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Student Confidence/Overconfidence in the Research Process

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ABSTRACT

Librarians with instructional responsibilities will base information literacy session content upon course syllabi and teaching faculty's assessments of student readiness. Often students' self-perceived competencies do not factor into the lesson planning process. The aim of this project is to collect the levels of self-confidence for a group of students who are primarily entering health care professions. This study observes students' levels of self-confidence in performing research-related activities and their corresponding ability to correctly answer content questions for those tasks. Students' self-confidence ratings are not reliable indicators for information literacy competence. The confidence levels for information literacy tasks of students entering health care professions may have clinical implications for future practice.

INTRODUCTION

Librarians often design lesson plans predicated upon a set of assumptions regarding the information literacy levels of the students. Those presumptions are generally guided by conversations with the teaching faculty, demographic data from the Office of Institutional Research, course sequencing considerations, and the assignments upon which the session is based. Often students' self-perceived competencies do not factor into the lesson planning process. This study observes students' levels of self-confidence in performing research-related activities and their corresponding ability to correctly answer content questions for those tasks. This data could provide a baseline of students' self-identified areas for improvement and competencies, which could be targeted by librarians for inclusion or greater emphasis during information literacy sessions.

The investigation centered upon upper division students (i.e., juniors and seniors) taking a mandatory writing course in the area of health sciences. The assignments from this course promote the development of research skills using an evidence based practice framework, while moving students from using general databases to subject-specific resources. Oftentimes, this course may be the first occasion where the students have the opportunity to link health care literature to clinical practice. The authors of this study hope to contribute to the literature by examining if student confidence levels serve as reliable indicators for competence.

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LITERATURE REVIEW

EVIDENCE BASED PRACTICE AND ITS CONNECTION TO INFORMATION LITERACY

Evidence based practice (EBP) "is the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients" (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996). It was first defined by medical doctors in the 90s (Evidence-Based Medicine Working Group, 1992 and Guyatt, 1991). In the last twenty years, the theoretical framework of EBP has been implemented in almost every health science related discipline. A primary tenet of EBP requires that health care practitioners effectively and thoroughly search the literature to support clinical practice. The emphasis on evidence, as provided by the literature, requires strong information seeking skills.

Wahoush and Banfield (2013) highlighted the influence of EBP behaviors among experienced nurses, recent nursing graduates, and nursing students at a medium-sized university in Canada. They concluded that recent graduates employ more electronic information sources and resources to support clinical practice than their more seasoned counterparts. Hider, Griffin, Walker, and Coughlan (2009) compared the differences in information seeking behaviors between medical doctors and dentists and other health professionals; medical doctors and dentists more frequently employ information resources and libraries than nurses and allied health staff, who tended to consult coworkers and experts in their daily practice. This reliance on experts, instead of the literature, can have clinical implications. The authors further commented that the lack of consistently searching and using the literature for decision-making could result in additional deterioration of information literacy skills.

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Evidence based practice demands the acquisition of complex skills that cannot be acquired in a short period of time. Indeed, Dee and Stanley (2005) observe that health professionals have to deal with very complicated logistical daily practices, which, in the clinical setting, do not allow a great amount of time to dedicate for research. Furthermore, McKnight (2006) noted that critical care nurses thought that it was unethical to "read" material during their shifts. This is important because it indicates the lack of intersection between clinical duties and literature-informed practice. To promote EBP in professional practice, discipline-specific information literacy skills should be fostered within the university curriculum while performing clinical experiences.

Academic and health sciences librarians devote a significant portion of instructional sessions to the EBP process with students in the medical and health sciences related areas. Boruff and Thomas (2011) reported on the experience of a librarian and an instructor who designed a specific activity integrating EBP and information literacy skills for physical and occupational therapy students. Several authors have published articles focusing on the teaching of EBM skills to medical students with the participation and collaboration of a librarian (Cyrus et al., 2013; Gagliardi, Stinnett, & Schardt, 2012; Ilic, Tepper, & Misso, 2012; Kealey, 2011; Keim, Howse, Bracke, & Mendoza, 2008). These research articles observe and illustrate the possibilities that librarians may have in assuming greater responsibilities in students' development of EBP skills. Dorsch and Perry (2012) conducted a literature review on the intersection of EBP and information literacy in both library and medical professional literature; they concluded that this topic is of similar interest for the two professional groups. While there are many studies involving EBP, librarians, and other medical professionals or teaching faculty, the authors were unable to find any studies that measured students' self-confidence in performing the discrete information literacy skills that affect sound EBP skills. Ivanitskaya, O'Boyle, and Casey (2006) correlated students' proficiencies in finding and assessing consumer health information to their self-reports of research skills, and they found that students did a poor job of characterizing their skills.

