

CONSUMER HEALTH INFORMATION WEBSITES IN TAIWAN

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Abstract: Developers of consumer health information (CHI) websites and pages in Taiwan have included: 1) individuals; 2) general hospitals; 3) disease-oriented associations; 4) government health administrative agencies; and 5) commercial corporations. General hospitals have developed the largest number of sites, but the quality of these sites differs widely. The unprecedented impact of health-oriented websites on medical care and the health of the public in general necessitates the establishment of credible instruments for the evaluation and rating of the quality of such websites and pages. In this paper, we describe the current status of CHI websites and pages in Taiwan. Suggestions for improving the content of CHI websites and pages are also proposed.

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The numbers of Internet users and consumer health information (CHI) websites and pages have increased rapidly during the past 4 years in Taiwan. As Chinese is the native language of Taiwan, Taiwanese CHI websites and pages are Chinese-based. English-based websites are usually not used by the general population if Chinese translations are not available. Although efforts have been made to provide online translation and browser-based English-Chinese dictionaries, the ability of and opportunities for most Internet users in Taiwan to use English information are still extremely limited. CHI websites and pages in Taiwan primarily use traditional Chinese characters, which are represented in binary code using the Big-5 system. The mainland Chinese system of simplified characters, which is encoded using the GB system, is also in use and CHI websites can be compiled and displayed in either traditional or simplified form by selecting a browser's encoding setting. Presently, although one-fifth of the world's population communicate with Chinese characters, there are very few Chinese-language based Internet CHI resources.

Medical-related websites can be categorized into three groups: 1) research oriented; 2) practice oriented; and 3) education oriented, for both professionals and consumers or patients [1]. In Taiwan, developers of CHI websites and pages for the health education of patients or consumers can be categorized into five groups: 1) individuals; 2) general hospitals; 3) disease-oriented associations; 4) government health administrative agencies; and 5) commercial corporations. Websites developed by general hospitals are the most common type of CHI website in Taiwan, but the quality of these sites differs widely.

This brief communication provides an overview of CHI websites and pages in Taiwan. To provide this overview, we thoroughly searched the Internet for CHI websites and pages already existing in Taiwan. Nevertheless, some important sites or pages may have been overlooked.

CHI Web Sites and Pages in Taiwan

Individual websites and pages

Most of the early CHI websites and pages in Taiwan were developed by young medical doctors, students, or paramedical workers. These developers tended to focus more on the visual presentation of their sites than on the medical information content. Besides providing health information, some of these sites also provide subscription-based CHI updates to subscribers via e-mail.

A common function of CHI websites is to provide answers to consumer inquiries on the Internet and through e-mail. Our calculations indicate that the inquiry response times tend to vary widely, ranging from a few minutes to 2 to 3 days, with an average of about 24 hours. Some inquiries that are not CHI-related are not answered, leading to an average response rate of approximately 80%. This immediate and interactive way of obtaining CHI is very popular in Taiwan. The most frequently asked questions concern sex, sexually transmitted diseases, urological problems, women's diseases, and children's diseases.

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CHI-based portal websites provide directory services about CHI websites for consumers in Taiwan. At present, there is only one such site in Taiwan that provides information about how to obtain accurate, credible, and appropriate health information (Taiwan Medical Network [in Chinese] — <http://www.tmn.idv.tw/>; <http://www.tmn.com.tw/>; <http://www.tmn.org.tw/>; or <http://tmn.web.hinet.net/>). It uses the expertise of doctors and other medical professionals to sort through relevant health information in order to provide the consumer with information.

Hospital-based websites

A number of academic medical centers and teaching hospitals (general hospitals accredited by the government for training residents) in Taiwan have their own websites. However, the content of these sites tends to focus more on the administrative and operational aspects of the medical center or teaching hospital than on CHI, especially in the early stages of their development. Few of these sites have patient or consumer health education as their main objective. Hence, these sites do not attract the interest or meet the needs of visitors. These conditions have improved recently.

Websites of administrative health agencies

The third type of CHI website in Taiwan is made up of those developed by the administrative health agencies. There is one national level administrative-health agency and 23 city/county levels of administrative health agencies in Taiwan. Several have their own websites. The website of the Department of Health (DOH) [2] in Taiwan is used extensively in the performance of administrative work and in the provision of CHI. The website maintained by the DOH of Taipei also displays useful CHI. Although other government agency-based websites with CHI content are expected to be developed, only several are currently in operation and their quality is generally poor.

Other medical websites

Websites developed by disease-oriented foundations or associations in Taiwan usually provide information about only one particular disease or disease group. These sites often contain information about one specific disease, written in plain and simple language for the general public. Their quality is generally good.

