Assessing the Quality of the Israeli Alzheimer's Association Website: An Evaluation of Lay Persons, Family Caregivers and Professionals

Perla Werner

Received 3 August 2015; Published online 17 October 2015

© Columbia International Publishing 2015. Published at www.uscip.us

Abstract

The Internet is increasingly used as a source for health-related information in general and for information about memory loss, dementia and Alzheimer's disease (AD) particularly. The aim of this study was to evaluate the quality of the Israeli Alzheimer's Association website. A convenience sample of 62 lay persons, 28 family caregivers and 27 professionals assessed the quality and content of the website using a structured questionnaire. Based on DISCERN scores, the quality of the website was rated as modest. Better scores were obtained regarding its accountability and aesthetics. About content, participants reported that appropriate information was present regarding the characteristics of the disease, its stages and symptoms. Information regarding prevention and treatment issues was poorer. No differences were found between the scores obtained from the different groups of users. The official website of the Israeli Alzheimer's Association provides accurate and responsible information to potential consumers of information regarding AD.

Keywords: Alzheimer's disease; Website; Internet; Quality

1. Introduction

One of the most pressing public health challenges societies face is to reduce the burden of Alzheimer's disease - AD (Wortmann, 2012). To address the challenge, several initiatives and strategies are being developed. First, dementia in general and AD in particular is being defined as a public health priority worldwide by bodies such as the World Health Organization, the international federation of AD – Alzheimer’s Disease International (ADI) and the G8. Second, National Dementia Strategy Programs are being instituted in an increasing number of countries (Kenigsberg et al., 2015), including Israel.
Together with a call for increasing the amount spent on dementia research, and developing an international action plan for research (Lundkvist et al., 2014), all these initiatives stress the importance of raising awareness as the first step in any effort to battle the upcoming epidemic of AD. Awareness and knowledge about a disease are an integral part of cognitive models of health behavior (Glanz et al., 2008) and have been extensively studied in several diseases as well as in AD (Cahill et al., in press). Increased knowledge and awareness of AD may lead to early detection of the disease as it was found to be associated with increased preventing behaviors such as help seeking (Werner et al., 2014).

The Internet is increasingly becoming an important source of knowledge and information for consumers and medical professionals, providing a wealth of data on diseases and treatments. Indeed, the number of persons using the Internet is growing fast. According to Internet World Stats the number of Internet users increased by 741% between 2000-2014 and there were more than 969 million websites in 2014 (Internet Usage Statistics, 2015). A national representative survey conducted in 2012 among a sample of over 3,000 adults in the United States showed that one in three U.S. adults reported that they have gone online specifically to search for health information, and 17% of them looked for information about memory loss, dementia and AD (Fox & Dugan, 2013).

Despite this trend and regardless of the current call to increase the use of the Internet to promote screening and awareness of memory impairment in later life (Lundquist & Ready, 2015), attention should be paid to the completeness and accuracy of the information provided by Internet websites regarding these topics. Indeed, a recent review of the 25 most frequently retrieved websites marketing dietary supplements associated with the treatment of AD found that the primary websites had a marketing objective, described supplements as effective, natural and strong, but cited scientific peer reviewed sources infrequently (Palmour et al., 2013).

Thus, it is surprising that to the best of our knowledge only three studies have assessed till today the content and quality of the information provided on dementia websites. The first study - conducted in the UK - included a sample of 15 websites identified in 2001 and assessed them using four generic health-related website evaluation tools (Bouchier & Bath, 2003). The second study - conducted in the US - included a sample of the 16 websites most frequently listed for dementia caregivers (Anderson et al., 2009) and used a tool specifically developed for assessing dementia caregiving information in the Internet – the Dementia Caregiving Evaluation Tool developed by and Bouchier and Bath (2003). Finally, the third study included 7 Canadian websites which were evaluated using the DISCERN instrument, a well-established, validated and widely used tool for assessing quality of information in Websites (Charnock et al., 1999). Overall, the findings of these studies showed variability in the quality of the websites reviewed, with those pertaining to national Alzheimer’s Associations presenting the best completeness and accuracy of the information.

