

# HEALTH PROMOTION ON SOCIAL MEDIA

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**Abstract-** Information on social media spreads like a wildfire, hence, health organizations are increasingly using social media to disseminate health information. This paper presents a pilot study and aims to find- how individuals are exploiting health information available on social media? and, how are they contributing in health promotion on social media? The research method used here is a self-administered questionnaire survey. The findings reveal that, for health information exploitation majority of the respondents have a preference for- images and videos over text and other forms, both Facebook and YouTube over other kinds of social media, health organization pages over health related groups and video channels (this information can be used by health organizations to promote health information effectively); whereas for sharing of health information the individuals share it almost equally in the three forms but with slight preference for text form and preference for Facebook over YouTube or other kinds of social media. The findings reported are important as they answer how individuals are viewing and sharing health information, rather than how many are doing so or which health topics.

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**Index Terms-** health; health promotion; social media.

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## I. INTRODUCTION

Social media, in general refers to Internet-based tools which enable people to come together and communicate; to share contents such as- personal messages, information, images, etc.; and in some instances, to cooperate with other individuals in real time. It is a constellation of- social networking platforms (e.g. Facebook), blogs (e.g. Tumblr), microblogs (e.g. Twitter), media sharing websites (e.g. YouTube), wikis (e.g. Wikipedia) [1], and virtual worlds (e.g. World of Warcraft) [2]. There has been a significant growth in the popularity of social media in only a few years [3]. Since 2005 the percentage of adults exploiting social media has boosted from 8% to 72% in America. The number of Facebook users surpassed 1 billion (one-seventh of the earth's population) in 2012; 2 billion videos are viewed on YouTube and 100 million active Twitter users tweet more than 65 million times, a day[1]. The extensive popularity of social media complements its application in the health discipline [4]. Mayo Clinic researchers suggested that social media has started "revolutionizing healthcare" through enhancing healthcare as well as life standard [5].

It was reported that, almost 80% physicians who advise patients on the Internet, share or generate medical information using social media; 60% of state health divisions employ at least one social media application [6]by which they support general health matters and public education [1].Health organizations such as- the American Medical Association, Weight Watchers and the Canadian Cancer Society utilize social networking sites for information dissemination [7].

Social media supports public health promotion by providing preventive medicine information to individuals (e.g. the Ottawa Health Decision Centre in

association with the Ottawa Health Research Institute has a Facebook page called iShould; the U.S. Preventive Medicine has accounts on Twitter, Myspace and Facebook) [7]. Social media render platforms for interactions associated with different health subjects such as- health promotion, patient education, public relations, etc. [8]. It can also be used to foster health policies and healthy lifestyle [9].

Emergency notification systems can employ social media to disseminate information by virtue of its merits, e.g. the Public Health Agency of Canada and Health Canada utilize their pages on social media websites to broadcast diverse information ranging from immunization and preventable diseases information to product recalls and nutrition information. The Centers for Disease Control and Prevention (CDC) circulates videos, pictures, messages and other form of information to more than fifty thousand individuals, using its Facebook page [7].

Public health organizations utilize keyboard content from social networks such as Twitter and position tracking technologies together to handle disasters immediately and to observe the health and well-being of the people e.g., the CDC utilizes Facebook and Twitter to track messages that might point to a flu outbreak and also to share notifications regarding such events. In the past CDC has found and monitored origins and suspicious occurrences of Legionnaire's disease using social media [1].

The anticipated advantages of social media promoting health encompasses- extensive dissemination of information, customized information accessible to people, uncomplicated connections to other individuals for social assistance and more [7]. Social media can track and observe disease breakout, monitor

public reaction to health topics, identify misleading of health information, etc. [10]. The pivotal benefit is its capacity to stretch out to extensive audiences without high costs of conventional business methods [7]. It can supply useful peer, emotional and social assistance to common people and patients [10]. It was found that diabetic patients, family and their friends utilized Facebook to get emotional assistance, and disease related advice and responses [11]. Social media can be tailored and modified to preferences and requirements of different users. Tailored messages are very successful for motivational messages such as reminder of the advantages of exercises [4].

