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Communicating Health Information with Online Videos

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ABSTRACT

Videos can create learning communities, increase communication richness, empower users and encourage identity formation. Online sites like YouTube share both professionally-produced videos and user-generated videos. Low-budget user-generated videos could offer new opportunities for promotion and awareness of health issues. Our study explores how a broad spectrum of people living in a small Canadian city engages with online videos for health information. A sample of adults who watch online videos participated in a survey with multi-media content. The study focus was to determine if they were seeking health information via online videos and to assess their responses to online videos on mental health issues. While 44% of participants never or rarely watched online videos containing health information, 90% believed that viewing short videos online produced by health professionals is a good way for people to access information about health. Participants then viewed, in random order, two short videos on mental health posted on YouTube— one user-generated, and the other professionally-developed by a mental health organization. After viewing the videos, participants reported high levels of interest and learning, being influenced by the video, and acceptance for the use of online video for increasing their awareness and knowledge of health information. Our results suggest that both short user-generated and professional online videos are potentially of interest to a wide range of people and are an influential medium of health information that can positively influence the viewers' awareness, interest and learning on health issues.

INTRODUCTION

YouTube seems to be everywhere these days but research on the value and impact of online videos is still in its infancy. Health professionals are interested to know if YouTube videos can increase public awareness of health issues. Online sites like YouTube can share both user-generated videos as well as professionally-produced videos. Given that video material for health promotion can be

extremely costly to produce professionally, it makes sense to consider the possibility that a low-budget user-generated video could offer new opportunities for promotion and awareness of health issues. Our study explores how a broad spectrum of people living in a small Canadian city engages with online videos for health information. Our findings suggest that both user-generated and professionally-produced videos shared on line have potential for public health awareness and education.

ONLINE VIDEO AND YOUTUBE AS A SOURCE OF HEALTH INFORMATION

Video has been established in the medical literature as both a convenient and effective means of conveying health and medical information to the public [1]. With increasing use of the internet, producing and viewing online videos has recently become popular. Videos can also easily be created and uploaded online with web access, a computer, and a webcam or cell phone videos [2]. Online, user-generated video can be a dynamic information and communication technology that has the potential to provide a higher level of engagement and educational, communicative and collaborative opportunities [3, 4].

With increased bandwidth, lowered equipment costs, and the proliferation of free on-line video-sharing websites, both professional as well as user-generated videos are now an attractive option for eLearning and for eHealth. New media, like social networking sites (Facebook, MySpace), wikis, blogs, video blogs (also known as vlogs), podcasting and video podcasting (also known as vodcasting) are no longer about "narrowcasting" or broadcasting content but are focused on interactive exchange and creating communities [5]. These new technologies, combined with collaboration and peer-learning pedagogy, could potentially create learning communities that encourage participation and feedback in a socially and culturally rich environment [6, 7].

Health professionals are currently recognizing the increasing role of online video in online health searches, on sites like YouTube. In addition, YouTube videos, when carefully selected, are now being seen by educators as an important pedagogical tool and a way to connect with students through technology. Online video can educate and engage as long as care is taken in selecting the videos [8].

Different opinions about YouTube have been raised by health professionals and health researchers. A 2007 article on YouTube immunization videos raised awareness of both negative user-generated and positive public service health information disseminated online. The authors noted that physicians need to be aware of such sources of information and could potentially use video sites as a means of communicating health information to the public [9]. In response to this article Hayanga and Kaiser wrote a letter to the editor of the *Journal of the American Medical Association (JAMA)* expressing concern over using websites like YouTube for medical information because of issues of veracity and accountability [10]. In response, Keelan and colleagues noted that similar criticism were made of using the internet as a source of medical information and these issues have been addressed through sites like Medline. Also, if health professionals ignore the health information that currently exists on YouTube, videos from unreliable sources will dominant [11]. Medical professionals need to be aware of the information available on video sites like YouTube in order to address the concerns of patients who view such sources of information [12].

Online video sites like YouTube are being recognized by health care professionals as important repositories of information. For example, physicians in the UK have examined online videos demonstrating nasal irrigation techniques. After examining the top twenty search results, they concluded that the vast majority of the videos provided accurate information and proper demonstration of the technique, and that the user-generated videos in particular could be helpful to reassure the patient of the ease of the process [13].

Professionally produced interactive online video, where the viewer can navigate through the video by skipping sections or reviewing previous watched sections, has shown promise in interventions to reduce STD risk [14]. Online video used for education can be a more effective learning tool than traditional text-based learning platforms. For example, in a 2009 randomized controlled trial of patients using online video for melanoma awareness education compared to a group using text based resources, the online video group demonstrated significant improvements in knowledge compared to those given written educational tools. Also, those in the online video group reported higher usefulness and appeal of online video tools. When asked if they preferred video-based or text-based educational tools, the most participants in both groups stated a preference for video-based education [15].

