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Connecting for Better Health: Discovering Differences in Self---Reported Preference in the Environment of Social Media in Healthcare Communications

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Connecting for Better Health: Discovering Differences in Self-Reported Preference in the

Environment of Social Media in Healthcare Communications

by

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Abstract

Though working as a vital service to the community, health care companies have the same

challenges as other businesses needing to remain competitive in the marketplace. Health care

providers, however, have the additional challenge of providing healthcare communications that

are valuable to society. Social media presents a new environment for healthcare providers to

communicate and form a relationship with their patient community. Better insights into this new

environment are necessary in order to establish how patients self-report differences in preference

for the different types of technology-mediated communications. Through survey methods, this

study looks into the differences in self-reported claims of the patient community and their

preferences in connecting with healthcare providers through social media and other forms of

technology-mediated communications.

Keywords: health, social media, technology-mediated communication

Connecting for Better Health: Discovering Differences in Self-Reported Preference in the

Environment of Social Media in Healthcare Communications

Although working as a vital service to the community, health care companies have the

same challenges as other businesses needing to remain competitive in the marketplace. Health

care providers, however, have always had to remain cautious when choosing methods to market

their services. Given that their services are always in high demand, they promote a service that

is complicated, expensive, and frightening (Hackworth & Kunz, 2011) making their relationship

with consumers very complex. Patients, physicians, hospitals, pharmaceutical companies, and

regulatory agencies are concerned with major issues such as credibility, recency, uniqueness,

frequency, and salience in regards to healthcare marketing communications (Abbasi & Adjeroh,

2014). Another struggle is the constraints placed on providers by the Health Insurance

Portability and Accountability Act (HIPAA), a set of consumer protection standards (Hackworth

& Kunz, 2011). The intertwining of all these factors have always created challenges for health

care providers as businesses to promote themselves and their services, both as a business seeking

to remain profitable and as a public service to the community.

Social media, however, are providing new outlets for companies looking to connect with

their consumers. Beese (2015) reports that 49% of consumers are willing to like a company's

Facebook page in order to support the brand. As consumers become more accepting of creating

connections with brands, it stands to reason that patients may be prepared to connect with health

care providers through the same outlet. However, in order to understand whether or not social

media will provide a good channel for health care communications, one must look at how social

media compare to the what has previously created successful health care communication.

Literature Review

The Ottawa Charter by the World Health Organization states that "Health is created and lived by people within the settings of their everyday life; where they learn, work, play and love" (World Health Organization, 2015, p. 1).   This famous dictum established the idea that in order for health promotion to be most effective it would need to be integrated into the environments in which individuals lived. This early basis is now referred to as the settings-based approach to health care communications (Loss, Lindacher, & Curbach, 2014). By integrating healthcare communications with the environments, structures and processes that directly influence health and well-being, health care promotions can have the most impact in a patient's day-to-day life. By promoting health education and even physical change to an environment, healthcare communicators can create change on a sociological level. For example, in order to teach young students about healthy eating habits, schools can include nutrition education programs as well as provide healthy school lunch options. A variety of health promotion programs and networks are oriented to such settings such as work sites, communities, and schools (Loss et al., 2014). Traditionally, these settings are defined so that they offer social context and social interaction, play an integral part of everyday life, allow for the pursuit of various personal, professional or leisure time activities, display policies and organizational structure, are based on shared values, norms, sanctions and/or code of conduct, have an influence on health and well-being, are permanent or consistent, and exist as a geographical location (Loss et al., 2014). However, with the advent of the Internet and the era of social media, health care providers may wish to look beyond physical boundaries and broaden the settings-based approach to include a new definition of community.

Social networking sites such as Facebook are part of the Web 2.0 experience, allowing users to share and interact with one another online. These sites allow individuals to maintain, form, and visualize social networks (Boyd & Ellison, 2007) creating online communities. These online interactions have called into question whether or not there is value in this new medium to be leveraged by healthcare providers. Some believe these technologies have the potential to increase the effectiveness of educational programs, disease management, and communications between professionals and consumers (Ball & Lillis, 2001). Others express concerns regarding the same risks that have challenged the healthcare community in the past such as confidentiality, consent, copyright, damaged reputations, harassment, and defamation (Anderson, 2012). However, while health care providers hesitate to join consumers on social media, they run the risk of being left out of the conversation.

More than 60 million Americans are consumers of "health 2.0" resources (Kane, Fishman, Gallaugher, & Glaser, 2009). Many people make their health care decisions based on the recommendations and advice given to them by the people they trust the most (Hackworth & Kunz, 2011). As a result, people are increasingly taking to social media for their healthcare concerns, looking for product recommendations, obtaining advice, sharing experiences, and voicing concerns (Abbasi & Adjeroh, 2014). In fact, 90% of those surveyed between 18 and 24 said they would trust the medical information shared by others on their social networks (PwC Health Research Institute, 2012). The same study estimated that about one-third of consumers are naturally having health-related conversations through social channels (PwC Health Research Institute, 2012). Although the discussion is skewed to a younger generation of users with 80% of respondents ages 18-24 reporting they would be likely to share health information through social media, there is still significant evidence that social media are channels likely to be continually

embraced by all ages since 56% of users ages 45-64 report that they too would be likely to

engage in health activities through social channels (PwC Health Research Institute, 2012).

Healthcare providers are beginning to see value in a social presence, with eight in 10 having

some social presence (PwC Health Research Institute, 2012), a resounding growth over the 21%

of hospitals in 2010 (MacDonald, 2014). Twitter, YouTube, and Facebook are the most popular

social media for hospitals and the most effective channels for driving website traffic (Cummins,

2010); however, evidence shows that health care providers have yet to realize the full potential of

these social media channels.

