

HOW CREDIBLE ARE THE ROMANIAN HEALTH-RELATED WEBSITES? A CROSS-SECTIONAL STUDY

VALENTIN NĂDĂȘAN¹, ZOLTÁN ÁBRÁM²

^{1,2}University of Medicine and Pharmacy Tîrgu-Mureș

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Abstract: The aim of the study was to assess the compliance of the Romanian health websites to the credibility criteria for health-related websites. The cross-sectional study included 317 websites selected by simple randomization. The mean overall Health Quality Score of the Romanian health-related websites was very low (2.8 on a scale of 9) indicating a very poor compliance with the quality criteria. The most frequently complied with requirement was providing a feedback mechanism for the users while several critically important criteria such as displaying a clear medical disclaimer and disclosing conflicts of interests were rarely met. The results of this study should raise the awareness of the general population to the risks involved in seeking health-related information on websites with a poor level of compliance with the quality criteria developed for the health-related websites.

INTRODUCTION

Health-related websites have become an ordinary source of information in most of the developed world.(1) According to a 2011 survey, 54% of Europeans have searched the Internet for information about prevention and treatment of diseases.(2) An increasing number of health consumers use the Internet as a primary or exclusive source of health information.(3) While the Internet provides anonymous instant and interactive access to a wide spectrum of health information, the poor quality of online health-related information raises concerns as it exposes the unaware consumers to significant health risks by postponing urgently needed interventions, and the subsequent worsening of the disease or deaths.(4,5)

While a Romanian public survey reported that 15% of the Romanian online information seekers were looking also for health-related information (6), and published data show that the quality of information about various health topics on the Romanian Internet is modest at best (7-10) the credibility of the Romanian health-related websites has not been systematically explored yet.

PURPOSE

The objective of the study was to assess the compliance of the Romanian health websites to the eEurope 2002 Quality Criteria for Health Related Websites, developed under the patronage of the European Council.(11) The study aimed to answer the following research questions: (a) What is the overall level of compliance of the Romanian health-related websites to the eEurope 2002 criteria? and (b) What is the level of compliance of the Romanian health-related websites to each particular eEurope 2002 criteria?

MATERIALS AND METHODS

The study was designed as a descriptive cross-sectional study. The total number of websites in the statistical population was 1787 and comprised of all the websites listed as of February 2010 in the "Health" ("Sănătate") section of www.traffic.ro, the largest Romanian traffic monitoring web

service at the moment. The analytical sample included 317 websites selected by simple randomization. The size of the sample was calculated using a confidence level 5%. Only sites with information about human health, with content fully published in Romanian were included. Veterinary medicine sites, virus infected or unavailable sites were excluded.

The credibility of the websites was measured using a set of nine ethical criteria derived from the eEurope 2002 standards of quality for health-related websites, the Health on the Net (HON) code of conduct and American Medical Association's guidelines for medical and health information sites.(11-13) The eEurope 2002 principles were developed by consensus among specialists and they address the most important requirements that publishers should comply with in order to be considered trustworthy as a health-related website: transparency and honesty, authority, privacy and data protection, updating of information, accountability, responsible partnering, editorial policy, accessibility.(11) Due to the heterogeneity of the websites, the original set of criteria had to be tailored down and the number of questions was reduced from 14 to 9. The relevant questions were included in the assessment form along with detailed instructions for the reviewers. (The form is available upon request from the corresponding author). During the rating procedure, for each requirement that was met, the website was granted one point.

The sum of the points granted to one particular website resulted in the European Health Quality Score (EHQS) of the respective website. The rating procedure was conducted by two independent evaluators who followed the common set of instructions provided in the assessment form. The data were centralized, compared for discrepancies and all disagreements were settled by consensus.

The sampling size and confidence interval were calculated online at URL www.surveysystem.com/sscalc.htm. Proportions were calculated using OpenOffice Calc software.

RESULTS

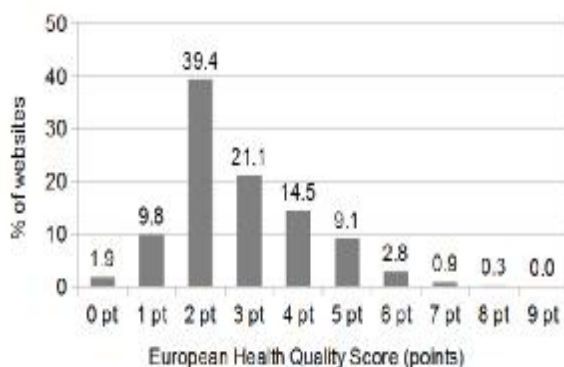
The mean EHQS of the Romanian health-related

¹Corresponding author: Valentin Nădășan, Str. Arinului, Nr. 6, Sântana de Mureș, România, E-mail: valentin.nadasan@umftgm.ro, Phone: +40265 312007

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websites included in the sample was 2.8 (SD=1.4). Figure no. 1 shows the frequency of the EHQSs across the sample.