Despite the importance of these studies, their contribution is limited for several reasons. First, they were conducted in English-speaking countries and their conclusions might be less applicable to societies were English is not the first language. Second, they based their evaluation on assessments completed by the researchers. Since lay persons, patients and their family members, and professionals are the main consumers of health information through the Internet (Fox & Dugan, 2013), it is important to assess and compare their ratings regarding the quality of the websites.
This is especially true in the area of AD where shared decision-making is highly recommended (Miller et al., 2014).

Thus, the aim of the present study was to assess the quality and content of the Israeli Alzheimer's Association Website by the lay public, by family caregivers and by professional persons.

**The Israeli setting**

Israel is a highly advanced country, ranking 17th among the 47 countries worldwide with the highest Human Development Index (HDI) and having in 2013 over 5.5 million Internet users and an Internet penetration rate of 70.8% (Internet Usage Statistics, 2015). Moreover, a nationally representative sample of the Israeli population aged 18 and over conducted in 2011 showed that 59% of Internet users in Israel were involved in seeking health related information during the 3 months preceding the survey (Israel Internet Association, 2015).

By the end of 2012 there were a total of 832,900 persons aged 65 and over in Israel, and 148,900 of them were estimated to have AD or other types of dementia, with the majority of them (88.7%) living in the community (Brodsky et al., 2013). The Israeli Alzheimer’s Association (EMDA) is the national voluntary organization for providing support and education to persons with AD and their caregivers in Israel. Established in 1988 and a member of Alzheimer's Disease International (ADI), EMDA has 38 branches nationwide and its main activities include caregivers' self-help and support groups nationwide, support groups for persons in the first stages of dementia, a Hotline service and various activities (such as conferences) for raising knowledge and awareness of the lay public, caregivers and professionals.

2. **Methods**

2.1 **Participants:** A total of 117 respondents completed the survey: 62 lay persons, 28 family members of a person with AD and 27 professionals with special knowledge regarding persons with AD in the community such as social workers and psychologists. The majority of the participants in all groups were female, although the percentage was significantly higher among professionals (50.8% among lay persons, 67.9% among relatives and 85.2% among professionals, \( \chi^2(4) = 10.7, p < .05 \)). The mean age for the sample was 54.5 (SD = 10.9) years, with the group of professionals being significantly younger than the other groups (mean age = 49.3 compared to 53.5 among the relatives and 57.4 among lay persons).

2.2 **Evaluation of the Web site:** The Web site was assessed in relation to quality, accountability, aesthetics, and content.

*Quality of the web site:* Was assessed using DISCERN, a standardized, valid tool for evaluating the quality of health information written for the public (Channock et al., 1999; Channock & Shepperd, 2004). DISCERN includes 16 items assessing reliability of the website (items 1 to 8), treatment choices (items 9 – 15) and overall quality of the website (item 16). Each item was rated on a 5-point Likert-type scale ranging from 1 – Low to 5 – High. An overall index was created for each subscale
by averaging the items. The internal reliability of the subscales was very good for the reliability subscale (Cronbach alpha = 0.84) and excellent for the treatment subscale (Cronbach alpha = 0.92).

Accountability of the website: Was assessed using a 12-item scale aimed at rating websites on criteria of authorship, such as whether authors, their affiliation and credentials are identified, whether sources and references are mentioned (Silberg et al., 1997). Each item was rated 0 – No or 1 - Yes. An overall index was created by summing the items. The internal reliability of the accountability scale was good (Cronbach alpha = 0.76).

Aesthetics of the website: Was assessed using Abbott's (2000) criteria adapted by Kisely (Kisely et al., 2003) and covering presence of headings, subheadings, hyperlinks as well as absence of advertising. Each item was rated 0 – No or 1 – Yes. An overall index was created by summing the items.

Content of the website: Assessment of the quality of the content was based on the guidelines developed by the second AD Consensus Conference held in 2012 in Israel (Werner & Korczyn, 2012) as the golden standard. Factual accuracy was examined in terms of definitions, prevention, treatment, and miscellaneous. A total of 24 items were examined. Each item was rated 0 – No or 1 - Yes.

