Young Women and Online Health Information:

A Study of Credibility, Access, and Usability

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Abstract

Seeking health information online is a common practice in society today, especially among young people and women. Due to the increasing prevalence of this practice, I have reviewed current research on issues of credibility and access in online women's health information to establish how credibility is conveyed online, and how improving access to online resources could decrease the number of barriers between individuals and health information in general (particularly for those individuals who might not have ready access to health care providers). I then selected a list of current health information websites designed for women and analyzed them according to well-known usability guidelines to determine how well these websites are designed for their audience and which design aspects could improve perceived credibility of or increase access to these sources of information.

Keywords: women's health, health information, usability, credibility, access

Introduction

The purpose of this research paper is to explore and address the implications of young women using the internet to access and acquire information on health related topics. Studies suggest that the vast majority of internet users, seventy-two percent (Fox & Duggan, 2013), have gone online to look for health information, and this percentage is even larger for women, especially young women. Seventy-nine percent of female internet users have gone online to look for health information, and the percentage of online adults ages 18-29 seeking health information online is seventy-six percent. However, few research studies currently exist on the intersection of health and internet resources (Merolli, Gray, & Martin-Sanchez, 2013). Research has established how individuals use the internet to access health information, but we've yet to establish how well this information is designed, whether it's usable to those who access it, or how it may affect individual health outcomes.

Organizations and researchers have been documenting how individuals access the internet or how well certain populations understand health information. Considering the prevalence of the internet and internet-accessible devices in society today, a better understanding of how individuals interact with health information online would lead to a better understanding of how to write and design this information so that it is both easily accessed and understood. According to recent data from the Pew Research Center, eighty-seven of American adults are internet users[1] and sixty-four percent now own a smartphone,[2] which further illustrates a need for technical communicators to understand ways to improve these sources of health information.

This paper will review current research on the construction and use of online health

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[1] Pew Research Center. (2014). Internet User Demographics. Retrieved from http://www.pewinternet.org/data-trend/internet-use/latest-stats/
[2] Smith, A. (2015). U.S. smartphone use in 2015. Pew Research Center. Retrieved from http://www.pewinternet.org/2015/04/01/us-smartphone-use-in-2015/

information and analyze the effectiveness of a select group of current health information

websites specifically designed for women. The research review will focus on the issues of

credibility and access as they pertain to online health information. I will then outline a brief

evaluation of current online health information resources specifically designed for women based

on criteria established by Janice Redish (2012) in her book, *Letting Go of the Words*.

Research Review: Issues of Credibility and Access in Online Health Information

According to the Pew Research Center, seventy-seven percent of individuals seeking

health information online began their research with a search engine (as opposed to a specific

health resource),[3] and sixty percent of these users report that the information they found

influenced a health-related decision (Fox & Jones, 2011). Given the popularity of searching for

health information online, designers need to be aware of how online resources construct

credibility for novice uses, as well as how aware users are of the issue of credibility in and of

itself. A discussion of access could also potentially decrease the number of barriers between

information seekers and topics in health and wellness.

Credibility

Many of us are familiar with the fact that the internet can be a hotbed of scams (including

scams related to health and wellness) and that not all sources are considered equal (for example,

a personal blog vs. a government organization). Twenty-six percent of individuals searching for

health information online state that they were then asked to pay for the information they wished

to view (Pew Research Center, 2014), an obvious barrier to access that simultaneously harms a

resource's credibility. Only two percent of the internet users who ran into this issue agreed to pay

for the information they sought, and thirteen percent simply quit their search. For my research

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[3] Pew Research Center. (2014). Internet User Demographics. Retrieved from
http://www.pewinternet.org/fact-sheets/health-fact-sheet/

review, I discuss issues of credibility in online health information based on the definition

established by Robins, Holmes, & Stansbury in their study, "Consumer health information on the

Web: The relationship of visual design and perceptions of credibility," where they define

credibility as "the perception of trustworthiness, believability or expertise perceived in the

stimuli shown to subjects" (2009, p. 14).

A study of college students found that from a list of criteria for health websites the

students were most likely to rank "accuracy" and "credibility of the author" as "very important"

criteria for health websites (Escoffery et al., 2005). In fact, ninety-four percent of the participants

ranked accuracy as very important, and seventy-eight percent ranked author credibility as very

important, making these two criteria the most frequently selected.

A more recent study found that users claim to judge the credibility of a website resource

based on "the source of the information, the quality of the design, and factors such as the number

of external links" (Zarcadoolas, Pleasant, & Greer, 2006, p. 125). However, this same research

revealed a startling trend of users not checking the website for factors that greatly determine how

credible the source is, for example checking either the "about us" page on a website or checking

the cited source for specific information. This is an alarming trend considering that seventy-

seven percent of individuals who check for health information online start with a search engine,

as opposed to the thirteen percent of individuals who begin their research on a health-specific

website (Fox, S., & Duggan, M. 2013). Search engine results do not discriminate between which

sources are reliable and credible and which are not, so these search results can include personal

blogs, pages advertising a product or treatment, brief dictionary definitions of the search terms,

and advice from anonymous forum users. This suggests that users perceive credibility based

solely on the design of the website and the way the information is presented. In fact, a research

study with over 2,500 participants found forty-six percent of respondents ranked the "design/look" of websites as a key factor in determining credibility of a website (Fogg, 2003).

