Evidence Based Library and Information Practice

Evidence Summary

Free Access to Point of Care Resource Results in Increased Use and Satisfaction by Rural Healthcare Providers

A Review of:

Eldredge, J. D., Hall, L. J., McElfresh, K. R., Warner, T. D., Stromberg, T. L., Trost, J. T., & Jelinek, D. A. (2016). Rural providers' access to online resources: A randomized controlled trial. *Journal of the Medical Library Association*, *104*(1), 33-41. http://dx.doi.org/10.3163/1536-5050.104.1.005

Reviewed by:
Lindsay Alcock
Head, Public Services
Health Sciences Library
Memorial University of Newfoundland
St. John's, Newfoundland, Canada
Email: lalcock@mun.ca

Received: 1 Sep. 2016 **Accepted:** 19 Oct. 2016

Abstract

Objective – To determine whether free access to the point of care (PoC) resource Dynamed or the electronic book collection AccessMedicine was more useful to rural health care providers in answering clinical questions in terms of usage and satisfaction.

Design – Randomized controlled trial.

Setting – Rural New Mexico.

Subjects – Twenty-eight health care providers (physicians, nurses, physician assistants, and pharmacists) with no reported access to PoC resources, (specifically Dynamed and AccessMedicine) or electronic textbook collections prior to enrollment.

Methods – Study participants from a previously identified underserved rural area were selected and contacted by email. Interested participants were able to enroll through a link in the email invitation and then contacted by a member of the research team. Study participants were stratified by geographic region and occupation, then randomized and allocated to receive free access to either Dynamed or AccessMedicine for six months. Usage and satisfaction were determined prior to intervention and after six months of use for the allocated resource through survey data. Other survey data collected included demographic information,

how long participants took on average to locate clinical information, what participants' preferred information sources were for clinical information and patient information, willingness to pay for access to information, and usage and satisfaction of other resources including free medical websites, fee-based websites, print scientific journals, PubMed or MEDLINE, general web resources, UpToDate, etc. Participation was voluntary and those enrolled were able to withdraw at any time. Data related to the subjects/topics searched in the intervention resources were not collected and all identifying participant information was removed following the linkage of the pre-intervention survey, the resource access data, and the post-intervention survey.

During the intervention period medical students on the research team provided technical support and training to study participants including phone and email support and in-house training videos.

Pre- and post-intervention user satisfaction and frequency of use of 13 health resources were compared with doubly repeated ANOVA measures, adjusted using Huynh-Feldt to reduce Type 1 error rate. Cohen's d-statistic was used to determine the effect size difference.

Main Results – The authors hypothesized that clinicians would prefer and be more satisfied with the clinically oriented Dynamed rather than the textbook based AccessMedicine, and that these two resources would be preferred over other resources normally utilized by participants. Participants in the Dynamed arm reported an increase in the use of Dynamed, but no significant change in the use of AccessMedicine. Participants in the AccessMedicine arm reported an increase in use of AccessMedicine, but no increase in the use of UpToDate or Dynamed, despite the fact that these participants did not report access to UpToDate upon study enrollment. Reported usage of the other 13 resources varied across time indicating a highly significant Resource main effect. That is, the effect of the intervention, regardless of the study arm and the time of assessment, was statistically significant. Reported use of the 13 resources was higher in the Dynamed arm, though it is important to note that reported use and level of satisfaction was higher at baseline and posttest for the Dynamed arm indicating a potential randomization error. An increase in satisfaction with only AccessMedicine was reported in the AccessMedicine arm while an increase in satisfaction with UpToDate, Dynamed, and AccessMedicine was reported in the Dynamed arm. In terms of reported use, Cohen's d indicated an increase of +1.50 for Dynamed users compared to 0.82 for AccessMedicine users. Both arms reported an increase in the number of searches, the success of searches and satisfaction with the level of information obtained from searches. Neither intervention resulted in a change from baseline related to participants' willingness to pay for regular access to an online health information resource.

Conclusion – Free access to online health information resources is a potential benefit to health professionals in terms of usage and satisfaction, and participants utilized point of care tools more heavily than the textbook-based resource thus supporting the authors' hypothesis.

Commentary

One hundred and fourteen articles were reviewed to inform the study, however only six were cited in the introduction and literature review. The paper would benefit from a more extensive presentation of literature findings.

The authors noted limitations of the study particularly related to the impact of the small sample size and difficulties communicating regularly with participants. Given the small sample size, external validity is low and therefore the results cannot be generalized to a larger population. This also affects the statistical power of the study. It would be interesting to see analysis based on profession, though authors indicate that the sample size was too small for subgroup analysis.

Twenty-three of the enrolled 28 participants completed the study. The authors claim an

"analysis of the urban-rural distribution" indicated a respective 55% and 45% rate (p. 35). Given that the population was defined as rural, it is unclear why urban is identified in the analysis.

Training availability for study participants was quite extensive, however it may not be indicative of standard training opportunities for this population. It may have biased results since the participants were provided with both free access to the resource as well as consistent focused and individual training. The fact that usage increased may have been influenced simply through study participation, as that brought the resource to the forefront and also provided the option for personal training and help. This is a potential bias that could be addressed in future studies with the addition of a control group.

Online resources provided to participants were paid for by a grant and therefore there is no appearance of conflict of interest. It is interesting that some participants in the Dynamed arm appeared to have access to both Dynamed and UpToDate as evidenced in the pre-intervention survey, but that no participants in the AccessMedicine arm appeared to have access to either. The authors state that participants did not initially indicate that they had access to UpToDate upon study enrollment. Interestingly, use of UpToDate was also reported to increase during the intervention period.

This is a well-designed and well-written, transparent study that provides a good grounding for future research. Were the study to be replicated, it would be important to utilize a larger sample size and a comparator group with normal access to the selected resources. Further, this article provides a validated methodology for subsequent research on the correlation between free access and usage of informational resources.