2017-05-30

# Health Related Web Site Usage by Persons with Serious Mental Illness: Design and Use of a Heath Literacy Survey Tool

Len L. Levin
*University of Massachusetts Medical School*

Zlatina Kostova
*University of Massachusetts Medical School*

Joanne Nicholson
*Dartmouth College*

***See next page for additional authors***

Repository Citation

# Health Related Web Site Usage by Persons with Serious Mental Illness: Design and Use of a Heath Literacy Survey Tool

**Authors**
Len L. Levin, Zlatina Kostova, Joanne Nicholson, Kathleen Biebel, and Elaine R. Martin

# Health-Related Website Usage by Persons with Serious Mental Illness:
# Design and Use of a Heath Literacy Survey Tool

Len Levin[1], Zlatina Kostova[2], Joanne Nicholson[3], Kathleen Biebel[4], Elaine Martin[5]

## GOAL OF THE PROJECT

➤ Create a new health literacy training website specifically for persons with serious mental illness (SMI) to empower them to effectively use online health resources about both their mental AND physical health.
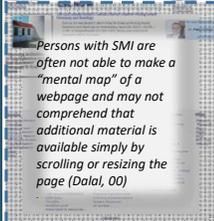
## POPULATION AND RATIONALE

Adults with SMI :
➤ Die 25 years earlier that those in the general population. (Parks 06, Viron 10)
➤ Experience disabilities and oftenexpress frustration at using current online health information tools (Fox 07).
➤ Often have neurocognitive deficits in spatial perception, sustained attention, working memory, and executive functioning, limiting their effective usage of online resources. (Rotondi, 07)

## PROVIDING RESOURCES TO THIS POPULATION

➤ Specific web design accommodations for persons with SMI have been recommended but have not been generally applied to health information websites (Rotondi 13).

➤ Within the general US population, the health literacy rate is only 12% (US Department of Health & Human Services). Figures for persons with SMI are thought to be lower

*Persons with SMI are often not able to make a "mental map" of a webpage and may not comprehend that additional material is available simply by scrolling or resizing the page (Dalal, 00)*

Websites designed for persons with SMI should adhere to the following criteria:
➤ Clear, concise, compact home page
➤ Small number of primary components, each with discrete conceptual grounding
➤ Homepage links only to next-level content
➤ Clear, short link labels
➤ No or only limited scrolling on each page
➤ Separation of "pathway" pages from "content" or "destination" pages (Rotondi, 07)

*Example of the survey*

*Use the QR code below to view the entire survey*

*Read more about the project here*

Martin E., Nicholson J., Biebel K., Levin LL., Kostova Z. (2016). eMental Health Bridges Project: a Web Site Development Project to Provide Needed Mental and Physical Health Information to People with Serious Mental Illness. *Psychiatry Information in Brief*, 13(1).
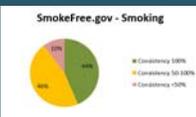
## THE SURVEY

➤ A literature review identified scholarly research on website design as well as validated health literacy evaluation tools for persons with SMI that formed the basis of the survey

➤ A survey tool of 64 questions was developed using pre-existing, validated health literacy instruments, e.g. DISCERN (Rees, 02)

➤ Questions sought feedback on format, navigation, usability and credibility as well as content of each site

➤ 20 health related websites on topics of physical health issues experienced by persons with SMI (cardiovascular disease, obesity, diabetes and smoking) were chosen using simple searches through the Google search engine

➤ Project team associates (n=5) tested the survey → questions were edited and refined → survey was loaded onto the RedCAP platform → 10 experts in mental and physical health, including members of the project team, took the survey

➤ Data was downloaded and analyzed using Microsoft Excel and R, an open source statistical computing environment

➤ The data were analyzed for two factors – 1. consistency of agreement or level of disagreement per question (for questions 3 through 41 which reviewed format and usability) per site, i.e., how often did different reviewers give the same score for the same question and 2. overall weighted scores of each site for all questions including content

## THE RESULTS
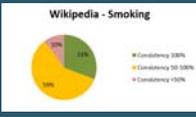
➤ Highest consistency obtained by Smokefree.gov followed by Wikipedia pages and goverment websites (i.e. Medline Plus)
➤ For overall weighted score, Wikipedia, CDC/Cardiovascular Diseases and the Mayo Clinic Heart Diseases pages performed the highest.
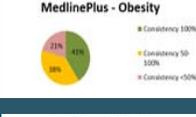
## 1. CONSISTENCY

Consistency primarily measured formatting of each website (e.g., Does navigation remain clear whether viewed on a large or small screen?)

**SmokeFree.gov - Smoking**
Consistency 100% / Consistency 50-100% / Consistency <50%

*The Smokefree.gov website obtained highest consistency in format. It will serve as the template for the initial formatting of the website we will create*
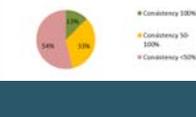
**Wikipedia - Smoking**
Consistency 100% / Consistency 50-100% / Consistency <50%

*Wikipedia (one selected for each condition reviewed) scored high overall for consistency*

**MedlinePlus - Obesity**
Consistency 100% / Consistency 50-100% / Consistency <50%

*MedlinePlus sites and other government sites (e.g. CDC) had mid-level consistency scores*

**WebMD - Heart**
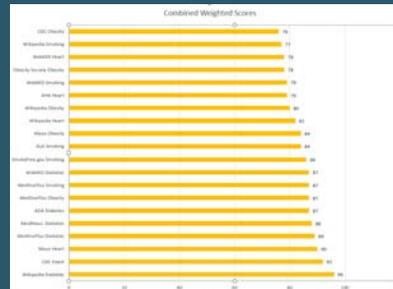Consistency 100% / Consistency 50-100% / Consistency <50%

*WebMD, a site mentioned as a "go to" site in focus groups conducted in relation to this project, scored lower for consistency*

**Obesity.org - Obesity**
Consistency 100% / Consistency 50-100% / Consistency <50%

*The Obesity.org website obtained the lowest score in consistency ratings*

## 2. WEIGHTED SCORES

Weighted scores measured overall response including content questions (e.g., Is data presented that supports the likelihood of developing the condition based on these risk factors?)

Combined Weighted Scores

## DISCUSSION

➤ Survey was succsesful in identifying websites that we can use as a template for completion of the projecy goal
➤ The websites that obtained highest consistency scores were goverment websites and Wikipedia, in which less bias may be present
➤ Lowest consistency scores were found in some medical society sites as well as in sites such as WebMD. We hypothesize that advertisements or the specific mission/voice of the society may be more biased
➤ These results correlate well with patient, librarian and mental health professional views obtained through focus groups also conducted as a part of this project.

This survey demonstrated:
• The successful creation and use of a survey instrument designed to evaluate websites with the framework of best-practice usage for persons with SMI
• Reviewers consistency scoring matched formatting guidelines for SMI users recommended in existing research
• Provided clear guidance as to initial design methodology for the next phase of this project – creation of a health literacy training website designed for persons with serious mental illness

*Read the poster abstract here*

*View the full poster here*

1. Lamar Soutter Library, University of Massachusetts Medical School, Worcester, MA
2. Department of Psychiatry, University of Massachusetts Medical School, Worcester, MA
3. Dartmouth Center for Technology and Behavioral Health , Dartmouth Medical School, Hanover, NH
4. Systems and Psychosocial Advances Research Center, University of Massachusetts Medical School, Shrewsbury, MA
5. Francis A. Countway Library of Medicine, Harvard Medical School, Boston, MA