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## A Survey of Speech-Language Pathologists' Use and Understanding of Evidence-Based Practice

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A SURVEY OF SPEECH-LANGUAGE PATHOLOGISTS' USE AND  
UNDERSTANDING OF EVIDENCE-BASED PRACTICE

By  
Emma Kate Thome

A thesis submitted to the faculty of The University of Mississippi in partial fulfillment of  
the requirements of the Sally McDonnell Barksdale Honors College.

Oxford, Mississippi  
May 2018

Approved by

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Advisor: Dr. Susan Loveall

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## DEDICATION

I would like to express my deepest gratitude to my advisor, Dr. Loveall, for all of the time, dedication, and patience she devoted to me throughout this process. She has proven to be my greatest mentor and I could not have completed this project without her expertise, guidance, and encouragement. I would also like to thank Dr. Davis Henderson and Dr. Ann Monroe for their feedback and suggestions. I would also like to thank Alyse Lemoine and Annalise Valle for serving as research assistants on this project. They offered tremendous support and creative ideas. Finally, I would like to thank my friends and family who were wise counsels and sympathetic ears. I could not have completed this project without their love and support. Thank you.

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## ABSTRACT

EMMA KATE THOME: SLPs' Use and Understanding of EBP  
(Under the direction of Dr. Susan Loveall)

**Problem Statement:** Prior research on evidence-based practice (EBP) in speech-language pathology is both limited and inconsistent regarding the frequency in which SLPs engage in EBP, their understanding of EBP, and the emphasis that their employers place on EBP.

**Purpose:** The purpose of the present study was to assess SLPs' understanding and use of EBP. In addition, this study investigated the potential barriers SLPs face when attempting to engage in EBP including employer emphasis and opinions toward EBP.

**Methods:** SLPs ( $n=176$ ) from across the United States participated in an online survey designed to assess their understanding and use of EBP. Participants were recruited via each state's speech-language-hearing association's listserv database.

**Results:** Only a small percentage of SLPs were able to accurately identify the complete, three-part definition of EBP or identify strong levels of evidence. Similarly, only a small percentage were able to rank meta-analysis as the strongest level of evidence but the majority of participants were able to rank meta-analysis among the strongest levels of evidence. SLPs self-reported a high level of knowledge for accessing a wide range of resources, but reported the least amount of knowledge for accessing college, university, public, and medical libraries, including online databases of these libraries. ASHA resources were reported as the most frequently accessed source. When asked about the importance of EBP, a majority of respondents reported that EBP is beneficial and important, but difficult to engage in. Although the majority of SLPs reported a lack of

employer-led training in EBP, the majority of SLPs reported that they feel their employer values EBP in the workplace.

**Discussion:** The results of the present study will encourage SLPs to improve their treatment processes to align with the guidelines of EBP. The use of EBP will allow SLPs to improve their clinical practices and provide higher quality treatment to their clients.

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## LIST OF ABBREVIATIONS

ASHA	American Speech-Language-Hearing Association
CCC	Certification of Clinical Competence
EBP	Evidence-Based Practice
SLP	Speech-Language Pathologist
SLP-A	Speech-Language Pathology Assistant

## Chapter I

### INTRODUCTION

Speech-language pathologists (SLP) assess and treat a range of communication related impairments across the lifespan, including in the areas of fluency, speech, spoken and written language, cognition, voice, resonance, feeding and swallowing, and auditory habilitation/rehabilitation (American Speech-Language Hearing Association [ASHA], 2016). To best assess, diagnose, and treat their patients, SLPs are required to engage in Evidence-Based Practice (EBP; American Speech-Language Hearing Association [ASHA], 2005). EBP refers to the task of acquiring current, high-quality research and combining that research with practitioner expertise and client preferences to make informed clinical decisions (ASHA, 2005). However, EBP was not formally established by ASHA until 2005. Unfortunately, there is limited research regarding the use of EBP in the field, including the extent to which SLPs engage in EBP. The purpose of the present study was to examine SLPs' understanding and use of EBP.