Students' self-perceptions of their competency in performing information literacy tasks, as they relate to EBP, have not been well studied. It is the hope of the authors that this study will address that gap in the literature.

METHODOLOGY

The authors developed a 24-question survey for Health Professions 100 Writing (HPRF 100W) students. The student survey consisted of two parts: a demographic questionnaire and multiple-choice questions on information literacy mastery and concepts. The demographic part of the student survey employed questions from one of the author's previous publications (Molteni, 2008 and Molteni, Goldman, & Oulc'hen, 2013). The information literacy component was further divided into two sections: the students' perceptions regarding their information literacy skills and information literacy questions that corresponded to those specific skills. The survey was loaded into Qualtrics, an online survey platform, which enabled the authors to electronically administer the survey and collect and analyze the data using Microsoft Excel. The project has the approval from the San José State University Institutional Review Board #F1202078.

The survey was taken by upper division students enrolled in HPRF 100W during Fall 2012. Assignments from this course promote the development of research skills, moving students from using general databases to subject-specific resources. This course may oftentimes be the first occasion where the students have the opportunity to link health care literature to clinical practice. The students who take this course are generally from the Department of Health Sciences; Occupational Therapy; Nutrition, Food Science, and Packaging; and pre-nursing students from the Valley Foundation School of Nursing. Other students who register in this course also originate from Communicative Disorders and Sciences; Kinesiology; Social Work; Hospitality Management and even from the College of Business.

STUDENT PERCEPTIONS REGARDING RESEARCH SKILLS AND QUIZZES

This study consisted of two key collections of data. Students reported on their levels of competency in performing four information literacy-related tasks within the health profession discipline:

1. differentiating between popular and scholarly materials,
2. distinguishing between primary and secondary articles,
3. revising a database search, and
4. identifying the specialized databases specific to this content area.

These tasks were selected because of their connections to EBP. Students were asked to rate their ability to differentiate between scholarly and popular materials because clinical practices should always be based upon materials that have undergone a rigorous referee process. In the health sciences, primary research is defined as research conducted by the authors, whereby original data is collected. Students are generally asked to use primary research articles because they constitute evidence. Study parameters are stated, allowing for the critical analysis of study design and identification of the study's strengths and weaknesses. Distinguishing between primary and secondary sources is essential as literature types offer varying degrees of support; in EBP, credibility and relevance are based on the strength of study design, protocols, and procedures. Due to the primacy of navigating within the clinical literature for applicable evidence, it is of the upmost importance that students are able to effectively and efficiently revise searches. Knowing and being familiar with the resources of the discipline are important to properly search and find appropriate materials. Certain databases provide access to the most current indexes on health sciences and EBP. As such, students must be able to identify those resources that will offer the most comprehensive, recent, and relevant resources that will inform their clinical practice.

In addition, students answered seven questions that tested for mastery in understanding information literacy concepts. These questions were validated in previous studies (Feind, 2010; Staley, Branch, & Hewitt, 2010); however, the authors adapted them to meet the emphasis of EBP and health sciences. Thus, the authors of this paper were able to correlate student perceptions of their own skills against their ability to correctly answer information literacy questions based on evidence based practices.

The seven-question quiz asked students to select the best answer from multiple answers. Students were given the correct answer, multiple incorrect answers, and the option of "Not Sure." The option of "Not Sure" was important, as the authors of this article wanted to ascertain the size of the student population who did not have sufficient confidence in their ability to select from one of the other given options.

The authors of this article operated from this premise — students, regardless of the quality of their answer, would not choose "Not Sure" as their response if they were sufficiently confident in their selection. That is, those who picked "Not Sure" as their response were indicating their lack of confidence in their ability to answer the question and, subsequently, their lack of mastery in the information literacy-related task. Likewise, students who were incorrect in their response were sufficiently confident in their answer to select one of the options.

Students rated their skills in performing the health profession information literacy-related tasks on the following scale: "Excellent," "Very Good," "Good," "Fair," and "Poor."

The information literacy mastery quiz consisted of seven questions that were associated with the four information literacy tasks. Each task had two questions that assessed for mastery, except for the differentiating between popular and scholarly materials task, which only had one question.

The 24-question survey is shown in Appendix A.