Research by Robins and Holmes (2008) in their study, "Aesthetics and credibility in Web site design," found that regardless of how credible a website actually was, once it was given a more aesthetically-pleasing design the perception of the site's credibility improved for ninety percent of the websites included in their project. In this study, respondents judged the credibility of a selected website in an average of 2.4-3.2 seconds (depending on whether outliers were included). First impressions are directly related to whether an information-seeker decides to remain on a website or return to their search, so creating a website that seems credible to users will improve the length of time they are willing to stay on a website to find the information they're looking for. The drawback to this research study is that they failed to establish which aspects of design aesthetics improved the perception of websites.

In their follow-up study, "Consumer health information on the Web: The relationship of visual design and perceptions of credibility," Robins, Holmes, and Stansbury (2010) researched the topic of website design and perceptions of credibility within their previously established "first impressions" time frame by limiting the viewing of health information resources to 2.8 seconds. Again, their results showed a strong correlation between the ability of a website to elicit a positive response from a user for the visual design of the website and its ability to elicit similarly positive credibility judgments. A correlation between organizational identity and online credibility was also noted. After viewing each of thirty-one websites and ranking them for standards of visual design and credibility, the participants were then asked to explain what caused them to rank a site either high or low on the credibility index. These responses were then coded according to Fogg's (2003) four types of credibility: surface, earned, presumed, and

reputed. Participants frequently mentioned ranking a website as more credible if they had either

used it before (earned credibility) or if they were familiar with the name but had not yet used the

site (presumed credibility). Conversely, twenty-nine percent of the participants reacted

negatively when shown a health information website that "contained advertisements, any

indication of drug company or insurance company sponsorship, or if the site appeared to be a

'.com' site."

Access

While sixty-four percent of American adults own a smartphone, a larger portion of the

population owns a cell phone (eighty-three percent) and of this section of the population, thirty-

one percent have used their mobile phone to go online for health information (Fox & Duggan,

2013). Much like the demographics for users seeking health information online, the amount of

women and young people seeking this information with a cell phone is statistically higher.

Thirty-three percent of adult women use their cell phones to look for health information, and

forty-two percent of individuals ages 18-29 do so as well. Forty-five percent of women who own

smartphones and used it to look up health information, and sixty-six percent of individuals ages

18-29 do so with their smartphones as well. One way to use the broader availability of mobile

devices to improve access to health information online is through social media.

Social media greatly improves the level of interaction between health information

resources and consumers, and allows users to set their own level of interaction and access. Prior

to health information websites branching out to social media, users could only subscribe for

updates through email. This could be problematic, as the organization then has to determine how

much information to include in each email and how often to send such emails out to subscribers.

This meant that every subscriber automatically received every single update that got sent out,

which could lead to them getting more emails than they wanted, emails about topics that were

uninteresting to them or did not pertain to them, or even seeing these emails go directly into a

junk folder (meaning the user likely wouldn't see them at all, and rendering their subscription

moot). There is a vast difference between feeling that arbitrary and generic information is

consistently showing up in your email inbox, and actively seeking out which health organizations

or topics you respect and/or relate to.

The Pew Research Center Social Media Update (2015) found that many social media

users log in and use these websites and apps on a regular basis. Of all social media users, seventy

percent of those on Facebook check it daily, thirty-six percent of Twitter uses check it daily, and

seventeen percent of Pinterest users check it daily. Weekly visits are nearly as common, with the

range for these three sites being 17-29%. All of the social media sources mentioned have a

mobile app versions, thereby improving access to online health information by allowing users to

either browse the health information website itself or using a mobile app to interact with health

information resources from their phone or tablet. All of these social media mobile apps also have

a means for users to comment or ask questions in reply to a specific post or topic of

conversation. Each of these social media apps have comment, reply, and share features in which

users can reply directly to a post or to each other, which creates an opportunity for further

discussion and development of health topics.

Social media also has created a way for individuals to share health information with each

other. In "Social media and online health services: A health empowerment perspective to online

health information," Mano (2014) pointed out how individuals with similar health concerns

"participate to seek and find health information that clarifies details related to a health condition,

a treatment or a medication, seeking additional as well as alternative health solutions regimes

and treatments and improve their health and life conditions." She then goes on to suggest that social media can be used specifically to increase health information access for individuals experiencing a language barrier, stating:

> Finding practical and affordable ways to support the use of social media and encourage access to online health information and use of online health services can increase health wellbeing for the general public, as well as healthcare conditions for those facing a health condition and in need of medical follow-ups and health related moral support. All this could result in long-term improvement in health literacy, health empowerment and effective self-management of health. (p. 410).

