Quality Assessment of Persian Mental Disorders Websites Using the Webmedqual Scale

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ABSTRACT
Introduction: Nowadays, anyone with any level of Internet knowledge can act as producer and distributor of information. It differs from most traditional media of information transmission, lack of information control and lack of quality management to contents. This leads to quality of health information on the internet is doubtful. The object of this study is guidance patients to select valid mental disorders and determine the quality of Persian mental disorders websites. Methods: The sample of this study comprised 29 Persian mental disorders websites that were chosen by searching the Google, Yahoo and AltaVista search engines for the Persian equivalents of the three concepts “depression,” “anxiety,” and “obsession”. website was created by individuals or organizations. Data collection was performed with the WebMedQual checklist. Websites was assessed based on indicators as content, authority of source, design, accessibility and availability, links, user support, and confidentiality and privacy (Maximum score for any website was 83, mean score 41.5 and minimum score was 0). Collected data analyzed by one sample T- test in SPSS 20. Findings presented by Mean score and optimal score. Results: Based on the WebMedQual scale the mean score of Persian mental disorders websites in sex constructs including “content” (7.02±2.10), “authority of source” (4.71±1.96), “accessibility and availability” (2.19±0.47), “links” (1.45±0.97), “user support” (4.28±1.33), and “confidentiality and privacy” (2.81±2.81) are poor and below average, but the score for the “design” (9.17±1.59) is above average. The best website of mental disorders was that of the “IranianPsychological Association”. Conclusions: According to the results, only one website obtained the average score, so the quality of Persian mental disorders websites is low. Therefore, it is essential for users to criticize websites’ content and not trust them before evaluating them. It is better to use the ranked list websites or search on the internet by help information experts.

Key words: Quality assessment, mental disorders websites, Health information, WebMedQual scale.

1. INTRODUCTION
The massive growth of health information on the Internet, fundamental changes in the doctor-patient relationship, and no real protection against threats that can affect users of online health information are considered the main challenges of using medical information on the web (1). It is clear that the Internet could change the information-seeking behavior of users and their attitude toward their information needs (2). Reliable disease information online reduces anxiety and increases feelings of self-efficacy (3). But the challenge that users are facing with it is finding reliable information and determining its quality (4). There is misleading and false information on some websites and a person with no technical expertise can create a page providing medical care and advice (5).

Among different websites, those that are related to health information are more important because of the nature of the therapeutic use of this information. In this case, assessment of the quality of information on the website is a fundamental challenge, especially for those who are not experts on the specific health topic. Various studies also indicate that the quality of health information websites in various domains is low. Findings from studies of health information including back pain (6), burn scars (7), educational materials about schizophrenia (8), viral infections (9), retinopathy of prematurity (10), scoliosis (11), breast feeding web sites (12), colorectal cancer (13), and floaters and light flashes (14) suggested that there is a need for more attention to be given to the quality of information available on websites. In addition to these, information available on the Internet about mental disorders has been reported to be of poor quality, too (15, 16, 17).

This research deduced that inappropriate informa-
tion is available on health websites and that Internet users need help finding useful information. Clinicians are responsible for advising and training their patients; therefore, they should be able to recommend to their patients the best educational materials and the best places for finding information (11, 12).

Among health-related topics, many people surf the Internet for information about mental disorders on the Internet. These disorders may not cause direct mortality, but they have been considered the most important cause of disability around the world. Mental disorders decrease quality of life, increase the risk of various diseases, and lead to social and economic consequences for the patients (18).

According to epidemiologic studies in different provinces and cities of Iran, the most common mental disorders in Iran are mood and anxiety disorders. In some studies, mood disorders, including depression, and anxiety disorders, including generalized anxiety disorder, obsessive compulsive disorder, and phobia, have been reported as the most common disorders in Iran (19). Considering the high prevalence of these disorders in Iran and other countries, the evaluation of web-based information about mental disorders is necessary to determine the validity of the websites and rank them for users.