2.3 Statistical analyses: Descriptive statistics (means, standard deviations, frequencies) were used to describe the sample and the characteristics of the website. Pearson correlations were used to assess associations between website characteristics, and ANOVA and chi-square were used to compare among the groups of participants.

2.4 Ethical considerations: The study protocol was approved by the Ethics Committee of the Faculty of Social Welfare and Health Sciences of the University of Haifa.

2.5 Procedure: Participants were recruited using purposive sampling. They were provided with the URL of the Israeli Alzheimer’s Association and were requested to complete the structured questionnaire. Data were collected between January and March, 2013.

3. Results

3.1 Quality of the website: The mean (SD) of the DISCERN items are presented in Table 1. As can be observed, all groups rated the overall quality of the website as modest (only slightly over 3). The items scored the highest, related to the clarity and relevance of the website and those rated the lowest were those related to the information regarding treatment and choice, especially in regards to describing what would happen if no treatment is used.

3.2 Accountability of the website: Overall, the groups reported recognizing around half of the accountability items being present in the website (Table 2). Professionals recognized a slightly higher mean number of accountability items than the other groups, although this difference was not statistically significant. The accountability items recognized by the highest proportion of participants in all groups referred to the accreditation of the authors and the sources of the
information. The items recognized by the lowest proportion of the participants in all groups pertained to the date the website was created and modified.

Table 1 Quality of the website (DISCERN items)

<table>
<thead>
<tr>
<th></th>
<th>Lay persons (n = 62)</th>
<th>Relatives (n = 28)</th>
<th>Professionals (n = 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Reliability</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are the aims clear?</td>
<td>4.4 (0.9)</td>
<td>4.3 (1.0)</td>
<td>4.2 (1.2)</td>
</tr>
<tr>
<td>Does the website achieve its aims?</td>
<td>4.1 (0.8)</td>
<td>4.2 (0.9)</td>
<td>4.3 (0.7)</td>
</tr>
<tr>
<td>Is it relevant?</td>
<td>4.0 (0.9)</td>
<td>4.0 (1.2)</td>
<td>4.4 (0.8)</td>
</tr>
<tr>
<td>Is it clear what sources of information were used to compile the publication?</td>
<td>3.2 (1.0)</td>
<td>3.3 (1.4)</td>
<td>3.3 (1.2)</td>
</tr>
<tr>
<td>Is it clear when the information used or reported in the publication was produced?</td>
<td>3.2 (1.2)</td>
<td>3.1 (1.4)</td>
<td>3.1 (1.3)</td>
</tr>
<tr>
<td>Is it balanced and unbiased?</td>
<td>3.7 (1.0)</td>
<td>4.0 (1.1)</td>
<td>3.8 (1.1)</td>
</tr>
<tr>
<td>Does it provide details of additional sources of support and information?</td>
<td>4.1 (1.0)</td>
<td>3.9 (1.3)</td>
<td>4.1 (1.1)</td>
</tr>
<tr>
<td>Does it refer to areas of uncertainty?</td>
<td>3.5 (1.1)</td>
<td>3.7 (1.3)</td>
<td>4.1 (1.1)</td>
</tr>
</tbody>
</table>