This study also found a direct link between an individual's use of social media and the likelihood that they will seek health information online. That is to say, individuals who already use social media are more likely to be online health information seekers. This suggests that an immediate step toward improving health information access should be increasing the use of social media by health information resources, to bridge the gap between the social media user and the resource itself.

Usability Analysis of Current Health Information Websites

Methods

According to the National Action Plan to Improve Health Literacy, "Nearly 9 out of 10 adults have difficulty using the everyday health information that is routinely available in our health care facilities, retail outlets, media, and communities" (2010, p. 1)[4]. The first recommendation in the 2010 National Action Plan to Improve Health Literacy is "Adopting User-Centered Design." Analyzing current health resources for women online offers insight into

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[4] U.S. Department of Health and Human Services. (2010). National Action Plan to Improve Health Literacy.

how these resources are designed for their users, and what aspects of their design either help or hurt the usability of the website and its information.

For this study I selected a list of websites based on site traffic and popularity, including links specifically recommended on Oprah's website by health professionals (Googling Your Way Back to Health: What the Web's Health Sites Can Offer, 2010[5]). I included these websites due to the large audience of the Oprah website, magazine, and television shows, and the fact that the target audience for these media is female. According to The Alliance for Audited Media, *O, the Oprah Magazine* is one of the top 25 consumer magazines, with a readership of 2,385,199 individuals as of June 2014[6]. According to *TIME Magazine*, *O, the Oprah Magazine* has a readership that is 72.8% female, making her website a credible resource for topics relating to women ("Under the Influence of Oprah," *TIME Magazine*, 2007). The full list of websites I included in my analysis is as follows:

Girl's Health (http://www.girlshealth.gov)

Healthy Women (http://www.healthywomen.org/)*

MedlinePlus – Women's Health (http://www.nlm.nih.gov/medlineplus/womenshealth.html)

National Institute of Heath (http://www.nih.gov)

Resolve: The National Fertility Association (http://www.resolve.org/)*

WebMD – Women's Health (http://www.webmd.com/women/default.htm)

Women's Health: Office on Women's Health, U.S. Department of Health and Human Services

(http://womenshealth.gov/)*

Young Women's Health (http://youngwomenshealth.org/)*

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[5] http://www.oprah.com/health/The-Most-Reliable-Health-Websites
[6] http://auditedmedia.com/news/blog/2014/august/top-25-us-consumer-magazines-for-june-2014.aspx

(* - recommended in Googling Your Way Back to Health: What the Web's Health Sites Can Offer)

Usability is frequently defined by a "product [being] usable if the people who are intended to use it can do so in a way that is effective for them, efficient in their terms, and satisfying them in terms of their own goals" (Quesenbery, 2009, Usability and accessibility are defined in terms of people section, para. 2). Much of the usability of websites is closely related to issues of credibility and access. I will analyze the home pages of these online health information resources for women using Redish's guidelines for designing good home pages. Redish argues that good home pages should be "content-rich with few words" and must satisfy the following six basic functions:

1. Be findable through search engines.

2. Identify the site.

3. Set the site's tone and personality. Inspire confidence and trust.

4. Help people get a sense of what the site is all about.

5. Continue the conversation quickly.

6. Send each person on the right way.

Analysis

Be findable through search engines. Home page keywords need to match the keywords a health information seeker would enter into a search engine. Considering the prevalence of beginning a health information search with a search engine, it stands to reason that users should be able to find the information they need by searching in their own words. Redish summarizes:

People type *their* keywords into the search engine. If you want people to find you, you

must have *their* keywords in your site. If your words and theirs differ, your site won't

come up for them (p. 74).

The Center for Young Women's Health is an award-winning site that seems to have done well creating a personality for their homepage to inspire confidence and trust. They use a conversational writing style, the graphics and use of color are approachable, the home page in general is well-suited to the target user, but the only way to locate this website through Google's search engine is by searching specifically for "young women's health." That is simply not language young women use.
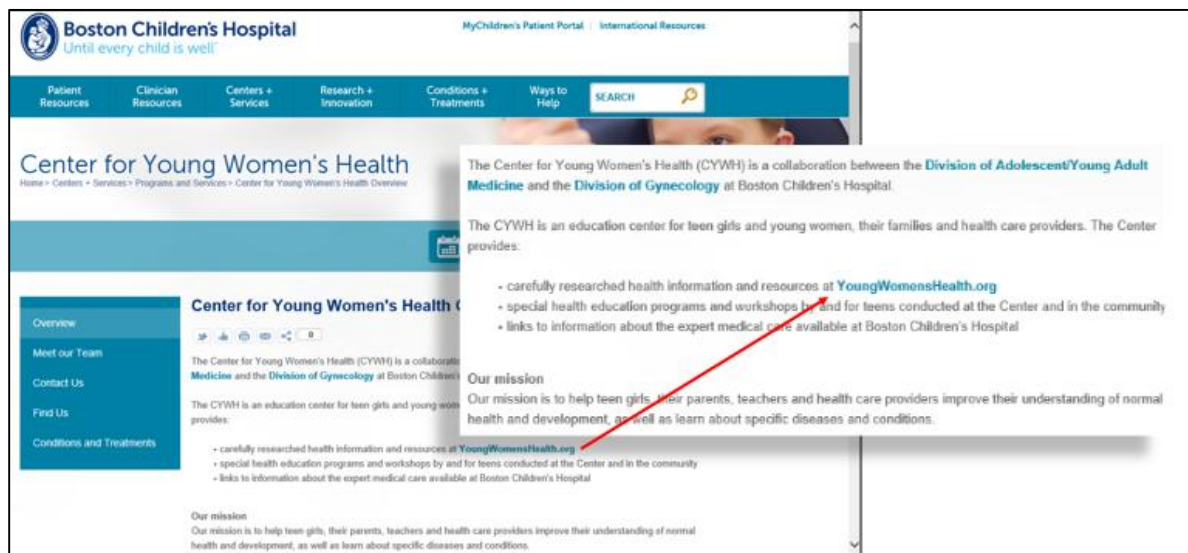

