The 8th International Language for Specific Purposes (LSP) Seminar - Aligning Theoretical Knowledge with Professional Practice

Information Giving in a Health Emergency: An Analysis of Three H1N1 Web Pages

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Abstract

The internet has become an effective tool for the maintenance of people’s health and well-being. One of the most popular search topics in health information websites is infectious diseases \cite{1}. In 2009, the H1N1 flu virus caused many deaths around the world. This study aims to analyze and compare the content of health information on H1N1 influenza in the websites of the top three countries which were highly affected by the flu. The findings of this study highlight the importance of information giving in a health emergency and provide recommendations for improvements.

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1. Introduction

Over the last few decades the world has witnessed the development of Information and Communication Technology (ICT), and increased trust and dependence on it\cite{2}. In the internet, there are thousands of web sites which are developed to deliver health information to the general population, each serving a variety of interests. According to the latest research, eight out of 10 Internet users have, at one time or another, searched for health information on the Web Pew Internet and American Life Project \cite{3}.

Considering the amount of health information disseminated via the internet, analyzing the content of health information websites is an area that justifies the application of health promotion energy and commitment. Health promotion recognizes the vital importance of access to information. Ideally, content on websites should be

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accessible to all, and should not be within reach of only those who can read at the sophisticated level, have access to the internet, and have knowledgeable technological skills. This is important as health is a concern for all especially in health crisis such as the recent outbreak of the 2009 H1N1 which caused panic across the globe.

This exploratory study seeks to shed some light in this area and gain a better understanding of information giving in the different health websites on H1N1. It would be important to evaluate the content of web pages as the internet continues to play an important role in the everyday lives of people around the world. The findings of the current study will help the health website developers to take initiative to ensure that health information is available online via health websites and these information and advice are well presented and constructed to ensure users to benefit from the health internet sources. This research is developed to systematically analyze and compare the content of three H1N1 health information web sites, namely the American, Mexican and Canadian websites. The purpose of this study is to find out what information is available in the selected websites and how they are presented.

2. Literature Review

The Internet is a popular source of information and advice especially within the fields of health. People interest in and demand for online administrative processes, information rich internet health portals, and access to the web pages have introduced a new dimension to maintaining wellness and treating disease. In fact, the internet or the World Wide Web is becoming an increasingly important source of health information. The use of the internet for health-related purposes continues to grow dramatically [4]. As adoption of eHealth applications grow, an evidence-based approach to the development and dissemination of these resources is necessary to ensure that they have a positive impact on individuals and public health [5].

Spreading health information via the internet is one of many methods to help individuals maintain and improve their health. There are many reasons why individuals access web-based health information. Some surf the net for information regarding health conditions or illness. Others do so in search of general health information, or for work or school-related activities [6]. Although it has some shortcomings, the internet has many advantages over other media. There are advantages for both users of the information and for writers who produce the information. In terms of users, apparent advantages of the web over other methods of communication include the ability to access a wealth of information, at any time, while maintaining anonymity and privacy [7]. In addition, it offers individuals a variety of perspectives and sources of information regarding an infinite number of topic areas [6].

For the producers of content, the internet offers many benefits including the ability to reach large numbers of people rapidly, update information easily, adapt for the particular need and information of individual users, be interactive and graphically appealing, and use a variety of mediums to distribute information (i.e. print, audio, visual). In addition as Cotton [6] points out, by providing simulations via the internet, users are able to virtually experience the result of their choices and behavior, without affecting their physical health.

