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Isaac Gilman
Pacific University

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Description

For over a decade, occupational therapists have been engaged in a shift to an evidence-based practice (EBP) model, necessitating a concurrent emphasis on EBP in occupational therapy (OT) education. An essential element of this education is the development of information-seeking behaviors: how to locate, access, evaluate, and utilize the best available evidence in the course of answering a clinical question [1]. Indeed, prior studies [2–5] have pointed to the need to incorporate instruction on information-seeking behaviors into the curricula of OT programs.

Previous studies of occupational therapists' information-seeking behaviors have primarily focused on undergraduate degree programs [4, 6]. Powell and Case-Smith recently provided the first examination of information-seeking behaviors in master of occupational therapy (MOT) graduates [7]. Further study of MOT graduates' information-seeking behavior is needed to inform decisions related to curriculum and instruction.

Disciplines

Library and Information Science

Comments

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Evidence-based information-seeking behaviors of occupational therapists: a survey of recent graduates

Isaac P. Gilman, MLIS

See end of article for author's affiliation.

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For over a decade, occupational therapists have been engaged in a shift to an evidence-based practice (EBP) model, necessitating a concurrent emphasis on EBP in occupational therapy (OT) education. An essential element of this education is the development of information-seeking behaviors: how to locate, access, evaluate, and utilize the best available evidence in the course of answering a clinical question [1]. Indeed, prior studies [2-5] have pointed to the need to incorporate instruction on information-seeking behaviors into the curricula of OT programs.

Previous studies of occupational therapists' information-seeking behaviors have primarily focused on undergraduate degree programs [4, 6]. Powell and Case-Smith recently provided the first examination of information-seeking behaviors in master of occupational therapy (MOT) graduates [7]. Further study of MOT graduates' information-seeking behavior is needed to inform decisions related to curriculum and instruction.

PURPOSE

In 2003, Pacific University's School of Occupational Therapy began to implement a new curriculum emphasizing EBP principles and incorporating EBP across didactic and clinical work. In 2008, Pacific University Library faculty began a collaboration with school of occupational therapy faculty to integrate new information-seeking instruction into the revised MOT curriculum. As a result, library faculty currently provide one class session in each EBP course (one per year, for a total of three sessions by the time students graduate). Library instruction builds from course to course to reduce redundancy and to gradually introduce more complex strategies.

The primary objective of this study is to provide an understanding of recent Pacific University MOT graduates' information-seeking behaviors to aid in planning the MOT EBP curriculum and related library instruction. In addition, by surveying graduates who

have not experienced any of the current *librarian-led* EBP instruction, the results of the study can be used as a baseline for a later assessment of MOT graduates who *have* experienced the full librarian-led EBP progression.

METHODOLOGY

An anonymous online survey (Appendix, online only) was used, adapted with permission from an existing questionnaire (created by Powell and Case-Smith [4]). No validation of the adapted instrument was completed for the purpose of this study, though input was received from Pacific University OT faculty. The study was approved by the Pacific University Institutional Review Board.

An invitation to participate in an EBP survey was emailed with the school of occupational therapy's regular alumni survey to all eighty-one alumni who had graduated between 2004 and 2008. A link to the survey was also posted on the school's home page. Using 2008 as the cutoff increased the likelihood that respondents would have had at least one year of clinical experience. An extra incentive (entry in a gift card drawing) was offered to alumni who completed the study's survey. Because the population was so small, a sample was not taken.

The survey opened in June 2009 and closed in August 2009, with email reminders (and postal reminders for bounced emails) sent in July 2009. Twenty-eight total responses were received. One response from outside the 2004-2008 range was excluded, and two responses were combined due to strong indications that they were from the same respondent. Descriptive statistics were derived from SurveyMonkey and Excel, and inferential statistics were computed using SPSS. (For some survey items, multiple responses were allowed and percentages may total more than 100%.)

RESULTS

There was an overall response rate of 32% (26/81) (Table 1, online only). Based on respondents' titles (25 of 26 responded), all participants were currently working as occupational therapists at the time of the survey. A majority worked in a psychiatric facility (4), a public or private school (4), or a skilled nursing or intermediate care facility (4). The next most common places of employment were in a rehabilitation center (3) or in community mental health (3).

Information needs

All respondents indicated that they had needed to find information to inform patient care since graduation. The graduates also appeared to be professionally active, with 15 (57.7%) seeking information for in-service presentations and 10 (38.5%) looking for information for a professional meeting presentation (overlap in these groups is possible). Five respondents



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A supplemental appendix and supplemental Table 1, Figure 1, Figure 2, and Figure 3 are available with the online version of this journal.