Therefore, in this study, Persian mental disorders websites relating to three widespread disorders in Iran—depression, anxiety, and obsession—were evaluated based on the WebMedQual scale. This study aims to help patients choose reliable websites for obtaining information about the identification and treatment of mental disorders. We also guide Web designers to publish reliable data and provide links to reputable sources on their websites.

2. METHODS

A typical search was performed to produce a list of websites similar to the one generated by a common user with limited medical or Internet knowledge. We performed keyword searches on the Internet in March 2013 to identify websites providing information on mental disorders. We entered the Persian equivalents of the three concepts (not Words) of depression, anxiety, and obsession, into three of the most popular search engines among Iranian people (20): Google, Yahoo, and AltaVista. We examined the first 30 Persian language websites coming up from each keyword query. Sites were excluded if inaccessible, containing no information on depression, anxiety, and obsession, discussion group or open forum, not a site (external links, books or articles) and no information in Persian. A final total of 29 websites were included. The websites were categorized into two groups: 14 websites in mood disorders (depression) and 15 websites in anxiety disorders (anxiety and obsession). List of these websites is presented in appendix 2.

WebMedQual scale was used to assess the quality of websites. This scale was changed according to the dominant characteristics of Persian websites and experts’ viewpoints. The WebMedQual scale is a comprehensive and standardized quality assessment of health websites. This scale allows for the relatively easy assessment of quality with numeric scoring (21). We evaluated seven criteria (content, authority of source, design, accessibility and availability, links, user support, and confidentiality) with 83 questions in a yes/no format checklist (the E-commerce construct, which is optional, was excluded in this study). A minimum score of 0 and a maximum of 83 could be earned by each website. An acceptable rating for websites was 41.5, which is half of the total score. Web designers, subject specialists (psychologists), and librarians answered the related questions based on their area of expertise. For each website, two checklists were completed by three specialists. Then average score of the two checklists was considered the website’s score.

Statistical analyses were performed using SPSS (version 20). An analysis involved the calculation of means and standard deviation of the outcome values and used one sample t-test to compare the websites mean scores with the WebmedQual values.

3. RESULTS

The number of questions, mean scores, and ideal scores of each main construct and sub construct are presented in Table I, which helps us better understand the score of each website by comparing it with average scores.

Table II displays the mean quality scores and T test results of Persian mental disorders websites based on the WebMedQual scale. As the findings indicate, based

| Main Constructs | sub-constructs | Number of questions and maximum scores of main constructs | mean scores of sub-constructs (Half of Maximum points) | Sum of questions & main scores of main construct (Half of Maximum points) |
|-----------------|----------------|--------------------------------------------------------|-------------------------------------------------------|-----------------------------------------------------------------------|
| Content         | Content        | 9                                                      | 4.5                                                   | 19                                                                     |
|                 | Credibility of information | 3                                                      | 1.5                                                   | 9.5                                                                   |
|                 | Information reliability and informing | 4                                                      | 2                                                     |                                                                       |
|                 | Intended audience | 2                                                      | 1.5                                                   |                                                                       |
| Authority of source | Disclosure of authors & developers | 6                                                      | 3                                                     | 16                                                                     |
|                 | Disclosure of sponsors | 10                                                     | 5                                                     |                                                                       |
| Design          | Design         | 16                                                     | 8                                                     | 16                                                                     |
|                 | Accessibility and availability | 6                                                      | 3                                                     | 6                                                                     |
|                 | Links          | 4                                                      | 2                                                     | 4                                                                     |
| User support    | Contact address and feedback mechanisms | 6                                                      | 3                                                     | 11                                                                     |
|                 | Availability of support and documentation for users | 5                                                      | 2.5                                                    | 5.5                                                                   |
| Confidentiality | Confidentiality | 11                                                     | 5.5                                                   | 11                                                                     |
| Sum             | Sum            | 83                                                     | 41.5                                                   | 83                                                                     |

Table 1. Number of Questions and maximum and average rating of each main construct and sub-construct in WebMedQual scale
on the WebMedQual scale, mean scores of Persian mental disorders websites in six constructs including content (7.02±2.10), authority of source (4.71±1.96), accessibility and availability (2.19±2.51), links (1.45±0.97), user support (4.28±1.33), and confidentiality constructs (2.81±2.28) are weak and less than half the average. The only design construct had a score (9.17±0.47) that was more than the average rating.