Figure 1. Boston Chidren's Hospital overview of the Center for Young Women's Health program.

If you search for "young women's health" in Bing the top search result is for the Boston Children's Hospital overview of the Center for Young Women's Health program. A user would then have to visit this web page and locate the link to the Center for Young Women's Health website in a paragraph of text.

Identify the site. Websites should be immediately identifiable to those individuals who do find them through search results. People make snap judgements regarding the credibility of a source and whether or not they will be able to find the information they're looking for. Designers

need to be able to utilize multiple aspects of design and language to assure health information

seekers that they've found a website that holds reliable information regarding the topic they are

interested in.

Once a user has made the decision to stay on a website to explore further, best practices

would be making sure that they relate to the "brand" of the website so that they will come back

to the website in the future. More importantly, having a clear brand will make it easier for

individuals to remember the website. Elements that can be used to identify the site include the

logo, name, and tag line.

Figure 2. Healthy Women website name and tagline.

These taglines immediately make it clear that these websites are about improving

communication of health topics to women and helping girls be happy and healthy, respectively.

Note that the graphical elements used also convey meaning about the audience of the website.

The Healthy Women website uses a serif font to make it seem more educational and

sophisticated, whereas the font for Girls Health seems more relaxed and cartoon-like, and the star

dotting the "i" in "girls" adds a touch of whimsy for its younger audience.

Figure 3. Girls Health website name and tagline.

Of the websites I analyzed only three did not utilize taglines to communicate the site's

identity to health information seekers. These websites were Women's Health, Resolve, and

WebMD. Interestingly, each of these has a different domain name (".gov," ".org," and ".com"

respectively) suggesting that the use of taglines or the lack thereof is not necessarily related to
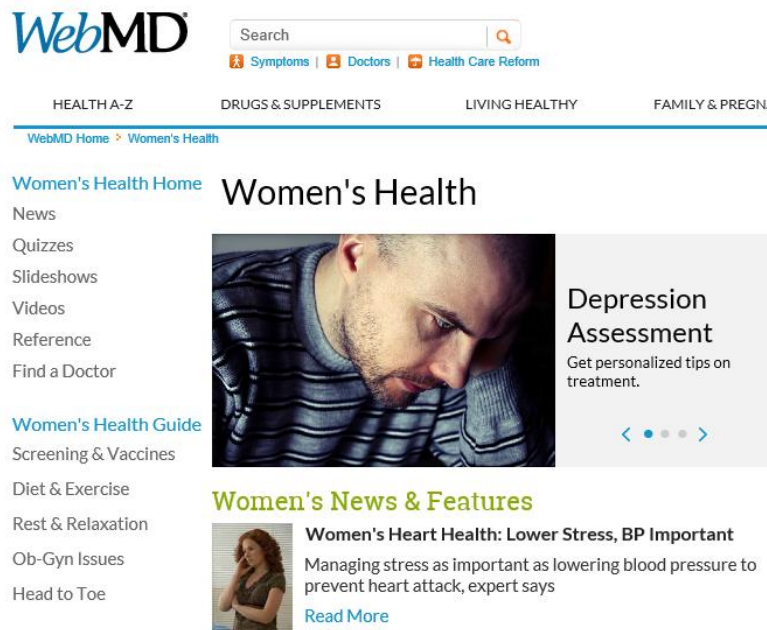
organizational or corporate structures.

Figure 4. Contradictory messages on WebMD's website.

Furthermore, WebMD seems to contradict its own identity on their Women's Health

home page. They recently featured a "Depression Assessment" link, but the picture

accompanying it is of a man. If an individual were searching the internet for topics related to

either women's health or depression they might be confused by this choice of graphic in the

context of all the many locations on the page that say "Women's Health" (five locations in this

small section alone). It sends a contradictory message that may hinder the communication of the

website's identity.