(19.2%) needed information for a research project (e.g., writing an article), and 2 (7.7%) sought information for a grant application. Information needs for patient care and in-service presentations were consistent with Powell and Case-Smith's recent MOT findings [7], but Pacific University graduates demonstrated higher needs for professional presentations and research projects.

Sources of information

Respondents were asked to indicate their 3 most common sources of evidence-based information (Figure 1, online only). The Internet (largely professional or evidence-based websites, with fewer respondents indicating Google) was a primary source of information. Beyond the Internet, personal contacts (14, 53.8%) and continuing education events (17, 65.4%) were common information sources for graduates, confirming the earlier findings of Powell and Case-Smith [4], though Pacific University graduates exhibited a greater tendency to use personal contacts than the MOTs in Powell and Case-Smith's follow-up study [7]. Public and hospital library resources ranked near the bottom for respondents, though 10 (38.5%) had used a health sciences college library.

Also consistent with Powell and Case-Smith [7], MOT graduates found traditional information formats most helpful for satisfying their information needs: 20 graduates (76.9%) selected journal articles and 17 (65.4%) selected books as one of the 3 most helpful formats. Though a majority of respondents (21, 80.8%) had indicated that professional or evidence-based websites were one of their most common *sources* of evidence-based information, only 14 (53.8%) selected websites as being *helpful* in satisfying their information needs, a potential disconnect between usage and actual utility.

Use of bibliographic databases

The majority of respondents (18, 69.2%) reported using either MEDLINE or CINAHL since graduation. Of those 18, 17 (94.4%) found the information they needed in MEDLINE (2, 11.1%), CINAHL (4, 22.2%), or in both databases (11, 61.1%). Use of databases other than MEDLINE or CINAHL (Figure 2, online only) varied, with many graduates using PubMed (13, 50.0%). Of the graduates who used databases other than, or in addition to, MEDLINE or CINAHL, 15 (88.2%) indicated they had found relevant information. Though there is room for growth, it is encouraging to observe the relatively high use of bibliographic databases (compared to both Powell and Case-Smith studies [4, 7]), as well as the percentage of graduates indicating *successful* use of databases.

Clinical information needs

Graduates were asked to share the most recent clinical question or research project for which they needed information (Table 2). Twenty-two respondents

Table 1
Respondents' information needs

Think back on the most recent clinical question or research project for which you were looking for any type of information. Please briefly describe what you were looking for:

- dementia in young adults
- therapeutic treatments for peripheral neuropathy
- pain management
- assistive technology (AT) for a middle school boy with cerebral palsy, one-finger typer, needing word prediction software and mapping capability
- handwriting interventions used with adults
- information about visual accommodation impairment after a stroke and eye exercises/activities to address it
- evidence on youth identity development for an occupation-based identity group
- an occupational therapy (OT) assessment of cognitive learning in children and the validity of such an assessment
- I was looking for simple handouts to provide parents for oral-motor activities
- occupational therapy intervention for young adults with Asperger's syndrome
- age and gender difference in Mini Mental State Examination (MMSE) scores in elderly
- information on stroke treatments
- average progression of recovery after bilateral pulmonary embolism
- cerebrovascular accident (CVA) related to upper extremity (UE)
- inhibiting increased tone in UE, facilitation of trunk extensor muscles for sitting balance
- It is usually about a diagnosis (Dx) and needing to find the best treatment (Tx) for it... like vision issues, diplopia
- therapeutic interventions for a bilateral above knee amputee
- current treatments in [pediatrics]
- [information] about an assessment
- developing a driving evaluation, needed evidence to support
- instilling motivation into clients
- executive function assessment
- effects of therapeutic listening on 3-5 year old children

(84.6%) were able to find information relevant to their question or project. Of the 4 respondents who did not find relevant information, 2 (50%) indicated there was not enough existing research on the topic, while 2 (50%) indicated there were inadequate resources available.

The majority of graduates (18, 69.2%) felt their search process was "Average," while 15.4% (4) felt their process was "Inefficient" and another 15.4% (4) felt their process was "Efficient." When it came to analyzing and applying information they had found, graduates' responses left room for improvement (compared to Powell and Case-Smith MOTs [7]): 34.6% (9) indicated being very successful (versus 74% for Powell and Case-Smith) and 61.5% (16) felt "Okay" (versus 23.0% for Powell and Case-Smith).

Impact of education

In response to the question, "What aspects of your Pacific experience do you feel helped you the most in being able to successfully seek and use evidence-based/professional information?" (Figure 3, online only), graduates indicated that faculty contacts in class (16, 64.0%), librarian instruction sessions (15, 60.0%), and writing and revising research papers (13, 52.0%) were most helpful.