Social networking offers individuals the opportunity to connect with each other [7], PatientsLikeMe allows patients to communicate with each other and share information regarding health subjects. Social media can support health behaviour change, e.g. quitting of smoking [10], which helps in disease prevention [5]. As humans are highly social [1], the source of information on social media favours positive health behaviours, health promoting messages come from family, friends, co-workers, etc. (within social networks) rather than from health specialists; which makes the messages more compelling [7].

From the above paragraphs it is clear that social media is playing a massive role in promoting health. In this paper we will focus on, *first*, how the individuals are exploiting health information available on social media, based on- number of individuals exploiting health information on social media, the preferred- forms of health information, kinds of social media, features (Pages, Groups and Video Channels) for viewing, *second*, how the individuals are contributing in health promotion on social media, based on- number of individuals who share health information on social media, the preferred- forms of health information and kinds of social media for sharing.

## II. LITERATURE REVIEW

In this section, we will briefly study about the health information available on social media- the forms of information and kinds of social media utilized; how many individuals view and share health information and which health topics.

### A. Health information and social media

Social media is employed by 70% of U.S. health care organizations, with most favoured kinds being YouTube, Facebook and Twitter [1]. It was reported that 620 breast cancer groups (having 1,090,397 constituents) existed on Facebook, and out of them 38.1% (236) groups were created to spread breast cancer awareness and 44.7% (277) groups for fundraising [12].

Social media render broad range of communication tools that link patients with similar health interests

who can organize online help groups or self-assistance groups. Studies have proved that help groups can assist patients in dealing with diseases or sickness and also in delivering information, and social and emotional aid. Patients with cancer or chronic diseases or those who are recovering from surgeries may benefit from social media. Health subjects that individuals converse frequently on social media are- particular diseases or medical subjects, pregnancy, weight maintenance, aging, safety of food and drugs and recollections, etc. [13]. It was found that social media creates an online community for cancer awareness in numerous ways and for several motives.

Academic institutions are increasingly focussing and training medical and associated health practitioners on the significance of employing social media as a means to spread information among patients and clients e.g. nursing students have been motivated and provided with resources to make short YouTube videos to be circulated with the help of different kinds of social media for dissemination of information to patients. [14].

Numerous health associated organizations keep a Facebook profile to disseminate health information [6]. Healthcare providers (e.g. Mayo clinic) present educational videos on YouTube and physicians use blogs to inform latest treatment alternatives and vaccination campaigns to patients [5]. Mayo Clinic started the Social Media Health Network in 2010, which strives to build relationships between patients and health care professionals with the help of social media, this plan has established an existence on YouTube, Facebook and Twitter. It offers a huge library of conferences, blog posts, webinars and podcasts to engage different stakeholders [1].

The CDC has utilized Twitter to disseminate flu associated information and updates with 160,528 present followers. An examination conducted on CDC's Twitter profiles namely- CDC eHealth, CDC flu, CDC Espanol, CDC Emergency and CDCgov, since 2008 showed greater than 1,411,359 followers, 48,125 clickthroughs and 1,617 updates. Moreover, CDC has uploaded more than 100 videos on YouTube with roughly 3.6 million views. In the course of outbreak of salmonella-contaminated peanut products (2008 to 2009), the Food and Drug Administration (FDA) developed a database which helped consumers to know whether the product had been recalled using the product barcode or name. Later CDC developed a widget (which could be posted on a blog or website) that also enabled consumers to access the database [6].

### B. Viewing and sharing of health information on social media

The term Web 2.0 differentiates the contemporary version of the Internet which is about user-generated, collaborative and user-controlled applications and

information from the original or more stable Internet [4]. Social media are also mentioned as Web 2.0 [1]. Users can share their health related experiences and understanding; and can post reviews concerning medicines and health products [13]. Since users both create and share medical information on the Internet there is production of more available health information on social media [10].