Set the site's tone and personality. Inspire confidence and trust. One excellent

example of a website setting a tone to inspire confidence and trust is the home page for The

Center for Young Women's Health. The website launches right away with graphical elements

and language that are specifically directed to their target users. The mission statement for the

website is relatively concise, and placed off to the side so that users see it, but it is not in the
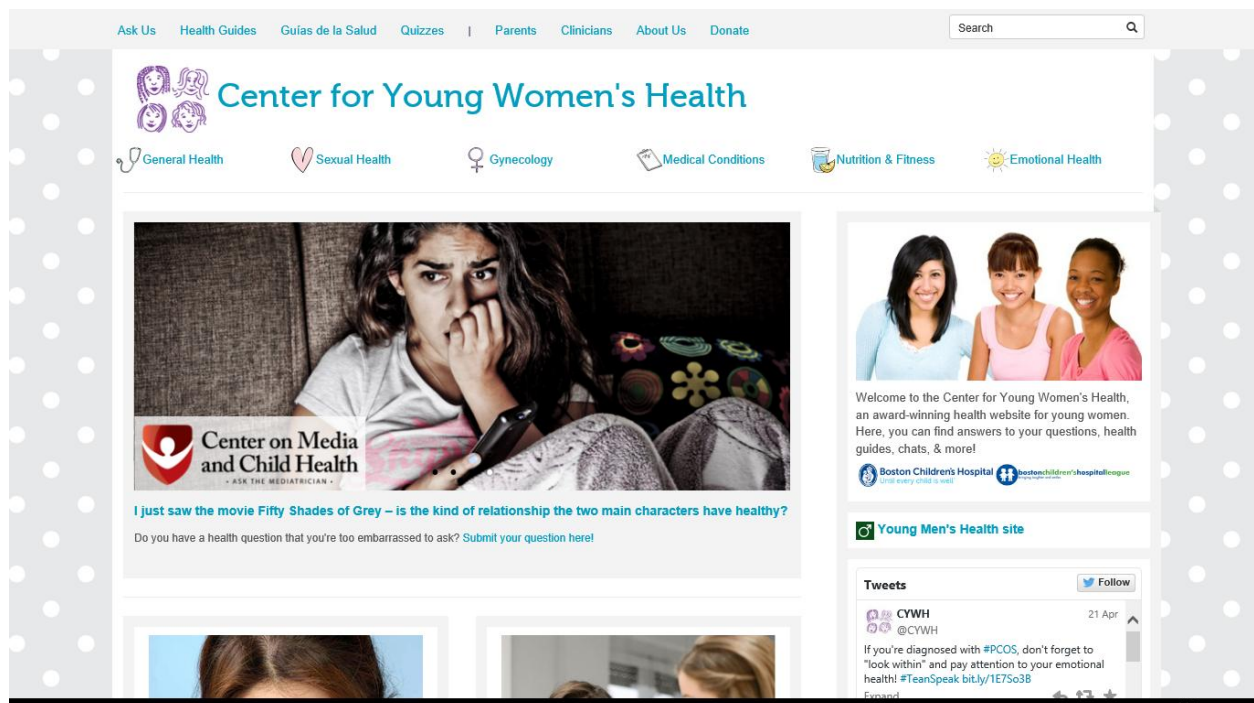
main navigational areas of the site.

Figure 5. The Center for Young Women's Health website home page.

A couple of ways websites can harm the formation of the trust is through advertisements

or domain names. The Center for Young Women's Health is a '.org' website and has zero

advertisements placed on it. However, of the links included in the Oprah article, 6 of the 10 have

'.org' or '.gov' domain names. This is noteworthy because most websites ending as such are

considered by users who understand the difference between different web address endings to be

much more credible and trustworthy than '.com' sites (like WebMD). As previously mentioned,

users have a negative reaction to '.com' websites, but four of the websites recommended in the

Oprah article are '.com' sites, including WebMD. Although, the physician who decided to

include this website in the Oprah article as a mental health resource stated the following

regarding the credibility of WebMD:

> A lot of mental health sites focus solely on depression, but WebMD.com gives good
>
> background on everything from stress management to ADHD. The site, however, could
>
> do a slightly better job of making it clear that in many instances the best treatment for
>
> mental health disorders may be talk therapy, by itself or combined with medication.[1]

WebMD was the only site I analyzed that had a '.com' domain name, and it is also one of the

three sites that had advertisements on it (an advertisement sponsored by Monsanto). Other sites

had advertisements from pharmaceutical companies, a proven cause of distrust by users, health

magazines, and the retailer Bed, Bath and Beyond.

WebMD (.com)	Resolve: The National Fertility Association (.org)	Healthy Women (.org)
• Monsanto	• Merck • Ferring Pharmaceuticals • Various Fertility Centers/Clinics	• Pfizer • Prevention Magazine • Bed Bath and Beyond

*Figure 6. A*dvertisements found on women's health information websites in my analysis.