In general, according to the overall scores (Appendix 1), the “Iranian Psychological Association” and “Afsordegi” are the best and the worst websites, respectively, among 29 mental disorders websites. Also, only one website (Iranian Psychological Association) obtained the mean score. In addition, the “Iranian Psychological Association” was the best website and “Afsordegi” the worst among 14 mood disorder websites; among 15 anxiety websites, “Ravanyar” and “Farakav” were the best and the worst websites, respectively.

4. DISCUSSION

Other research has examined the quality of mental disorders websites in other countries. Christensen and Griffiths (2000) indicated that information overload, poor information quality, potential harm, and lack of scientific evaluation are problems with information in mental health. According to their research, sites and interventions on the Internet need to be formally evaluated (15).

Also, Lissman and Boehnlein (2001) examined the quality of information about depression available on the Internet. They evaluated a total of 178 active sites. Half of the sites mentioned no diagnostic symptoms or criteria in their descriptions of depression. Overall, the quality of information was quite low (22).

Also, Reavley and Jorm (2011) reviewed studies assessing the quality of websites providing information about mental disorders. Topics covered included affective disorders, anxiety disorders, eating disorders, substance use disorders, and schizophrenia/psychosis. They concluded that the quality of most was poor, although the quality of affective disorder sites may be improving (23).

According to these studies and an investigation of research findings related to the quality of information in medical and related field’s information (1, 6, 7, 8, 9, 10, 11, 12, 13, 14, 24, 25, 26); it can be inferred that much health information is available on the Internet, but that this information is not always reliable.

In other words, anyone with any level of knowledge can act as a producer and distributor of information on the Internet. Authors often neglect and ignore quality criteria and publish information without being aware of its authenticity and validity. Therefore, differences between the Internet and traditional media related to information transformation are a lack of information quality control and a lack of arbitrating and editing process for publishing information. Electronic documents can be changed at any time, so their reliability is difficult to certify (27). Hence, this leads to difficulty in recognizing accurate and inaccurate information on the web. It is essential that users criticize content and not trust a source without considering its credibility. Therefore, it is essential for web designers to consider all constructs, including content, authority, design, accessibility, and so on, to improve their websites.

5. CONCLUSION

In this study, we aimed to assess the quality of information on Persian mental disorders websites. We conclude that quality of Persian mental disorder websites is low, and users face difficulty in choosing reliable websites from which to obtain information about the identification and treatment of mental disorders. Healthcare professionals, especially medical librarians and those in the information sciences, have a key role in directing users to good-quality websites. They can evaluate health information websites and introduce them to the non expert groups in society that need such information.

CONFLICT OF INTEREST: NONE DECLARED.