     A joint study conducted out of the University of Virginia and MIT Sloan School of

Management found that only about 25% of Facebook posts by hospitals contained information

regarding patient issues (Miller & Tucker, 2012). Although many hospitals would report that

their ultimate goal for their social media platforms is to improve communication with patients,

the vast majority of posts were devoted to generic observations or employee-related issues

(Miller & Tucker, 2012). More concerning, only 18% of the Facebook pages were actively

managed (Miller & Tucker, 2012). This likely explains why community sites (third-party or

consumer-driven sites) get more visitors and see more than 20 times the weekly web traffic

(AlliedHealthWorld.com, 2012). In terms of public health, this is a major concern. Without

regulation on user-generated content, there is no mechanism to control or maintain

misinformation, and with nearly 1 in 3 consumers discussing health-related issues

(AlliedHealthWorld.com, 2012) it is a fair assumption that a significant amount of the

information is not created or validated by a certified healthcare provider. From a business

standpoint, it represents potentially a missed opportunity for most healthcare providers to create

an experience that engages and creates value for their patients.

Recognizing the potential but not getting the value, healthcare communications professionals are in uncertain as to how to best utilize social media and other forms of technology-mediated communications. The answer may be as simple as a step back to the roots of the settings-based approach to healthcare communications. Rather than viewing the Internet as a broadcast medium, healthcare providers may find value in viewing channels such as social media as a network of communities. Social networking sites, after all, provide an environment for social interaction, albeit online. By broadening our definition of an environment to that which exists online, healthcare providers can begin to conceptualize how a settings-based approach can be used to add value to the healthcare experience on social media.

Traditionally, healthcare providers had sought out environments such as schools, workplaces, and community centers to integrate health messaging and attempt to create significant sociological changes in healthcare. This settings-based approach goes beyond using the setting as merely a channel for distribution, and views it as a tool to empower the community and the people within it by giving them control over the behavior and/or environmental determinants of their health (Dooris, 2004; Green, Poland, & Rootman, 2000; King, 1998). These centers of activity all provide environments that offer social context and social interaction; play an integral role in everyday life; allow for the pursuit of various personal, professional, or leisure time activities; display policies and an organizational structure; are based on shared values and norms; have influence on health and well-being; are permanent and/or consistent; and provide a geographical location or have physical boundaries (Loss et al., 2014). Under strict definitions, social media could not be defined as constituting settings. However, societal views on environment seem to be in flux as locale seems to be lessening in importance. Of the U.S. workforce, 80-90% say they would like to telework at least part time, and approximately 20-25%

of the workforce teleworks at some frequency (GlobalWorkplaceanalytic.com, 2015). In fact,

3.7 million employees are now working from home at least half the time

(GlobalWorkplaceAnalytic.com, 2015). Trends point to consumers favoring online shopping

more and more with half of surveyed consumers in the US and UK saying they plan to do more

shopping online, in contrast to the 4% of U.S. consumers who planned to increase their in-store

shopping (Sreepal, 2015). Such societal trends point in a direction for preference of an online

environment over that of traditional geographic settings. Setting geography aside for the

moment, an examination into the other components of social media may shed light on whether or

not social networks may be best used not as a broadcast medium for company messaging, but as

a means of change and online community empowerment.

Social Context and Interaction

At its very simplest, social media are defined as a means of interaction through

technology. What differentiates the medium from other forms of computer-mediated

technology, such as instant messaging (IM) technologies, is that it creates a means by which

individuals can publicly present themselves (often through a profile) and an articulated list of

connections through an online platform (Boyd & Ellison, 2007). While this definition has been

widely accepted by researchers and has been used to classify sites such as Facebook and Twitter,

social media platforms have widened with time, and so the definition has broadened. Correa,

Hinsley, and Gil de Zuniqa (2010) further expanded on this definition stating that social media

were websites and software that serve a primary function of allowing users to "connect,

communicate and interact with each other" (p. 248). Kaplan and Haenlein (2010) furthered the

academic term identifying social media as "a group of internet-based applications that build on

the ideological and technical foundations of Web 2.0 and that allow the creation and exchange of user-generated content" (p. 61).

All of these definitions revolve around the concept that social media are tightly connected with making connections and exchanging information. This assumption would not be wrong, as a questionnaire to 289 undergraduate students found that 98% of respondents reported that keeping in touch with friends, keeping in touch with family, and reconnecting with old friends to be among some of the top motivations behind the use of social media technologies (Ezumah, 2013). In fact, social media users may use various applications within a social networking site based on the type of connection they wish to make. Smock, Ellison, Lampe, and Wohn (2011) explored motivations behind Facebook use by looking into how specific utility interaction changed in relation to specific need gratification. Through an online survey, the researchers found that needs related to social interaction positively predicted use of features such as commenting, private messaging, chat and wall posts. In contrast, users who reported needs of self-expression were more likely to use features such as status updates rather than chat tools (Smock, Ellison, Lampe, & Wohn, 2011). Similar results were found during interviews conducted by Whiting and Williams (2013). They found that 88% of those interviewed reported that they used social media for interaction; however, 80% also reported using it to seek out information, and 56% reported using features such as liking, sharing photos and posts, and commenting as a means of self-expression. These findings suggest that social media do indeed provide a platform for social engagement but also empower the user to help define the context for interaction as well.

An Integral Part of Everyday Life

Nearly two-thirds of American adults are using some form of social networking site, up

from 7% when the Pew Research Center began tracking usage in 2005 (Perrin, 2015). The

media, once considered a fad for teens and young-adults, have taken off in popularity within the

last decade. While young adults (ages 18-29) are still the most likely to use social media, usage

among those 65 and older has more than tripled since 2010 (Perrin, 2015). On Monday August

24, 2015, Mark Zuckerberg reported that one billion people had used Facebook on a single day,

roughly 1 in 7 people out of the total global population (Zuckerberg, 2015). However,

familiarity does not ensure integration in daily life.

