

## Introduction

- Depression is a serious mood disorder estimated to affect 21 million Americans, a majority of whom turn to the internet to learn about their condition and to seek help.<sup>1</sup>
- A single web query on Google for 'depression' generates nearly 600 million results and sorting through the millions of resources can be a significant challenge.
- Often it is easiest for health consumers to default to clicking on one of first website options that populates in an internet search.
- For patients with low literacy levels or cultural and linguistic backgrounds that already make it difficult to search the internet in English, the barriers to health literacy are even higher.
- Since the internet has become a leading platform that Americans turn to for their health information, there is an increased importance for healthcare professionals to evaluate online resources.

## Aims and Objectives

- The aim of this study was to evaluate the quality, content, readability and cultural sensitivity of the depression websites that patients are most likely to encounter.

## Methods

- Eight of the top depression websites in the United States were identified through a comprehensive, multiple-query search.
- To determine which websites to evaluate, the top three search engines and top three web browsers in the United States were used to search medical subject headings (MeSH) terms for depression, based on the PubMed MeSH database.<sup>2</sup>
- A multimeric evaluation of each website was performed with criteria based on seven factors: design, credibility, accessibility, literacy, engagement, content and cultural sensitivity.
- Data was collected by a trained coder answering 'Yes,' 'No' or 'Not Applicable' under the variables of design, credibility, accessibility, literacy, engagement, content, and cultural sensitivity. A yes/no coding system that corresponded with 1 and 2 was used, as shown in Figure 1.
- The scores of each individual parameter was averaged across each website. Scores closest to 2 represent sites that scored the highest for each variable, as shown in Figure 2.
- Methods were modified from a similar published study that investigated the most popular diabetes websites in the US.<sup>3</sup>
- To measure cultural sensitivity, the cultural sensitivity assessment tool (CSAT) and a modified methodology from a study that investigated cultural sensitivity of cancer prevention resources for older minority men was used.<sup>4,5</sup>

## Results

- Data analysis revealed that all websites presented most of the assessed design and accessibility features. However, none of the websites allowed users to listen to written text.
- Most of the sites scored well on the credibility assessment. Two websites scored notably lower on credibility than the others, missing an author, editor, or reviewer and references.
- The average readability for the websites was high, at a grade level of 11.5 based on the SMOG index but literacy scores had a wide variability.
- Most of the websites offered multiple opportunities for reader engagement and all of the sites had a presence social media.
- As far as content, all of the websites provided basic information about depression but none of the websites included first-person accounts about living with depression and only one website included information about health insurance coverage.
- Out of the seven assessment factors, cultural sensitivity fared the most poorly.
- Only two websites were offered in multiple languages and only one mentioned minority groups at higher risk for depression.
- Cultural stigmas related to depression were not mentioned in any of the sites.

