Hawai‘i Pacific Health Library’s Nursing Resource Page (LibGuide) and Confidence in Evidence-Based Practice: An Action Research Study

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Abstract: While the policy and idea of evidence-based practice are highly touted, the practice is hindered by the ability of health professionals to retrieve evidence-based information. Retrieval is affected by the professionals’ knowledge of where and how to retrieve it, as well as whether the professional can distinguish quality information. The purpose of this action research project is to develop and evaluate a resource page, also referred to as a LibGuide, to encourage evidence-based practice amongst Hawai‘i Pacific Health (HPH) nurses. HPH is a nonprofit health organization that consists of four hospitals: Kapi‘olani Medical Center for Women and Children, Pali Momi Medical Center, Straub Medical Center, and Wilcox Medical Center. The LibGuide is intended to guide nurses to evidence and resources that can inform their professional decision making. The study sought to learn whether access to a LibGuide tailored to nurses’ information needs will promote confidence amongst HPH nurses in retrieving and evaluating evidence to inform their professional decision making. Twelve HPH nurses responded to a questionnaire after having used the resource page to guide a research query relevant to their practice. After using the nursing LibGuide, results indicated that seven out of twelve (~58%) participants saw an increase in some kind of confidence, either in information retrieval or evaluation, after using the nursing LibGuide. A third of respondents already felt a high level of confidence in regards to retrieving and evaluating information. While the data did not demonstrate a drastic increase, the results tell us that just knowing where to find helpful resources will increase perceived confidence in some nurses’ ability to retrieve or evaluate information.

Introduction

Evidence-based practice (EBP) is a consistent topic in the health field. Many institutions have integrated EBP into their operation and strategic plan. While the policy and idea are highly touted, the practice is hindered by the ability of the health professionals to retrieve evidence-based information (Alving, Christensen, & Thrysøe, 2018). Retrieval is affected by the professionals’ knowledge of where and how to retrieve it, as well as whether the professional can distinguish quality information (Brown, Wickline, Ecoff, & Glaser,
The purpose of this action research project is to develop and evaluate a resource page, also referred to as a LibGuide, to encourage evidence-based practice amongst Hawai‘i Pacific Health (HPH) nurses. HPH is a nonprofit health organization that consists of four hospitals. The LibGuide is intended to guide nurses to evidence and resources that can inform their professional decision making. With the advice of subject matter experts and the medical librarian, the LibGuide will include curated nursing resources from the National Library of Medicine, other online resources, items from HPH’s collection, as well as specialized guides on the most common topics that HPH nurses encounter. The study sought to learn whether access to a LibGuide tailored to nurses’ information needs will promote confidence amongst HPH nurses in retrieving and evaluating evidence to inform their professional decision making.

Literature Review

Hawai‘i Pacific Health’s Medical Library’s mission is to provide “system-wide, scientifically-based medical information, resources and services to enable health professionals to acquire and maintain the knowledge and skills needed for patient care, education, research and management,” (Hawai‘i Pacific Health). The creation of a LibGuide for nurses is an effort to carry out the library’s mission to provide on-the-job means of professional compliance and development.

Library resources have a positive impact on nursing and patient outcomes (Marshall, Morgan, Klem, Thompson, & Wells, 2014; Eldredge, Marshall, Brettle, Holmes, Haglund, & Wallace, 2016, p.129). In trying to promote evidence-based practice, librarians and health professionals should work together to increase the awareness of evidence-based information resources (Barr-Walker, 2017, p. 77). Nurses most often turn to their peers and Google for evidence-based information, and they choose those sources because they lack time, information, retrieval skills, and training in database searching (Alving, Christensen, & Thrysøe, 2018). Organizing nursing information resources can address the barrier of “lack of time” because an organized resource can facilitate quick and easy access for users (Tannery, Wessel, Epstein, & Gadd, 2007). Nurses who used a Web-based resource page reported greater confidence in their ability to change practice through the use of evidence (League, Christenbery, Sandlin, Arnow, Moss, & Wells, 2012). Since the medical library is HPH’s gateway to evidence-based information, the medical library carries the responsibility of making information resources known in order to promote EBP.

In researching the most appropriate instructional format, brief video tutorials that incorporate voice-over and demonstrate database features within the context of real queries are considered particularly effective (Johnson, Trabelsi, & Fabbro, 2008, p. 409). Since using real-life applications help the learner develop personal meaning and contextualize information, the nurses were instructed to conduct research on one topic related to their nursing practice using the LibGuide (Ally, 2008, p. 29). Applying a connectivist theory, where nurses make connections to their professional practice, paves a
mental pathway for nurses to recall in the future when they need evidence (Siemens, 2006).