Users reported being highly engaged with many of the popular social media platforms.

Of those surveyed, 70% reported using Facebook daily (with 45% reporting using it multiple

times a day). This is a significant increase from 2013, suggesting users are only becoming

increasingly engaged with their Facebook communities (Duggan, Ellison, Lampe, Lenhart, &

Madden, 2015). While other popular platforms do not report the same daily use, with 49% of

Instagram users and only 36% of Twitter users checking-in daily, more than half of Internet users

use two or more social media sites (Duggan et al., 2015). Indeed, usage frequency on these

levels suggests that users are integrating social media into their personal lives on a regular basis.

However, perhaps even more convincing are the ways in which social media are

changing the lives of their users. For one thing, the newspaper market is falling at a rate of more

than 8% a year (Greenslade, 2014). Although, concern often points to online readership as a

rationale for this change, 56% of readers reported consuming the newspaper exclusively from

print (Barthal, 2015). Instead, digital organizations are emphasizing the importance of social

media. Nearly half of users reported getting news through Facebook, amounting to 30% of the

general population (Anderson & Caumont, 2014). Moreover, half of total social networking site

users have shared news stories, images, or videos with nearly half participating in news-related

discussions online (Anderson & Caumont, 2014). This change in the way users consume news,

while concerning to some, illustrates that social media are not only frequented by their users

often, but creating changes in their lives suggesting a deep integral role in everyday life.

Personal, Professional, or Leisure Activities

While Facebook is the most popular and is often referenced as the definitive social

medium, it is important to note that social networking platforms are often different, promoting

unique user experiences from specific perspectives. LinkedIn is likely the most obvious

example. With over 380 million members, the social networking site is the world's largest

professional network (LinkedIn, 2015). Users connect with professionals to advance careers,

share job related information, and recruit talent. Untappd provides a social media platform for

craft beer lovers to connect (Untappd, 2010); Flixster provides a community for movie fans

(Jain, 2012); and related to healthcare, Patientslikeme.com has 200,000 users who connect to

track their conditions, therapies, and treatments for a variety of diseases (Comstock, 2013). This

wide range of topics illustrates the vast number of subjects that social network sites can be

developed around.

In addition, various social media platforms can allow for customized experiences that

provide users the ability to reach out and connect with users of like interest. Google indexes 620

million Facebook groups (O'Neill, 2010). These groups represent the multitude of topics,

events, and interests that users can join and create for customized subcommunities with those

with like interests. Pinterest provides subcategories for pinners that allow them to filter material

based on categories of interest. Among the most popular are food & drink, DIY arts & crafts,

humor, home décor, and holidays & events (Dougherty, 2015). This customization of a platform

shows that not only are social networking sites formed around like-topics but their users are also divided into niche communities.

Displays, Policies, and Organizational Structure

Each social networking platform has its own set of terms and conditions. These guidelines provide regulatory standards for privacy, information that can be shared, and terms for engagement with other users. Many platforms, such as Facebook and Twitter, require that you acknowledge that you have read these conditions before creating an account. Many, including Facebook, allow you to report posts containing hate speech, nudity, or violence, thus empowering users to regulate content in their feeds (Facebook, 2015). These types of terms and conditions shape the possible interactions that are possible on the social media platform and determine the guidelines for how engagement will take place. However, one survey suggests that as little as 7% of respondents read the full terms when buying a product or service online (Smithers, 2011). So even more important are the social rules of engagement that are created by the community of users.

Shared Values, Norms, Sanctions, and/or Codes of Conduct

Users in a community often create unwritten sets of rules and norms, and while violators may not be penalized for breaking these rules by the social platform, they are not necessarily going to receive the instant gratification of a like, comment, or share. Many Instagram users consider the overuse of hashtags or asking to be followed bad etiquette (Cowen, 2015). Replying to your own tweets is considered bad form on Twitter as is liking your own post on Facebook (Lee, 2015).

While at first this may not seem substantial, it must be kept in mind that social media profiles provide a stage from which users can portray themselves publicly. For this reason, users

may strive to present themselves in a positive light (Zywica & Doanowski, 2008) and may

engage in impression management (Rosenbeg & Egbert, 2011). As social media provide a

subject with constant feedback to their portrayal, it is important that the user comply with these

social norms (Loss, Lindacher, & Curbach, 2013).

However, social media adoption varies among different demographics. For some

populations social media norms are not just important for gaining acceptance online. Norms for

use of the technology aid users in establishing and maintaining relationships offline as well. For

example, social media users 18 to 34 years old are more likely than older generations to prefer

social media for interactions with acquaintances, friends, and family (Bolton et al., 2013). In

fact, a study conducted by Yang, Brown, and Braun (2014) suggested that social media may have

a very important part to play in the formation of intimate connections. These participants

narrated a norm of what channels of technology were acceptable during various stages of a new

relationship. New acquaintances were expected to establish initial contact via Facebook, then

move to IM and then, as the relationship grew closer, proceed to cell phone communication

(Yang, Brown, & Braun, 2014). Studies such as these illustrate that not only do norms exist

within the environment of a social media platform but are also shaping the norms of interaction

and relationship development.

