


Using the Alzheimer's Association Web Site to Improve Knowledge of Alzheimer's Disease in Health Care Providers

American Journal of Alzheimer's Disease & Other Dementias®
2015, Vol. 30(1) 98-100
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DOI: 10.1177/1533317514559827
aja.sagepub.com


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Abstract

Background: The purpose of the current study was to investigate whether an informative Web site is effective at producing higher scores for an individual's knowledge of Alzheimer's disease (AD) relative to those who do not visit a Web site. **Methods:** A total of 552 participants completed the study on Amazon's Mechanical Turk; half were randomly assigned to visit alz.org, while a control group did not. Both groups were given the AD Knowledge Scale (ADKS) to assess their knowledge of AD. **Results:** Participants who visited alz.org scored significantly higher on the ADKS than those in the control group. Participants who were health care workers demonstrated higher scores than others in the experimental condition. Findings indicate that the Alzheimer's Association Web site is effective at producing higher scores for AD knowledge relative to no Web site at all and that it is especially helpful for health care workers compared to those who are not health care workers.

Keywords

Alzheimer's Association, Alzheimer's disease, dementia, Alzheimer's Disease Knowledge Scale, ADKS

Introduction

Alzheimer's disease (AD) is a pervasive disease that will likely affect everyone in some respect during their lifetime. Recent estimates place the prevalence of people with AD at just under 5 million and project that by 2050 nearly 14 million people will meet the diagnostic criteria in the United States alone.¹ However, some suggest that the increase can be slowed or halted if modifiable risk factors can be removed.² One study estimated that there could be a reduction of 10% to 25% in Alzheimer's cases if certain risk factors were avoided.³ The key to reducing risk factors, however, is disseminating the appropriate knowledge to the public and health care workers at all levels. Disseminating knowledge has other benefits as well. A better understanding of AD and its progression would give families and patients necessary information to better plan for the disease, for example. In addition, having up-to-date information about AD can also help families and health care workers seek and provide proper care for people with AD and promote early detection.

Given the far-reaching effects of AD and the benefits of AD knowledge, an increasingly large number of individuals require information about the disease. Indeed, many professional and lay people are turning to the Internet and Web sites like that of the Alzheimer's Association (alz.org) to find information about AD. In the present study, we investigated whether an extremely brief interaction with this informational Web site would improve people's knowledge for AD. We

hypothesized that individuals who experienced a brief exposure to alz.org would show higher scores on the AD Knowledge Scale (ADKS⁴), compared to those who did not visit it. We also hypothesized that health care workers would benefit from the Web site to a greater extent than nonhealth care workers would benefit from the Web site. Prior work has suggested that an individual's goals can influence information processing during a task.⁵ In particular, self-relevant information has been shown to automatically capture individual's attention.⁶ Because information on the alz.org Web site is naturally relevant to health care workers, we predict that health care workers will attend more to the health care-related information presented on alz.org, which will be reflected in a greater retention of the material.

Method

Participants

A total of 552 adults (ages 18-72; mean [M] = 34.50, standard deviation [SD] = 12.75 years old) were included in the

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analysis. They completed their participation through Amazon's Mechanical Turk. All participants were located in the United States and received compensation for their participation. Of this sample, 276 (50%) were female and 63 (11%) had earned a high school degree or less, 387 (70%) had at least some college experience, and 102 (18%) had completed some postgraduate education. In all, 8 (1%) were American Indian or Alaskan Native, 39 (7%) were Asian, 39 (7%) were African American, 1 (0%) was Native Hawaiian or Pacific Islander, 470 (85%) were caucasian, 12 (2%) reported other as a race, and 2 (0%) preferred not to answer. Of this sample, 19 (3%) identified themselves as having multiple races. In addition, 26 (5%) described themselves as Hispanic. A number of these participants, 82 (ages 18-65, $M = 36.20$, $SD = 13.11$ -years-old), self-identified as health care workers who were working in a field other than AD.

Procedure

After participants read a consent form that informed participants the study was about assessing their AD knowledge, provided demographic information, and responded to questions about their experience with AD and their self-reported knowledge of the disease, they were randomly placed into one of the conditions. One group of participants was provided with a link to the Alzheimer's Association Web site (alz.org); the study did not advance to the next section for 20 minutes to encourage participants to visit the Web site. These participants were told that they should spend 20 minutes interacting with the Web site and should try to learn about AD and that after the 20 minutes had elapsed, they would answer some questions to assess what they learned. The control group did not view a Web site. Participants were then given the ADKS, which consists of 30 true–false questions about the symptoms, treatment, course, life impact, risk factors, caregiving, and diagnosis of AD. This measure was created over the course of 2 years by combining questions from all existing AD knowledge measures. It has solid psychometric properties and is well suited for this investigation (cf^4).

Next, participants were given a 10-item vocabulary quiz taken from the Shipley Vocabulary Test.⁶ Finally, participants were once again asked to rate their subjective knowledge of AD on a scale from 1 to 10 and to answer follow-up questions regarding their satisfaction of the Web site (if they viewed it), what type of information on AD they would like, and how they would like to obtain this information.

