitted infections - UpToDate
- ☐ Result #6: Prevention and control of sexually transmitted ... - WHO
- ☐ Result #7: Stop STIs: Six Steps to Safer Sex | HIV.gov

[Display This Question: If The following questions require looking at an image (a screenshot of a Google search). Will you require image description to proceed? = No]

31b. Why would you be least likely to click on that result?

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[End of Block: Information Seeking]

[Start of Block: Information Encountering]

32. Have you ever encountered sexual health information online without intentionally searching for it?

☐ Yes

☐ No

[Skip To: End of Block If Have you ever encountered sexual health information online without intentionally searching for it? = No]

33. Where did you encounter sexual health information online? Select all that apply.

☐ Search engines (ex. Google)

☐ Social media sites (ex. Twitter)

☐ Nonprofit organization websites (ex. Planned Parenthood)

☐ Government websites (ex. Centers for Disease Control and Prevention (CDC))

☐ Other (please describe):

\_\_\_\_\_

-----



34. Which do you tend to do most frequently: intentionally search for sexual health information or just happen to encounter it?

- ☐ I intentionally search for sexual health information more often than I just happen to encounter it
- ☐ I intentionally search for sexual health information just about as often as I encounter it
- ☐ I tend to encounter sexual health information more often than I intentionally search for it

[End of Block: Information Encountering]

[Start of Block: Information Evaluation]

35. How often do you fact-check the sexual health information you find online?

- ☐ Every time I find or encounter sexual health information
- ☐ Nearly every time I find or encounter sexual health information
- ☐ Occasionally
- ☐ Almost never
- ☐ Never

[Page Break]

36. In the next section you will be provided links to specific webpages. Please visit the webpage and then return to the survey to answer some questions about each webpage.

[Page Break]

37. Link #1: [Centers for Disease Control and Prevention \(CDC\) - How You Can Prevent Sexually Transmitted Diseases](#)

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38. To what extent would you trust the information on this webpage?

- ☐ I would trust this information completely.
  - ☐ I would somewhat trust this information.
  - ☐ I would somewhat not trust this information.
  - ☐ I would not trust this information at all.
- 

39. Please explain why you would or would not trust the information on this webpage. What factors influenced your decision?

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40. How likely would you be to act upon the recommendations found on this webpage?

- ☐ Very Likely
- ☐ Somewhat likely
- ☐ Somewhat unlikely
- ☐ Very unlikely

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40a. Please explain why you would or would not act upon this webpage's recommendations. What factors influenced your decision?

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[Page Break]

41. Link #2: [HealthyChildren.org - Sexually Transmitted Infections Prevention](#)

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42. To what extent would you trust the information on this webpage?

- ☐ I would trust this information completely.
- ☐ I would somewhat trust this information.
- ☐ I would somewhat not trust this information.
- ☐ I would not trust this information at all.

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43. Please explain why you would or would not trust the information on this webpage. What factors influenced your decision?

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44. How likely would you be to act upon the recommendations found on this webpage?

- ☐ Very likely
- ☐ Somewhat likely
- ☐ Somewhat unlikely
- ☐ Very unlikely

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44a. Please explain why you would or would not act upon this webpage's recommendations. What factors influenced your decision?

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[Page Break]

45. Link #3: [MedBroadcast - Sexually Transmitted Infection](#)

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46. To what extent would you trust the information on this webpage?

- ☐ I would trust this information completely.
  - ☐ I would somewhat trust this information.
  - ☐ I would somewhat not trust this information.
  - ☐ I would not trust this information at all.
- 

47. Please explain why you would or would not trust the information on this webpage. What factors influenced your decision?

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48. How likely would you be to act upon the recommendations found on this webpage?

- ☐ Very likely
- ☐ Somewhat likely
- ☐ Somewhat unlikely
- ☐ Very unlikely

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48a. Please explain why you would or would not act upon this webpage's recommendations. What factors influenced your decision?

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[Page Break]

49. In general, what factors do you check in order to evaluate the credibility of the sexual health information you find online? In other words, what do you look for to make sure that the information that you find online is good information? Select all that apply.