Influence on Health and Well-Being

In a national survey, it was found that 7-in-10 adult Internet users say they have searched

online for information about a range of health issues (Fox, 2014), but where are they finding

answers? A study from 2013 reported that over one-third of adult Internet users 50 years old and

above stated they had used at least one type of social media to locate and share health

information within the previous 12 months (Tennant, Stellefson, Chaney, Chaney, & Dodd,

2015). Among those social channels used, most participants indicated using a popular social networking site to locate or share health information (95%), using online support groups (11%), or writing in an online diary or blog (6%) less often (Tennant et al., 2015). In addition, the use of social media use was compared across three older generations as well (Baby Boomers, the Silent Generation, and the G.I. Generation) to determine if this pattern of information seeking was specific only to a select demographic. Approximately 40% of the Baby Boomers, 40% of the Silent Generation, and 23% of the G.I. Generation reported using social media to seek health information (Tennant et al., 2015). That being said, young adults (ages 18 -24 years) are more than twice as likely to use social media for health-related discussions (Allied Health World, 2013). Not only a phenomenon across these generations, 23% of patients with chronic health issues, such as cancer, diabetes, or heart disease have gone online to look for patients with similar conditions (Lober & Flowers, 2011).

Not only are patients seeking information through social media, these media are having a significant impact on behavior and healthcare decisions. More than 40% of consumers say that information found via social media affects the way they address their health (Allied Health World, 2014). It has been reported that 42% of consumers are using social media to look up reviews for healthcare providers, treatments, and products (Allied Health World, 2014). In fact, 41% of those surveyed reported using it to make decisions about which doctors or hospitals to use, and 34% reported that the information they find may even affect their decision to take a specific medication (Miller, 2012). These findings suggest that not only are health consumers seeking this information online through social channels, but are directly being influenced by the information being shared by others.

Permanence and/or Consistency

It may be too early to tell if social media will play a lasting role in society, but many trends certainly seem to be headed in that direction. Since social networking really did not hit its stride until Friendster was launched in 2002 (Digital Trends Staff, 2014), it would seem that these channels are still in their infancy. However, it should be noted that these children of technologies such as CompuServe and AOL are growing rapidly. MySpace quickly launched after Friendster in 2003 (Digital Trends Staff, 2014). And while Facebook dominates the market today, over 50 million people still visit MySpace each month (Shields, 2015), suggesting that these social networking sites may not be as wavering with popularity trends as first suspected. Facebook launched in 2004, as a Harvard-only exercise and was not released to the public until 2006 (Digital Trends Staff, 2014). With this in mind, the fact that one billion users would log-in on a single day less than 10 years later is an incredible feat of growth, but does that mean it is here to stay?

Over the course of the last two years, mobile technologies have begun to change social networking. Photo and video-sharing applications such as Instagram exist almost entirely on mobile and have reached over 20 billion images shared since its launch in 2010 (Digital Trends Staff, 2014). Social networking is likely to continue to be more mobile friendly, and new platforms like Snapchat will develop that cater to the increasing use of mobile technology. In March of 2014, Facebook acquired Oculus VR, a company bent on the mass production of virtual reality headsets (Digital Trends Staff, 2014), suggesting a possible next trend in the social networking world. Many experts agree that by 2039, social media will not only continue to play a role in daily life, they will continue to integrate through wearable technology and virtual experience (Wellons, 2014).

With these identifying features in mind, social media could certainly provide a setting, albeit online, for health care providers to employ a settings-based approach. However, social media have the potential to provide a vast number of approaches to these settings via private groups, various social networking sites, and industry-specific communities. Some of these settings provide opportunities for users to seek out information that is of interest to them from industry experts such as healthcare organizational blogs. Other channels are public to the user's network such as connecting through social media networks such as Facebook, Twitter, or Instagram. This very public forum could create hesitation to participate and fear of public judgment or social stigma. And others, such as chat or forum models, still provide opportunities for users to engage each other. Anonymity in such channels could provide comfort to patients and provide a feeling of support for their healthcare concerns. Establishing relationships between the patient community's self-reported preferences for healthcare communications among social media channels and other technology-mediated communications can help researchers to develop an understanding of how healthcare providers can use this medium to provide patient communities with information on various health-related topics like disease prevention. This leads research to question what differences, if any, are there among self-reported preferences in receiving communications from their healthcare provider among various social media and other technology-mediated communication channels regarding various health topics?

Method

A survey was employed to measure self-reported channel preferences in health-related topics and organizational communications. The survey was divided into three parts. The first section was used to determine the background of the sample population by requesting

demographic, technographic, and medical background information. These questions served to provide a better understanding of the sample population, and to help determine future research directions.

The second section of the survey requested that participants evaluate their interest in receiving communications from their healthcare provider on various topics. These topics were subdivided into two categories. The first was health-related topics such as the prevention, management, and/or treatment of cancer, diabetes, weight loss and nutrition, migraines, multiple sclerosis (MS), attention-deficit/hyperactive disorder (ADHD), autism, asthma, orthopedics, sports medicine, children's health, and pregnancy. The second is organizational communications such as national health news, local health news, services provided, promoting classes and events, patient stories, employee stories, and patient support services. After rating their general interest level in receiving communications on the various topics, participants were asked which among the following technology-mediated communication channels they would be most interested in receiving communications about the topic: healthcare provider's blog, Facebook, Twitter, Pinterest, Instagram, YouTube, LinkedIn, a specific health-related website, public forum, private forum, public chat, private chat, or email. These channels were then combined into categories in order to determine whether there were differences in the sample population's interest in receiving healthcare communications between traditional website delivery (healthcare provider's blog, specific health-related website), social networking sites (Facebook, Twitter, Pinterest, Instagram, YouTube, and LinkedIn), private forum/chat, public forum/chat, and direct marketing (email).

The third section of the survey was used for the purpose of providing an incentive. At this point, participants were asked their name, email address, and the name of any person who

referred them to take the survey. Surveyed participants were given the opportunity to win a $50

Amazon gift card by random selection. Participants could enter by both filling out a survey and

referring other people to take the survey. A snowball sampling method was used via Facebook

event and posting to distribute the survey and allow other Facebook users to share it with their

network. This method ensured a population that has a basic knowledge and use of social media.