Health care providers are also seeing the benefit of patient-generated videos. For example, a 2008 article on internet-based training for parenting notes the importance of video in education as well as communication. The health care providers use videos to show the parents key concepts and behaviours and the parents recorded their interactions with

their infants. The parents and providers would then discuss the educational videos and recorded interactions over the phone on a weekly basis [16].

Other health professionals have found that podcasts are useful in educating patients. In a rural general practice in Wales, video podcasts are created by local health professionals and used during consultations as well as in the patient's homes in order to demonstrate inhaler technique and spacer devices [17]. Video has also been used by children with asthma to show their case workers their inhaler technique. In a 2008 study, participants sent videos of their inhaler technique to their case managers. Excellent outcomes were reported, however researchers were disappointed that only one-third of the anticipated videos were uploaded. The authors note that over time interest in the site declined steadily but that interest in both in-person and internet groups declined over time [18].

RESEARCH MATERIALS AND METHOD

Our study included participants from a broad spectrum of the general population in a small Canadian city – Fredericton, New Brunswick. The survey was administered from June to September 2009. To be eligible for the study, participants had to have used online videos. They were recruited through posters around the city and on campus, an article in the local newspaper, a university e-newsletter and networks of acquaintance. Sixty-two participants took part in a survey with multimedia content. The research protocols were reviewed and approved by the research ethics board of the researchers' home institution.

The participant profile varied somewhat from the Census data for adults in Fredericton (Statistics Canada, 2006) but researchers achieved their goal of attracting a broad socio-demographic spectrum of adults in the city. The 62 participants aged 18 plus were 50% female and 50% male (Census: 53% female, 47% male). The age ranges were 43% aged 18-34 (Census: 34%), 31% aged 35-54 (Census: 34%), and 26% aged 55 plus (Census: 32%). The biggest difference was that in our study, 80% had a post-secondary education (Census: 58%).

Participants were advised on the nature and content of the study through an informed consent form. They completed a 90-item questionnaire, which assessed their current technology use using both closed (e.g., Likert scale responses) and open field response formats. Participants then watched six randomly-ordered short videos on three themes: 1) Native Languages, 2) Mental Health, and 3) Fredericton. Each theme group consisted one professionally-produced and one user-generated video available on YouTube. After viewing each video, participants were asked to report on their reactions to the video (e.g., "I learned something about this topic from watching the video") by responding to six questions scored on 5-point Likert scales with end points *strongly disagree* to *strongly agree*. Finally, participants were asked to provide any additional comments regarding their thoughts

on the video in an open-response format field. Participants were provided with a \$15 honorarium. Quantitative data were analyzed using SPSS statistical software.

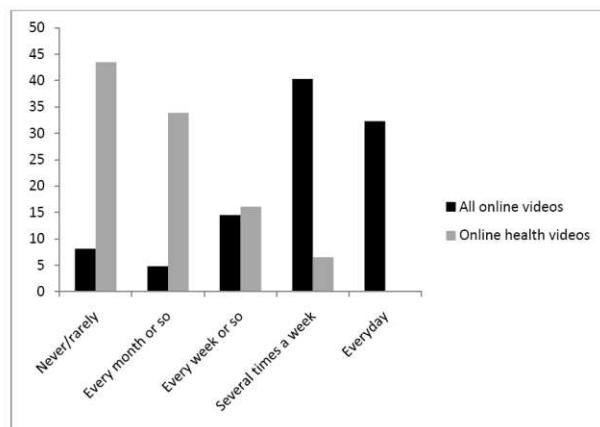
RESEARCH FINDINGS

Frequency of viewing online health videos

Study participants were asked how frequently they view online videos (Never/rarely; every month or so; every week or so; several times a week; every day). 87% of our respondents indicated that they viewed online videos every week or more, while 32% reported viewing online videos every day (Figure 1).

When asked how often they viewed online videos about health, 23% reported viewing every week or so to several times a week (Figure 1). No one reported viewing daily (see Figure 1, below). Our analysis did not find a significant difference in viewing frequency by gender; however we did note a difference by age, with our younger respondents (those under 45 years of age) being more inclined to watch health videos than our older respondents (over 45 years of age).

Figure 1: How often do you watch videos online?



N=62

Attitudes towards viewing online videos produced by health professionals

While 44% of participants noted that they never or rarely watched online videos containing health information, 90% believed viewing short videos online produced by health professionals is a very good or somewhat good way for people to access information about health.

