

UNIVERSITY *of* **INDIANAPOLIS**®

School of Occupational Therapy

Differences in the Use and Perceptions of Evidence-Based Practice
between Occupational Therapy Students and Practitioners

Paige Creighton, Annie DeRolf, Shelby Hale,
LeAnn VanDeman, Kersten Laughlin, and Kelsie Long

December 15, 2017



A research project submitted in partial fulfillment for the requirements of the Doctor of Occupational Therapy degree from the University of Indianapolis, School of Occupational Therapy.

Under the direction of the research advisor:

Alison Nichols, OTR, OTD

A Research Project Entitled

Differences in the Use and Perceptions of Evidence-Based Practice between Occupational
Therapy Students and Practitioners

Submitted to the School of Occupational Therapy at University of Indianapolis in partial
fulfillment for the requirements of the Doctor of Occupational Therapy degree.

By

Paige Creighton, Annie DeRolf, Shelby Hale,
LeAnn VanDeman, Kersten Laughlin, and Kelsie Long

Occupational Therapy Students

Approved by:

Research Advisor (1st Reader)

Date

2nd Reader

Date

Accepted on this date by the Chair of the School of Occupational Therapy:

Kate E. DeCleene Huber, OTR, MS, OTD
Chair, School of Occupational Therapy

Date

Differences in the Use and Perceptions of Evidence-Based Practice between Occupational
Therapy Students and Practitioners

Paige Creighton, Annie DeRolf, Shelby Hale,
LeAnn VanDeman, Kersten Laughlin, and Kelsie Long
University of Indianapolis

Abstract

This study explored differences in perceptions of evidence-based practice (EBP) between occupational therapy (OT) students and practitioners. Researchers aimed to understand student and practitioner perceptions of barriers, knowledge, attitudes, and confidence in EBP. Eighty-three OT students and practitioners completed an online survey, and seven individuals participated in a focus group. Results indicated practitioners were more confident in utilizing EBP, particularly when applying EBP to a client and assessing its efficacy on client outcomes. Students and practitioners identified time as the highest perceived barrier to EBP implementation. Three themes emerged from the focus group responses: supports and barriers to EBP, client-centered EBP, and perceptions of EBP by role. These results support a gap between student and practitioner perceptions as related to EBP implementation. It is critical for practitioners to demonstrate EBP implementation in order to bridge the disconnect between student and practitioner utilization of EBP.

Literature Review

In 2006, the American Occupational Therapy Association (AOTA) devised a strategic plan, known as the Centennial Vision, aimed to direct occupational therapy (OT) to an evidence-based, science-driven, and widely recognized profession with a common future. In 2016, AOTA shifted to Vision 2025, which states, "Occupational therapy maximizes health, well-being, and quality of life for all people, populations, and communities through effective solutions that facilitate participation in everyday living" (Stoffel, 2016, p. 4). The Vision 2025 expanded on effective solutions, including evidence-based practice, client-centered care, and cost-effective strategies. Therefore, as the profession continues to apply evidence to practice, it aims to effectively solve issues that inhibit occupational performance in everyday living, as well as make strides towards Vision 2025 (AOTA, 2016).

Graham, Robertson, and Anderson (2013) defined evidence-based practice (EBP) as "the integration of the best available research evidence with clinical expertise and patients' values and circumstances to make the best decision regarding patient care" (p. 120). According to Thomas, Saroyan, & Snider (2012), there are five steps to EBP implementation. These steps include: (a) posing a PICO (Population, Intervention, Comparison, Outcome) question regarding treatment considerations or potential outcomes, (b) searching for literature that best supports the question, (c) evaluating the evidence in order to determine relevant and valuable information, (d) using the evidence to make both clinical decisions and client-centered applications, and (e) evaluating the intervention's ability to meet the client's needs (2012).

A gap in EBP implementation between OT students and practitioners was found in the literature. Thomas et al. (2012) explored the implementation of EBP and found that experienced OT practitioners excelled at clinical decision-making and evaluating intervention techniques,

while occupational therapy students were more proficient at posing a clinical question, searching literature, and appraising the evidence. With the exception of Thomas et al. (2012), there was a lack of literature that further investigated this relationship between student and practitioner attitudes, knowledge, confidence, and barriers to utilization of EBP.

The Contemporary Paradigm and EBP

Occupational therapy as a profession experienced a number of changes throughout the twentieth century (Gustafsson, Molineux, & Bennett, 2014). The essence of the term occupation changed simultaneously with the way of the world, specifically the medical profession. The once reductionist approach transformed in order to fit within the Contemporary Paradigm. The basis of this paradigm was formed by three concepts: the importance of occupation to health and well-being, recognition of occupational problems and challenges as the focus of OT, and the recognition of the use of occupation to improve health as the defining feature of OT practice (Joosten, 2015). Gustafsson et al. (2014) argued that the philosophical underpinnings of the Contemporary Paradigm needed to be congruent with evidence-based interventions in order to retain a professional identity.

Because the Contemporary Paradigm was described as the most stable factor regarding OT's conceptual foundations, it was suggested that evidence-based knowledge and techniques outside of the occupational therapy profession were implemented under two conditions: (a) the knowledge needed to be in accordance with the Contemporary Paradigm and all conceptual foundations, and (b) the evidence could not dictate the intervention or the measure of the client's intervention outcomes (Joosten, 2015). The shift toward EBP demanded that occupational therapy practitioners consistently reflect on their practice to be sure that it was congruent with the paradigm, with occupation at the center.

