Evidence Based Library and Information Practice

Evidence Summary

Information Horizons Mapping is Related to Other Measures of Health Literacy but Not Information Literacy

A Review of:
Zimmerman, M.S. (2020). Mapping literacies: Comparing information horizons mapping to measures of information and health literacy. *Journal of Documentation*, *76*(2), 531–551. https://doi.org/10.1108/JD-05-2019-0090

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Abstract

Objective – To evaluate information horizons mapping as a valid measure for assessing information literacy and health literacy compared to three validated information and health literacy measurements and level of educational attainment.

Design – Quantitative data analysis using multiple regression and the Anker, Reinhart, and Feeley model as the conceptual framework.

Setting – A small university-centered community in Iowa City.

Subjects – 149 members of the university community.

Methods – The author conducted a power analysis to determine a minimum sample size required for maintaining study validity and selected the Anker Model of conceptual framing for health information-seeking behavior. This is a three-phased model that explores the information seeker's predisposing characteristics, engagement in health

information seeking, and outcomes associated with information seeking. Recruited participants completed three assessments—the Tool for Real-time Assessment of Information Literacy Skills (TRAILS), the Health Literacy Skills Instrument (HLSI), and the Brief Health Literacy Screen (BHLS)—and drew information horizon maps illustrating what sources of information they tend to seek for health-related questions. The author calculated information horizon map results using a scoring system incorporating the number and quality of information sources identified in the maps and applied multiple linear regression analysis and Spearman's rank correlation coefficient to participants' scores from all four assessments as well as their level of educational attainment to determine strengths of relationships between variables.

Main Results – In the information horizons map results, participants identified an average of 6.9 information sources with a range of 3–13 and received an average score of 18.8 in information source quality with a range of 4–45. The author applied multiple linear regression to predict the number of information source counts on the information horizons map based on HLSI, TRAILS, and BHLS assessment scores and level of educational attainment and found a significant relationship (p=0.044). A significant relationship also existed between quality of source scores on the map based on HLSI, TRAILS, and BHLS assessment scores and level of educational attainment (p=0.033). Removing the educational attainment variable produced an even stronger significant result. Spearman's rank correlation coefficient supported the findings of the multiple regression analysis and revealed a strong relationship between source count and scores on the BHLS (r=0.87) and HLSI (r=71) but a weak relationship between source counts and TRAILS score and level of educational attainment. Source quality had a weak relationship with BHLS scores (r=0.24), a moderate relationship with the HLSI scores (r=0.50), and a weak relationship with TRAILS scores and educational attainment.

Conclusions – The data analysis suggests a significant relationship between information horizons mapping and health literacy but not information literacy or level of educational attainment. This data supports findings from the author's previous research examining the relationship between information horizon maps and information literacy scores for refugee and immigrant women. It also suggests that information horizons mapping may facilitate storytelling that reflects the complexity of participants' health literacy ability and may introduce the potential to assess low-literacy level populations. More research is needed to examine the quality and complexity produced in information horizons maps. This methodology may be applied to investigate better techniques for assessing the health literacy levels among populations that struggle with prose-based assessments.

Commentary

This research builds upon the author's previous work using information horizons mapping to assess health and information literacy among low-income refugee and immigrant women (Zimmerman, 2018) and examines the efficacy of this tool, in comparison with other validated literacy tools, to measure literacies among a general population with the long-term goal of applying the tool to low-literacy-level populations. The information horizons methodology has been taught to library science students as a tool to measure information behavior among various populations (Hartel, Oh, & Anh, 2018) and used by researchers to measure information literacy (Eckerdal, 2013), but this article is one of the first to measure health literacy.

This study was appraised using the EBL Critical Appraisal Checklist (Glynn, 2006). The study methodology is appropriate to address the research questions, is strengthened by a conceptual framework of linear information-seeking behavior, and is detailed enough to facilitate study replication. Analysis of the results was a strength of the study. The author clearly articulates the process of creating the information horizons map scoring system

based on currently existing examples in the literature; accounts for positive scoring of information horizon mapping by taking only positive scores from the HLSI, TRAILS, and BHLS assessments; and corroborates the results of multiple linear regression analysis by utilizing Spearman's rank correlation coefficient to determine the strength of correlations between variables. The author's sample information horizon maps helped to visually articulate the methodology but could have included the source counts and quality scores for each of the example maps to convey information more effectively.

Though the author conducted an analysis to determine a minimum sample size for study validity and exceeded the minimum population sample, the demographic, which mostly consisted of white, college-educated adults, lacks diversity and is not representative of a general population. The author is clear about this limitation and describes the study population as coming from an "unusually educated" university-centered community and with a significant lack of racial diversity (p. 548).

While the findings of this study are inconclusive in determining if they can apply to a broader population, the study serves as a stepping stone toward thinking critically about the development and utilization of heath literacy assessments, especially for low-literacy and underrepresented populations who experience increased health disparities (National Academies of Sciences, Engineering, and Medicine, 2017) and who may struggle with conventionally prose-based assessments. These study findings may help librarians personalize research consultations with medical students or be used for patient education training, identifying strengths and areas for growth in health literacy and information-seeking behavior. The information horizons map shows promising results to achieve this goal as well as the ability to detail the complexities of health information-seeking behavior in a strength-based rather than a deficit-focused approach.

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