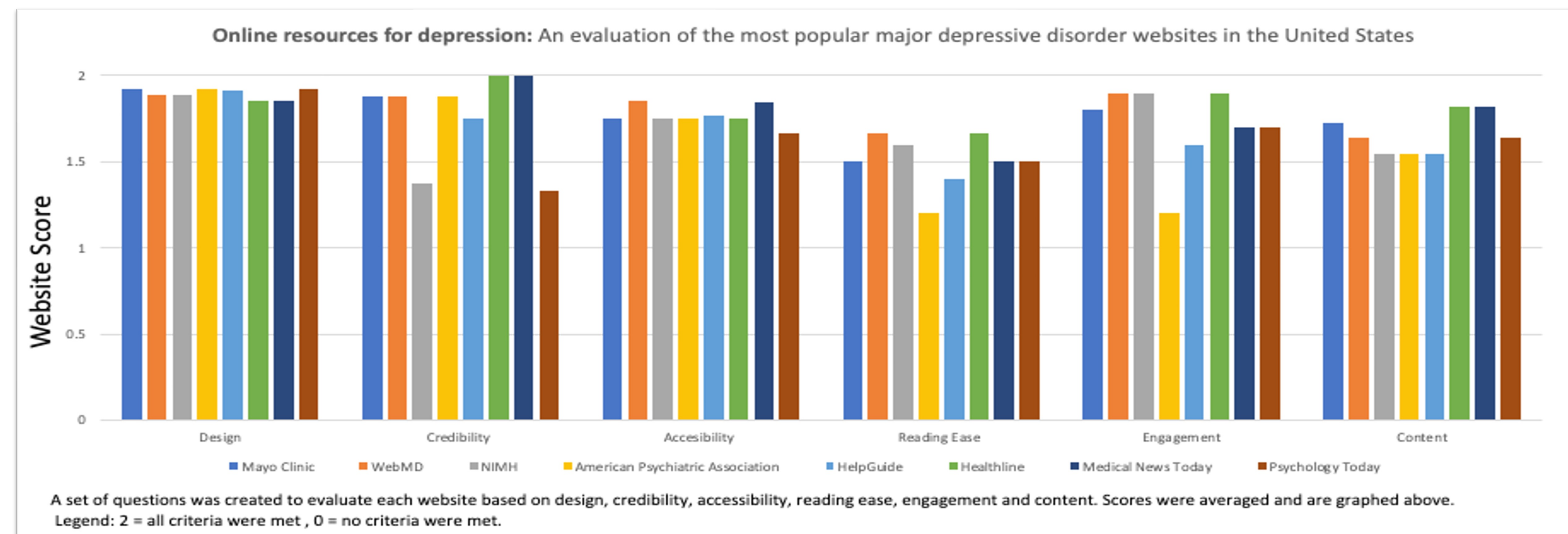


Figure 2: Results of Study

Website Name:	Mayo Clinic	WebMD	NIMH	Psychiatry	HelpGuide	Healthline	Medical New Psychology Today
Can users properly access the webpage using Chrome?	2	2	2	2	2	2	2
Can users properly access the webpage using Safari?	2	2	2	2	2	2	2
Can users properly access the webpage using Firefox?	2	2	2	2	2	2	2
Can users properly access the webpage on a smartphone?	2	2	2	2	2	2	2
Can the majority of the site be accessed without a password?	2	2	2	2	2	2	2
Are logos consistent throughout the website?	2	2	2	2	2	2	2
Are the page headers consistent throughout the website?	2	2	2	2	2	2	2
Are the graphics consistent throughout the website?	2	2	2	2	2	2	2
Are the colors consistent throughout the website?	2	2	2	2	2	2	2
Are there no broken links?	1	1	1	1	1	1	1
Is there a viewable scrollbar on the website?	2	2	2	2	2	2	2
Are items correctly aligned on the page?	2	2	2	2	2	2	2
Is there a consistent use of font size?	2	2	2	2	2	2	2
Is there a consistent use of style?	2	2	2	2	2	2	2
Does the website use the proper capitalization of sentences?	2	2	2	2	2	2	2
Does the website provide a search function?	2	2	2	2	Non-funct	2	2
If the website provides a search function, is the scope of the search indices	2	1	1	2	n/a	1	2
Are the search results displayed clearly?	2	2	2	2	n/a	2	2
Is there a home page link on all pages in the website?	2	2	2	2	2	2	2
Is there a Help section?	1	1	1	1	2	1	2
Is the most important information on the top of the pages? Above the fold	2	2	2	2	2	2	2
Is the homepage simple?	2	2	2	2	2	2	2
Is 'white space' used? (No clutter)	2	2	2	2	2	2	2
Does the top window bar display the website's name?	2	2	2	2	2	2	2
Does the top window bar display a users' location in the website?	2	2	2	2	2	2	2
Are 'crumb trails' used to help users understand where they are in the web	2	2	2	2	1	1	1
Is there a site map?	2	2	2	2	2	2	2
Average	1.92592592	1.88888889	1.88888889	1.92592592	1.91666666	1.85185185	1.92592592

\* broken links are determined from <https://validator.w3.org/>

2= yes  
1= no  
0= not applicable

Figure 1: Representation of Data Collection Method

## Conclusions

- The results of this study inform medical providers about the most popular information circulating on the Internet about depression.
- The study highlights the demand for culturally sensitive, multilingual depression resources online.
- There is a need for more culturally sensitive depression resources offered in multiple languages that include first-person accounts of individuals with depression.
- Further efforts are needed to create accessible and easy-to-understand depression resources for all health consumers, regardless of educational and/or cultural background.
- Improving public understanding of depression through online resources can help reduce the stigma around mental health illness as well as health disparities among diverse patients.

## References

- Major Depression. [https://www.nimh.nih.gov/health/statistics/major-depression.shtml#part\\_155029](https://www.nimh.nih.gov/health/statistics/major-depression.shtml#part_155029). Accessed July 17, 2020.
- StatCounter Global Stats - Browser, OS, Search Engine including Mobile Usage Share. <https://gs.statcounter.com/>. Accessed July 19, 2020.
- Fleming LC, Jacobsen KH. Evaluating the most popular diabetes websites in the USA: a content analysis. *Health Promot Int*. 2010;25(1):73-84. doi:10.1093/HEAPRO
- Friedman DB, Kao EK. A comprehensive assessment of the difficulty level and cultural sensitivity of online cancer prevention resources for older minority men. *Prev Chronic Dis*. 2008;5(1). [http://www.cdc.gov/pcd/issues/2008/jan/07\\_0146.htm](http://www.cdc.gov/pcd/issues/2008/jan/07_0146.htm). Accessed [date]. Accessed July 19, 2020.
- Cultural Sensitivity Assessment Tool Manual: Goal of Assessment Tool. <https://www.texasancer.info/pcemat/goal.html>. Accessed July 19, 2020.