Figure no. 1. The frequency of European Health Quality Scores across the Romanian health-related websites



The websites' compliance with each individual credibility standard is represented in figure no. 2.

Figure no. 2. The compliance of the Romanian health-related websites with each particular credibility criterion



* The percentage was calculated only for those websites that this specific criterion was applicable (N=141).

DISCUSSIONS

To the best of our knowledge, this is the first study to investigate in a systematic and comprehensive way the level of compliance of the Romanian health-related websites to the eEurope 2002 quality criteria for health-related websites.

Our main findings show that the investigated health-related websites are characterized by major deficiencies as far as their compliance with the eEurope 2002 credibility criteria. These deficiencies are revealed by the very low overall mean EHQS (2.8 points), the important proportion of websites with a null or quasi-null score and the absence of websites with maximum score.

However, this negative performance of the Romanian health-related websites is not unique. A study conducted in America by the Office of Disease Prevention and Health Promotion (ODPHP), including 102 health-related websites using a similar selection methodology and a similar set of evaluation criteria has found that none of the websites met all the criteria. The authors considered that full compliance is an extremely low probability appearance. The same study also

reported that 10% of websites did not satisfy any of the six main criteria of quality and that although 90% of sites have met one or more criteria of quality, only 3% of the investigated websites complied with more than 3 criteria.(14)

In our study, the analyses of compliance to each individual credibility criterion have shown a great heterogeneity. While some of the criteria are complied with by a majority of the websites, other criteria seem to be almost entirely ignored.

The quality standard most commonly achieved in our sample was criterion number nine, which require the health-related websites to provide a feedback form or mechanism. This feature, either as a contact form or simply providing an email address at which the user can get in contact with the owner, was provided by the vast majority of the websites (91.5%). In some cases, owners provided even telephone numbers for the interested users. By contrast, the websites investigated in the ODPHP study, only 58.8% of the health-related websites complied with this criterion.(14)

Another European criterion that was frequently complied with was the transparency regarding the ownership of the website. In this respect, almost 75% of the websites in our sample complied with the requirement. It is worth emphasizing that this requirement was rated only if the website disclosed both the name of the owner (corporate or private individual) and the physical address of the owner's headquarter in an easily accessible location on the website. In the American ODPHP study, although over 91% of the websites disclosed their corporate name, the ownership transparency criterion was fully met only by 54% of the websites (by disclosing both the name and the address of the owner).(14)

The next criterion that was met by a fairly good number of Romanian health-related websites was the one requiring a clear differentiation between advertising and editorial content. More than 70% of the websites in our sample complied with this standard. The analysis was performed only on a subsample of 141 websites since the content of the other 176 websites did not contain advertisement at all and as such, making a distinction was irrelevant. For comparison, in the ODPHP study, the percentage of websites clearly distinguishing advertisement from editorial content was approximately 75%, just slightly higher than in the Romanian sample.(14)

A mission statement or a disclosure of the websites' purpose was found on less than half of the websites in our sample (42.3%). Comparatively, this criterion was met by 64% of the American health-related websites included in the ODPHP study.(14) It is worth to underscore that neither the eEurope 2002 expert consensus document nor the assessment procedure as applied in the present study attempted to judge the values the owners declared in the mission statement or to check whether the declared purposes are consistent with the real-world practices of the entity.

The assessment was strictly limited to ensure that the website complies with the eEurope 2002 standard regarding disclosure of the purpose. Many of the mission statements posted on an easily accessible page of the website, were very vague, non-specific, or were by mistake or on purpose filled with basically promotional content. In fact, our assessment found very few sites that understood the real meaning and aim of a mission statement.

The next criterion refers to a statement from which the user can find out if the website owner has any financial interest in the products or services presented on its site. Less than 25% of Romanian websites referred explicitly to any commercial interest they may had to the health or medical products or services presented on the site. In ODPHP study, the percentage of websites compliant to this criterion was much higher (slightly

over 60%).(14) Apparently, most of the owners or/administrators of the Romanian health-related websites either were not aware or willingly ignored the importance of the "Declaration of conflict of interest" for raising the credibility of the websites and for maintaining a trust relationship between the consumer and the health-related information providers.