Project Design

The action research process followed the steps outlined in Taylor’s *Action Research for Workplace Education* (2008). The planning phase includes “1) Understanding the Problem 2) Defining the Project and 3) Determining the measures.” I understood the problem through discussions with the medical librarian, the nurse manager, and the Director of Clinical Education. I conducted a literature review to learn about the factors that may prevent evidence-based practice and learned about ways to solve the problem. During an informal front-end analysis, I learned about the target learner population and how to navigate the HPH library resources, making note of the kind of information resources currently available for HPH nurses. Step 2 and 3 encompass the studio phase. I interviewed the nurse manager for the top five topics nurses encounter on the job, and surveyed HPH nurse educators on the resources they use the most to inform their practice. With that information, I curated nursing resources to populate and build the LibGuide (Appendix A), as well as specialized guides that focused on the five health topics ranked by nurse educators (Appendices B-F). SpringShare’s LibGuides CMS is the online platform that HPH’s medical library uses for content management. Within the content management system, I created the nursing LibGuide. The visual design of the LibGuide was informed by the eBook, *Using LibGuides to Enhance Library Services : A LITA Guide* (Dobbs, Sittler, Ryan, Cook, Douglas, & Library Information Technology Association, 2013). Part 3 of the eBook provided helpful tips on how to design LibGuides to facilitate an efficient user experience.

The nursing LibGuide was introduced to nurses through a brief introductory video that instructed nurses on how to access the LibGuide, and then to conduct a search on a topic related to their professional practice. After the nurses conclude their research, those nurses willing to participate in the study completed the five minute online questionnaire. By clicking "Submit" on the questionnaire, the participants consented to having their answers used for the study. I created the video through Camtasia, a screen recording and video editing software. Luckily, HPH already owned a version of Camtasia.

Methods

The study sought to answer the research question of whether access to a nursing LibGuide, tailored to nurses’ information needs, promotes confidence amongst HPH nurses in retrieving and evaluating evidence to inform their professional practice.

The target population is HPH nurses. The nurses may come from any of the four hospitals: Kapi‘olani Hospital, Straub Hospital, and Pali Momi on O‘ahu, and Wilcox Hospital on Kaua‘i. They range in age and socio-economic background, but we assumed that they were at least 18 years old. Twelve nurses were recruited with the help of nurse educators from HPH’s nursing academies, which are classes of nurses pursuing continuing education. Participating nurses, or the sample population, were asked to give
20-30 minutes to this study. None of the nurses’ personally identifiable information was collected.

This action research project was completed during the Spring semester of 2018. Implementation began mid-January. Data collection concluded by mid-February, and data analysis immediately followed. Analysis was completed by the end of March, and conclusions were compiled into reports and presentations during the first few weeks of April.

As far as instrumentation, HPH has a subscription to LibGuides CMS, and therefore has access to an integrated survey and forms feature, which served the data collection process.

The data collection involved a questionnaire (see Appendix G) that sought to learn whether the LibGuide improved confidence in nurses’ abilities to retrieve and evaluate information from the library’s resources. Since I was looking to measure self-reported behavior change and I desired complete datasets, retrospective surveys were appropriate (Raidl, Johnson, Gardiner, Denham, Spain, Lanting, Jayo, Liddil, & Barron, 2004). I employed a Likert scale for many of the questions. Moreover, the questionnaire sought to learn about the user’s experience. For example, questions asked which resources were useful, whether the LibGuide was easy to navigate, and whether nurses would use the LibGuide again.

The phase “4) Implementing an Action and Observing the Results” involved recruiting nurses, and having them access the LibGuide (Taylor, 2008). To preempt recruitment, I presented the nursing LibGuide at a November 2017 consortium that gathers the HPH nurse educators. In January 2018, I emailed instructions (Appendix H) for nurse educators to share the introductory video, LibGuide, and questionnaire with their academy students. I provided synchronous and asynchronous instructions because I wanted to provide various points of entry for learners (Tschofen & Mackness, 2012, p. 125). However, I believe all the nurse educators chose to share the evaluation asynchronously. Recruitment proved to be challenging. Some nurse educators were able to get their students to evaluate the LibGuide, but eventually, I asked the nurse educators to fill out the questionnaire themselves since not enough academy nurses responded. As mentioned above, nurses watched the introductory video, accessed the LibGuide from an HPH network computer or device, conducted research on a topic related to their professional practice, and completed the questionnaire if they decided to participate.