Results

The majority of the sample population (*n* = 90) was female (65.9%). Almost half of the

sample population was between the ages of 30-39 (48.4%), 17.6% were 40-49, and 14.4% were

21-29. The sample's ethnicity was very homogeneous with 92.3% of the sample population self-

identifying themselves as White. In terms of marital status, 57% was married, while 24.4% was

divorced. Of this sample, 64.8% had no children living in the household. One-child households

made up roughly 17.6% of the sample population and 9.9% had two children. The sample's

average time spent on the Internet varied with 30% reporting spending 16 hours or more a week,

29.7% reported spending 6 to 10 hours, 20.9% reported spending 11 to 15 hours a week, and

14.3% reported only spending 1 to 5 hours. In contrast to this, 49.5% of the sample reported

spending 1 to 5 hours a week on social media and 29.7% reported spending 6 to 10 hours each

week. In terms of media usage, 55.5% of the sample reported sometimes using the Internet to

seek out health-related information, 22.2% reported using it often, and 17.7% reported rarely

using the Internet to seek out information regarding their own or someone else's health. Of

these, 78% reported using search engines, 8% using social media channels, 31% accessing a

healthcare provider's website, and 62% to go to a healthcare specific site such as WebMD. No

participants reported using telehealth applications to find healthcare-related information. With

regard to social media, 97% of the population reported having a Facebook account, and 50 to

60% of the sample also reported having a Twitter, Pinterest, YouTube, Instagram, and Google+ account. Almost three-quarters of the sample population had a LinkedIn account (73%).

To determine whether any differences in preference among various social media and technology-mediated communication channels existed, respondents were asked to rate their level of interest in receiving communications about various health topics including prevention, management, and/or treatment of: cancer, diabetes, weight loss and nutrition, migraines, MS, ADHD, autism, asthma, orthopedics, sports medicine, children's health, and pregnancy. Participants were then asked among which of the following technology-mediated communication channels they would be interested in receiving communications about the topic: healthcare provider's blog, Facebook, Twitter, Pinterest, Instagram, YouTube, LinkedIn, a specific health-related website, public forum, private forum, public chat, private chat, or email. These channels were then combined into categories to determine whether there were differences in the sample's interest in receiving healthcare communications between traditional website delivery (healthcare provider's blog, specific health-related website), social networking sites (Facebook, Twitter, Pinterest, Instagram, YouTube, and LinkedIn), private forum/chat, public forum/chat, and direct marketing (email).

Chi-square tests were performed to determine whether there were significant differences between traditional website delivery (healthcare provider's blog, specific health-related website), social networking sites (Facebook, Twitter, Pinterest, Instagram, YouTube, and LinkedIn), private forum/chat, public forum/chat, and direct marketing (email). When a chi-square test was performed to examine the difference between whether the sample population was interested in learning more about cancer treatment/prevention from social media channels versus public chat/forum there was a significant difference in the two categories, $x^{2=}$ (1, $N = 89$) = 4.475, $p =$

.0344, with social media the reported preferred medium. Differences between private forum/chat

and public forum/chat approached significance, $x^{2=}$ (1, N = 89) = 3.419, p = .0645, with private

forums/chats preferred by those surveyed. Almost half (47.8%) of the surveyed population

reported wanting to learn more on this topic through a company blog and over half (64.4%)

through a dedicated website. Facebook was the most popular social media channel with 18.8%

of the sample population wanting to receive information about cancer treatment/prevention

through the channel.

Significant differences were found between those wishing to learn about the

prevention/treatment of diabetes through traditional website delivery (healthcare provider's blog,

specific health-related website) and social networking sites (Facebook, Twitter, Pinterest,

Instagram, YouTube, and LinkedIn), private forum/chat, public forum/chat, and direct marketing

(email). Of these traditional website delivery and direct marketing were the most preferred.

However, it should be noted that 26 out of 90 respondents reported no interest in receiving any

communications regarding diabetes. Significant differences were also found between those

interested in receiving communication from traditional web and email delivery, $x^{2=}$ (1, N = 90) =

6.4883, p = .0109; those interested in receiving information about diabetes prevention/treatment

from social media and email, $x^{2=}$ (1, N = 90) = 7.3989, p = .0065; and those who preferred

receiving information from private and public chat/forum channels, $x^{2=}$ (1, N = 90) = 10.83011, p

= .001. Fewer than half the population was interested in learning about this topic from a blog

(42.2%) or a specific healthcare-related site (47.8%). Facebook was once again the most popular

social networking site.

Facebook was yet again the most popular choice for social networking with 44.4%

reporting interest in receiving information about nutrition/weight loss through this channel

followed by Pinterest (22.2%). Only 3% of the population indicated that they would not like to receive information from any of the channels in regards to nutrition/weight loss. The only statistically significant difference was between people interested in receiving information about nutrition/weight loss in the public and private chat/forums, $x^{2=}$ (1, N = 90) = 5.7399, p = .0166, with more people preferring public chat/forum. It should be noted that only 5.68% of the population surveyed reported having no interest in the nutrition/weight loss topic. This may indicate that as consumers have more interest in a health topic, they may have less channel preference, not minding information sent in various forms.