There are now several commercial CHI websites on the Internet. The homepages of these sites tend to be superior in technical presentation to other types of CHI websites because of a higher level of professional support. However, the accuracy of their CHI content needs to be evaluated.

Several medical association journals are beginning to develop websites. Users from the general public will frequently visit professional resources when they are well designed. For example, MEDLINE was originally intended to be a professional medical resource for the medical community. However, as access became open to the general public in 1998, a number of consumers, patients, and parents have advocated its use in learning more about personal health [3]. The recent appearance of MEDLINE Plus, designed specially for the public, together with MEDLINE is example of the increased use of these services by the general public [4].

Discussion

Usefulness of websites and pages for CHI

Advances in Internet technology have had a remarkable impact on health care issues. The general public can now use CHI websites to rapidly obtain information on health, diseases, the prevention of diseases, and the promotion of health. Medicine is now seen as less of a mysterious branch of knowledge to be understood only by medical professionals. Patients visiting their physicians can use this information to ask informed questions about health and disease issues, and physicians often need to know about what is on the Internet in order to respond to specific patient problems. Thus, the availability of accurate, appropriate, and high-quality health information on the Internet is extremely important. Progress in information and communication technologies may help reduce health disparities. The benefits of electronic health information and data are becoming apparent, and proper public policy and measures are essential for the efficient development and use of the World Wide Web (WWW) [5-7].

Question and answer websites

Taiwan has several interactive websites that provide direct and immediate responses to inquiries. This is unlike most English-based websites, which typically provide responses to inquiries several weeks after the inquiries have been sifted, sorted, and selected. To effectively operate an interactive website, the cooperation of visitors is very important. This kind of website is usually supported and maintained by a group of enthusiastic volunteers. However, maintaining focus on health-related topics can be difficult and visitors who submit questions that are extraneous to the purpose of the site can be a major burden. The importance of being polite and respectful on the WWW has been stressed [8].

Warnings and disclaimers

Although visitors are warned in disclaimers that information appearing on websites is general medical knowledge and may not be applicable to particular cases, it is doubtful that the general public really understands the implications of such disclaimers. It is, therefore, critical that the CHI providers be careful not to mislead patients into believing that the information given on the site is medical advice for their specific conditions [9].

Easy access

A few high-quality CHI webpages are hidden so deep under their homepages that they are difficult to access and visitors reach them only on occasion. Although visitors to a hospital's homepage may have different objectives (such as seeking information about procedures for medical consultation or finding a specific doctor's schedule), it is important that these sites clearly direct visitors to the whereabouts of any specific page on the site.

Tradeoffs between accurate content and visual appeal

Although the rapid progress and development of digital techniques for website creation have led to an increase in the graphical content of webpages, these applications also slow down access time. CHI sites should be aimed primarily at the promotion of health and the prevention and cure of diseases. In these matters of life and death, all content must be readily accessible, accurate, and easily understandable by the general public. In this context, a cleanly designed site that makes optimal use of simple HTML may be more suitable [10]. Some English websites are displayed in both graphical and text-only styles, but this kind of display is not yet common in Taiwan.

To be accurate, the content of websites should meet basic standards of authorship, attribution, disclosure, and currency [11]. Of the existing CHI webpages in Taiwan, only a few meet all of these criteria. Some do not give authors' names and the attributions are unclear. In addition, many do not post the dates of publication or revision. Because of the rapid progress in medical science, updating content at least once a year is definitely necessary, and when a new fact appears, the site should be updated as soon as possible. The benefits of the Internet are obvious, but inaccurate information could also result in potentially harmful effects. The establishment of a rating system for CHI on the Internet is sorely needed in Taiwan, but practical obstacles exist [12, 13].

Misplaced, broken, and obsolete hyperlinks

Many new websites have links that are obsolete or no longer active. This condition is common in the classified directory websites. This may be due to the carelessness of new web developers, who fail to check for the activity of the hyperlinks. Webmasters should endeavor to update links as frequently as possible [10].

Search engines and categorized classifications

Similar to the problem with English search engines, massive searching results from Chinese search engines can be confusing. Although a categorized directory is much friendlier than a webpage full-text search engine, the question of unreasonable categorization still exists. At present in Taiwan, the items of grouping are often redundant, and many necessary groups are often lacking. Even with the appropriate grouping, the arrangement may be improper. This situation could be improved if webmasters allowed registrants to choose a category themselves. However, problems such as registration of websites to a group that favors their own interests are common. Since most webmasters cannot afford to pay for professionals to properly categorize and arrange the vast number of categories and pages, volunteers are typically used to resolve these problems. For the effective use of CHI websites and pages, a smart medical directory or well-designed search engine is needed.