**Quality of information on treatment and choice**

<table>
<thead>
<tr>
<th></th>
<th>Lay persons (n = 62)</th>
<th>Relatives (n = 28)</th>
<th>Professionals (n = 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Does it describe how each treatment works?</td>
<td>3.5 (1.1)</td>
<td>3.9 (1.4)</td>
<td>3.8 (1.3)</td>
</tr>
<tr>
<td>Does it describe the benefits of each treatment?</td>
<td>3.2 (1.0)</td>
<td>3.8 (1.3)</td>
<td>3.6 (1.3)</td>
</tr>
<tr>
<td>Does it describe the risks of each treatment?</td>
<td>3.3 (1.3)</td>
<td>3.4 (1.4)</td>
<td>3.2 (1.3)</td>
</tr>
<tr>
<td>Does it describe what would happen if no treatment is used?</td>
<td>3.1 (1.3)</td>
<td>2.7 (1.5)</td>
<td>2.7 (1.4)</td>
</tr>
<tr>
<td>Does it describe how the treatment choices affect overall quality of life?</td>
<td>3.5 (1.1)</td>
<td>3.0 (1.3)</td>
<td>3.6 (1.3)</td>
</tr>
<tr>
<td>Is it clear that there may be more than one possible treatment choice?</td>
<td>3.8 (1.1)</td>
<td>3.6 (1.4)</td>
<td>3.9 (1.3)</td>
</tr>
<tr>
<td>Does it provide support for shared decision-making?</td>
<td>3.5 (1.0)</td>
<td>3.4 (1.2)</td>
<td>3.6 (1.2)</td>
</tr>
</tbody>
</table>

**Overall quality**

<table>
<thead>
<tr>
<th></th>
<th>Lay persons (n = 62)</th>
<th>Relatives (n = 28)</th>
<th>Professionals (n = 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rate the overall quality of the publication as a source of information about treatment choices.</td>
<td>3.6 (0.9)</td>
<td>3.4 (1.1)</td>
<td>3.5 (1.3)</td>
</tr>
</tbody>
</table>

1-Low           5-High
Table 2 Accountability of the web site (%)

<table>
<thead>
<tr>
<th></th>
<th>Lay persons (n = 62)</th>
<th>Relatives (n = 28)</th>
<th>Professionals (n = 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are authors credited</td>
<td>83.0</td>
<td>71.4</td>
<td>76.0</td>
</tr>
<tr>
<td>Do affiliations appear?</td>
<td>76.0</td>
<td>60.7</td>
<td>61.5</td>
</tr>
<tr>
<td>Do authors’ credentials appear?</td>
<td>34.7</td>
<td>28.6</td>
<td>30.8</td>
</tr>
<tr>
<td>Are information sources given?</td>
<td>78.8</td>
<td>64.3</td>
<td>69.2</td>
</tr>
<tr>
<td>Are there links to the references</td>
<td>69.4</td>
<td>64.3</td>
<td>69.2</td>
</tr>
<tr>
<td>Are links updated</td>
<td>75.0</td>
<td>100.0</td>
<td>80.8</td>
</tr>
<tr>
<td>Is site ownership disclosed**</td>
<td>57.1</td>
<td>69.2</td>
<td>100.0</td>
</tr>
<tr>
<td>Is sponsorship disclosed</td>
<td>54.7</td>
<td>60.7</td>
<td>64.0</td>
</tr>
<tr>
<td>Was site modified in the last month*</td>
<td>52.3</td>
<td>29.2</td>
<td>72.0</td>
</tr>
<tr>
<td>Is the date the website was created specified</td>
<td>46.0</td>
<td>20.0</td>
<td>34.6</td>
</tr>
<tr>
<td>Is the date the website was last modified specified</td>
<td>31.3</td>
<td>20.8</td>
<td>30.8</td>
</tr>
<tr>
<td>Mean total score</td>
<td>5.5 (2.6)</td>
<td>4.9 (3.3)</td>
<td>6.1 (2.1)</td>
</tr>
</tbody>
</table>

** p < .01  * p < .05

3.3 Aesthetics of the website: The total mean score for the aesthetics characteristics of the website was fair (almost 3 out of 4 in all groups). As for the individual aesthetics items assessed, as can be observed in Table 3, the majority of the participants in all groups reported headings and hyperlinks to be present in the website. Regarding advertisements, compared to professionals and lay persons, a lower percentage of participants in the relatives’ group reported recognizing them in the website. No statistically significant differences were found between the groups neither in the overall scale scores nor in any of the individual items.