Attitudes Toward EBP

Perceived congruence between the philosophical underpinnings of OT practice and the shift toward being a more evidence-based profession impacted EBP attitudes among OT students and practitioners. A study conducted in New Zealand found that the surveyed occupational therapists had positive feelings towards EBP, with 84 percent of the OT practitioners surveyed reporting that EBP had daily benefits when using it throughout their practice (Graham, et al., 2013). The majority of the practitioners also reported that they believed the use of EBP was important to the practice of occupational therapy, and it increased the ability to make care more client-centered. These findings were congruent with a prior study where researchers found that 96% of the OT practitioners stated that EBP was an important part of their daily practice, and 87% of the participants stated that they found literature and research to be a crucial part of their practice (Salls, Dolhi, Silverman, & Hansen, 2009). OT practitioners were not the only population found to have positive attitudes about EBP. In an Irish study, Stronge and Cahill (2012) found that OT students had optimistic feelings about EBP and believed that it is a critical component to the OT curriculum. These researchers determined that “all 86 of the final-year students reported a willingness to engage in EBP in academic work, on clinical placements, and in the future as therapist” (Stronge & Cahill, 2012, p. 12). Furthermore, Stube and Jedlicka (2007) found that OT students at the University of North Dakota had positive perceptions of EBP and were enthusiastic about the profession’s use of EBP. One third-year OT student stated, “It’s the future of the OT profession. It provides a basis and rationale for treatment, and it offers avenues of continued research to expand the profession,” when sharing her excitement (Stube and Jedlicka, 2007, p. 56). However, attitudes were not inherently enough to solidify the certainty of EBP implementation.

Knowledge and Confidence in EBP Use

Despite general positive attitudes regarding EBP, actual implementation necessitated a certain comfort level that was preceded by knowledge and confidence regarding the use of EBP. Egan, Cahill, Huber-Lee, and Wallingford (2016) utilized an online training module aimed to increase 29 OT practitioners' skills and knowledge. Using the Adapted Fresno Test (AFT), clinicians who completed a training module demonstrated a higher average change in EBP knowledge and skills than a control group (2016). Similarly, Nichols (2017) used the AFT and found an increase in knowledge and skills and a statistically significant change in confidence among fieldwork educators after the completion of an introductory short course in EBP. The findings of Egan et al. (2016) and Nichols (2017) were congruent with the research of Graham et al. (2013) in which Australian occupational therapists who received training for EBP techniques from their university had more confidence than occupational therapists who had not received training .

However, clinical and academic experience created a gap in knowledge and confidence in comparison to more novice groups. Adler and Gavin (2012) highlighted this gap in knowledge between recent graduates and current, experienced occupational therapy practitioners. The researchers found that recent graduates had higher levels of confidence in their abilities to perform EBP-related activities, such as database searches and Internet usage, versus occupational therapists who graduated five or more years ago. When examining differences in confidence among OT students, DeCleene Huber et al. (2015) found that third year OT students report more confidence than first- and second-year students when evaluating a course of action and selecting a decision based on evidence. These findings indicate that further education in EBP increases the

confidence and ability for students to implement EBP principles. However, research suggested that the fieldwork experience needed to be congruent with this formal instruction.

Crabtree, Justiss, and Swinehart (2012) used pre-test/post-test methods and discovered that an EBP-directed course facilitated an increase in MOT students' scores for comprehension and use of EBP after the completion of the course. However, scores for the same students "declined between postcourse and postfieldwork measurements" (Crabtree, Justiss, & Swinehart, 2012, pg. 146). This decrease in scores post-fieldwork could be due to a lack of EBP implementation by fieldwork coordinators or a lack of opportunity for students to apply skills learned in the EBP course. Despite the veracity of findings regarding low self-reported levels of knowledge, confidence, and skills among both OT practitioners and students, there were still other barriers that were pervasive in the literature.

Barriers to EBP Implementation

Reasons for a lack of EBP implementation in the clinical and academic settings was evident among OT students and practitioners due to multiple barriers. In 2012, Hu reported lack of time, skills, expertise, and support from management as barriers to EBP implementation among practitioners. In a more recent study, Harding, Porter, Horne-Thompson, Donley, and Taylor (2014) explained that without an understanding of underlying factors that contribute to barriers, it was difficult to design and implement supportive techniques to allow for the utilization of EBP in practice. Therefore, Harding et al. (2014) aimed to use qualitative and quantitative methods to better understand barriers to the implementation of EBP among allied health clinicians. Researchers found a common barrier, lack of time, was broken down into three sub-themes with the use of the qualitative results. These sub-themes were, "attitudes and expectations of clinicians and managers, lack of resources resulting in too many tasks to

complete in the time available, and lack of skills leading to inefficiencies in the implementation of EBP” (Harding et al., 2014, p. 227). Clinicians felt they had a lack of time due to their caseloads, as well as diminished access to physical and electronic resources due to cost or availability. Lastly, some clinicians felt that a portion of the staff lacked understanding of EBP, or the search for literature was overwhelming, leading to time inefficiency. These mental representations had negative limitations on the advancement of EBP within the profession.

In summary, literature surrounding EBP was abundant in regards to the analysis of attitudes, knowledge, confidence, and barriers affecting EBP implementation. There were consistent discoveries highlighting, in general, positive attitudes toward EBP in conjunction with low self-reported levels of knowledge and confidence. Common barriers, such as lack of time and lack of skills, were also pervasive in the literature. With the exception of the study by Thomas et al. (2012), there is minimal literature comparing the population of OT students and OT practitioners. These findings reflected the inconsistent nature of competencies between education and practice. The recognition of this inconsistency supported the existence of a gap in the EBP decision-making processes between OT clinicians and students. There is a need for research that highlights the differences in the factors influencing EBP implementation among OT students and OT practitioners alike. The current study aimed to explore this gap and provide insight into the relationships among knowledge, attitudes, confidence, and barriers of EBP implementation.