More recently, WebMD featured a banner ad across the top of the Women's Health home page.

Credibility helps users understand that they have found a trustworthy source of information, but

advertisements (especially those that act directly on a user's potential insecurities) will lead them

to look elsewhere.

Figure 7. Banner advertisement on WebMD's Women's Health web page.

Help people get a sense of what the site is all about. Websites should be designed with a careful balance of being useful and helping the user understand what the site is for and what actions they can accomplish on it. Redish points out that the trick to finding this balance is to "satisfy Goldilocks." Offering too much right away on the homepage can overwhelm the user, but not offering enough could prevent the user from understanding what information they might be able to find.

The website for Resolve is one of the websites I looked at that did not have a tagline to help users understand the purpose of the site, and while the website includes "calls to action," the most noticeable of these are "get involved" and "donate now." These links both suggest that the user should volunteer either their time or money to the cause of infertility, but without knowing precisely what the website's goal is, it would be difficult for a user to understand why they should click on those links.

Most individuals would prefer to have information about the organization and infertility in general before being asked to donate. Furthermore, most users who come to this website might actually need information on topics directly related to infertility. Unfortunately, the "get involved" and "donate now" links are in the exact location that a search box would typically be located, suggesting to the user that searching the website might not be an option. The search

option is in a much more subtle location near the "calendar" and "contact us" links at the top
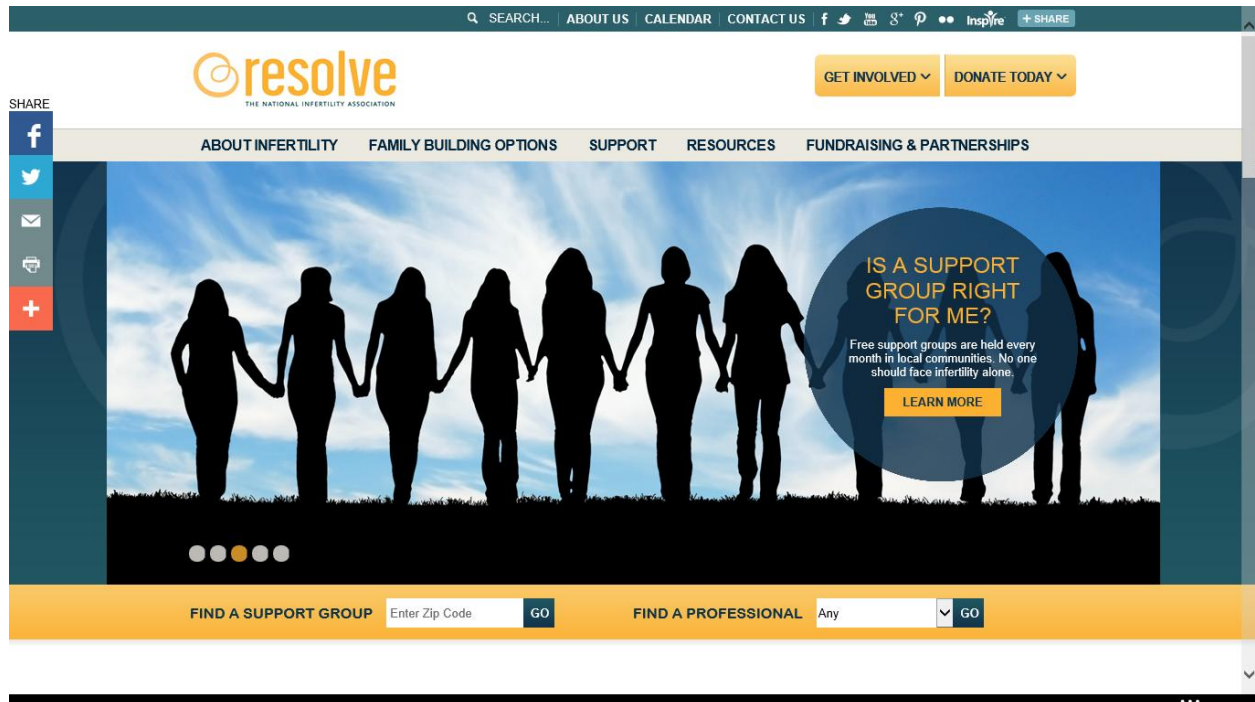
edge of the page.

Figure 8. Resolve home page, "above the fold."

The main home page should not only make it clear what the site is about, but it should

offer users a glimpse of the features and functions the site has to offer. With the Resolve website

much of this information is hidden "beneath the fold," meaning a user would have to scroll down

to find it. In this specific instance, a user might not even realize that there is more content lower

on the page, because the home page is designed in a such a way that it looks like the bottom edge

is the end of the content.