Fox & Duggan (2013) reported that as of September 2012, 72% of the internet users viewed health information online in the previous year. The information being associated with serious issues, common information and less significant health issues [15]. Fox (2011) reported that 25% of internet users viewed health or medical related video online [16]. According to Deloitte's 2010 Survey of Health Care Consumers, more than 50% of consumers searched health information online, which comprised of- 53% of seniors, 57% of the individuals born between roughly 1961 and 1981, and 56% of individuals born between 1982 and 2001 [4]. Lenhart, Madden, Smith, & Macgill (2009) reported that 79% of young adults (18 to 29 years) view health information online; 55%- fitness or physical activity information; 21%- sex related health information; 18%- vaccination or immunization information; 14%- alcohol or drugs issues; 13%- how to cease smoking. Only 28% teens view health, physical strength or diet information online; 22%- health issues which are difficult to be conversed such as- depression, drugs or sexual health [17].

Social media enables convenient and extensive sharing of health associated- remarks, images and videos; and is alternative source of health information [18]. AIDS.gov observed the information posted throughout its Facing AIDS Campaign supporting World AIDS Day (2008), and found that giving inducements like web badges to bloggers for posting online and motivating viewers to post their photographs wearing a red ribbon on their respective social media profiles and blogs, boosted engagement and user-generated information [4].

Facebook is utilized by general people, patients, health experts, etc. to share their knowledge of disease control, diagnosis and research. YouTube has been utilized by- general people to share health information related with symptoms, diagnosis and medicines; and patients to share their cancer stories. Health experts can share information with patients and general people using Blog sites. [10]. It was reported that 40% of individuals who searched for health information on social media, shared their health associated experiences [13]. Lenhart, Purcell, Smith, & Zickuhr (2010) reported that in 2009, 38% of teens, 30% of adults, 37% of young adults (18 to 29 years) and 28% of individuals aged thirty or more, internet users shared self-created content on the Internet in 2009 [19].

### C. This paper

The literature review suggests that health information is available in almost all forms such as- text, images and videos on Facebook, YouTube and Twitter being most preferred kinds of social media; and reveals the percentages of individuals who view and share health information *online*. The percentage of individuals who share health information related with their experience and kinds of social media preferred (names but not the percentage of individuals who use them) *on social media* is identified but the same for viewing of health information on social media is not stressed in the current literature. In this pilot study we aim to know- how individuals are exploiting health information available on social media? and, how are they contributing in health promotion on social media?

### III. RESEARCH DESIGN

A concise self-administered questionnaire was conducted to meet the aim of this paper. The other research methods such as- interviews and observations were not employed because, they are not as reliable and accurate as questionnaires. The research was focused on a sample of 17 individuals from the population of individuals aged between 18 to 41 years (mean age being 25.7 years). The questionnaire contained a total of nine short and clear questions, all being closed questions which assisted in summarizing responses to form a picture of the opinions provided by the considered population. Additionally, five questions were single response questions, eliciting only one response; four questions were kept as multiple response questions, providing the individuals with liberty to choose as many categories as they liked.

The initial questionnaire was modified in several ways by learning from series of pilot tests carried out before the final survey was conducted. The categories to be chosen from in the previous questionnaires were kept fairly broad to cover almost all categories and it was learned that majority of the responses focused on two kinds of social media- Facebook and YouTube. Although in literature review, we learnt that good amounts of health information are available on Twitter also, but the respondents did not show interest in Twitter from viewing perspective. Three out of seventeen respondents selected three kinds of social media apart from Facebook and YouTube, but it is to be noted that the selected kinds were different from each other and were selected along with either Facebook or YouTube. So, in the final questionnaire the category "others" was used which served as the catch-all type option.

The questionnaire comprised of nine questions, which can be classified into two sections, the first section contained questions regarding viewing of health information on social media, the second section contained questions regarding sharing of health

information on social media. A part of the survey was also to know how many individuals view health information on social media, and it can be perceived that individuals who do not view it, do not share it as well. The first question of the questionnaire was to know whether the respondent views health information on social media, only the respondents who did so continued with the next questions, the other respondents contributed in informing us how many individuals do not view health information on social media.