Conversely, regarding topics in which there was little initial interest, tests showed more significant differences found among the various channels. This seems to suggest a higher degree of channel preference for these topics. For example, a majority (53.93%) of the sampled population was not interested in receiving health care information about migraines, and only 15.56% were interested in receiving information through Facebook, and 16.85% through email delivery. Despite these percentages, 60% indicated they did not wish to receive information about migraines through any channel. Significant differences were found between traditional web delivery and social networking sites, $x^{2=}$ (1, N = 90) = 9.960, p = .0016, with preference in web delivery, as well as traditional web delivery and private chat/forum, $x^{2=}$ (1, N = 90) = 5.438, p = .0197; public chat/forum, $x^{2=}$ (1, N = 89) = 7.839, p = .0051; and email delivery $x^{2=}$ (1, N =89) = 6.741, p = .0094. Significant differences were also found between social networking sites and email delivery for information regarding migraines, $x^{2=}$ (1, N=89) = 9.862, p = .0017, with email methods preferred by surveyed subjects, and between interest in public and private forum/chat, $x^{2=}$ (1, N = 89) = 23.605, p = .0001, with reported preference towards private forum/chat.

Again, very little interest was reported in receiving any information about multiple MS with 75% indicating no interest at all. As seen with migraines, there were more statistically significant differences between the various channels. Only 19% of the population indicated interest in receiving information about MS through a blog; however, 33.3% indicated interest through a healthcare specific site. Only 7.78% of the sample population indicated interest in receiving information on this health topic through Facebook. Significant differences were found between traditional website delivery and social networking sites, $x^{2=}$ (1, $N = 90) = 4.4955$, $p = .034$, and between traditional website delivery and private forum/chat, $x^{2=}$ (1, $N = 90) = 4.818$, $p = .028$, and public forum/chat, $x^{2=}$ (1, $N = 90) = 7.003$, $p = .008$, with subjects reporting preferences in traditional website delivery over each of the other categories. The chi-square test also revealed statistically significant differences between the sample population's interest in receiving information about MS through social networking sites and public forum/chat, $x^{2=}$ (1, $N = 90) = 5.726$, $p = .0167$, with more interest in public forums/chats. This seems to indicate that those surveyed would rather seek out the information rather than have it sent to them via social media. Differences between interest in receiving information about MS through email and private forum/chat were also statistically significant, $x^{2=}$ (1, $N = 90) = 4.743$, $p = .0294$, with more interest in receiving emails reported.

A surprising lack of interest was found regarding information about ADHD with 63.9% of the sample not interested in receiving information and 17.4% indicated being only somewhat interested. Moreover, 45.6% of the sample population was uninterested in receiving information about ADHD from any of the channels. Again, there were many differences in the surveyed population's reported preference in channels to receive information on this topic. Differences between traditional website delivery and social networking sites approached significance, $x^{2=}$ (1,

$N = 90) = 3.433, p = .0639$, with respondents reporting more interest in receiving traditional

website delivery communications. However, significant differences were found between interest

in traditional website delivery of ADHD information from traditional website delivery and

private chat/forum, $x^{2=}$ (1, $N = 90) = 7.571, p = .0059$; email delivery and traditional website

delivery, $x^{2=}$ (1, $N = 90) = 11.8699, p = 0.0006$; and social networking sites, $x^{2} =$ (1, $N = 90) =$

8.3028, $p = 0.004$; and private forum/chat, $x^{2=}$ (1, $N = 90) = 8.376, p = .0038$. Of these

categories, respondents reported 27% wishing to receive information through a blog, 35%

through a healthcare related site, and 14% through email communications. Receiving

information about ADHD through private and public forum/chat channels also resulted in

significant differences results, $x^{2=}$ (1, $N = 90) = 31.25, p = .0001$, with a higher percent of

respondents reporting preference to public forum/chat.

Asthma was another topic that received little interest with 60.9% of the population

expressing no interest in receiving information, and only 20.7% being somewhat interested.

Additionally, 50% of the population indicated that they were not interested in receiving

information about asthma through any of the channels. Once again, tests showed a number of

statistically significant differences in the channels through which consumers preferred to receive

information on this topic. Significant differences were found between interest in receiving

information about asthma through traditional website delivery and social networking sites, $x^{2=}$ (1,

$N = 90) = 6.975, p = .0083$; public forum/chat, $x^{2=}$ (1, $N = 90) = 6.1595, p = .0131$; and email

delivery, $x^{2=}$ (1, $N = 90) = 13.076, p = .003$, with reported preference in all cases being for

traditional web delivery. The chi-square test also revealed significant differences in interest in

receiving information about asthma through public and private forum/chat, $x^{2=}$ (1, $N = 90) =$

23.476, p = .0001. Statistical differences were also found between interest in receiving

information through email and private forum/chat, $x^{2=}$ (1, N = 90) = 7.378, p = .0066.

Interest in information about allergies was mixed with 50% of the sample population

somewhat or moderately interested in learning about them from their healthcare provider's blog,

but 57.8% expressed interest in receiving information through a healthcare provider's site, and

46.7% through a healthcare provider's blog. Chi-square tests revealed significant differences

between interest in receiving information about allergies through traditional website delivery and

social media, $x^{2=}$ (1, N = 90) = 4.986, p = 0.0256; as well as private forum/chat, $x^{2=}$ (1, N = 90) =

3.984, p = .485; public forum/chat, $x^{2=}$ (1, N = 90) = 5, p = .0253; and email delivery, $x^{2=}$ (1, N =

90) = 7.815, p = .0052. Significant differences were found between public and private

forum/chat channels, $x^{2=}$ (1, N=90) = 34.712, p = .0001. A significant difference was also found

interest in email delivery and private forum/chat $x^{2=}$ (1, N = 90) = 4.0625, p = .0438.