Table 3 Aesthetics of the website (%)

<table>
<thead>
<tr>
<th></th>
<th>Lay persons (n = 62)</th>
<th>Relatives (n = 28)</th>
<th>Professionals (n = 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Are headings present</td>
<td>92.5</td>
<td>96.4</td>
<td>92.0</td>
</tr>
<tr>
<td>Are diagrams present</td>
<td>34.0</td>
<td>21.4</td>
<td>34.6</td>
</tr>
<tr>
<td>Are advertisement absent</td>
<td>58.8</td>
<td>71.4</td>
<td>50.0</td>
</tr>
<tr>
<td>Are hyperlinks to external sites present</td>
<td>85.7</td>
<td>85.2</td>
<td>95.8</td>
</tr>
<tr>
<td>Mean total score</td>
<td>2.6 (1.0)</td>
<td>2.7 (0.8)</td>
<td>2.6 (0.8)</td>
</tr>
</tbody>
</table>

3.4 Content of the website: The vast majority of the participants in all groups reported the website presenting information regarding the characteristics of AD disease such as, the stages and symptoms of the disease, as well as the definition of behavioral problems and of Mild Cognitive Impairment (Table 4). Lower percentages of participants reported recognizing in the website
information regarding prevention and treatment issues. No statistically significant differences were found among the groups in the overall scales.

**Table 4** Content of the website (%)

<table>
<thead>
<tr>
<th></th>
<th>Lay persons (n = 62)</th>
<th>Relatives (n = 28)</th>
<th>Professionals (n = 27)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Definitions</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Are the stages of the disease defined</td>
<td>92.5</td>
<td>85.7</td>
<td>88.5</td>
</tr>
<tr>
<td>Is MCI mentioned/defined</td>
<td>96.2</td>
<td>85.7</td>
<td>80.8</td>
</tr>
<tr>
<td>Are symptoms of AD</td>
<td>100.0</td>
<td>92.9</td>
<td>100.0</td>
</tr>
<tr>
<td>Are behavioral problems</td>
<td>94.3</td>
<td>92.9</td>
<td>92.3</td>
</tr>
<tr>
<td>Mean definition</td>
<td>3.8 (0.5)</td>
<td>3.6 (1.1)</td>
<td>3.6 (0.8)</td>
</tr>
<tr>
<td><strong>Diagnosis</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Is this issue mentioned</td>
<td>98.1</td>
<td>92.9</td>
<td>92.6</td>
</tr>
<tr>
<td><strong>Prevention</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Omega 3</td>
<td>69.4</td>
<td>46.2</td>
<td>60.0</td>
</tr>
<tr>
<td>High Blood pressure</td>
<td>66.7</td>
<td>74.1</td>
<td>80.0</td>
</tr>
<tr>
<td>Diabetes</td>
<td>74.0</td>
<td>78.6</td>
<td>76.0</td>
</tr>
<tr>
<td>Metabolic syndrome</td>
<td>74.5</td>
<td>64.0</td>
<td>80.0</td>
</tr>
<tr>
<td>Depression</td>
<td>73.5</td>
<td>61.5</td>
<td>68.0</td>
</tr>
<tr>
<td>Physical activity</td>
<td>73.1</td>
<td>70.4</td>
<td>84.0</td>
</tr>
<tr>
<td>ApoE variation</td>
<td>70.2</td>
<td>57.7</td>
<td>65.2</td>
</tr>
<tr>
<td>Mean prevention</td>
<td>4.7 (2.3)</td>
<td>4.3 (2.3)</td>
<td>5.1 (1.9)</td>
</tr>
<tr>
<td><strong>Treatment</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cholinesterase inhibitors</td>
<td>75.0</td>
<td>66.7</td>
<td>88.0</td>
</tr>
<tr>
<td>Memantine</td>
<td>87.8</td>
<td>75.0</td>
<td>83.3</td>
</tr>
<tr>
<td>Dimelbon</td>
<td>50.0</td>
<td>43.5</td>
<td>39.1</td>
</tr>
<tr>
<td>Ginko Biloba</td>
<td>45.5</td>
<td>36.4</td>
<td>37.5</td>
</tr>
<tr>
<td>Hormone Replacement Therapy</td>
<td>30.2</td>
<td>30.4</td>
<td>41.7</td>
</tr>
<tr>
<td>Folate and Vitamin B12</td>
<td>61.4</td>
<td>54.2</td>
<td>60.0</td>
</tr>
<tr>
<td>Statins</td>
<td>44.2</td>
<td>39.1</td>
<td>56.5</td>
</tr>
<tr>
<td>Mean treatment</td>
<td>3.7 (2.3)</td>
<td>3.2 (2.7)</td>
<td>3.9 (2.5)</td>
</tr>
<tr>
<td><strong>Other information</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Information about hospitalization*</td>
<td>64.2</td>
<td>35.7</td>
<td>57.7</td>
</tr>
<tr>
<td>Information about end of life</td>
<td>70.6</td>
<td>50.0</td>
<td>50.0</td>
</tr>
<tr>
<td>Information about driving discontinuation</td>
<td>56.9</td>
<td>46.4</td>
<td>46.2</td>
</tr>
<tr>
<td>Information about home changes</td>
<td>78.0</td>
<td>71.4</td>
<td>73.1</td>
</tr>
<tr>
<td>Information about legal issues</td>
<td>69.2</td>
<td>71.4</td>
<td>76.9</td>
</tr>
<tr>
<td>Links to other institutions and resources**</td>
<td>100.0</td>
<td>82.1</td>
<td>88.0</td>
</tr>
</tbody>
</table>