Continue the conversation quickly. Health information websites should be designed

with the primary user in mind and the main tasks they will be looking to accomplish by visiting a

website. Redish points out that planning for the primary audience is important because "if you

try to give equal emphasis to all things for all people on your home page, you'll end up satisfying

no one." Therefore, websites should allow users to start tasks right on the home page, instead of

requiring them to click through multiple pages, and unnecessary content should not be on the

home page of the website as they will detract from the more important actions.

Figure 9. Women's Health home page.

Women's Health is a good example of a streamlined home page with a specific audience

in mind. This particular website not only has clear menu options for users to explore health

topics, but they make other navigational options very clear. The majority of the home page is

dedicated to current topics that might be of interest to a female browser, and the top right corner

of the page is dedicated to giving users other options for accessing specific topics. Users can

browse through the "About Us" or "Contact Us" tabs, they can call a helpline, they can use a

search box, and they can even click to access information in Spanish. Every '.gov' website I

analyzed offers a Spanish translation, which is a good start for communicating health topics to

populations that might not be proficiently health literate in English. WebMD does not offer a Spanish option, and neither do two of the '.org' sites I analyzed.

Another method for adding further browsing options is by linking to social media. Due to the ever-increasing numbers of individuals using the internet to access health information either through computers or cell phones, social media is an increasingly recommended way to increase the quantity of and improve the quality of conversations between health information seekers and health information websites.

The implications of linking to social media for health resources show that websites understand that one way of increasing communication with your audience is to be readily accessible. Being able to follow a health resource website on Twitter or Facebook suggests that the organization will frequently update their information with the latest news in medicine and/or wellness. This gives the organization a profile that is informative and readily available from any internet-accessible device.

Of the eight health information websites I analyzed, all of them include links to some sort of social media, and all except one (MedlinePlus – Women's Health) link to two or more forms of social media. In fact, the majority of them (75%) link to three or four social media sites, with an average number of links across the board of 2.88. These links include Facebook, Twitter, Pinterest, and YouTube.

Three of the websites listed have Pinterest accounts, a website and mobile application that functions as a platform for sharing and saving pictures, information, and links. A quick visit to the "Popular" page on Pinterest will reveal links and directions for getting fit, eating healthy, and easing the symptoms of the common cold, so Pinterest has become a well-known spot to find health information. Pinterest is also well-known for being popular among the female

demographic. According to the Pew Research Center, forty-two percent of women online use

Pinterest while only thirteen percent of men online do. Estimates for the demographics of

Pinterest users place the percentage of Pinterest users who are female at anywhere from 72-80%.

Furthermore, one-in-five Pinterest uses check the website at least once daily.

	Facebook	Twitter	Pinterest	YouTube
Girl's Health	X	X		
Healthy Women	X	X		
MedlinePlus – Women's Health	X	X		
National Institute of Heath	X	X	X	X
Resolve: The National Fertility Association	X	X	X	X
WebMD – Women's Health	X	X	X	
Women's Health: Office on Women's Health, U.S. Department of Health and Human Services	X	X	X	X
Young Women's Health	X	X		X
				Min: 2, Max: 4, Mean: 3.0

Figure 10. Links to social media found on women's health information websites in my analysis.

Send each person on the right way. Sending each person on the right way means

helping users find the means to move ahead in their search for health information in an efficient

manner. Once users have skimmed the home page and determined that the site is credible and is

written for individuals like themselves, they need to quickly and efficiently find routes to the

information they need. One way to do this is by having the search bar up near the top of the

home page, another is by having clearly labeled links.

Figure 11. National Institutes of Health home page.

The website for the National Institutes of Health (NIH) seems to be laid out in precisely this manner, but it runs into multiple usability issues. The search bar is in the proper location, but if a user prefers navigating through tabs, they might be confused to discover a second search bar under the "Health Information" tab. Secondly, it might confuse users as to why there is a link to a separate website, "MedlinePlus Health Info" under the tab as well. Users would expect to find the information they are looking for on this website, not a link to an external source. If that link is meant as the main source of health information for the average user, then it should be featured at the top of the list on the left side of that drop down menu. In fact, that whole right side of the drop down menu should be removed, to integrate those links in with the other health information links, and remove the second search bar.

The NIH website also uses language that is difficult for most adult Americans to understand. Websites should focus on using language familiar to their users, but the NIH website shows up in many search results related to health topics, and seems reputable and credible, so

users will come to the website seeking answers to their questions. Unfortunately, the NIH

website is written at around a grade 16 reading level, according to the Flesch-Kinkaid Grade

Level readability standards, putting the website far beyond the language used by most American

adults.

Figure 12. National Institutes of Health overview of Contraception and Birth Control.

Users that click through the NIH website to MedlinePlus will find topics that are written

in more accessible language (with a Flesch-Kinkaid Grade Level around 8.6). However, the

MedlinePlus website does not make it apparent what the site has to offer its users or how they

may take action on the site. Users who land on the Women's Health page will discover that much

of the page is related to the entire Medline Plus website, not Women's Health specifically. This

complicates navigation for novice users, because they would not know if the search bar, which

states that it will search the website, will search the whole website or if there is a way to search

within women's health topics. The same can be said for much of the other navigation. For

individuals seeking information on health topics for women, this section of the MedlinePlus

website would not seem useful at all. Health information seekers who come to this page are

probably looking for more specific health information than a brief outline of health issues that
affect men and women differently.