In the end of the questionnaire, the email id of the respondent was requested for future reference; and the age, gender and nationality was confirmed by the respondent.

**IV. FINDINGS AND DISCUSSION**

The findings are as listed in table I and as discussed below.

**A. How individuals are exploiting health information available on social media?**

To find it, we will consider- the number of individuals viewing health information on social media, the preferred- forms of health information, kinds of social media, features (Pages, Groups and Video Channels) for doing so. In this research we will focus on Pages and Groups of Facebook, and Video Channels of YouTube. It is known that-Health organizations have formed *Pages* on Facebook to disseminate health information. *Groups* on Facebook could be used for communication and sharing of health information among people with common interest. *Video channels* on YouTube helps in viewing videos and sharing them using other types of social media (e.g. Facebook). In this pilot study we can learn whether individuals are more interested in knowing the health information (provided by Pages) or communication of health information among others having same interest (provided by Groups) or health information specifically presented as videos (provided by video channels).

We find that 70.59% (12/17) of the respondents view health information on social media, most of them prefer to view health information in the form of images and videos over text, because both images and

videos are individually preferred by 83.33% (10/12) of them (respondents who view health information), whereas text is preferred by only 33.33% (4/12) of them. Majority of them prefer Facebook and YouTube over other kinds of social media for exploiting health information, because Facebook and YouTube is used for viewing health information by 91.66% (11/12) and 83.33% (10/12) of them respectively, whereas other kinds of social media are preferred by only 25% (3/12) of them. The most preferred feature is Page as preferred by 66.66% (8/12) of them, followed by Video Channel (preferred by 33.33% or 4/12) and least preferred being Group (preferred by 8.33% or 1/12). We can also infer that 66.66% of them are more interested in knowing the health information, 33.33% of them are more interested in health information specifically presented as videos, and 8.33% of them are more interested in communication of health information among others having same interest.

**B. How are they contributing in health promotion on social media?**

To find it, we will consider- the number of individuals sharing health information on social media, the preferred- forms of health information and kinds of social media for doing so.

58.33% (7/12) of the respondents who view health information on social media share it on social media. They share health information in three forms- text, images and videos almost equally with slightly more preference to text form as 71.43% (5/7) of them (respondents who share health information) share health information in text form and, 57.14% (4/7) of them share health information in images and videos form individually. They show a unanimous preference for Facebook for sharing health information, as, all of them use Facebook to share health information. 42.86% (3/7) of them use YouTube to share health information, kinds of social media other than Facebook and Youtube are not preferred by them, as only 14.28% (1/7) of them share health information using other kinds of social media. In the literature review we cited that 40% of individuals who searched for health information on social media, shared their health associated experiences [13], in our pilot study we find the percentage to be higher as 58.33%.

**Table I: Findings**

Purpose	Number of subjects
View health information	70.59% (12/17 respondents) view health information on social media.
Share health information	58.33% (7/12 respondents) share health information on social media.
Forms of health information preferred for viewing	83.33% (10/12 respondents) prefer to view images (either only or along with other forms of health information). 83.33% (10/12 respondents) prefer to view videos (either only or along with other forms). 33.33% (4/12 respondents) prefer to view text along with forms.
Forms of health information preferred for sharing	71.43% (5/7 respondents) prefer to share text (along with other kinds of social media). 57.14% (4/7 respondents) prefer to share images (along with other kinds). 57.14% (4/7 respondents) prefer to share videos (only or along with other kinds).