The Internet is now a popular source of information and advice across a variety of domains. Health is a domain that heavily deal in consumers. It has been reported that 80% of adult Internet users have accessed the domain for general health information [8]. Widespread access to the Internet coupled with the increasing volume of material available inevitably raises issues surrounding the quality and reliability of online information. There have been numerous detailed assessments of the quality of health information on the web embracing diverse topics such as Viagra, rheumatoid arthritis and diabetes. Eysenbach [9] carried out a systematic review of health website evaluations and noted that the most frequently used quality criteria included accuracy; completeness and readability; and design.
3. Methodology

According to WHO [10], the top three countries which were most affected by H1N1 are United States, Mexico and Canada. This study will undertake an analysis and comparison of the content of these three H1N1 official health information web sites, namely the American, Mexican and the Canadian websites. The first website is the U.S department of health and human website. This website is the United States government’s principal agency for protecting the health of all American and providing essential human services. The second website is the department of health of Mexico. As stated in the website, its’ priorities is in prevention and diseases control. The third website is the public health agency of Canada. The Canadian Health Network (CHN) was a national, bilingual health promotion service operated by the Public Health Agency of Canada and major health organizations across Canada.

Discourse analysis will be used as the analytical framework for this study. To analyze the data, discourse analysis is used to code the significant linguistic features of the selected web pages. The discussion will look at the length of explanation, the number of words and sentences used which is integral assessing the readability of the information provided in the website. In addition, the study will focus on examining the structure of information given by looking at whether it is in the active or passive voice, the usage of conditional sentences and the Q & A format in the four different H1N1 websites.

4. Findings and Discussion

4.1 Information Giving

One of the difficulties of providing online health information is the problem of ensuring that the right kinds of information reach the targeted users. In this case, these three H1N1 websites are public health websites which have different users with different background knowledge. So, the information provided must be clear and easily understood. Evidence show that the length of sentences has effect on the ability of users’ to understand the particular information [11]. In addition, the structures of information also have an effect on users’ understanding [12]. In order to assess the readability of written material, there are many formulae that will provide an estimate of how difficult a passage is to read because of its sentence structure and word length. They are usually based on the number of words in each sentence. Shorter sentences encourage users to continue reading and facilitate users’ understanding of the text. The discussion that follows will focus on the length of explanation and the structure of information in the four H1N1 websites.

4.1.1 Information Giving in the American Website

The Length of Information

The American health website has six different WebPages. Each web page covers specific information about H1N1 flu virus. Table 5 shows the numbers of words and sentences in each page and show the average length of each sentence.
Table 1: The number of words and sentences in American health website

<table>
<thead>
<tr>
<th></th>
<th>H1N1</th>
<th>Symptoms</th>
<th>Seasonal flu</th>
<th>Flu vaccine:</th>
<th>Prevention</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Words</td>
<td>375</td>
<td>254</td>
<td>560</td>
<td>961</td>
<td>312</td>
<td>604</td>
</tr>
<tr>
<td>sentences</td>
<td>34</td>
<td>13</td>
<td>43</td>
<td>56</td>
<td>23</td>
<td>37</td>
</tr>
<tr>
<td>average</td>
<td>11</td>
<td>19</td>
<td>13</td>
<td>17</td>
<td>13</td>
<td>16</td>
</tr>
</tbody>
</table>

In the American website, on average each sentence has 15 words. Sentences with the length of up to 20 words are the most suitable and comprehensible sentences for internet users from all range of ages and different knowledge. Shorter sentences make it interesting and encourage users to continue their reading and understand the text better. The answers of questions are in two or three lines and the length of sentences are not too long. Most of the sentences are simple sentence or compound sentences. There are no medical terms or technical words, and lay users can understand the text easily. In some cases, no sentences are used, instead keywords are given. Below is the example from the actual data:

‘Getting the flu vaccine is your best protection against H1N1. You cannot get H1N1 from properly handled and cooked pork or pork products. Symptoms of H1N1 are similar to seasonal flu symptoms.’

i) Structure of information

Providing health information on the internet is a complex form of communication as information and advice reaches a significantly large number of users from different places, with different health needs, condition and risks. Therefore the information must be structured in such a way that the right information reaches the targeted group. This can be achieved linguistically and this is shown in the findings of this study.