Methods

Participants

Criteria to participate in the study required all participants to be either students in or alumni from the School of Occupational Therapy or alumni from the Doctorate of Health

Sciences program at the University of Indianapolis. After receiving approval from the university's Institutional Review Board, a purposive sample of 188 students was selected to complete a survey regarding evidence-based practice in the fall of 2016. The student cohorts were differentiated by degree and year of expected graduation, including Master of Occupational Therapy (MOT) and Doctor of Occupational Therapy (OTD). Fifty-four students were invited to complete the survey from MOT 2016, as well as 21 from MOT 2018, 18 from MOT 2019, 46 from OTD 2018, and 49 from OTD 2019. A random sample of two-hundred alumni were invited to complete this survey, however, due to invalid e-mail addresses, only 169 of the original 200 alumni were successfully sent.

Study Design and Procedure

The current study was a mixed methods design using qualitative and quantitative data. Qualitative data were retrieved from a focus group and quantitative data were derived from an online survey. The online survey was created with Qualtrics® software. Recruitment letters, which contained a link to the survey, were sent via email from the University of Indianapolis School of Occupational Therapy Chair. Participants completed informed consent before beginning the survey. If participants did not agree to the informed consent, then they were redirected out of the survey. The participants were allowed five weeks to complete the survey. Reminder emails were sent two weeks after the initial email. At the end of the survey, participants were asked to provide their email if they were interested in participating in a focus group. The primary investigator contacted participants who indicated interest in participating, and a focus group that consisted of occupational therapy students and one OT clinician was created and held one month after survey completion. The focus group took place in the Health Pavilion located at the University of Indianapolis. The session lasted for approximately 90

minutes, and it was facilitated by two of the student investigators. A third student investigator took down field notes, including a record of times in which important statements were made. Focus group questions concentrated on participants' definitions of EBP, perceptions of how EBP was used in the classroom and clinically, and barriers and supports for utilization of EBP.

Instruments

The survey created for this study was reviewed by professors in the occupational therapy department at the University of Indianapolis. These professors were experts in survey design and EBP. Reviewers provided feedback regarding survey content, which was considered and implemented. The student survey included 15 questions, and the practitioner survey included 17 questions. Participants were not required to provide identifying information ~~in order~~ to ensure anonymity. The survey content between practitioners and students was similar; however, practitioner questions were focused on clinical experience, while the student questions were related to current academic and fieldwork experiences. Basic demographic information, as well as attitudes and barriers in relation to EBP, were included in the survey's content. Participants were also asked questions regarding access to research, knowledge of research, and implementation of research. Also included in the survey were 11 questions using the Evidence-Based Practice Confidence (EPIC) scale, which rated participants' confidence in implementation of EBP and their ability to appraise evidence-based research and interpret findings from the articles (Salbach & Jaglal, 2011). Each participant was asked to rate their confidence in completing EBP skills using an 11-point scale that ranged from 0-100 percent at ten percent intervals. The EPIC scale can be found in Appendix A. Empirical support for the construct validity of the EPIC scale was noted in a study with 125 occupational therapists conducted by

Clyde, Brooks, Cameron, and Salbach (2016); results indicated excellent test-retest reliability (ICC 0.92, 95% CI).

Data Analysis

Quantitative data from the survey was analyzed using Qualtrics® and Microsoft Excel. The responses to the perceived barriers and EPIC scale (Salbach & Jaglal, 2011) were entered into Microsoft Excel, and manual member-checking was performed for accuracy. Modes regarding barriers were calculated in the following categories: (i) time, (ii) expertise, (iii) managerial support, (iv) research skills, and (v) access to literature. Two-tailed t-tests were performed in Microsoft Excel to determine statistical significance of survey data. The two independent variables were the OT students and OT practitioners, while the dependent variables were their responses to both the EPIC scale (Salbach & Jaglal, 2011) and email survey questions. Statistical significance was assumed at $p < .05$. Qualtrics® was utilized to compare relationships of survey data based upon participant responses regarding themes generated by the research team. Crosstabs within Qualtrics® allowed researchers to compare results among the data within the survey.

While participating in the focus group, participants used pseudonyms to preserve anonymity. The focus group was audio recorded and later transcribed verbatim. The transcript was reviewed by student researchers as a form of member-checking for accuracy. The primary investigator and six student investigators read the transcript independently to gain a holistic perspective of the collected data, then individually identified common key pieces of data throughout the transcript. After, the student researchers grouped the data into themes. Utilizing Dedoose software, the student researchers reviewed the transcript again, locating participant statements that best illustrated these themes.

Results

Quantitative Data

Eighty-three of the original 357 participants (23.25%) completed parts of the survey. There was a higher response rate for OT students at 32.98% (n=62), although only 12.43% (n=21) of practitioners responded to the survey. The sample size fluctuated per survey question for both practitioners and students, as 8.43% of respondents did not complete the barriers section. While 100% of practitioners completed the demographic and knowledge section, the sample size ranged from 19 to 21 respondents for the remainder of the survey. In total, student sample size varied from 57 to 62 respondents per question. Furthermore, 30.12% of the participants did not complete the EPIC scale. Participant demographic information was collected and presented in Appendix B.

Participant characteristics. The majority of respondents were predominantly female (97.54%, n=80) and reported their highest level of degree achieved as Master's degree (90.48%, n=19), and the majority of OT students were enrolled in OTD class of 2018 and 2019 (79.41%, n=46) at the time of the study. There were five student cohorts invited to participate, including: MOT 2016, MOT 2018, MOT 2019, OTD 2018, and OTD 2019. At the time of this survey, each cohort had completed varying levels of fieldwork. MOT 2016 (n=13) completed all level I rotations and the first level II 12-week rotation. MOT 2018 (n=2) had completed a 1-week level IA fieldwork. MOT 2019 (n=1) had not completed any fieldwork experience. OTD 2018 (n=26) had completed a 1-week level IA rotation and 2-week level IB rotation. OTD 2019 (n=20) had not completed any fieldwork experience.