#### *Importance of EBP*

The purpose of EBP within the field of Communication Sciences and Disorders is to aid SLPs in providing the best, most informed treatment options to patients (ASHA, 2005). Failure to engage in EBP could result in several negative outcomes for patients, including limiting growth towards long-term goals, waste of time and money, and, in extreme cases, physical or psychological harm. Further, the use of unreliable, invalid, or

outdated sources of information may result in a decrease in the quality of care and treatment received by clients. In addition, evidence is increasingly required before an insurance company will fund a procedure or before a state education agency will approve funding for a particular program (ASHA n.d.-a). A further investigation into SLPs' opinions towards EBP may indicate how important they feel EBP is to their field. The purpose of the present study was to examine SLPs' understanding and use of EBP.

### *Components of EBP*

Evidence-based practice is defined by ASHA as “the integration of research evidence with practitioner expertise and client preferences and values into the process of making clinical decisions” (ASHA, n.d.-b). This definition includes three different components: research, clinician, and client. First, EBP requires that SLPs critically evaluate research evidence for its quality and apply relevant and valid results to individual cases (ASHA, 2005). Being able to read, interpret, and critically evaluate the latest research evidence is important for clinicians to provide the highest quality and most up-to-date forms of treatment.

Second, the clinician must obtain and maintain the knowledge and skills needed to provide high-quality treatment and intervention (ASHA, 2005). The knowledge and skills that an SLP accumulates throughout his/her career is referred to as “clinical expertise”. Clinical expertise may include an SLP's educational background level and knowledge, the policies of their employer, data they have collected about previous clients and treatment, recommendations from their professional colleagues, and access to various evidence-based sources. Clinical expertise can positively impact treatment by allowing

clinicians the knowledge to assess research evidence and apply the evidence in an appropriate and tactful manner.

Lastly, EBP involves the clinician's ability to recognize the needs, abilities, values, preferences, and interests of the patients they serve (ASHA, 2005). Client preferences may refer to certain cultural values and beliefs, client activities, financial resources, level of parent engagement, and client-parent opinions (Gillam & Gillam, 2006). The process of incorporating the needs and beliefs of clients into assessment and therapy is both important and beneficial to SLPs and their clients. Failure to do so may lead to insufficient treatment and a lack of progress towards treatment goals.

Considering client values, in combination with research evidence and clinical expertise, will aid SLPs in making the best treatment decisions for each individual client. EBP has the potential to improve the quality of clinical practices in speech-language pathology and improve the quality of services given to clients with speech and language disorders. (ASHA, 2004).

### *Steps in EBP*

Beyond simply knowing the different components of EBP, it is important to understand how to combine the components to effectively implement EBP. EBP can be achieved by the following steps: 1) frame the clinical question, 2) find the evidence, 3) assess the evidence, and 4) make a clinical decision (ASHA n.d.d-g). Framing the clinical question relies heavily on a clinician's expertise as they must determine the extent to which the evidence for a particular treatment meets the criteria of their client's needs (ASHA n.d.-d). A useful acronym for framing a clinical question is PICO. The "P" represents a patient's characteristics and the speech-related issue for which they are

seeking treatment. The “I” represents the intervention program the clinician is considering using with the client. SLPs should therefore seek relevant research information about the chosen intervention program. The “C” represents a comparison treatment. The purpose of including a comparison treatment is to indicate that the chosen treatment is more effective than an alternative treatment and thus the best option for that individual case. The “O” refers to intervention outcomes. After selecting and implementing a treatment, the SLP should assess the level of success that was achieved by their chosen intervention program (Gillam & Gillam, 2006).

After a clinician has located research evidence relevant to their clinical question, they must assess the validity of the presented results. Not all research demonstrates the same level of evidence. Some forms of research provide strong levels of evidence while other research may be considered weak. To help SLPs with this process, ASHA has provided an example of how to rank order levels of evidence. Table 1 demonstrates ASHA’s example of how to rank the six levels of evidence.