The standards regarding privacy and data protection were measured in two questions. The first one assessed whether the websites display their policies to ensure the privacy and confidentiality of the users' data. Given the sensitive nature of the health-related information, this standard is of paramount importance for a responsible partnering between the health-related web site owners and the health-related information seekers. Nevertheless, the percentage of websites compliant to this credibility requirements was less than 10% among the Romanian health-related websites.

The assessment procedure that we applied was adapted to the local context and the rating was not as strict as the eEurope 2002 criteria were recommending. A tightly rigorous rating would have probably resulted in even lower percentages of compliant websites. In contrast, the percentage of American websites meeting this requirement is as high as 80%. In addition, the same ODPHP study reported that 75.3% of US websites not only display a regulation on privacy but provide specific details on how protection of personal data is done.(14)

The next criterion is directly related to the previous one and aims to measure the compliance to the standards regarding the protection of privacy and handling of personal data as regulated by the Romanian legislation in the field. The existing Law requires that all entities which handle personal data, online or otherwise, should be registered with the Government's Office of Personal Data Operators (Registrul operatorilor de date cu caracter personal). Upon registration, each operator is granted a unique registration code and they are required to display it in a visible location on the website. Our study aimed to find out how many of the Romanian health-related websites implemented this mandatory requirement. Our results have shown that only an extremely low number of Romanian health-related websites comply with this mandatory requirement.

Another important principle of the eEurope 2002 online health credibility code requires the health website owners to display a medical disclaimer in a visible location on their website. The disclaimer should state that any medical information found on the respective website is merely information - not medical advice, moreover, if users need medical advice, they should consult a doctor or other appropriate medical professionals.

Our assessment shows that the level of compliance of the Romanian health-related websites to this most sensitive issue is unacceptably low. Only 6% of the investigated health-related websites displays such a medical disclaimer.

As a further matter, during the assessment, we identified a particularly problematic situation on several websites where in spite of the medical disclaimer that was displayed as required, the health products on sale were promoted in a language that clearly contradicted the medical disclaimer.

The American ODPHP study was again in a stark contrast with our results. The percentage of websites displaying the medical disclaimer was as high as 71%. (14)

Finally, the most ignored credibility criterion was that of financial transparency. Less than 2% of the investigated websites met this credibility principle. The figures reported in the ODPHP study, although relatively higher (20%) suggest that disclosing the sources of revenue for running a health-related website might be regarded by the owners as a sensitive issue

even in more democratic societies.(14)

The results of the study need to be interpreted considering several limitations. First, the variables under investigation were many times displayed at highly unpredictable locations making the assessment procedure prone to error and some of the existing information was probably missed. However, it is reasonable to assume that regular health-related information seekers would miss these credibility indicators as well. Second, the generalizability of the results depends on whether the websites in the www.traffic.ro directory are representative of the whole Romanian Internet. Considering that www.traffic.ro was monitoring 15% of the websites with a .ro top level domain, and, in fact, was the biggest web directory at the time of the study, we can conclude that this was the best available option to ensure the highest possible representativity of the results. Third, randomly selecting the websites in the study sample resulted in the inclusion of a high proportion of websites with very low traffic which were not really relevant for the regular user. However, the aim of the study was to investigate the whole spectrum of Romanian health-related websites, including those that are rarely visited by the regular Internet users. And finally, the reproducibility of the results is highly influenced by the very dynamic nature of the Internet as some websites are closing down and others are launched and still others, change their owners and are rebuilt on the same domain name with significantly different content. But the most influential factor remains the ranking of the websites that radically impacts on their visibility and accessibility to the regular health-related information seekers.

In spite of these inherent limitations, our study brings a valuable contribution to raising the awareness of both medical professionals and the general population to the risks involved in seeking health-related information on websites with a poor level of compliance with the quality criteria developed for the health-related websites.

CONCLUSIONS

1. The mean Health Quality Score of the Romanian health-related websites was very low (2.8 on a scale of 9) reflecting a poor compliance to the quality criteria outlined in the eEurope 2002 credibility requirements for health-related websites.
2. The most frequently complied with criteria were: providing a feedback mechanism for the users (90% of the websites), disclosing the identity and the address of the owner (almost 3/4 of the websites), and distinguishing between advertisement and editorial content (70% of the relevant websites).
3. On the other hand, compliance was low on some critically important criteria such as: displaying a clear medical disclaimer, financial transparency, disclosing any possible conflicts of interests, and clearly displaying and explaining the privacy and confidentiality policy.

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