Active voice

The American website use present tense sentences in all its pages, except when the website defines the pandemic flu in one paragraph. All the sentences are in active voice. Below is the example from the actual data:

‘H1N1 is a flu virus. When it was first detected in 2009, it was called “swine flu” because the virus was similar to those found in pigs. The H1N1 virus is currently a seasonal flu virus found in humans’.

Conditional ‘IF’

Vaccination web page uses some conditional sentences, both the ‘if’ clause and main clause are in the present tense. The "zero" conditional is formed with both clauses in the present tense. It is used to express certainty. ‘If you are sick with flu-like illness, stay home for at least 24 hours.’ The ‘if’ statement helps to signal to the users that the information are only meant for a specific group of users. In this case, it is targeting the high risk group. Users who have flu like illness fall under the high risk group for H1N1.

Q & A format

The American website gives its information in question and answer format. All the topics are arranged in question form. The question-and-answer format is the most efficient way to communicate with readers. It is much
more efficient to anticipate the reader’s questions and pose them as he or she would. By doing this, the website makes it easier for the user to find information. Below are examples from the data sample:

‘What is H1N1 flu?
H1N1 is a flu virus. When it was first detected in 2009, it was called “swine flu” because the virus was similar to those found in pigs.’

4.1.2 Information giving in the Mexican website

The discussion that follows will discuss in detail the length and structure of information available in the Mexican website.

i) Length of Information

This webpage has 274 words and contains 11 sentences. It means in average each sentence has 27 words. The length of sentences is relatively longer than the American website, so it may be difficult for low literate people to understand the text. Short sentences help the reader to understand the text better and motivate them to continue their reading.

ii) Structure of Information

Active voices

In the Mexican website, all the sentences are in active voice. Active voice is more direct; therefore users understand the active sentences better. In addition, sentences in the active voice have energy and directness, both of which will keep reader turning the pages.

‘Although one has advanced in the control of the disease of influenza A (H1N1), still we followed in alert and we do not have to lower the guard, is ours to have to continue reinforcing the preventive measures, to realize calls to the action and to mainly continue informed that one concerning the new virus into influenza A (H1N1).’

Conditional ‘IF’

The followings are the two conditional sentences found in the Mexican webpage:

‘If it is necessary to escupir, to do it in a disposable handkerchief, to throw it to the sweepings and to wash the hand’
‘To remain in house when respiratory sufferings are hard and to go to the doctor if some of the symptoms appears (greater fever to 38° C, headache, pain throat, nasal draining, etc.).’

These sentences give information to users that they should only carry out these actions in these circumstances only. As previously discussed, the ‘if’ clauses are used to signal that the advice that follows the information is only targeted at a specific group of people. In this case, it those who have greater fever to 38° C, headache, pain throat, and nasal draining, should seek medical attention.

Q & A format

The topics in the Mexican webpage are structured as noun phrases and is organized mentioned in point form. It is interesting to note that this webpage has not structured the information using the question and answer format.
4.1.3 Information giving in the Canadian website

i) Length of information

The Canadian website provides a very brief definition of H1N1 which consists of 141 words and six sentences. On average each sentence has 19 words. The length of sentences are suitable for users from any background.

ii) Structure of information

Active voice

The Canadian website uses the past tense. This comes to no surprise as the Canadian websites substantially updated and the information regarding H1N1 has had major changes after the H1N1 epidemic was over. This may indicate a clear shift in the types and perhaps the structure of information provided during a health emergency and at other times when the disease is no longer considered as a serious threat. However, like the American website, the sentences are written in active voice.

'It was a new strain of influenza and because humans had little to no natural immunity to this virus, it caused serious and widespread illness'.

Conditional IF

There is no conditional sentence found in the text. As previously mentioned, this may be due to the fact that H1N1 no longer poses a threat to the public and there are fewer high risk groups in the society. Furthermore, the Canadian website offers no information about vaccination or treatment. There is only general information about H1N1 flu virus.

Q & A format

The information provided is all in sentence format. Although the question and answer format in website improves readability as it facilitates information search, however, in the Canadian website, this type of information format is not used.