The final steps of the action research process involved “5) Evaluating Results and 6) Reflecting on Project,” (Taylor, 2008). After twelve nurses completed the questionnaire, data analysis began by early March 2018. I analyzed the data through descriptive statistics, and created data visualizations. We had hoped the nurses felt more capable of incorporating evidence into their professional decision making after utilizing the LibGuide. The data was presented through presentations and reports to the University of Hawai’i at Mānoa’s LTEC and LIS Master’s program, at the TCC Conference, as well as at Hawai’i Pacific Health meetings.
Results

Since I initially aimed to recruit from HPH’s nurse academies, naturally most of the participants are from the academies (8). To reach my participant goal, I welcomed any nurses from HPH (4). The majority of participants self-identified as having either 1-5 years of experience, including schooling, or more than 10 years of experience, including schooling. The participants ranged in age, but most of them fell into the 25-34 age range. Most of the participants were comfortable with technology.

A third of the participants already felt their level of confidence in both retrieval and evaluating information was high. About 58% (7 out of 12) of the participants saw an increase in some kind of confidence (Figure 1). About 33% (4 out of 12 participants) felt an increase in confidence in both areas. About 42% of the participants (5 out of 12) felt an increase in their confidence in retrieving information after using the resource page (Figure 2). The same percentage applies to the number of participants that felt an increase in confidence regarding evaluating information (Figure 3).

The participants found the databases and the specialized guides to be most useful. On a Likert-type scale, 9 out of 12 participants agreed the specialized guides were useful. Most participants felt the resource page was either helpful or very helpful during their query. Most participants felt the quality of the resource was very good on a five-point scale ranging from poor, fair, good, very good, to excellent. On a Likert-type scale, most participants either agreed or strongly agreed that they would use the nursing resource page again.

Discussion and Conclusions

While the data did not demonstrate a drastic increase of confidence in all participants, the results demonstrated that just knowing where to find helpful resources will increase perceived confidence in some nurses’ ability to retrieve or evaluate information. We assume that the increase in confidence would mean less inhibitions towards practicing evidence-based decision making. Following the results of this research, the HPH library has created LibGuides for other HPH professional groups, like the pharmacy and respiratory care departments. This research demonstrates that those LibGuides can also help increase some confidence levels in information retrieval and evaluation.

The results provided enough information to answer the research question, but a combination of data collection methodologies would have provided more in-depth explanations of trends that showed up in the data.
Figure 1. Percentage of HPH nurses that felt an increase in confidence, either in retrieving or in evaluating information.

Figure 2. Confidence in Retrieval Information.
Since participants found the specialized guides useful, they should be continuously updated to maintain usefulness, and specialized guides should be considered for other professional groups’ LibGuides. Further research may be conducted to learn about why participants found the specialized guides useful. For example, did they find the specialized guides useful because the topics were useful or because curated lists make information access faster?

Only one person included the evaluation resources when posed with the question, “Which of the resources did you find most useful? Check all that apply.” Three participants originally felt a medium level of confidence regarding evaluating information and did not feel any increase in confidence after using the resource page. Interestingly, they did not include the evaluation resources when posed with the aforementioned question. I speculate they did not find the listed evaluation resources to be particularly helpful, or they did not look at them at all. Based off design theory, I placed an image with human faces to draw attention to the evaluation resources (Dobbs, 2013, p. 107). A usability study could have shed light on participants’ intuition, including whether participants simply did not see the evaluation resources, or if the problem is the resources themselves.

Reflecting on the questionnaire, I wish I had included an open-ended question that inquired why some participants did not feel an increase in confidence. I also wish I had included questions on how often the nurses used the library’s site and whether the number of clicks to get to the resources they want might affect the usefulness of the
resource page. In other words, I theorized that the resource page prevented a long search all over the site for the resources most useful to them. In addition, a general question on how each nurse felt about their confidence in EBP may have illuminated whether the nurses knew retrieval and evaluation of information is inextricably linked to evidence-based practice. Interviews may be the best route to obtain answers to these questions.

Structure-wise, the action research process was appropriate for the project because action research is iterative. Since the nursing LibGuide is an intervention that is meant to be continuously improved, action research was most fitting. The process also worked well because the scope of the project stayed within the locus of my control. Librarians can benefit from the action research process if they have a project that they are looking to iterate, and if the project parameters are within their control.

The research findings give the HPH library feedback on how library users respond to the lists of resources, and provides ideas on potential areas of growth. This project serves as a branching off point to conduct further research depending on the library’s interests. Conducting a usability test or interviews can provide more in-depth data, and can provide a more complete picture of how library resources affect evidence-based practice.
References


Medical Library Resources: Nursing and Allied Health

This guide serves both practicing and student nurses in evidence-based practice. Below are links to specialized guides, databases, journals, and other resources that nurses can access to retrieve evidence to inform their professional decision-making.