Table 1: Example hierarchy of levels of evidence (ASHA, n.d.-f)

Level	Description
Ia	Well-designed meta-analysis of >1 randomized controlled trial
Ib	Well-designed randomized controlled study
IIa	Well-designed controlled study without randomization
IIb	Well-designed quasi-experimental study
III	Well-designed non-experimental studies, i.e., correlational and case studies
IV	Expert committee report, consensus conference, clinical experience of respected authorities

Meta-analysis and true experimental designs are ranked at the top of the list due to their ability to provide confidence in the results. True experimental designs allow clinicians to be certain that the intervention itself was the cause of the results and not outside factors. Confidence in intervention techniques can be achieved by including participants who are randomly assigned to intervention and control groups (ASHA n.d.-a). Quasi-experimental studies are ranked among the middle of the list due to their lack of random assignment (ASHA, 2004). Clinicians should exercise caution when interpreting results from these types of studies because of their lack of control over extraneous variables (ASHA n.d.-a).

Once the relevant research evidence has been evaluated, the clinician is charged with making the decision. This decision should incorporate the combination of clinical expertise, client's needs, and the available evidence. In addition, the clinician should consider the cost effectiveness of the treatment and rule out any potential for harm (ASHA n.d.-g).

Finally, SLPs should evaluate the outcomes of their clinical decisions (Gillam & Gillam, 2006) by determining the level of success their client achieved. The level of a treatment's success can also be determined by examining if the treatment is applicable to other clients with a similar prognosis, or if a change in the previously mentioned steps could impact the effectiveness of the treatment (Johnson, 2008). In addition, an evaluation should include the opinions of those who interact closely with the client such as parents, teachers, etc. Objectively answering questions about the outcome of treatments can be a beneficial tool when determining clinical outcomes.

### *Pseudoresearch*

In addition to understanding what constitutes evidence-based research, it is also important for SLPs to have knowledge about what does not constitute evidence-based research. Pseudoscience is defined as “a pretended or spurious science; a collection of related beliefs about the world mistakenly regarded as being based on scientific method or having the status that scientific truths now have” (Simpson & Weiner, 1989). SLPs who do not understand EBP may have difficulty distinguishing between therapy techniques based in science versus pseudoscience. Pseudoscience can hold any of the ten characteristics as listed by Finn et al. (2005). First, pseudoscience is untestable. Second, the research remains unchanged even in the face of contradictory evidence. Third, the rationale for the treatment is based only on confirming evidence while ignoring or minimizing disconfirming evidence. Fourth, the treatment is supported only by personal experience or anecdotal accounts. Fifth, the treatment lacks an adequate level of evidence needed to support its claims. Sixth, the treatment lacks evidence that has undergone critical scrutiny. Seventh, the treatment approach lacks the structure of well-established models. Eighth, the treatment is described using non-scientific terms. Ninth, the treatment approach is based on extravagant claims or poorly specified outcomes. Tenth, the treatment can only be explained through vague holistic frameworks. If a research study or treatment model relates to any of these guidelines, it may constitute pseudoscience and requires further scrutiny.

### *Use of EBP by SLPs*

Despite its importance, it is unknown how often SLPs engage in EBP. For example, Cheung et al. (2013) found that 76% of the SLPs they surveyed reported to



using research evidence on a regular basis and that 46% reported to accessing EBP supported resources more than once a week. In contrast, a study conducted by Vallino-Napoli and Reilly (2004) reported that 49% of SLPs surveyed reported that they accessed non-scholarly Internet sources daily for patient-related information. Likewise, Zipoli and Kennedy's (2005) study reported that SLPs only pose 0-2 EBP questions per year and only read 0-4 ASHA articles per year. These discrepant findings could be a result of social desirability answering in the case of Cheung et al. (2013) or a misunderstanding of what constitutes EBP. It is unclear whether or not an SLP who reports engaging in EBP is actually following EBP guidelines.