Our analysis found a statistically significant difference in how women and men perceived online videos produced by health professionals. More women (42%) than men (26%) strongly agreed that viewing short online videos created by health professionals is a good way for people to access information about health.

Participants were invited to comment about whether or not sharing short videos online produced by health professionals is a good way for people to access information about health. Fifty-three participants wrote responses. Most (61%) were positive about the use of video. Several reasons were cited, such as the use of video as a better means of communication and learning than text:

“Videos allow for voice inflection, visual aids, and a human aspect that simple text and images can’t. Information would be better understood.” (Female, 20 years old)

“Very much so! I think many people, myself included, learn better from a human voice speaking from a human face than from reading text/ brochures, etc!” (Female, 40 years old)

“Yes, health info is an area everyone can benefit from – not everyone can read as well as we might like to think- video might help more people” (Female, 40 years old)

“Videos are less cumbersome than having to read long texts and will be accessible to more people” (Male, 21 years old)

Other participants wrote about the potential video has for reducing physician workload:

“Would greatly help cope with shortage of medical personnel but would also allow for “private” resolution of questions before potential consultation.” (Female, 77 years old)

“Would improve wait times, would bring Dr’s and patients closer without the need to visit. Could answer questions that patients have.” (Male, 39 years old)

A final group of study participants noted that videos could improve patient access to health care and aid with patient self care:

“Absolutely – would provide info to all individuals regardless of location/scheduling conflicts. Not everyone can make it into a doctor’s office.” (Female, 25 years old)

“It’s easier than to drive 2-4 hours to see the health professional” (Female, 26 years old)

“Provide people with less of an excuse to continue unhealthy lifestyle, thus reducing medical expenses.” (Male, 27 years old)

Thirteen participants responded positively, but expressed some concerns and wrote about several themes, including the importance of sources, trusting the information, the difficulty in interpreting medical information delivered via video, the need for feedback and the difficulty getting videos created by medical professionals.

“As long as it is easy to show that the video is from a reputable source has references & citations to established medical literature. The downside is that it is just as easy to find harmful information that is promoted by people who

claim to have medical background or who have vested interests.” (Male, 24 years old)

“As long as the videos are up to date & well monitored. But they would only supplement and not replace person to person (e.g. doctor and patient) interaction.” (Male, 32 years old)

“Yes [viewing short online videos created by health professionals is a good way for people to access information about health] but that does not mean that people who view medical information will apply that information correctly, just as people who read medical info (which is readily available in print form) will not interpret printed info correctly.” (Male, 41 years old)

Several expressed concern with the use of online videos for health information, citing trust issues as a potential barrier:

“Everyone thinks they are experts nowadays. Health video could turn into health issues.” (Male, 22 years old)

“I don’t think my trust level is high enough for something serious like health; would always prefer face-to-face.” (Male, 27 years old)

Knowledge of mental health issues and viewing online videos on mental health

In general, study participants responded favourably to the idea of online videos created by health professionals. However, online health videos are not always created by health professionals, and, as discussed earlier, people often search online for user-generated health information. To assess our participants’ reactions to both user-generated and professionally developed health videos, we asked them questions about their experience with mental health issues before viewing and commenting on two videos related to mental health.

Of the study participants, 63% said they were knowledgeable about mental health issues. Of this group there were no significant differences among age categories; however, more woman than men did indicate a higher level of mental health knowledge. Forty-five percent of women strongly agreed with the statement “I am knowledgeable about mental health issues,” compared to six percent of men.

The survey participants then viewed - in random order - six videos posted on YouTube, two of which were on the topic of mental health awareness. One video was user-generated and the other was professionally produced.

The user-generated video was titled “Canadian Mental Health Coverage; Suicide and Depression.” In this video a young woman, who introduces herself as Kathleen, discusses her personal experiences trying to get help for her mental health issues – in particular, her addiction to self-mutilation and her resulting depression. Sitting in front of a computer web camera and speaking into a white desktop microphone, Kathleen announces this is her first time

creating a video. She has medium length brown hair held back by a white hair clip and is wearing a black t-shirt and red beaded necklace. In the background a wooden side table, lamp and white laundry basket is in view, indicating that she is video recording herself in her own home.