**Spontaneous Guides**
- Hypertension
- Septic
- Dynamic Management
- Healthcare-Associated Infections
- Stroke

**Databases**
- PubMed
  - PubMed for Nurses
  - Tutorial and quiz for learning to use PubMed: 30 minutes
- UpToDate
- CINAHL
  - Primary database for journal articles covering all aspects of nursing
- Nursing Reference Center Plus
  - New interface with skill sets, comparative tools, videos and more. See the Tutorials page for how to videos.
- Ovid Journal Collection
- Lippincott Procedures

**Evaluation Resources**
- National Library of Medicine Video Tutorial on Evaluating Internet Health Information
- Duke University Intro to EBP Tutorial
- MedlinePlus Evaluating Health Information
- "Treat it or Trash it" Interactive Guide

**Drug Information**
- DailyMed (NLM NLM)
  - Official provider of FDA labeling as found in medication package inserts
- CenterWatch
  - FDA-approved drugs including approval status, indications of use, and clinical trial results
- Drugs@FDA
  - Patient information, approval status, reviews on FDA drug products approved after 1992.
- NLM Drug Information Portal
  - Selected drug information from the U.S. National Library of Medicine and other key U.S. Government agencies

**Nursing Associations & Organizations**
- Hawaii Center for Nursing
  - Provides accurate nursing workforce data for planning; disseminates nursing knowledge to support excellence in practice and leadership development
- American Nurses Association
  - Practice, safety, and ethical standards
- American Nurses Credentialing Center
  - Offers educational materials to support nurses and organizations as they work toward their credentials
Hypertension: Home

Return to Nursing and Allied Health

Online Resources

Microbinder
Clinical decision support tool (drug interactions, IV compatibility, etc.)

Patient and Family Education: Teaching the Patient with Cardiovascular Disease (nursing Reference Content) Detailed outcomes, facts and figures.

NIH Resources for High Blood Pressure

Organizations & Community Programs

American Heart Association: Hawai'i
Events, research news

HFF Pulmonary Hypertension Case Review
Continuing education with Dr. Sheree Kuo

The Heart Truth Campaign
NIH program to raise awareness of women's risks for heart disease.

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Articles

KBHLO Project: a protocol for a randomized controlled trial of a native cultural dance program for cardiovascular disease prevention in Native Hawaiians (2017)

Teaching Children to Be Healthy Educators (2017) Pilot project to address hypertension in rural Hawai'i

E-BOOKS

On Call Medical Surgical Nursing
Ch: 22 Nursing Care of Patients with Hypertension (2015)
### Online Resources

- Initial assessment and management of acute stroke
- (UpToDate) Stroke Centers Clinical Practice Guidelines
- Overview of the evaluation of stroke
- (UpToDate) Classification, initial assessment, presumptive diagnosis of subtype, etc.
- Stroke Assessment: Using the National Institutes of Health Stroke Scale
- Includes skills competency checklist
- Guidelines for Adult Stroke Rehabilitation and Recovery
- American Heart Association & American Stroke Association
  (VC01TA1) Data informing JCI Core Measures

### Organizations & Community Programs

- American Heart Association: Hawai’i
- Events, research news

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**Last Updated:** Nov 8, 2017 11:31 AM  
**URL:** https://hawaiipacifichealth.libguides.com/Stroke

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**Appendix D**

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### Articles

- **CriticalCareNurse**
  - Patients’ Hand Washing and Reducing Hospital-Acquired Infection (2017)

- **PLOS**

### Online Resources

- State of Hawaii DOH HAI Reports
- Reports since 2012
- State of Hawaii DOH Antimicrobial Summary report of antimicrobial susceptibility testing data from patients from 2012
- CDC State-Based HAI Prevention: Hawaii
- Infographic progress report on CLABSI’s, SSI’s, CAUTI’s, MRSA Bacteremia, C. difficile Infections
- CDC Healthcare-Associated Infections
- Types of HAI’s, data and statistics, guidelines and recommendations
- Aseptic Technique and Infection Prevention: Applying Principles at the Bedside (Nursing Reference Center Plus) Definitions, facts and figures, red flags.
- Infection Prevention: General Principles
  - *Unidate* Summary, surveillance, cleaning
- Infection prevention and control in healthcare for preparedness and response to outbreaks
- Control guidelines since 2001

### Organizations & Community Programs

- Hawaii Antimicrobial Stewardship Collaborative (YASC)
  - Aimed at improving individual patient outcomes, reduce the overall burden of antibiotic resistance, and save healthcare dollars.