There are several possible reasons why SLPs may be less likely to engage in EBP on a regular basis. First, they may have limited training in EBP and therefore not have a full understanding of the different components of EBP and how to incorporate them to make informed, clinical decisions. Vallino-Napoli and Reilly (2004) asked SLPs to select the complete definition of EBP from a list of possible answers. While 94% of surveyed clinicians had heard of EBP, only 25% were able to accurately select all parts of the three-part definition. The definition consisted of applying results from clinically relevant studies, applying clinical skills/experience, and integrating patient views into clinical decisions. Interestingly, the majority of SLPs have received training in EBP (Cheung et al., 2013; Hoffman et al., 2013). Research regarding SLPs' knowledge of EBP will help identify if SLPs are receiving adequate training on EBP.

Second, SLPs may not have easy access to EBP or training to utilize sources. There are discrepancies in the literature regarding what types of sources are most commonly used by SLPs when they have a professional information need and very little

research on why SLPs choose the sources they access. Vallino-Napoli and Reilly (2004) reported that developmental lectures are the most frequently accessed source, while other researchers have reported personal contacts are the most frequently used source of information by SLPs (Nail-Chiwetalu & Ratner, 2007; Zipoli & Kennedy, 2005). In addition, the Internet is cited as both a frequently (Nail-Chiwetalu & Ratner, 2007) and infrequently used source (Vallino-Napoli & Reilly, 2004; Zipoli & Kennedy, 2005). Journal articles were reported among the middle (Vallino-Napoli & Reilly, 2004) and bottom of the lists of frequently used sources (Zipoli & Kennedy, 2005). While the results are somewhat mixed, there is also a lack of research on why SLPs choose the sources they access. A lack of knowledge about how to access journal articles may explain why they are less commonly referenced. Further investigation into SLPs' most frequently used sources, as well as their confidence level when accessing those sources, will help understand if and how often SLPs are truly engaging in EBP.

Overall, there may be a lack of interest in research among SLPs. Meline and Paradiso (2003) point out the decline in doctorate recipients from 1991 to 2001. A decline in doctorate recipients could indicate a decline in research interest and thus a decline in EBP use. In addition, nearly half of doctoral recipients are choosing to work in non-faculty positions. The movement away from universities and towards clinical or administrative positions further highlights the decrease in research interest.

Meline and Paradiso (2005) also cite the difficulty faced when translating research results as a possible barrier to EBP. Their research explains the difficulty SLPs may face when attempting to decode statistics such as means and standard deviations. Similarly, Spek et al. (2013) cite inadequate graduate curriculum as a reason SLPs are

less likely to engage in EBP. Researchers found that while graduate students understood the importance of EBP, their self-efficacy for engaging in EBP was low. This lack of confidence may impact students' willingness to use EBP and may carry over into their professional years. A further investigation into the satisfaction of SLPs' graduate curriculum coupled with an investigation into the barriers of EBP may help explain why SLPs are less likely to engage in EBP.

Another possible reason SLPs may not engage in EBP is because their employers do not place a large emphasis on, nor provide resources for, engaging in EBP. A common theme surrounding EBP is that SLPs do not have enough time/are not allocated any time during the workday to read research pertaining to their caseloads (Hoffman et al., 2013; Nail-Chiwetalu & Ratner, 2007; Vallino-Napoli & Reilly, 2004; Zipoli & Kennedy, 2005). Meline and Paradiso (2005) report that while SLPs recognize the importance of EBP, they are not satisfied with the time allotted to read or evaluate research. In a study conducted by Cheung et al. (2013), 34% of SLPs surveyed claimed that their workplace lacks the funds needed to engage in EBP. Likewise, Zipoli and Kennedy's (2005) study reported that 63% of SLPs surveyed had attended a non-employer sponsored continuing education workshop in the past six months. In addition, Finch et al. (2015) argued that a large barrier of EBP is a fear of conducting research. SLPs credited the support or lack of support they received from their workplace as one variable to overcoming their fear. Likewise, SLPs are asked to make evidence-based decisions with little outside support (Gillam & Gillam, 2006). Lack of help coupled with a lack of employer support could explain why SLPs choose not to engage in EBP, yet more research is needed to understand if this is truly a barrier to SLPs engaging in EBP.