An overwhelming majority of graduates (24, 96.0%) felt the MOT curriculum had prepared them for lifelong learning. When asked for suggestions "about lifelong learning skills or information resources" that

they wished they had learned at Pacific University, only 9 graduates responded. Of those respondents, 6 (66.7%) addressed access to resources, and one graduate summed up the general sentiments: "Allow graduates to maintain access to all of the research options that they had as students." Interestingly, this issue of limited access also appeared among responses in the "Other" comments sections for several earlier survey questions.

Results based on graduation year

Based on the level of exposure to the MOT EBP curriculum, 2007–2008 (high or complete exposure) and 2004–2006 (minimal exposure) graduates were analyzed for differences between groups. Overall, responses from the two groups were quite similar, and no significant differences were found between compared items.

One difference of note, though not significant, was in the role of writing and revising research papers. Only 30.0% (3) of graduates from 2004–2006 indicated that this process was helpful, while 66.7% (10) of graduates from 2007–2008 selected it as a factor in their successful seeking or use of evidence-based and professional information (Fisher's exact test $P=0.11$). Encouragingly for the MOT program, graduates in both groups also indicated that their education had prepared them for their lifelong learning needs (with only 1 negative response).

While the lack of differences between groups is not useful in and of itself, it does provide a control for future assessment of the impact of the librarian-led instruction component in the MOT curriculum.

LIMITATIONS

Participation was limited to voluntary responses from recent Pacific University MOT graduates. There may be differences between recent graduates and those further removed from their education [3], and it is unknown why eligible participants did not respond. The small size limits the generalizability of results and the ability to draw meaningful comparisons. Furthermore, it is possible that some response bias exists due to question wording. However, the similarity in responses from Pacific University MOT graduates and Ohio State MOT graduates [7] on many items lends validity to the results.

DISCUSSION AND CONCLUSIONS

Limited search skills, difficulty in accessing literature, and lack of available evidence to support interventions have been identified as the main barriers to occupational therapists implementing EBP [3]. The results of this study indicate that, at least for Pacific University MOT graduates, limited search skills may no longer be a primary barrier (given their self-reported success in finding necessary information using databases). However, the study does point to

areas for improvement and refinement in the information-seeking experience of practicing occupational therapists.

In clinical practice, the value of evidence-based information is related not only to its quality, but to the efficiency of obtaining the evidence [8]. While respondents did report success in locating information, a majority of the graduates in the study indicated that their search processes were only "Average," which was defined as "Took a while, but got what I needed." Searching for evidence-based information is as much an art as a science, and the difference between a few frustrating hours and several successful seconds can be as simple as knowing which tools or terms to utilize. It is essential that future occupational therapists be trained in the most efficient search strategies so that they can spend more time on client care and less time at a computer terminal.

Despite graduates' general success with finding necessary evidence-based information, access to information is still a problem. While graduates reported flexibility and creativity in accessing resources, the repeated comments about the disparity between resources available as a student and resources available as a practicing occupational therapist are quite telling. Accessing evidence-based literature without the benefit of an academic library's resources requires extensive knowledge of the available options and flexibility in utilizing them. This presents an opportunity for librarians to provide continuing education for practicing occupational therapists to educate them about the resources that are available to them and how best to use them.

Issues for further consideration

This study provides a look at the *nature* of information-seeking behaviors of recent MOT graduates—but not the *scope* of those behaviors. As part of a complete understanding of information-seeking behaviors, Kloda and Bartlett [9] call for an examination of rates of information-seeking behaviors (how often evidence-based information is sought and how often that information is retrieved successfully). Further study of MOT graduates should include this component. Additionally, an important factor related to the growth of occupational therapists' evidence-based practice is time. The relationship between effective time-management skills and the utilization of EBP has been noted in previous studies [10], and research into the most effective time-management strategies would prove valuable for preparing new graduates.

Despite its importance, understanding occupational therapists' information-seeking needs and tendencies is only one component of enabling them to fully implement EBP. Even if a therapist is skilled at seeking information, lack of access to evidence continues to be a challenge. Leveraging the collective resources of professional organizations (such as the American Occupational Therapy Association) to provide access to additional online databases and

publications (beyond those owned by AOTA) could provide one means of supplementing the limited resources available to the individual therapist. A recent agreement between the Canadian Association of Occupational Therapists (CAOT) and the British Association of Occupational Therapists (BAOT) has enabled members in either association to access the online versions of both *British Journal of Occupational Therapy* and *Canadian Journal of Occupational Therapy* [11]. Such reciprocal agreements, if extended between all national OT associations, would provide members access to a wealth of information and would be beneficial to both practitioners and the profession.

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AUTHOR'S AFFILIATION

Isaac P. Gilman, MLIS, gilmani@pacificu.edu, Assistant Professor, Scholarly Communications and Research Services Librarian, Pacific University Library, Pacific University, 222 Southeast 8th Avenue, Suite 202, Hillsboro, OR 97123

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