The majority of OT practitioner respondents were graduates of the University of Indianapolis Master of Occupational Therapy program (76.19%, n=16). The program's

curriculum related to EBP in research has been consistent over the last 10 years. The remainder of alumni were graduates from the University of Indianapolis Doctorate of Health Sciences program. In regards to area of practice, 33.33% of OT practitioners worked in inpatient acute or an inpatient rehabilitation setting, while the largest percentage of OT students expressed interest in working in inpatient acute care or rehabilitation (47.54%, $n=29$). In terms of experience, 60% of practitioners had ten years of experience or less in clinical practice. All demographic data is presented in Appendix B.

Knowledge of EBP use. In response to EBP knowledge, there was no statistically significant difference between student and practitioner perceptions (See Appendix C). The majority of students agreed (45.76%, $n=27$) or strongly agreed (22.03%, $n=19$) that they knew the components of a PICO question; however, half of practitioners disagreed (33.33%, $n=7$) or strongly disagreed (14.29%, $n=3$) to knowing the components. The majority of practitioners and students agreed with having the ability to appraise, search, and interpret EBP literature. The majority of practitioners either agreed or strongly agreed (42.86%, $n=9$) to having the skills to identify clinical relevance to research findings. Similarly, 59.32% ($n=35$) of OT students agreed and 27.12% ($n=16$) strongly agreed to having these skills.

Confidence to EBP implementation. The EPIC scale (Salbach & Jaglal, 2011) was utilized to gain perceptual knowledge regarding OT practitioner and student confidence in components of EBP implementation. With a 69.88% ($n=58$) response rate, participants rated confidence of EBP implementation on a scale from 0-100 percent. Results indicated a statistically significant difference between student and practitioner perceived confidence for the following: identifying a gap in knowledge ($p= <0.001$), asking about values, needs, and treatment preferences with clients ($p= 0.002$), deciding on a course of action ($p= <0.001$), and

continually evaluating actions ($p = < 0.01$), as practitioners rated higher confidence in these areas. These differences are presented in Appendix D. The majority of practitioners reported a higher level of confidence in identifying a gap in knowledge and asking about values, needs, and treatment preferences, as compared to students (Figure 1). Students felt most confident conducting an online literature search, and they reported lower levels of confidence when deciding on a course of action and continually evaluating actions compared to practitioners (Figure 1). Both students and practitioners reported the lowest levels of confidence for interpreting statistical t-tests and procedures. The findings from the EPIC scale can be found in Figure 1.

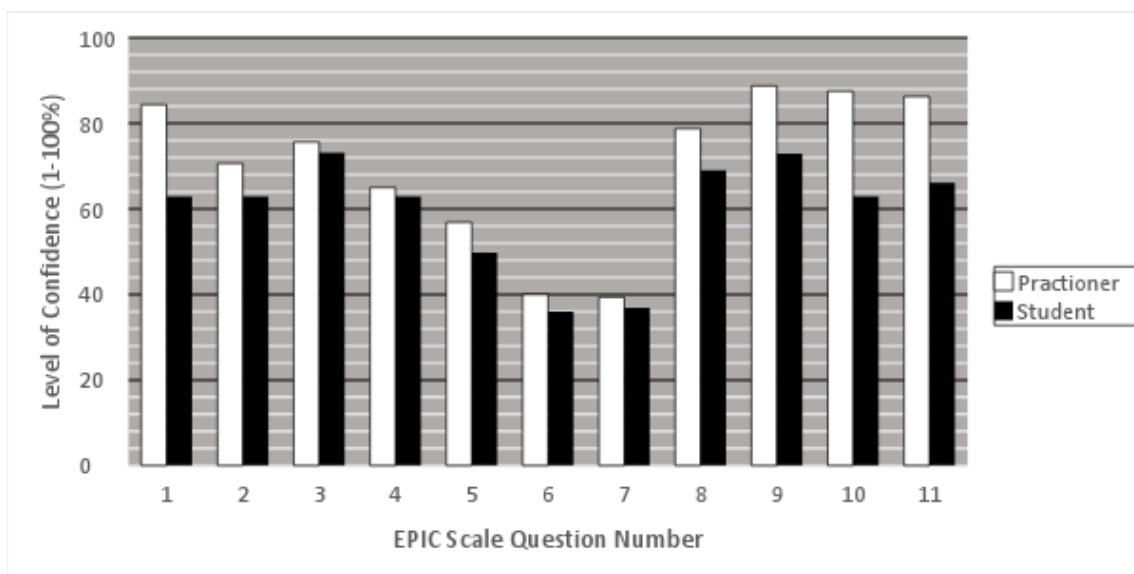


Figure 1. Comparison of practitioner and student scores on EPIC scale items.

Attitudes to EBP use. There was a statistically significant difference between practitioner and student reports of feeling qualified to implement EBP ($p = 0.001$), as the majority of OT practitioners strongly agreed at a higher rate than OT students (Appendix B). Additionally, OT students reported EBP is strongly focused on meeting client needs ($p = 0.004$) at a higher percentage than OT practitioners. OT students reported being expected to be an evidence-based

professional at a higher rate than practitioners did. Half of the practitioners strongly agreed that EBP is essential to clinical practice, and 57.89% of students expressed the same level of agreement. Though most participants identified EBP as being an important component to clinical practice, 24.56% of students and 15.00% of practitioners felt clinical experience was more important than EBP. See Appendix C for further information about the attitudes of participants towards EBP use.