*p < .05  ** p < .01
3.5 Association between website characteristics: Statistically significant associations were found between all the criteria used to assess the quality of the website. The highest association was found between the two aspects assessed by DISCERN (reliability and treatment – $r = 0.87$, $p < .001$) and the lowest association was found between the definition and treatment scales in the content assessment ($r = 0.21$, $p < .05$).

3.6 Association between website characteristics and participants' gender and age and group: No statistically significant associations were found.

4. Discussion

As knowledge and awareness about the rise in the number of persons with Alzheimer's disease and other dementias spreads (Lin & Lewis, 2015), lay persons and caregivers experience increasing concerns and worry about developing the disease (Cutler & Hodgson, 2001; Werner, 2003; Kessler et al., 2012; Werner et al., 2013). Seeking information is one of the ways of coping with these worries (Persoskie et al., 2014).

Since the Internet is rapidly becoming one of the first places to go for obtaining health related information (Fox & Dugan, 2013), examining the quality of the most widely used websites is of utmost importance. The aim of the present study was to evaluate the Israeli Alzheimer's Association website as reported by the main users of the website – lay persons, family caregivers and professionals. This evaluation was performed based on assessing the overall quality of the website as well by assessing its accountability, aesthetics and the presence of specific information based on evidence-based guidelines.

According to the DISCERN tool, quality scores were overall modest, with higher scores given to items assessing the reliability of the website (such as stating its aims and providing details for additional sources of information) and lower scores given to the information provided about treatment and choice. Similar results were found in studies also using the DISCERN questionnaire to address the quality of information regarding other health problems (Montoya et al., 2013; Carlsson et al., 2015) as well as regarding AD (Dillon et al., 2013). This is somewhat worrisome especially since as many as 47% of those seeking information in health web pages reported that their findings influenced treatment decisions (Fox & Rainie, 2000). The lower scores obtained in the treatment subscale may stem from the fact that all these studies used a generic version of the DISCERN questionnaire, which might have caused the items to be too vague and elusive.

Indeed, our study showed that when evaluating the content of the Israeli Alzheimer's Association website in relation to evidence-based information derived from consensus statement guidelines, participants' reports regarding content quality were relatively high. For example, close to 100% of the participants in all groups stated finding information about the stages of the disease, its symptoms and behavioral problems. These results are valuable especially since accurate knowledge about a disease has been associated consistently with appropriate health beliefs and health behavior (Glanz et al., 2008; Werner et al., 2014). Regarding treatments, over three quarters of the participants reported finding information about pharmacological treatments such as cholinesterase inhibitors and memantine. Lower percentages were reported regarding the presence of information...
about dietary supplements. This should be interpreted positively, mainly since although diet and nutrients have gained significant interest as potentially modifiable protective factors for dementing disorders, their effect is still questionable when available data based on randomized controlled trials is considered (Otaegui-Arrazola et al., 2014).