The sample appeared to have moderate interest in orthopedics/joint replacement, with

52.9% not interested in and 63.3% having no interest in receiving information through any of the

channels. Even with that in mind, almost 50% of respondents reported interest in finding this

information on a healthcare provided site and 27% on a healthcare provider's blog. In addition,

13% of respondents reported interest in a public forum and 12% in receiving messages through

Facebook. The chi-square test revealed a statistical difference in interest in receiving

information about orthopedics between traditional website delivery and social networking sites,

$x^{2=}$ (1, N = 90) = 5.8301, p = .0158; as well as the public forum/chat, $x^{2=}$ (1, N = 90) = 7.7346, p

= .0054; private forum/chat, $x^{2=}$ (1, N = 90) = 6.351, p = .0117; and email delivery, $x^{2=}$ (1, N =

90) = 6.7183, p = .0095. A significant difference was also revealed between public and private

chat/forum, $x^{2=}$ (1, N = 90) = 34.4128, p = .0001. Interest in receiving information about

orthopedics by private forum/chat and email was significantly different as well, x^2 (1, $N = 90$) = 6.6399, $p = .01$.

Little interest was found regarding information about sports medicine with 58.62% reporting no interest and only 26.7% interested in receiving information through a healthcare provider's blog. However, 40% reported interest in receiving this type of information through a healthcare specific site. The chi-square test revealed significant differences between interest in receiving information on sports medicine from traditional website delivery and social networking sites, x^2 (1, $N = 90$) = 6.8014, $p = 0.0091$; as well as private chat/forum, x^2 (1, $N = 90$) = 6.5922, $p = .0102$; public forum/chat, x^2 (1, $N = 90$) = 15.737, $p = .0001$; and email delivery, x^2 (1, $N = 90$) = 14.0179, $p = .0002$. Significant differences were found between interest in delivery of information through social networking sites and email delivery through the chi-square test, x^2 (1, $N = 90$) = 5.0349, $p = .0248$; as well as public forum/chat, x^2 (1, $N = 90$) = 11.6971, $p = .0006$; and private forum/chat, x^2 (1, $N = 90$) = 8.2415, $p = .0041$. The chi-square test also determined that there was a significant difference between interest in receiving information through public and private forum/chat, x^2 (1, $N = 90$) = 35.598, $p = .0001$. A significant difference was found between interest in receiving information about sports medicine through public forum/chat, x^2 (1, $N = 90$) = 6.0692, $p = .0138$, and approaches significance with private forum/chat, x^2 (1, $N = 90$) = 3.777, $p = .052$, while 39% reported interest in receiving information on a health care provider's site, 14% via email, and 16% through Facebook.

Little interest was found regarding receiving information about pregnancy with 59.1% of the sample reported that they were uninterested, 17% reported being somewhat interested, and 42.2% uninterested in receiving information through any of the channels. Almost 42% of the respondents reported wishing to receive information from a health care specific site as well as

30% through a healthcare provider's blog. Interest in social media seemed higher in this

category with 16% interested in receiving information through Facebook and 10% through

Pinterest. Interestingly, 13% of respondents were interested in receiving information about

pregnancy through email or public forum. A significant difference was found between interest in

receiving information about pregnancy through traditional website delivery and social

networking sites, $x^{2=}$ (1, $N = 90$) = 10.7005, p = .0011; as well as private forum/chat, $x^{2=}$ (1, $N =$

90) = 6.7738, p = .0093; public forum/chat, $x^{2=}$ (1, $N = 90$) = 15.134, p = .0001; and email

delivery, $x^{2=}$ (1, $N = 90$) = 5.8199, p = .0158. The chi-square test also revealed that differences

in interest to receive this health topic through social networking sites and public forum/chat to be

significant, $x^{2=}$ (1, $N = 90$) = 22.315, p = .0001. Interest in receiving information about

pregnancy in private and public forum/chat were also significantly different, $x^{2=}$ (1, $N = 90$) =

24.615, p = 0.0001. The chi-square test also showed the interest in receiving information about

pregnancy to be significantly different between email delivery and private forum/chat, $x^{2=}$ (1, $N =$

90) = 9.6778, p = .0019; as well as public forum/chat, $x^{2=}$ (1, $N = 90$) = 5.752, p = .0165.

Moderate interest was shown in receiving information about children's health topics with

15.7% very interested, 18% somewhat interested, and 13.5% moderately interested. Credibility

seemed to explain the results of 48.9% reporting interest in receiving information through a

healthcare specific site, and 40% interested in receiving information through healthcare

provider's blog. Only 16.7% of the sample group reported interest in receiving information

through Facebook and 8.9% through Pinterest. Significant differences were found between the

sample's interest in receiving information about children's healthcare through traditional website

delivery and social networking sites, $x^{2=}$ (1, $N = 90$) = 5.5533, p = .0184; as well as private

forum/chat, $x^{2=}$ (1, $N = 90$) = 5.7369, p = .0166; public forum/chat, $x^{2=}$ (1, $N = 90$) = 8.821, p =

.003; and email delivery, $x^{2=}$ (1, $N = 90$) = 7.4557, $p = .0063$. A significant difference was also

found in the sample's interest in receiving information about children's healthcare topics

between social networking sites and public forum/chat, $x^{2=}$ (1, $N = 90$) = 12.5, $p = .0004$.

Significant differences were found between interest in receiving information about this health

topic through private and public chat/forum, $x^{2=}$ (1, $N = 90$) = 11.664, $p = .0006$. A significant

difference was also found in interest in receiving children's health information through email and

private forum/chat, $x^{2=}$ (1, $N = 90$) = 26.819, $p = .0001$, and public forum/chat $x^{2=}$ (1, $N = 90$) =

9.0652, $p = .0026$.

Discussion

With nearly three-quarters of the sampled population using the Internet to look up health-

related information, it was surprising to see the lack of interest in the chosen health topics. This

may be due, however, to the homogeneous nature of the population surveyed. Interestingly, of

the topics surveyed, nutrition/weight loss and the prevention/treatment of cancer had the most

interest of somewhat and above. These topics also had the fewest statistically significant results

regarding differences between channels through which the sample population preferred to

receive information. One explanation is that level of interest may correlate with preference to

receive information through more personal media such as social media. It may be that some

forms of technology-mediated communication may be well received across the sample

population regardless of their level of interest; however, as individuals show more interest, they

are more willing to access information across multiple channels.