Overall, it is necessary for the field of Communication Sciences and Disorders to understand how much SLPs understand about EBP, including how knowledgeable they are about EBP and how to access quality sources, how often they engage in EBP, and how much emphasis their employers place on EBP. A deeper understanding of SLPs' overall experience with EBP will be beneficial in understanding how often and to what extent SLPs are engaging in EBP and therefore, the quality of therapy they are providing to clients.

### *Current Study*

Previous research on the use EBP by SLPs has been limited and inconsistent. Further, limited research has examined underlying causes for why SLPs may not fully engage in EBP. For example, while previous research has examined the types of sources most frequently accessed by SLPs, little research has examined their knowledge of how to obtain evidence-based sources. SLPs may be willing to engage in EBP but lack the background knowledge required to access peer-reviewed research articles. Discrepancies regarding the frequency in which SLPs engage in EBP may be the result of a misunderstanding about what does and does not constitute EBP. A limited or inaccurate understanding of EBP may lead SLPs to report that they are engaging in EBP without a full understanding of the different facets of EBP. Finally, examining the emphasis employers place on EBP could be beneficial to understanding why certain SLPs are less likely to engage in EBP than others.

To further examine the use of EBP by SLPs, the following aims and research questions were posed:

Aim 1: Measure SLPs' knowledge of EBP.

1. How knowledgeable are SLPs regarding the definition of EBP and the different levels of evidence, as provided by ASHA?

*We hypothesize that SLPs will be unable to determine the complete definition of EBP nor accurately rank high vs. low levels of evidence.*

Aim 2: Assess SLPs' perceived knowledge and confidence to accessing evidence-based sources.

1. How knowledgeable and confident are SLPs regarding how to access college, university, or medical libraries, ASHA resources, and continuing education workshops?

*We hypothesize that SLPs lack sufficient knowledge about how to access the majority of the seven most common types of sources.*

2. What is the most frequently accessed source used by SLPs to answer questions for professional information needs?

*We hypothesize SLPs most frequently access the Internet to answer questions for professional information needs.*

Aim 3: Determine perceived barriers to engaging in EBP, including employer emphasis and SLPs' opinions towards EBP.

1. How much emphasis do SLPs feel their employers place on EBP?

*We hypothesize that employers place minimal emphasis on EBP.*

2. What are SLPs opinions towards EBP in regards to the benefits, importance, and difficulty level of engaging in EBP?

*We hypothesize that SLPs will report that EBP is time consuming but that it is a useful strategy when seeking out treatment options.*

## Chapter II

### METHODS

#### *Design*

This research study was a nonexperimental, descriptive survey. The survey was created via Qualtrics and contained questions relevant to six categories (see under “Measures”) addressing the previously mentioned research questions.

#### *Participants*

Two-hundred and eighty-five SLPs participated in the survey. Participants who responded to at least one question related to the research questions (i.e., not just answering demographic questions) and who reported holding their Certification of Clinical Competence (CCCs) were included in data analysis. All others were excluded from data analysis. This inclusion criteria removed 109 respondents from the sample. The final sample size was 176 respondents. Table 2 represents participant demographics. Table 3 represents education and employment demographics.

Table 2: Participant Demographics

<b>Characteristic</b>	<b><i>n</i></b>	<b>Percentage</b>
<b>Sex</b>		
Male	8	5%
Female	168	95%
<b>Race</b>		
American Indian or Alaska Native	0	0%
Asian	2	1%
Black or African American	2	1%
Native Hawaiian or Other Pacific Islander	0	0%
White	168	95%
Other	2	1%
<b>Ethnicity</b>		
Hispanic or Latino	2	1%
Non-Hispanic or Latino	171	97%