For people whose mother tongue is English or some other alphabetic language, disease names are easily searched for by alphabetical order. For Chinese native language users, the ideographic Chinese characters are usually arranged by simplicity; ie, the number of strokes of a character. Literature searches by these methods are cumbersome. Usually, people in Taiwan

categorize a disease by the clinical area to which it pertains. A similar categorization on websites may facilitate understanding by the general population in Taiwan. Furthermore, frequently seen or hot-topic diseases could be grouped into one category, as is found in the "hot topic" list of the Healthfinder website [14].

The content levels of CHI

When a particular consumer views a CHI webpage, he or she may feel that the content is too esoteric to continue reading, while another may perceive that it is very well written and useful. This may not necessarily be related to their educational backgrounds. The first visitor may be browsing for any article to read while the second may be searching for a specific article. Therefore, at least two different levels of writing for the same heading are needed.

Need to make CHI websites more attractive

The appearance of the WWW and other elements of the Internet have had a profound influence on the prevention and treatment of diseases and on the promotion of health [5, 9]. In the US in 1997, nearly half of all Internet users sought health information on the Internet. In contrast, according to a study performed in 1998, only 1% of 25,127 visitors in Taiwan have visited health-related websites, compared with 25% of visitors who visit leisure websites as their first and second main purpose [15]. The same study also disclosed that most Internet users in Taiwan are young (students) and that their interests are focused on Taiwanese leisure-related websites [15]. It is important that the motivation to visit health-related websites is encouraged and that such websites are maintained in a more attractive way [9].

Conclusion

The construction of a high-quality CHI website depends on the experience of the developers, the quality and quantity of medical information provided to the developers, and the existence of a credible party and instrument for the evaluation of the site content. Hospital administrators need to encourage their staff to provide information resources and to assist them if they are unfamiliar with web authoring. A conspicuous label for health information needs to be arranged for visitors, and changes of URLs should be minimized.

Finally, government agencies and medical societies should include the construction of CHI webpages as a criterion for the accreditation of teaching hospitals; finance and award individuals and institutions with high quality CHI websites; and establish instruments for rating websites.

References

1. Li Y-C: Finding Medical Resources on the Internet. In: Van Bommel JH, McCray AT, eds. *Yearbook of Medical Informatics*. Stuttgart/NewYork: Schattauer Verlag; 1998:108-112.

2. The Department of Health (Uei-Sheng-Shu): Available at: <http://www.doh.gov.tw/> (Chinese). Accessed 3 October 1999.
3. Linderberg DAB: Fiscal Year 1999 President's Budget Request for the National Library of Medicine. March 18, 1998. Available at: <http://www.nlm.nih.gov/pubs/staffpubs/od/budget99.html>. Accessed 4 October 1999.
4. MEDLINE Plus. Available at: <http://www.nlm.nih.gov>. Accessed 4 October 1999.
5. Eng TR, Maxfield A, Patrick K, et al: Access to health information and support — a public highway or private road? *JAMA* 1998; 280:1371–5.
6. Lindberg DA, Humphreys BL: Medicine and health on the net — the good, the bad, and the ugly. *JAMA* 1998;280:1303–4.
7. Jadad AR: Promoting partnerships: challenge for the Internet age. *BMJ* 1999;319:761–4.
8. Peters R, Sikorski R: Digital dialogue — Sharing information and interests on the Internet. *JAMA* 1998;277:1258–60.
9. Ferguson T: Digital doctoring — Opportunities and challenges in electronic patient–physician communication [Editorial]. *JAMA* 1998;280:1361–2.
10. Peters R, Sikorski R: Building your own — A physician's guide to creating a website. *JAMA* 1998;280:1365–6.
11. Siberg WM, Lundberg GD, Musacchio RA: Assessing, controlling, and assuring the quality of medical information on the Internet [Editorial]. *JAMA* 1997;277:1244–4.
12. Jadad AR, Gagliardi A: Rating health information on the Internet. *JAMA* 1998;279:611–4.
13. Robinson TN, Patrick K, Eng TR, et al: An evidence-based approach to interactive health communication. *JAMA* 1998;280:1264–69.
14. Healthfinder. Available at: <http://www.healthfinder.gov/>. Accessed 4 October 1999.
15. Yam. Investigation of Taiwan Internet Users in 1998 by Yam. URL: <http://survey.yam.com.tw/98/q15&16.htm> (Chinese). Accessed 4 October 1999.