- ☐ Whether the information references scientific literature
  - ☐ The expertise of the person or organization who wrote the information
  - ☐ Who paid for that information to be published
  - ☐ When the information was published
  - ☐ Whether the information is easily understandable
  - ☐ The presence of scientific jargon
  - ☐ If the same information appears on multiple webpages
  - ☐ Whether the information was peer-reviewed
  - ☐ The website domain (ex. .com, .gov, .org, etc.)
  - ☐ Other (please describe):  
\_\_\_\_\_
  - ☐ I do not evaluate the credibility of the sexual health information I find online.
-

50. Of these information evaluation methods, which do you use most often?

- ☐ Whether the information references scientific literature
  - ☐ The expertise of the person or organization who wrote the information
  - ☐ Who paid for that information to be published
  - ☐ When the information was published
  - ☐ Whether the information is easily understandable
  - ☐ The presence of scientific jargon
  - ☐ If the same information appears on multiple webpages
  - ☐ Whether the information was peer-reviewed
  - ☐ The website domain (ex. .com, .gov, .org, etc.)
  - ☐ Other (please describe):  

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  - ☐ I do not evaluate the credibility of the sexual health information I find online.
-



51. Of the information evaluation methods, which do you think is the most effective?

- ☐ Whether the information references scientific literature
  - ☐ The expertise of the person or organization who wrote the information
  - ☐ Who paid for that information to be published
  - ☐ When the information was published
  - ☐ Whether the information is easily understandable
  - ☐ The presence of scientific jargon
  - ☐ If the same information appears on multiple webpages
  - ☐ Whether the information was peer-reviewed
  - ☐ The website domain (ex. .com, .gov, .org, etc.)
  - ☐ Other (please describe):
- 

- ☐ I do not evaluate the credibility of the sexual health information I find online.

[Page Break]

52. Would you be willing to participate in a 30-minute online follow-up interview or observation study?

- ☐ Yes
- ☐ No

[Display This Question: If Would you be willing to participate in a 30-minute online follow-up interview or observation study? = Yes]

53. Thank you for your willingness to participate in future studies. Please click on the link below in order to sign up. You will only be asked to provide your Participant ID

([randomly assigned, automatically generated Participant ID numbers appear here])  
and your email address.

Follow-up Study Sign-up Sheet: <https://go.umd.edu/behresurveyfollowup>

Please click the 'Next' button to finish the survey and ensure that your responses are recorded.

## Appendix E: Thematic Codebook

<b>Code</b>	<b>Definition</b>	<b>Sample Quotes</b>
Abstinence	Reference to abstinence or abstinence-only sexual health education	“I would act upon [the recommendations made by the CDC] because they align with other recommendations...and aren’t entirely abstinence-based” (R56)
Credibility	Any comments referencing the credibility of a particular source	“CDC is a known and credible health organization” (R87)
Domain (ex. .com, .org)	Reference to a website’s domain in relation to its trustworthiness or reliability as a credible source of information	“They [a website] have a .com rather than .gov or .org which makes them less reliable” (R27)
Fact-checking	Situations where a participant may be inclined to fact-check the information presented on a certain webpage	“I would [act upon a website’s recommendations] if I can confirm the information is true from other sites” (R7)
Heteronormativity	Discussion of the heteronormativity of a particular resource	“It [the advice from a particular website] is heteronormative and anti-sex” (R49)
Intended Audience	Situations where a participant feels they are not the intended audience of a particular resource	“The information is good, but I’m definitely not the intended audience” (R80)
Place in results list (first)	Reference to the order in which resources appear within a results list, and a participant’s inclination to click on said result	“It’s [a website from the Google Screenshot] the first result so it’s worth checking briefly at least” (R12)
Professionals	Reference to professionals in the medical field in relation to	“The fact that it [the recommendations from a particular website] comes

	a resource's trustworthiness/credibility	from medical professionals" (R59)
Reliability	Reference to the perceived reliability of a particular source	"The website is not as reliable because it's not from a trusted source" (R65)
Reputation	Reference to a website or organization's reputation, typically in relation to participants' level of trust in a resource associated with that website or organization	"CDC has a good reputation" (R1)
Sexist/sexism	Discussion of the sexism associated with a particular resource and/or how the resource presents information	"The information seems correct but this website is sexist and problematic" (R84)
Trust	Reference to a participant's trust in a particular resource	"I might not trust this information as much because the website looks to be targeted at children despite having all the relevant information" (R10)
Understanding	Reference to the overall understandability of the information presented by a particular resource	"The information presented makes sense to me" (R69)

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