Barriers to implementation of EBP. Practitioners ranked perceived barriers on a scale of 1-5, with 1 being the highest perceived barrier and 5 being the lowest perceived barrier. Practitioners perceived time as their largest barrier to EBP implementation, followed by access to literature, management support, expertise, and research skills. Students equally ranked time and expertise as their highest perceived barriers, followed by management support, research skills, and access to literature. Though practitioners reported limited access to literature as the second highest perceived barrier, 52.63% (n=10) agreed to having access to EBP articles.

The third highest identified barrier to EBP implementation for OT practitioners was managerial support. In relation to workplace expectations, 45.00% of practitioners agreed evidence-based practice was expected at work and 50.00% agreed to being an evidence-based practitioner. The majority of practitioners agreed EBP was allowed by administration (57.89%, n=11); however, 31.58% (n=6) reported their workplace was not equipped to allow EBP implementation. OT students identified time and expertise as the highest perceived barriers to EBP implementation, while OT practitioners reported expertise as the second lowest perceived barrier.

Students agreed to searching EBP once a month or more for fieldwork, with 46% self-identified as an evidence-based fieldwork student. The majority of practitioners utilized EBP to

implement interventions, with 57.89% (n=11) performing interventions based on EBP once a week or more. However, 42.11% (n=8) of practitioners disagree or strongly disagree to having ample time during the workday to incorporate EBP and only 50.00% identified self as an evidence-based practitioner.

Qualitative Data

Seventeen individuals indicated interest in participating in the focus group after completion of the online survey. When these individuals were contacted, seven agreed to participate in the focus group. The final group participants included one OT practitioner, two students from each of the MOT 2016 and OTD 2018 cohorts, and one student from each of the MOT 2018 and OTD 2019 cohorts. The focus group was led by two student researchers.

After the focus group discussion, three main themes emerged related to evidence-based practice, including: (1) supports and barriers of evidence-based practice, (2) client-centered evidence based-practice, and (3) perception of evidence-based practice by role (i.e. student vs OT practitioner). Work environment (having a supportive team), practice setting, academic research experience, access to university research, sharing resources with peers, the use of the *American Journal of Occupational Therapy* through AOTA, reimbursement for continuing education, accountability, and journal review programs were the supports identified. An MOT 2016 student who had completed all Level I fieldwork and one 12-week Level II fieldwork rotation explained, “I’ve had some settings where they actively encouraged you to look up a new article every week and to talk about them and other settings where it was never ... mentioned.”

Barriers identified by focus group participants included: productivity requirements, time, gap between newer practitioners and senior practitioners, and the lack of research available. An MOT 2016 student explained her negative experience with productivity, describing it as “the

biggest factor about being able to use evidence-based practice,” and the barrier of time as “not... being able to have the time to look up things.”

The utilization of evidence as client-centered practice was the second theme that emerged from the focus group. When reflecting on implementing client-centered practice, an OTD 2018 student stated:

I desire to be in a setting where the setting views that as important, and that it's ethical; ...therefore, it's already built in to that decision where I'm going to have to be accountable and following up with that. And I know that I'm being respected for that time, and then it's more of a cohesive thought of providing the best care...for the client, because we're all looking together collaboratively to figure out what that best evidence is. The OT practitioner indicated that the client can also implement and guide client-centered use of EBP: “I had a kid, he's 20 with muscular dystrophy, and he came with this great idea on his own. Sometimes it's not even the research; it's just the interview process and seeing what they have done...” An OTD 2019 student indicated her understanding of client-centered EBP from her didactic experiences, stating, “Having that holistic view, you want to give the best care to your patient and that's kind of built within for each of us.”

Evidence based practice perceptions by role varied from individual to individual during the focus group. An MOT 2016 student had different experiences from fieldwork educators during her level II rotations:

I found across the board some fieldwork educators come in and they're like, “What did you learn in school? This is so great we get to talk about this” . . . and the other fieldwork educators had a little bit more of like, “I'm here to teach you.” And it was very...much...expected that you would ...simply do things the way you had been taught.

Overall, the students and practitioner found EBP to be an important aspect of fieldwork, classroom work, and general practice. An OTD 2018 student discussed the importance of utilizing research for justifying treatment interventions by saying, “I think that we just have to be providing more research to really show that strong evidence for what we’re doing, so then we can be respected by other disciplines.” The OT practitioner emphasized the importance of students and fieldwork educators collaborating, sharing resources, and discussing research: “I love to take students because they bring...much more of that [research] into my practice and that keeps me fresh on using it.”

Discussion

Barriers

Practitioners and students, as indicated by the survey and focus group, found lack of time to be the largest barrier to EBP implementation, which was consistent with the literature (Graham et al., 2013). Students in this study rated access to literature as the lowest perceived barrier, while practitioners ranked access to literature as the second highest perceived barrier, indicating that students likely have more access to EBP literature than practitioners do.

Students rated expertise as one of the highest perceived barriers to EBP implementation and OT practitioners reported it as the second lowest perceived barrier. This finding reflects the clinical experience of practitioners and supports the statistically significant EPIC scale finding, in which practitioners reported higher levels of confidence in identifying a gap in knowledge and asking about values, needs, and treatment preferences, and deciding on a course of action as compared to students. Correspondingly, Thomas et al. (2012) found practitioners demonstrated the ability to apply decision-making and re-evaluation skills at a higher rate as compared to students. Though practitioners reported higher confidence in clinical application skills, students demonstrated the ability to form a PICO question and search literature at a higher rate (Thomas

et al., 2012). This challenges the findings of the current study, in which practitioners reported a higher rate of confidence (70.28%) for the ability to form a PICO question and search the literature as compared to students (59.56%).