Figure 13. Women's Health section of MedlinePlus.

Conclusion and Suggestions for Future Research

Research has shown that young women have low expectations of providers, consider in-
depth conversations with them to be "unnecessary," and that most young women search for
health information online because they do not want to have these conversations or be seen
having them (McCloskey, 2011). These conversations and this information is so personal that the
internet has simply become the go-to resource for many young women, and we don't necessarily
need to change that. What we do need to do is make sure that they can find the information they

need when they need it, and that the information is seems credible, can be easily accessed, and is not only usable, but leads to a positive user experience, so they feel comfortable coming back to these resources. Future research should be done to determine which aspects of accessing health information online are directly related to user demographics, and how these results can be used to design better health information in virtual spaces. Specifically, researchers should better determine how health information is accessed from mobile devices, whether the language used on health information websites suits the audience and leads to full understanding of health topics, how young women specifically perceive credibility of online sources, and how to improve the experience of certain credible online health information sources so that they are more likely to be used by young women.

The issues of language and understanding is one that could be further researched by a more thorough evaluation of the language used by current health information resources. However, my recommendation for a more thorough understanding of the process of looking for online health information and how positive the user experience is would be to carry out an anonymous online survey of women ages 15-30 to discover how women of this age group determine which sources of health information online are accurate, useful, and user-friendly. This survey could be filled out online to improve access of a wider audience and lessen some of the factors that may result in biased answers in in-person interviews or surveys. This means some level of web knowledge and use would be a requirement for participation, but based on the topic of the survey this should be a prerequisite for inclusion in the survey (as individuals who aren't familiar with the internet are least like to turn to it as a resource). The survey should include questions of demographic information (such as age and educational level) and questions regarding which online sources of health information are accessed by the user and when.

Consider the following questions as a starting point for such a survey.

Computer/web use:

- How often do you access the internet?

- How many hours per week do you spend online?

- Do you have a computer at home?

- Do you access the internet anywhere else?

- Do you use your phone or mobile device for web browsing?

- If so, how often?

- How many hours a week (do you use your phone for browsing the web)?

- Would you consider yourself "tech savvy"?

Health information in general and health information online:

- How well do you feel you understand topics related to health and wellness?

- Do you have a primary care physician or a specific health care practitioner you visit?

- Where do you go for health information?

    - Friend

    - Family member

    - Internet

    - Clinic

    - Primary care physician

- How frequently do you check for health information online?

- Where are you when you do so (at home, at the library, on the go)?

- Is the Internet a good source of health information?

- Do you trust health information you find online?

- What would be the first place you would check online for information regarding to a specific health topic?

  - Google or other search engine

  - Wikipedia

  - WebMD

  - Specific health topic site (such as American Heart Association or Autism Speaks)

  - Health and wellness blog

  - Magazine website (such as Women's Health or Yoga Journal)

- How do you determine which sites are trustworthy?

  - Layout/look and feel

  - Amount of information

  - Website name

  - Website is backed by an organization you recognize

  - Website was recommended by a separate source

- Do you find health information webpages:

  - Reliable

  - Easy to use and navigate

  - Easy to understand

- When looking for online resources of health information do you typically:

  - Find the information you need?

  - Feel you have a better understanding after checking the internet?

- Do you prefer health information be presented in:

  o Pictures

  o Video

  o Info-graphics

  o Plain text

- Do you prefer health information be presented in paragraphs or bullet points?

- Do you prefer health information online that is written by someone with a PhD, or do you also consider information from other health and wellness persons helpful as well (for example: well-known wellness bloggers, physical trainers, diet websites, etc.)?

- Do you feel there is a difference between sites that end in .com vs. .org?

- Do you trust one more than the other, if so which?

- How many sites do you typically look at?

- Do you prefer searching a website once you've found one, or clicking through pages to find what you're interested in?

- How much time are you willing to spend on a site?

- How much time are you willing to spend searching for information?

- Do you search for health information from a phone or from a computer more often?

- Do you find that a phone or mobile search leads to better information, or do you prefer checking for health information online from a computer?

- Do you subscribe to any health information organizations or individuals on any of the following social media platforms:

  o Facebook

  o Twitter

     o   Youtube

     o   Pinterest

This is just a brief selection of the many questions that could be considered for future research. A better understanding of user experience and access would lead to a better understanding of whether or not health information online is readily available to those individuals who need it. Asking questions about the ability of users to access the information they seek and how efficient this process is could ultimately answer the question of how satisfactory the experience is for them. If website designers and health information writers know how to create positive learning experiences in online health information for this audience, this could lead to a far greater likelihood that young women will seek out credible health information resources online again in the future.

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