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| Content [19] | Authority of source [16] | Design [16] | Accessibility and availability [6] | Links [4] | User support [11] | Confidentiality [11] | Total score [83] |
|-------------|-------------------------|-------------|----------------------------------|----------|------------------|---------------------|------------------|
| 1           | W27 (13)                | W19 (9.5)   | W8 (11.5)                        | W27 (3)  | W11 (5)          | W9 (6.5)            | W17 (8.5)        |
| 2           | W22 (10.5)              | W11 (8)     | W15 (11.5)                       | W9 (3)   | W25 (3)          | W18 (6.5)           | W26 (7.5)        |
| 3           | W25 (10.5)              | W25 (8)     | W1 (11)                          | W28 (3)  | W13 (2.5)        | W16 (6.5)           | W2 (7)           |
| 4           | W1 (10)                 | W1 (7)      | W5 (11)                          | W3 (2.5) | W20 (6)          | W23 (6)             | W26 (7)          |
| 5           | W18 (10)                | W20 (7)     | W10 (11)                         | W13 (2.5)| W26 (2)         | W23 (6)             | W28 (7)          |
| 6           | W3 (9.5)                | W18 (6)     | W3 (10.5)                        | W13 (2.5)| W3 (2)          | W27 (5)             | W18 (6.5)        |
| 7           | W4 (8.5)                | W23 (6)     | W18 (10.5)                       | W7 (2.5) | W14 (2)         | W28 (5.5)           | W15 (5.5)        |
| 8           | W26 (8)                 | W24 (6)     | W26 (10)                         | W11 (2.5)| W17 (2)        | W22 (5)             | W1 (4.5)         |
| 9           | W2 (8)                  | W26 (5.5)   | W22 (10)                         | W25 (2)  | W18 (5)        | W12 (5)             | W9 (4)           |
| 10          | W24 (8)                 | W12 (5.5)   | W17 (10)                         | W2 (2.5) | W23 (2)        | W1 (5)              | W8 (4)           |
| 11          | W13 (7.5)               | W3 (5)      | W19 (10)                         | W4 (2.5) | W4 (2)         | W25 (5)             | W19 (4)          |
| 12          | W21 (7)                 | W22 (5)     | W28 (10)                         | W20 (2.5)| W19 (2)        | W24 (5)             | W22 (5)          |
| 13          | W23 (7)                 | W14 (5)     | W13 (9.5)                        | W26 (2)  | W8 (2)         | W6 (4.5)            | W5 (3)           |
| 14          | W8 (7)                  | W9 (4.5)    | W7 (9.5)                         | W22 (2)  | W5 (2)         | W29 (4.5)           | W21 (2.5)        |
| 15          | W28 (7)                 | W21 (4.5)   | W12 (9.5)                        | W12 (2)  | W10 (2)        | W7 (4)              | W23 (2)          |
| 16          | W11 (6.5)               | W15 (4.5)   | W12 (9)                          | W1 (2)   | W15 (2)        | W11 (4)             | W4 (2)           |
| 17          | W9 (6.5)                | W29 (4)     | W25 (9)                          | W14 (2)  | W1 (1.5)       | W19 (4)             | W7 (2)           |
| 18          | W5 (6.5)                | W4 (4)      | W23 (9)                          | W21 (2)  | W9 (1.5)       | W17 (3.5)           | W24 (2)          |
| 19          | W29 (6)                 | W28 (4)     | W2 (9)                           | W18 (2)  | W22 (1)       | W2 (3.5)            | W6 (0)           |
| 20          | W12 (5.5)               | W13 (3.5)   | W27 (8.5)                        | W16 (2)  | W21 (1)       | W10 (3.5)           | W12 (0)          |
| 21          | W17 (5.5)               | W16 (3.5)   | W11 (8.5)                        | W23 (2)  | W24 (1)       | W13 (3)             | W17 (0)          |
| 22          | W16 (5.5)               | W5 (3.5)    | W26 (8.5)                        | W19 (2)  | W12 (1)       | W13 (3)             | W14 (0)          |
| 23          | W14 (5)                 | W23 (3)     | W29 (8.5)                        | W5 (2)   | W6 (0)        | W14 (3)             | W27 (0)          |
| 24          | W7 (5)                  | W8 (3)      | W9 (8)                           | W10 (2)  | W7 (0)        | W21 (3)             | W11 (0)          |
| 25          | W19 (5)                 | W16 (2.5)   | W23 (8)                          | W2 (0)   | W8 (0)        | W18 (3)             | W7 (0)           |
| 26          | W20 (5)                 | W6 (2)      | W14 (7)                          | W13 (2)  | W27 (0)       | W23 (3)             | W25 (0)          |
| 27          | W15 (5)                 | W27 (2)     | W6 (0)                           | W29 (0)  | W16 (0)       | W4 (2.5)            | W10 (0)          |
| 28          | W6 (4)                  | W17 (2)     | W24 (6)                          | W6 (1)   | W28 (0)       | W15 (2.5)           | W20 (0)          |
| 29          | W10 (5)                 | W10 (2)     | W4 (5.5)                         | W8 (1)   | W29 (0)       | W5 (2)              | W29 (0)          |
### List of Persian Mental Disorder Websites