<http://www.youtube.com/watch?v=Hzb1KUHUY&NR=1>

Also posted on YouTube was the other video, professionally produced by the Canadian Psychiatric Research Foundation. At the start of this short video there is a close-up shot of a man walking on a crosswalk. Suddenly he is hit by a bus. A crowd of people see the incident and stop, and a woman asks if he is alright. The camera focuses on some of the individuals in the crowd who respond by saying that the man is “just looking for attention” and is “lazy.” The camera zooms out as the crowd of people disband, leaving the man lying on the street. Text superimposed on the building above the man states “imagine if we treated everyone like we treat the mentally ill.” <http://www.youtube.com/watch?v=Ec0h1LRdL8>

After viewing both of the videos, participants reported high levels of interest, learning, connecting to the person in the video, being influenced by the video and noted that they would recommend both videos to others.

Professionally produced online health video

After participants viewed the professionally-produced video, they were asked to respond to several statements about learning and opinion-formation. When asked about their learning outcomes, 61% of participants responded favorably, either strongly or somewhat agreeing with the statement: “I learned something from this video”. Only 15% somewhat disagreed or strongly disagreed that they learned something as a result of the video. There were no statistically significant differences between the responses of men and women, frequent and infrequent online video viewers or older and younger respondents.

When asked to respond to the statement: “watching the video influenced my opinion,” participants responded similarly. Sixty-one percent noted that they strongly agreed or somewhat agreed with the statement, while only 15% reported somewhat or strongly disagreeing. Again, there were no statistical differences between the responses of men and women, frequent and infrequent views and older and younger respondents.

After responding to the specific statements about the two videos, participants were given the opportunity to write comments about the professionally-produced video. There were a few negative comments: some participants felt that the video was not what they would consider online video, and that the video seemed more like a television commercial:

“My first impressions of the video was what type of gimmick was someone trying to sell me as so many senseless commercials use human suffering to set the stage

for the viewer. After seeing the ending it certainly made the first part have a more significant impact.” (Female, 54 years old)

“this is not an “online video.” This is an old-media style advert. Where do you think someone would see this? It’s not really a “viral video.” (Male, 28 years old)

As discussed earlier, although the video was professionally produced, it was on YouTube. While some participants questioned the inclusion of the professionally-developed video as “online video,” they did note the potential impact of professionally created videos. There were a number of comments indicating that the video was able to engage the viewer and deliver the message:

“Despite the “slicker” production values, this video has less impact for me than the previous one with the girl who cuts herself. This is a good example of how expert use of video technology does not always result in a better video. However, this video (because of its high production values) might be more successful at engaging an audience that doesn’t normally think about or care about mental illness.” (Male, 41 years old)

“Wow! What a great video! I thought this video was incredible powerful in the delivery of its message. I happen to know much about depression and could relate to the person who got “hit” as much as recognize the reactions of people who don’t understand/are not familiar with depression. Fantastic way of redescribing the phenomenon and challenging societal judgment!” (Female, 40 years old)

User generated online health video

Most study participants also responded positively to the user-generated video. When asked if they learned something about the topic of mental health from the user-generated video 93% of participants responded favourably, either strongly or somewhat agreeing. Only 5% reported they neither agreed nor disagreed with the statements that they learned something, and only 2% somewhat disagreed. None reported that they strongly disagreed. There were no statistical differences between men and women, frequent and infrequent viewers or older and younger respondents.

Participants were also asked to respond to the statement: “watching the video influenced my opinion about this topic.” Sixty-nine percent of respondents strongly or somewhat agreed with this statement, while only 2% strongly disagreed.

Using a t-test analysis we determined there was a statistical difference between the mean ratings of men and women on the item that asked participants if watching the video influenced their opinion. Compared with men, women reported that the video influenced their opinion more ($t=2.19$ (60) $p < .05$). There were no statistically significant

differences between frequent and infrequent online video users and older and younger respondents in relation to this question.

Participants were also encouraged to comment about the user-generated video. Some commented about sound quality issues; however, there were few negative comments other than observations about the technical aspects of online video creation. However one respondent noted that “The video felt too personal, and biased for me to assume anything she said wasn’t embellished.” (Male, 24 years old); A few other participants found the video interesting, but questioned the truthfulness of the message because of the anecdotal nature of the source, and the young age of the speaker (Male, 27 years old; Female, 21 years old; Male, 45 years old).