Attitudes

In regards to attitudes of EBP implementation, our study found that 50.00% of practitioners (n=10) strongly agreed there was great benefit to EBP research and identified EBP as essential to clinical practice. OT practitioners reported utilizing EBP to implement interventions (57.89%, n=11); however, the majority reported searching articles once or twice a year during the workday (31.56%, n=6). This finding shows that though practitioners utilized EBP for implementation of interventions, article searches are not performed frequently. However, OT students searched for literature at a statistically significant higher rate than OT practitioners. This significance is likely due to a strong focus on EBP implementation throughout their OT program. The student and clinician motivations for completing EBP varied. For example, students may be required to perform EBP as a part of an assignment, whereas clinicians may perform EBP to provide the best possible care for the patient. Graham et al. (2013) found that 84% of the OT practitioners surveyed believed in the benefits of EBP implementation when used in daily practice. Though EBP implementation was positively viewed as beneficial to daily practice, OT practitioners' identified rate of implementation would be higher if there was an emphasis on clinical research in practice (Graham et al., 2013).

Knowledge

OT students viewed EBP as essential to clinical practice at a higher rate than OT practitioners. This is similar to our finding that a greater percentage of students than clinicians agreed that they are expected to be evidence-based. Students' views of EBP being essential to

clinical practice may correlate with their belief that they are expected to be evidence-based practitioners upon graduation. A study by Stronge and Cahill (2012) also found that Irish OT students had optimistic feelings about EBP and believed that it is a critical component of the OT school curriculum. Students from the University of North Dakota had positive perceptions of EBP and were enthusiastic about its use clinically (Stube, & Jedlicka, 2007). Our results indicated that seventy percent of OT practitioners strongly agreed that their academic backgrounds emphasized the importance of EBP implementation, as compared to 56.14% of students.

Confidence

Atler and Gavin (2012) found recent graduates had higher levels of confidence in the ability to use database searches and Internet usage for EBP. These conclusions correspond to our study findings, as students reported that they were most confident when conducting an online literature search. This may be related to the alumni's presumed lack of online database availability during their education. Our study's results also indicated that OT students reported lower levels of confidence when deciding on a course of action and continually evaluating actions as compared to practitioners. The statistically significant finding in student and practitioner perceived confidence from the EPIC scale further support the findings of Thomas et al. (2012), in which experienced OT practitioners excelled at clinical decision-making and evaluating intervention techniques.

Limitations

One limitation of the current study was the use of a small convenience sample with different levels of OT student and practitioner education and limited practitioner involvement. This study used convenience sampling in which all potential participants were either current or

former students of the University of Indianapolis. Therefore, generalizing the result to individuals from other universities may not be appropriate. Additionally, due to changes in the occupational therapy curriculum, students who graduated 20 years ago may have had different education related to EBP and research than more recent alumni, which may have impacted practitioner responses. A relatively low sample size of 83 participants (students [n=62], practitioners [n=21]) further limits generalizability of the research findings. Limited practitioner involvement in the focus group (n=1) may also influence the qualitative data results, creating a personal bias in reference to practitioner perceptions towards EBP.

Additional limitations, including cohort year of current students, were also present. For example, individuals from the OTD 2019 cohort (first year of OT school) reported lower levels of confidence in implementing EBP, and this may be due to the fact that no fieldwork had been completed at the time of our survey. Contrastingly, students from MOT 2018 and OTD 2018 (second year of OT school) may report higher levels of confidence due to additional education and practice through advanced fieldwork experience. Biases regarding EBP may also affect the results of this study, as individuals with strong feeling towards EBP may have been more likely to complete the survey and participate in the focus group.

Conclusion

Our study aimed to explore the perceptual differences in knowledge, attitudes, confidence, and barriers of EBP implementation between OT students and practitioners. Though students and practitioners are expected to utilize EBP in both the classroom and clinic, there is an existing gap between confidence in EBP utilization and decision-making processes. Our study explored this gap and found practitioners felt more qualified to implement EBP clinically, while students felt more strongly that EBP is focused on meeting clients' needs. As measured by the

EPIC scale, practitioners were more confident in all areas related to utilizing EBP compared to students. This finding was inconsistent with previous research.

Both practitioners and students rated time as the largest barrier to EBP implementation, which was consistent with previous study findings. By demonstrating EBP implementation in a clinical setting, practitioners are able to increase students' confidence in incorporating EBP into practice. This is a vital component to bridging the disconnect between practitioner and student confidence when using EBP. As part of this reciprocal learning process, students are able to share evidence learned in the classroom with fieldwork educators to allow for a collaborative approach to treatment. This collaborative approach is critical to increasing student confidence in EBP implementation, as well as EBP literature searching skills in practitioners.