4.2 Information Giving in the H1N1 Websites

i) Length of information

Apart from the Mexican website, the length of sentences in the other two websites is between which is suitable for users of all background. To assess the readability of written material, there are many formulae that will provide an estimate of how difficult a passage is to read because of its sentence structure and word length. They are usually based on the number of words in each sentence. Sentences with the length of up to 20 words are the most suitable and comprehensible sentences for internet users from all range of ages and different knowledge. As mentioned above, the shorter sentences help to engage the interest of users to continue reading and to understand the text better. In other words, when the length of sentences is shorter, the users can understand it better and their motivation to continue their reading is improved. These selected websites are public health websites and the users who visit this website may vary in age, gender and literacy. Therefore, it is very important that the content of the
website is understandable to all different groups of people. Based on the data analysis, the length of sentences in the American, Canadian and Mexican website range between 15 to 27 words per sentence. The lengths of sentences in the American and Canadian website are suitable for public users of health website and motivate the users to continue their reading. In contrast, the length of the Mexican website is long so it would be difficult for low literate people to understand the text.

ii) Structure of information

The structure of information helps the users to understand the information better. Information in all the three websites are structured in the active voice. Sentences structured in the passive voice often add to the number of words and change the normal doer-action-receiver of action direction, this in turn requires the reader to put in more effort to understand the intended meaning. Active voice is more direct; therefore users understand the active sentences better. Sentences in the active voice have energy and directness, both of which will keep reader turning the pages. Sentences written in the active voice are also less wordy than those in the passive voice.

The conditional ‘if’ is used to distinguish information needed by people of different risk groups. The conditional ‘if’ is used more in the vaccination and prevention web pages of the American website. In these health websites, both the ‘if’ clause and main clause are in the present tense. The "zero" conditional is formed with both clauses in the present tense. It is used to express certainty and the ‘if’ clauses are used to signal that the preceding information is only targeted at people who are considered high risk of getting H1N1 flu.

The data analysis also shows that when the American website uses the question and answer format (Q & A). The question-and-answer format is the most efficient way to communicate to users. Usually, users visit the website with questions that he or she needs to be answered. It is, therefore, much more efficient to anticipate these questions which also improves the user’s ability to understand the text as the questions they would potentially pose have already been answered. By doing this, the website make it easier for the user to find information as it resembles more interactive form of communication.

5. Conclusion

Among the three selected websites, the American website appears to provide the most comprehensive information. This website has many layers and pages, each page giving specific information about the H1N1 flu virus. The length of sentences is short and all the sentences are in active voice. The American website use question and answer format when giving information and make it easier for the users to find information.

The second website with the most comprehensive information is the Canadian website. This website has very brief and general information about H1N1 with some information about vaccination. The lengths of sentences are suitable. All the sentences are in active voice. There is no conditional ‘if’ and all the information is in the sentence format.

The Mexican website has the weakest potential to giving information. Mexican website provides one page about H1N1 flu. The website just gives information about measures of hygiene for preventing getting H1N1 flu. The lengths of sentences are too long and they are not suitable for public users. All the sentences are in active voice. There is no conditional ‘if’ and the information in this webpage is in sentence format.

In conclusion, there appears to be a disparity between the types of information giving in the three websites. Although, all three countries, namely, American, Canadian and Mexico, were seriously affected by H1N1 flu, they do not provide the same type of information and advice. This is indeed interesting as it indicates that the kinds of information provided as well as the way they are structured may vary from one website to another. Although these websites provide information on the same type of disease, this does not guarantee that the same type of information will be provided in all three websites. This may indicate that the decision about what kinds of information to provide for a particular kind of disease may be influenced by other factors such as the country’s
health resources, in this case the availability of the H1N1 vaccine. Further study will also help the health website developers to take the initiative to ensure that health information is available online via health websites and these information and advice are understandable for public users of different ages and background knowledge.

References