### Appendix E

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Last Updated: Nov 6, 2017 11:00 AM
| URL: https://hawaiipost.health.libguides.com.hawaii.edu/php?g=122495 | Print Page | Login to LibApps |
Appendix G

Nursing Resources Feedback

Are you completing this questionnaire as an academy student?

- Yes
- No
- Other

Age

Make a selection

How many years of nursing experience do you have? Include years of schooling towards certification or degrees.

Make a selection

What is your comfort level with technology? (required)

- Very comfortable
- Comfortable
- Neither comfortable or uncomfortable
- Uncomfortable
- Very uncomfortable

What topic did you research?

While searching for evidence to inform your topic of research, how helpful was the nursing resource page? (required)

- Extremely helpful
- Very helpful
- Helpful
- Neither helpful or unhelpful
- Unhelpful
- Other
How long did you spend researching your topic? (required)
- 0-5 minutes
- 5-10 minutes
- 10-20 minutes
- 20-30 minutes
- More than 30 minutes

Before using the nursing resource page, my confidence level in retrieving information to inform my professional practice was... (required)
- Very high
- High
- Medium
- Low
- Very low

Before using the nursing resource page, my confidence level in evaluating information to inform my professional practice was... (required)
- Very high
- High
- Medium
- Low
- Very low

After using the nursing resource page, my confidence level in retrieving information to inform my professional practice was... (required)
- Very high
- High
- Medium
- Low
- Very low

After using the nursing resource page, my confidence level in evaluating information to inform my professional practice was... (required)
- Very high
- High
11/18/2017

Nursing Resources Feedback

- Medium
- Low
- Very low

The quality of the resource page is... (required)
- Excellent
- Very good
- Good
- Fair
- Poor
- Very poor

I found the specialized guides useful. (required)
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

The resource page was easy to navigate and understandable. (required)
- Strongly agree
- Agree
- Neutral
- Disagree
- Strongly disagree

Which resource(s) did you find the most useful? Check all that apply. (required)
- Specialized Guides
- Databases
- Drug Information
- Nursing Associations & Organizations
- Evaluation Resources
- I did not find any of the resources useful.

http://hawaiipacifichealth.libsurveys.com/nursingresourcesfeedback
11/18/2017

Nursing Resources Feedback

☐ Other

I will use the nursing resource page again. (required)
  ○ Strongly agree
  ○ Agree
  ○ Neutral
  ○ Disagree
  ○ Strongly disagree

Please share any resources that you think are missing from the resource page, or resources that you think are valuable to include.

Questions, comments, concerns?

Back  Submit

http://hawaiipacifichealth.lib surveys.com/nursingresourcesfeedback
Appendix H

Dear Nurse Educators,

Hawai‘i Pacific Health’s medical library has created a [nursing resource page] as an effort to promote evidence-based practice (EBP). We are conducting a study to measure how the resource page affects nurses’ confidence in EBP.

Please share the resource page with your academy students, and have your students conduct a search for a topic that relates to their professional practice. You may introduce the resource page with this video created about the resource page and the study. Once your students have completed their research, share the voluntary questionnaire with them.

You may choose to introduce the resource page as an in-class activity, or you may share it with your students via email to complete asynchronously on their own time. Attached are instructions for an in-class activity that you can modify to your preference, and an email template to share with your students for the asynchronous option.

Please share this activity with your students by February 9, 2018.

Thank you. We appreciate your assistance.
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[Attachment as word doc.]
Medical Library
Nursing Resource Page Activity & Feedback

Please share with your students by **February 9, 2018.**

**In-Class Lesson Plan**
Students should each have access to HPH computers, or laptops and devices capable of accessing HPH’s intranet. If the instructor has access to a projector screen, instructor can use it to play the introductory video.

1. Watch introductory video. (5 min)
2. Navigate to “Nursing and Allied Health” tab of medical library website. (2 min)
3. Students choose a topic related to their professional practice and search for an appropriate article, preferably evidence-based (i.e. systematic review or randomized control trials), through the resources listed on the resource page. (approx. 10 min)
4. Once students complete their research, direct students to questionnaire. (5 min)

**Asynchronous Instructions**
In order to complete this activity, you must access HPH computers, or laptops and devices capable of accessing HPH’s intranet.

1. Watch introductory video. (5 min)
2. Navigate to “Nursing and Allied Health” tab of medical library website. (2 min)
3. Choose a topic related to their professional practice and search for an appropriate article, preferably evidence-based (i.e. systematic review or randomized control trials), through the resources listed on the resource page. (approx. 10 min)
4. Once research is completed, navigate to questionnaire. Read questionnaire’s preamble and submit the survey if you are willing to participate in the study. (5 min)