References

- American Occupational Therapy Association. (2006). *AOTA's centennial vision*. Retrieved From: <https://www.aota.org/-/media/corporate/files/aboutaota/centennial/background/vision1.pdf>
- American Occupational Therapy Association. (2016). *AOTA unveils Vision 2025*. Retrieved from <http://www.aota.org/aboutaota/vision-2025.aspx>
- Atler, K., & Gavin, W. J. (2012). Service-learning-based instruction enhances student's perceptions of their abilities to engage in evidence-based practice. *Occupational Therapy in Health Care*, 24(1), 23-38. doi: 10.3109/07380570903410860
- Clyde, J. H., Brooks, D., Cameron, J. I., & Salbach, N. M. (2016). Validation of the Evidence-Based Practice Confidence (EPIC) Scale with occupational therapists. *The American Journal of Occupational Therapy* 70(2), 7002280010. doi:10.5014/ajot.2016.017061
- Crabtree, J. L., Justiss, M., & Swinehart, S. (2012). Occupational therapy Master-level students' evidence-based practice knowledge and skills before and after fieldwork. *Occupational Therapy in Health Care*, 26(2-3), 138-149. doi: 10.3109/07380577.2012.694584
- DeCleene Huber, K. E., Nichols, A. Bowman, K., Hershberger, J., Marquis, J., Murphy, T., . . . and Sanders, C. (2015). The correlation between confidence and knowledge of evidence-based practice among occupational therapy students. *The Open Journal of Occupational Therapy*, 3(1), Article 5. doi:10.15453/2168-6408.1142
- Egan, B. E., Cahill, S. M., Huber-Lee, C., & Wallingford, M. (2016). The use of an online module to increase occupational therapy practitioners' evidence-based practice knowledge and skills. *Internet Journal of Allied Health Sciences and Practice*, 14(2), 1-5.
- Graham, F., Robertson, L., & Anderson, J. (2013). New Zealand occupational therapists' views

- on evidence-based practice: A replicated survey of attitudes, confidence and behaviors. *Australian Occupational Therapy Journal*, 60(2), 120-128.
- Gustafsson, L., Molineux, M., & Bennett, S. (2014). Contemporary occupational therapy service: The challenges of being evidence based and philosophically congruent. *Australian Occupational Therapy Journal*, 61, 121-123. doi: 10.1111/1440-1630.12110
- Harding, K. E., Porter, J., Horne-Thompson, A., Donley, E., & Taylor, N. F. (2014). Not enough time or a low priority? Barriers to evidence-based practice for allied health clinicians. *Journal of Continuing Education in the Health Professions*, 34(4), 224-231.
- Hu, D. (2012). Occupational therapists' involvement views, and training needs of evidence-based practice: A rural perspective. *International Journal of Therapy and Rehabilitation*, 19(11), 618-628.
- Joosten, A. V. (2015) Contemporary occupational therapy: Our occupational therapy models are essential to occupation centred practice. *Australian Occupational Therapy Journal*, 62, 219-222. doi: 10.1111/1440-1630.12186
- Nichols, A. (2017). Changes in knowledge, skills, and confidence in fieldwork educators after an evidence-based practice short course. *The Open Journal of Occupational Therapy*, 5(1), Article 13. doi:10.15453/2168-6408.1204
- Salbach, N. M., & Jaglal, S. B. (2011). Creation and validation of the Evidence-Based Practice Confidence Scale for health care professionals. *Journal of Evaluation in Clinical Practice*, 17, 794-800. <http://dx.doi.org/10.1111/j.1365-2753.2010.01478.x>
- Salls, J., Dolhi, C., Silverman, L., & Hansen, M. (2009). The use of evidence-based practice by occupational therapists. *Occupational Therapy in Health Care*, 23(2), 134-145. doi:10.1080/07380570902773305

- Stoffel, V. G. (2016). Coming home to family: Now is the time! *The American Journal of Occupational Therapy*, 70(6), 7006120010. doi:10.5014/ajot.2016.706003
- Stronge, M., & Cahill, M. (2012). Self-reported knowledge, attitudes, and behaviour towards evidence-based practice of occupational therapy students in Ireland. *Occupational Therapy International*, 19, 7-16.
- Stube, J. E., & Jedlicka, J. S. (2007). The acquisition and integration of evidence-based practice concepts by occupational therapy students. *American Journal of Occupational Therapy*, 61, 53-61.
- Thomas, A., Saroyan, A., & Snider, L. M. (2012). Evidence-based practice behaviours: A comparison amongst occupational therapy students and clinicians. *Canadian Journal of Occupational Therapy*, 79, 96-107. doi:10.2182/cjot.2012.79.2.5

Appendix A

Appendix 1. The evidence-based practice confidence (EPIC) scale**Instructions**

For each of the following activities, please indicate how confident you are in your current level of ability by choosing the corresponding number on the following rating scale:

☐ 0% ☐ 10 ☐ 20 ☐ 30 ☐ 40 ☐ 50 ☐ 60 ☐ 70 ☐ 80 ☐ 90 ☐ 100%
 No Confidence Completely Confident

How confident are you in your ability to:

1. ... identify a gap in your knowledge related to a patient or client situation (e.g. history, assessment, treatment)?	☐ 0%	☐ 10	☐ 20	☐ 30	☐ 40	☐ 50	☐ 60	☐ 70	☐ 80	☐ 90	☐ 100%
2. ... formulate a question to guide a literature search based on a gap in your knowledge?	☐ 0%	☐ 10	☐ 20	☐ 30	☐ 40	☐ 50	☐ 60	☐ 70	☐ 80	☐ 90	☐ 100%
3. ... effectively conduct an online literature search to address the question?	☐ 0%	☐ 10	☐ 20	☐ 30	☐ 40	☐ 50	☐ 60	☐ 70	☐ 80	☐ 90	☐ 100%
4. ... critically appraise the strengths and weaknesses of study methods (e.g. appropriateness of study design, recruitment, data collection and analysis)?	☐ 0%	☐ 10	☐ 20	☐ 30	☐ 40	☐ 50	☐ 60	☐ 70	☐ 80	☐ 90	☐ 100%
5. ... critically appraise the measurement properties (e.g. reliability and validity, sensitivity and specificity) of standardized tests or assessment tools you are considering using in your practice?	☐ 0%	☐ 10	☐ 20	☐ 30	☐ 40	☐ 50	☐ 60	☐ 70	☐ 80	☐ 90	☐ 100%
6. ... interpret study results obtained using statistical tests such as t-tests or chi-square tests?	☐ 0%	☐ 10	☐ 20	☐ 30	☐ 40	☐ 50	☐ 60	☐ 70	☐ 80	☐ 90	☐ 100%
7. ... interpret study results obtained using statistical procedures such as linear or logistic regression?	☐ 0%	☐ 10	☐ 20	☐ 30	☐ 40	☐ 50	☐ 60	☐ 70	☐ 80	☐ 90	☐ 100%
8. ... determine if evidence from the research literature applies to your patient's or client's situation?	☐ 0%	☐ 10	☐ 20	☐ 30	☐ 40	☐ 50	☐ 60	☐ 70	☐ 80	☐ 90	☐ 100%
9. ... ask your patient or client about his/her needs, values and treatment preferences?	☐ 0%	☐ 10	☐ 20	☐ 30	☐ 40	☐ 50	☐ 60	☐ 70	☐ 80	☐ 90	☐ 100%
10. ... decide on an appropriate course of action based on integrating the research evidence, clinical judgment and patient or client preferences?	☐ 0%	☐ 10	☐ 20	☐ 30	☐ 40	☐ 50	☐ 60	☐ 70	☐ 80	☐ 90	☐ 100%
11. ... continually evaluate the effect of your course of action on your patient's or client's outcomes?	☐ 0%	☐ 10	☐ 20	☐ 30	☐ 40	☐ 50	☐ 60	☐ 70	☐ 80	☐ 90	☐ 100%

Appendix B

Table 1.

Demographic Data of OT Practitioners and OT Students

Characteristic	Practitioner: <i>n</i> = 21 (25.30%)	Student: <i>n</i> = 62 (74.70%)
Gender		
Male	0 (0.00)	2 (3.82)
Female	21 (100)	59 (96.72)
Age		
	20-29= 7 (33.33)	20-23= 45 (73.77)
	30-39= 6 (28.57)	24-27= 11 (18.03)
	40-49= 4 (19.05)	28-30= 2 (3.28)
	50-59= 2 (9.52)	31-34= 0 (0.00)
	60-69= 2 (9.52)	>35= 3 (4.92)
	>70= 0 (0.00)	
Highest Degree Completed		
	Bachelor's Degree= 0 (0.00)	Bachelor's Degree in Progress= 11 (18.03)
	Master's Degree= 19 (90.48)	Bachelor's Degree= 49 (89.03)
	Entry-level Doctorate= 0 (0.00)	Master's Degree= 1 (1.64)
	Post-professional Doctorate= 2 (9.52)	Doctorate= 0 (0.00)
Years in Practice		
	0-5= 7 (33.33)	N/A
	5-10= 6 (28.57)	
	11-20= 2 (9.52)	
	21-30= 3 (14.29)	
	>30= 3 (14.29)	
Cohort		
	N/A	MOT 2016= 13 (21.31)
		MOT 2018= 2 (3.28)
		MOT 2019= 0 (0.00)
		OTD 2018= 26 (42.62)
		OTD 2019= 20 (32.79)

		None= 20 (32.79)
Fieldwork completed		
	N/A	Level I= 28 (45.90)
		Level II (first 12 week)= 13 (21.31)
		None= 20 (32.79)
Hours Practiced Weekly		
	0-9= 2 (9.52)	N/A
	10-19= 1 (4.76)	
	20-29= 3 (14.29)	
	30-39= 3 (14.29)	
	40-49= 12 (57.14)	

Note: Bachelor's in progress students have less exposure to EBP training and instruction, as they are in their first year of the OT program. Year of cohort reflects exposure to FW experience.

Appendix C

Table 2.

Statistical significance of OT Practitioners (Pr) vs. OT Students (S) Perceived Knowledge, Attitudes, and Utilization of EBP.

Survey Question	Pr. Average	S. Average	p-Value
Know components of a Pico question	3.14	3.644	.18
Appraise strength of research articles	4.05	3.98	.79
Adequate literature searching skills	3.95	4.37	.11
Interpret findings of research articles	3.90	4.12	.35
Identify clinical relevance to findings	4.19	4.08	.66
Feel qualified to implement EBP clinically	4.25	3.10	<0.001
Feels EBP is essential to clinical practice	4.40	4.53	.46
Feels EBP focuses on meeting client needs	3.35	4.11	.004
Feel clinical experience is more important than EBP	3.00	3.30	.26
Feel there is great benefit for EB research	4.45	4.35	.52
Fell willing to change/try new ideas	4.55	4.58	.83
Education emphasized clinical importance of EBP	4.55	4.38	.52
I am an EB practitioner/student	3.89	4.19	.15
I search for research articles during the work/school day	3.06	4.25	.005
I search for appropriate articles during my free time	3.11	2.52	.070
I use clinical interventions based on EBP	4.22	4.06	<0.001
I attend educational sessions on EBP	2.24	1.85	.043

Note. All Pr. and S. averages are of a possible 5 points; with 5 being equal to Strongly Agree, and 1 being equal to Strongly Disagree.

Appendix D

Table 3.

Statistical Significance in Difference of EPIC Scores between Clinicians and Students

EPIC Scale Questions	<i>p</i> -Value
1. Identify a gap in knowledge related to a patient or client situation	>0.001
2. Formulate a question to guide literature search	.25
3. Effectively conduct an online literature search	.70
4. Critically appraise strengths and weaknesses of a study	.80
5. Critically appraise measurement properties of tests	.46
6. Interpret statistical t-test	.60
7. Interpret statistical procedures	.75
8. Determine if evidence applies	.13
9. Ask about values, needs, and treatment preference	.002
10. Decide on course of action	>0.001
11. Continually evaluate actions	>0.001