Among all the various health topics, the surveyed population very consistently reported

the most interest in receiving information from a provider's blog or healthcare specific site. This

seems to suggest that among all the topics there is a desire for subjects to be able to research the

information needed at their own will or leisure. This may also be indicative of the population's

need for the thorough detail that can be provided through these channels. When seeking out

medical information, the level of detail that can be provided through these channels may be

significant to the sample population. These forms of communication may also provide the

sample population with an impression of credibility. It may be assumed that blogs from the

healthcare provider and healthcare specific sites are likely authored by credible sources, fact

checked and maintained by healthcare providers.

For health care providers, these findings are evidence to suggest that, like many other

industries, content is king. While as before mentioned, many health care providers have seemed

to jump on the Facebook bandwagon, it may be wiser to put more investment and resources

behind creating informative content that is unique and engaging to the audience. Content-driven

channels not only provide opportunities for better site engine optimization and traffic to health

care provider sites, they also allow providers to add value to health information with expert

authorship, case studies, testimonials, and information about services provided (Khwaja, 2013).

Research has shown that 61% of people feel better about companies that deliver custom content

and are more likely to buy from such companies (Khwaja, 2013). Health care providers can take

advantage of what retail providers already know by investing in content-driven marketing plans

to help drive patients to their practitioners and provide them with information that adds value to

the health experiences.

However, data seemed to suggest that as interest in a topic increased, significant

differences decreased between the channels preferred by the sample. Seemingly, interest began

to open up based on the level of consumer effort and intimacy involved with the channel. In

health care topics, approaching high interest levels in the sample population, there were fewer

differences between interest in receiving information through email and the other channels such

as web-based health care provider blogs and health-related websites. This suggests that as

interest in the topic increases among the sample population, so does their willingness to receive

emails regarding the information. Similarly, social media channels, in particular Facebook,

seemed to follow a similar pattern.

Of the two topics (cancer treatment/prevention and nutrition/ weight loss) that were of

most interest to the sampled population, there were fewer significant differences found among

the different channel types. In cancer treatment/ prevention there was a significant difference

found between public forum and social media channels, and the difference between public and

private social channels only approached significance. In nutrition/weight loss, the only

significant difference found was between public and private forum. The lack of significant

differences when compared to the other topics of less interest, such as MS or ADHD, seems to

suggest that the sample population may become more open to other channels when they assign a

higher degree of importance to it. Using already established forms of email and social media

(such as Facebook) may provide easy and welcomed channels for distributing information about

various health conditions. In addition, it is of interest that the difference between public and

private forum approached significance, among both of these topics as well as many others of less

interest. This result suggests that despite level of interest in the topic, private and public

chat/forum channel preference still varied among the sample population.

While the research conducted on this sample population implies that health care providers

may wish to invest resources into content-rich channels, such as blogs and condition-specific

websites, it also begins to indicate how other technology-mediated communication channels,

such as email and social media, can be effectively employed to distribute this information when

an interested population is targeted. What will influence the level of acceptance of this

messaging, however, will be the health care provider's ability to target emails, posts, and

messaging to patients with an already high interest in the subject material. It is recommended

that health care providers take advantage of patient portals, consumer-relationship management

software, and web-tracking services to help customize online experiences for their patients. In

addition, general Facebook groups around locations such as hospitals or practices will likely be

less effective than using social media to provide condition-specific information to those most

interested. While content may be key for health care providers, targeted distribution and a

customized user experience are very likely necessary for providing value and growing business.

Limitations

Data used in this study relied on self-reporting through a survey. In this type of study, it

is not necessarily always an accurate description of the preference of the user, but what they

believe might be their preference. They may also change their answers due to the sensitivity of

the material. For instance, fewer people may have reported that they had an interest in ADHD

for fear of stigmas associated with the condition.

The population sampled was also very homogenous in nature. This was likely due to the

nature of how the study was distributed. By using a Facebook event and post to distribute the

study, the researcher ensured a group that was familiar with at least some form of social media.

Since users were encouraged and incentivized to share among their friends and family, the

sample population became standardized and lacked the diversity required to draw conclusions

outside of the sample group. On the same note, this study does not take into account that

members of the patient community who do not engage on Facebook or social media are not

represented.

Future Research

Researchers may also look to a diversified population to find if the sample population represents a larger population. In contrast, looking at more targeted uniform populations, such as various age groups, could reveal different trends among different patient communities. Older populations, who may be less comfortable with some forms of technology-mediated communication, may have more selective channel preferences than younger populations who grew up with social media channels. Other characteristics outside of age that may be of interest to health care providers include gender, ethnicity, and technology use.

It would be of interest for future researchers to look into differences of channel preference among populations that are highly likely to have high degrees of interest in the healthcare topic. For example, it would interesting to see if women who are currently pregnant have significant differences in their channel preference to receive information about pregnancy among the various channels types. On the same note, it would be interesting for researchers to look into the types of channels cancer patients prefer to receive communications about cancer treatment. Would these highly targeted sample groups show similar trends to the overall population sampled in the current study?

As before mentioned, health care providers are not only charged with providing information, they are also challenged with marketing their services. A similar study that explored what channels populations would be most receptive of receiving organizational communications may be beneficial to this end. For example, researchers may determine whether there are significant differences in the willingness to receive information about patient stories/testimonials, upcoming events, company news, and patient support services on the various technology-mediated communication channels. In addition, researchers look to see if

there are differences in the preferences to receive national and local health news information

through the various types of channels. Understanding how these types of messages are received

in the various channel types can help health care providers to deliver added value through their

communication channels.

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