| Website code | Website Name                  | URL Address                                                                 |
|--------------|------------------------------|----------------------------------------------------------------------------|
| W1           | Pezeshk Online               | http://pezeshkonline.ir/                                                  |
| W2           | Ravan Pajouh                 | http://www.ravanpajouh.com                                                |
| W3           | Iran Psychological Association | http://iranpa.org/portal/default.aspx                                |
| W4           | Ravanshenasan                | http://www.ravanshenasan.com/news.php                                   |
| W5           | Atieh Clinic                 | http://www.atiehclinic.com                                                |
| W6           | Afsordegi                    | http://afsordegi.com                                                      |
| W7           | Goulmakan Tohid Old Aged Person | http://psychology.harferooz.com/forum308.html                        |
| W8           | Seemorgh                     | http://www.seemorgh.com/health/default.aspx?tabid=2094&comid=2755         |
| W9           | Zohrabi Dr.                  | http://dzohrabi.ir/index.php?option=com_content&task=view&id=552&Itemid=1 |
| W10          | Konjkav                      | http://konjkav.com/health/9711                                           |
| W11          | Tavana Dr.                   | http://www.ddtavana.com/index.php/component/content/article/24.html        |
| W12          | Parseh Clinic                | http://www.parsehclinic.com/VisitorPages/show.aspx?ItemID=1748            |
| W13          | Mignad                       | http://www.mignad.ir/ravanshenasi/balini/7140                            |
| W14          | Pezashkan Iran               | http://www.pezashkan.org/?p=24724                                        |
| W15          | Online Family Consult        | http://www.ofc.ir/fa/article/general/what_is_dejection_2006103125.html    |
| W16          | Valipour Dr.                 | http://wwwdrvvalipour.ir/index.php?ToDo=ShowArticles&AID=2973             |
| W17          | Harferooz                    | http://psychology.harferooz.com/thread444.html                            |
| W18          | Kahrakhshan Dr.              | http://www.ravanshenasi.de/farsi/index.htm                               |
| W19          | Ravanyar                     | http://www.ravanyar.com/Stress.aspx                                      |
| W20          | Pour ali net                 | http://www.pourali.net/                                                  |
| W21          | Javan emrooz                 | http://www.javanemrooz.com/articles/healthy/espiritual/other/article/27970.aspx |
| W22          | Iranian Clinical Psychology Association | http://www.irancpa.com/                                      |
| W23          | Ravanaa                      | http://www.ravanaa.com                                                   |
| W24          | Zehn Aram                    | http://www.zehnaram.ir/post-24.aspx                                      |
| W25          | Ravan                        | http://ravan.com/fa/service/mentaldisorder                                |
| W26          | Alachigh Ravan               | http://www.psychosalachigh.com/                                          |
| W27          | Institute for Cognitive Science Studies | http://www.iriess.org/fa/Pages/Default.aspx               |
| W28          | Kollegoezy Dini              | http://www.askdn.com/thread14.html                                       |
| W29          | Yek Farakav                  | http://1farakav.com/2010/08/10%e9%89%88%e9%99%a7%e8%96%b3%e9%99%a8%e8%96%b3%e9%98%8e%e9%99%a8%e9%99%a8%e9%99%a8/ |

- W1 to W14 are related to anxiety disorders websites and W15 to W29 are depression websites.

**Appendix 2.** List of Persian Mental Disorder Websites. W1 to W14 are related to anxiety disorders websites and W15 to W29 are depression websites.