Participants were randomly assigned to a condition such that 276 people were placed in the alz.org condition and 276 people were placed in the control condition. Participants in the 2 conditions did not differ by age, $t_{550} = -.61$, $P = .54$, education (which was measured in ordinal categories), $\chi^2_8 = 11.35$, $P = .18$, or vocabulary, $t_{550} = -.46$, $P = .64$. We assessed all participants on their background experience with AD. There were no between-group differences for the number of people in each group who had previously heard of AD (21 had not), who had ever been the main caregiver for a family

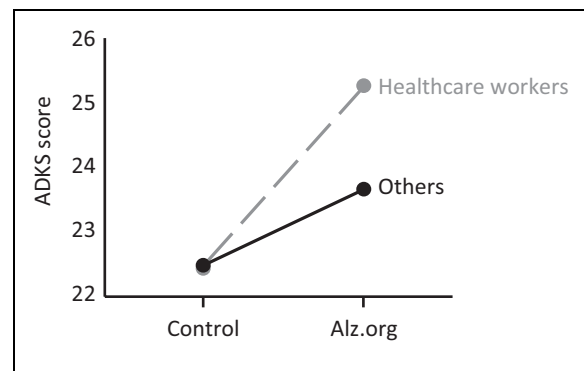


Figure 1. Health care workers show greater Alzheimer's disease (AD) knowledge after visiting alz.org.

member with AD (35 had been a caregiver), who were currently the main family caregiver (9 were currently caregivers), who had attended an AD support group (17 had attended), who had attended a class or educational program about AD (72 had attended), or who volunteered with patients having Alzheimer's (28 had volunteered).

Results

The main findings indicated that a brief exposure to an informational Web site about AD produced greater knowledge of the disease (see Figure 1) and that health care providers in particular benefited from the Web site more than nonhealth care workers. In other words, there was a main effect of condition, such that participants who visited the alz.org Web site scored higher on the 30-item ADKS ($M = 23.84$, $SD = 3.39$) than participants in the control group ($M = 22.38$, $SD = 3.17$), $t_{550} = 5.23$, $P < .001$, $d = .44$. There was also a significant 2 (Condition) \times 2 (Health care worker status) interaction, $F_{1,523} = 4.08$, $P < .05$, partial $\eta^2 = .01$. In particular, the health care workers scored higher after visiting the Web site (mean score on the ADKS = 25.13) than did the participants who visited the Web site but were not health care workers (mean score on the ADKS = 23.58; $t_{80} = 3.70$, $P < .01$, $d = .82$). Notably, those in the control condition who had worked in the health care profession had the same amount of AD knowledge ($M = 22.32$ [3.63]) as those who had not worked in the health care profession ($M = 22.36$ [3.06]; $t_{260} = .06$, $P > .05$, $d = .01$; AD workers not included in this analysis).

In addition, participants' subjective knowledge of AD also improved after visiting the Web site. Indeed, there was a significant interaction between time and condition, $F_{1,550} = 119.99$, $P < .001$, partial $\eta^2 = .18$. At baseline, there was no difference between groups for self-reported knowledge of AD (control condition: $M = 5.07$, $SD = 1.61$; alz.org condition: $M = 5.21$, $SD = 1.68$). However, after the intervention, there was a significant difference between groups (control condition: $M = 4.82$, $SD = 1.64$; alz.org condition: $M = 6.16$, $SD = 1.46$). Thus, the control group's level of

subjective AD knowledge decreased after completing the ADKS, whereas the alz.org group's level of subjective AD knowledge increased after visiting the alz.org Web site and taking the ADKS.

Discussion

The purpose of the current study was to investigate whether a brief exposure to information about AD could produce higher scores of knowledge of AD. Participants in an experimental group were allowed to spend 20 minutes exploring an informational Web site about AD (alz.org), while a control group was not. The results indicated that the participants who visited the Web site scored higher on the ADKS than those who did not. It is important to note that this exposure to an informative Web site was brief (only 20 minutes) but that even this brief exposure was linked to significantly higher AD knowledge. Moreover, health care workers in particular had even higher AD knowledge after brief exposure to the Web site relative to nonhealth care workers who visited the Web site. Although it was not possible to verify whether participants spent the whole 20 minutes on the Web site, participants were asked at the end of the study whether or not they did. Overall, very few (5%) participants reported leaving the Web site before the 20 minutes had elapsed.

We believe these data demonstrate the usefulness of informative Web sites in distributing information about AD both to the general public and to health care workers. It is also telling that the experimental group reported a higher subjective knowledge rating after visiting the Web site, suggesting that these participants felt like they had learned something about AD; their scores on the ADKS support that belief. Conversely, the control group reported a slightly lower subjective knowledge rating following the ADKS. One might conclude very cautiously that participants in the control group were confronted with questions to which they did not know the answer during the test, which caused them to re-evaluate their own knowledge on the subject.

The ADKS can be a useful tool for assessing the amount of general knowledge of AD in lay individuals. The Alzheimer's Association Web site (alz.org) may be used to help increase people's knowledge, particularly for individuals working in

the health care field. In the current study, individuals who spent a brief amount of time visiting the Alzheimer's Association Web site had significantly higher AD knowledge compared to those with no exposure to the Web site. Health care workers had a similar level of AD knowledge in the control condition as nonhealth care workers but had greater AD knowledge than nonhealth care workers after exposure to the information Web site. Future research might examine the increases in AD knowledge that can be gained by utilizing pre- and posttest measurements of the ADKS and by having participants spend more time with the Alzheimer's Association Web site. Future research might also use the ADKS to understand which domains of knowledge participants are lacking (eg, information about assessment, diagnosis, caregiving, etc), to provide a starting point for tailoring educational or training courses.

Declaration of Conflicting Interests

The authors declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

Funding

The authors received no financial support for the research, authorship, and/or publication of this article.

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