Regarding accountability and the aesthetics of the website, respectful results were obtained. Regarding accountability, over 50% of the participants in all groups reported 8 out of the 12 items in Silberg's criteria being present in the website, especially regarding the accreditation and affiliation of the authors.

The vast majority of the participants in all groups reported the main aesthetics items as present in the website. The only aesthetics characteristic reported as relatively absent in the website were diagrams. It has been stated that information available in websites should be understandable to persons with different levels of health literacy (Bastian, 2008) and that complementing the information presented with illustrations might be particularly helpful for persons with a low level of literacy (Houts et al., 2006). Since it can be assumed that some of the consumers of information associated with cognitive problems will be elderly persons (Fox & Dugan, 2013), it would be suggested to include more pictures and diagrams in the website.

It should be noted that the scores obtained in all the tools used in our study were significantly associated with each other. The question remains therefore, which one is the best and most valid indicator of the quality of a website. While according to several authors, this question remains unanswered (Cline & Haynes, 2001) we would like to suggest the use of more specific, evidence-based indicators of the quality of information provided in the website. Bastian (2008), in a paper describing the development of a national evidence-based health website in Germany, strongly supports this direction.

Finally, results of our study showed no differences in the assessments reported by different groups of consumers. This might indicate that the website was developed having both consumers and health-care providers’ views in mind, which might be important to maximize the potential use and benefits of the website.

4.1 Limitations

There are a number of limitations to this study. First, the study was performed in 2013. Considering the fast and dynamic nature of the Internet, our results reflect only the picture of the website at the time it was assessed. A longitudinal study on evaluating websites could be the next logical step for future research. Second, the convenience sampling method used and the small number of participants in the study do not allow us to make generalizations of the results. Third, the information gathered does not include information about readability. Fourth, only the presence or absence of specific content characteristic was assessed (diagnosis, treatment, etc.), without evaluating the accuracy or comprehensiveness of the information provided. Finally, we assessed only one website – the original website of the Israeli Alzheimer’s Association. However, a recent review on the topic of trust in health information websites showed that websites from reputable sources such as governmental sources or other formal organizations are associated with increased trust in the information provided (Kim, 2014).
4.2 Conclusions and practical implications

The objective of health related Internet websites is to provide accessible quality information to relatively well defined potential consumers (Bastian, 2008). In the case of Alzheimer's disease the main audience for this information is the lay public, caregivers and professionals. Results of our study showed that the official website of the Israeli Alzheimer's Association constitutes a relatively accurate and responsible source of information for all these groups. Given the increasing interest in web-based health information materials and the diversity of information available from private sources, there is constant need to examine the quality of this information. Physicians and other professionals should therefore take an active role identifying and guiding consumers to websites with accurate and comprehensible information. Results of our study suggest that professionals and decision-makers can refer potential consumers to official websites for gaining information regarding the disease.

Funding Source

The author received no financial support for the research.

Conflict of Interest

The author declared no conflicts of interest to the research.

References

http://dx.doi.org/10.1093/pubmed/22.2.191

http://dx.doi.org/10.1080/15398280802674560

http://dx.doi.org/10.1016/j.pec.2008.08.020

http://dx.doi.org/10.1177/1460458203009001002


http://dx.doi.org/10.1097/wad.0000000000000102

http://dx.doi.org/10.2196/ijmr.3819
http://dx.doi.org/10.1093/her/cyg046

http://dx.doi.org/10.1136/jech.53.2.105

http://dx.doi.org/10.1093/her/16.6.671


http://dx.doi.org/10.5770/cgi.16.40


http://dx.doi.org/10.1007/s10433-012-0242-8


http://dx.doi.org/10.1046/j.1440-1614.2003.01107.x

http://dx.doi.org/10.1093/geront/gnu122

http://dx.doi.org/10.3389/fphar.2014.00102