Kinds of Social media used to view health information.	91.66% (11/12 respondents) use Facebook (only or along with other kinds of social media) for viewing health information. 83.33% (10/12 respondents) use YouTube (along with other kinds of social media) for viewing health information. 25% (3/12 respondents) use other kinds of social media along with Facebook and Youtube for viewing health information.
Kinds of Social media used to share health information.	All respondents (7/7 respondents) who share health information on social media, do using Facebook (either only or along with other kinds of social media). 42.86% (3/7 respondents) share health related videos from YouTube on different kinds of social media. 14.28% (1/7 respondent) shares health information on Facebook, YouTube and other kinds of social media.
Preferred features of social media	66.66% (8/12 respondents) have marked a like on (are interested in) health organization's pages (either only, or along with interests in Pages and Video Channels). 8.33% (1/12 respondent) is a group member of (is interested in) health related Groups on Facebook along with interests in health organization's Pages. 33.33% (4/12 respondents) have subscribed to (are interested in) health related Video Channel on YouTube (either only, or along with interests in health organization's Pages).

**C. Comparing the findings from the above two questions**

Relatively more number of respondents view health information on social media than those who share it on social media. As 70.59% of the respondents view health information on social media, but 58.33% of those who view share health information on social media.

For viewing health information- majority of the respondents have a preference for images and videos over text and other forms, whereas for sharing of health information- respondents share it almost equally in text, image and video forms with a slight preference to text form. As, for viewing health information- both images and videos are individually preferred by 83.33% of the respondents, whereas text is preferred by only 33.33% of them; for sharing of health information- 71.43% of the respondents (who share health information) share it in text form and, 57.14% of them share it in images and videos form individually.

For viewing health information, majority of the respondents have a preference for both Facebook and YouTube over other kinds of social media, whereas for sharing of health information, respondents unanimously prefer Facebook for sharing it. As, for viewing health information, 91.66% and 83.33% of the respondents view it using Facebook and YouTube respectively, whereas other kinds of social media are preferred only by 25% of them; for sharing health information, all the respondent who share it show a unanimous preference for Facebook, 42.86% of them use YouTube to share health information, whereas only 14.28% of them share health information on other kinds of social media.

**CONCLUSION**

It would be fair to conclude that- in a survey performed on 17 individuals, 70.59% of them exploit health information mostly on Facebook and YouTube over

other kinds of social media, majority of them viewed images and videos information over text information. Two-third of them were interested in health organizations pages on Facebook, one-third of them in health related video channels on YouTube and only one individual showed interest in health related Groups on Facebook, which also shows that two-third of them were more interested in knowing the health information, one-third of them were more interested in health information specifically presented as videos and only one individual was more interested in communication of health information among others having same interest. It was also found that 58.33% of those who exploit health information were contributing in health promotion, signifying that relatively more number of respondents, view health information on social media, than, who share health information on social media. All of them shared health information on Facebook, around 40% shared YouTube videos on other kinds of social media and only one of them shared health information on other kinds of social media, which reveals that, from perspective of viewing health information both Facebook and YouTube are preferred, while from sharing perspective, Facebook dominates YouTube. Additionally, for sharing, all the three forms: text, images and videos are preferred with slightly more preference to text form, whereas for viewing, images and videos were preferred over text form.

**LIMITATIONS AND FUTURE WORK**

The limitations in the research, which hindered in the overall evaluation are as follows:

- Small sample size: Due to limited amount of time the sample size of only 17 individuals was considered which is the main limitation of this pilot study.
- Limited scope of the research: In the research about 65% of the individuals were male (male and

female ratios were not equal) and the majority of the individuals were of Asian ethnicity.

- Need for other research method: It is realized that, analysis of relevant case studies along with survey (as performed) would had made this research report more exhaustive.

The limitations are the lessons learned and will aid in the future- enhancement and extension, of this paper.

- More aspects involved in viewing and sharing of health information will be covered by adding more questions to the questionnaire. For example: what kind of health information is viewed or shared, the possible categories can be- disease related, nutrition related, general health related, etc. The survey would be performed on larger number of individuals, equal gender ratio and diverse ethnic groups for a better overall result.
- Case studies analysis approach will be adopted as a major part of future work. Some important health organizations will be considered and compared to understand more about how are they promoting health?
- Patients and doctors can also be involved in the survey to find whether their answers differ from that of general population.

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