More participants commented about the user-generated video than the professionally-produced video, and most of these responses were positive. Female respondents in particular noted feeling engaged with the young woman in the video:

“This one was heart-wrenching. I felt her pain and wanted to do something about it.” (Female, 28 years old)

“Great personal perspective to the video – like the concept of learning from others – very effective” (Female, 25 years old)

“This video was extremely powerful: young woman’s emotion communicates itself directly to the viewer. I certainly feel that I have a new sensitivity to, if not understanding of, the issue.” (Female, 49 years old)

Both men and women noted that the technical failings of the video may have served to make the video more “real:”

“I wasn’t sure if it was a real person or staged at first. I was distracted by the poor audio quality but riveted by the girl’s story. I felt sad for her and her family & wondered what kind of support she has at home & with friends. I will wonder about her now that I’ve seen this & wonder how she’s doing ... even though I don’t know who she is or where she lives or any of those personal circumstances. It definitely left an impression...” (Female, 41 years old)

“Here’s a case where the “low-tech” approach to creating/producing the video actually enhances the message. It has a very “do-it-yourself” kind of look, like something a real teenaged girl would do in her bedroom. Of course, the strength of her argument, the seriousness of the issue, and the fact that the girl is exceptionally well-spoken allows the message to over-ride the technical deficiencies.” (Male, 41 years old)

CONCLUSION

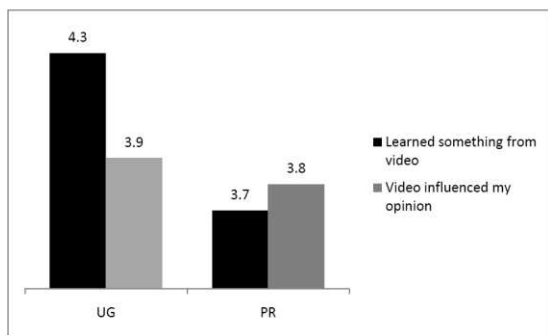
Our study offers new evidence that online videos are an influential medium of health information. Residents of the small city who took part in the study had previously viewed online videos; more than three-quarters were currently

viewing online videos every week or more, and almost one-third were viewing them every day. About 23% of participants were viewing online health videos every week or so to everyday, and among all participants there were high acceptance rates for using online videos to increase their awareness and knowledge of health information. When given the opportunity to view two online health videos, the response was very favourable overall – from both women and men and those from all age categories. Participants reported high levels of interest, learning, connecting to the person in the video and being influenced by the video, and they would recommend both videos to others.

These findings strongly suggest that health organizations could effectively use online videos as health information and promotion tools for different socio-economic groups. As one young man in our study wrote on his survey: *“Videos are less cumbersome than having to read long texts and will be accessible to more people.”* (Male, 21 years old)

Both short user-generated and professional online videos are valuable as a medium of health information (Figure 2, below). Interestingly, almost all (93%) the study participants purported to have learned something about mental health from viewing the video that had been produced by a teenager and posted on YouTube. In the video, “Kathleen” discusses her addiction to self-mutilation and her resulting depression, sitting in front of a computer web camera in her home. Almost 70% of participants agreed or strongly agreed that Kathleen’s video influenced their opinion, with women reporting more than men that their opinion was influenced. *“I felt her pain and wanted to do something about it,”* one young female study participant wrote in the survey (Female, 28 years old).

Figure 2: Viewer responses to health videos in the study



** Comparison of Mean Value of responses (0=strongly disagree - 5=strongly agree)

Type of Video

- User generated video of young girl discussing mental health issue (UG)
- Professionally produced video relating to mental health (PR)

User-generated video has excellent potential as an information and communication medium to connect people from a wide range of backgrounds and interests. The technology gives individuals the ability to produce audio-visual content and share it with a global audience. Online video content can be recorded by individuals from their own perspectives, including visual footage of themselves. After the videos are uploaded to YouTube or other video portals, the reach by both producers and audience members is global [19].

Video portals such as YouTube can also be a place for the video viewers to interact online to engage with each other about the topic of the video; the responders have a choice of making a text response or a video response. Researchers have argued that user-generated videos and video portals such as YouTube have effectively subverted the unidirectional model of mass media broadcast technologies such as radio and television [19]. Even though video portals such as YouTube do not allow real-time interaction, they provide the means for an exchange of views among many people. The opinions expressed are their own in whatever style and format they choose.

Online video as an information and communication medium is clearly here to stay and its use will only continue to grow. In the history of media and communications technology, it is still the very early days for online videos. In early 2006, sharing videos online was almost unknown by the general public but by the end of that year online videos were discussed regularly in the media, and it would have been difficult to find an internet user who had never heard of YouTube. Three years later, by 2009, YouTube claimed to have become the fourth largest site on the web, with 15 hours of video uploaded every minute. Currently 20 hours of video are uploaded to YouTube every minute [20].

The current study provides clear evidence for health professionals that videos shared on YouTube can increase public awareness of health issues. However research on YouTube is also in its early days and there is much more to be learned. The study was conducted with a small number of residents in a small Canadian city. Further research in other locations and contexts will expand our knowledge about the acceptance and use of online video for health information.

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