Table 3: Education and Employment Demographics

<b>Characteristic</b>	<b><i>n</i></b>	<b>Percentage</b>
<b>Highest Degree Held</b>		
M.A. or M.Sc.	156	89%
Ed.D. or Ph.D.	20	11%
<b>Region of Highest Degree Earned</b>		
Northeast	21	12%
Midwest	79	45%
South	40	23%
West	36	20%
<b>Region of Licensure Held</b>		
Northeast	19	11%
Midwest	81	46%
South	28	16%
West	47	27%
<b>Employment Location</b>		
Rural	25	14%
Small Town	42	24%
Suburban	56	32%
City	50	28%
<b>Employment Setting</b>		
Early Intervention Program	23	13%
Preschool	58	33%
Elementary School	97	55%
Middle School/Junior High	46	26%
High School	27	15%
College/University	25	14%
Private Practice	20	11%
Hospital/Medical Clinic/Outpatient Facility	12	7%
Nursing Facility	4	2%
Other	20	11%
<b>Years in Current Position</b>		
1-5	61	35%
6-10	23	13%
11-15	26	15%
16-20	14	8%
21-25	28	16%
25+	3	2%

The sample largely consisted of white females who held a Master's degree. While all regions of the U.S. were represented, the Midwestern region was most heavily represented with the state of Illinois producing the most participants (n=50). SLPs from 40 states completed the survey. The largest proportion of participants reported working in suburban and city settings. A large amount of SLPs were relatively new in their current positions, with the average time spent in their current position ranging from 1-5 years. When asked to report their employment setting, participants were instructed to select all applicable answer choices. The most frequently selected employment setting was elementary schools.

### *Procedures*

Participants were recruited through each state's speech-language-hearing association. The survey was sent to each state in the U.S. and requested to be distributed via each state's listserv database. A state's listserv database contains the contact information for all the SLPs practicing in that state. States were contacted in seven separate waves. Each wave consisted of ten states. Two additional waves were added to re-contact states that had not participated in their assigned wave.

The final version of the survey was sent to each state's association in the Fall of 2017. States who agreed to participate were then asked to distribute the survey link to all SLPs practicing in that state. Organizational guidelines prevented some states from distributing the survey through their database and instead posted the survey link on their website or on social media platforms. Recruitment varied by state, with some sending the link via listservs and other via social media and/or by posting on their website. A total of 25 states participated.



For each wave, participants were given two weeks to complete the survey to be entered in a drawing for a \$25 Amazon gift card. After completing the survey, participants could elect to enter the drawing but were not required to enter. A reminder was sent to participants by each state organization after the first week. Participants that completed the survey after the two-week period ended were included in the sample but missed the deadline for the gift card drawing. For each wave, once the two-week distribution period ended, a participant was randomly selected to receive a \$25 Amazon gift card. One gift card was awarded to one participant per wave (in each of the five, ten state groups), and two gift cards were awarded to the follow-up groups created to increase participation.

Once a participant began the survey, they had unlimited time to complete it. The survey consisted of 37 questions and took 10-20 minutes to complete. If participants were unable to complete the survey in one sitting, they had the ability to reopen the survey at their last completed question.

### *Measures*

*The survey.* The survey was anonymous and available online via Qualtrics. The questions are listed in full under Appendix A. Several survey questions were modeled off a previous study conducted by Nail-Chiwetalu and Ratner (2005) to determine the information-seeking abilities and needs of practicing SLPs.

The survey was divided into five sections. The first section asked questions about SLPs' knowledge of EBP and the six different levels of evidence. These questions required participants to select the complete definition of EBP and rank order the six different levels of evidence. Section two contained questions relevant to the frequency in

which SLPs engage in EBP. These questions were formatted as a Likert-type scale with “frequently” and “never” serving as anchors. Section three focused on SLPs’ knowledge and confidence about how to access different frequently used sources. These questions were also formatted as a Likert-type scale with “very knowledgeable/confident” and “very uncertain/doubtful” serving as anchors. Section four asked SLPs which source(s) they most frequently access. These questions allowed SLPs to pick their three most commonly used sources as well as their least commonly used source. Section five asked SLPs to report their perceived emphasis that their employers place on EBP. These questions were formatted as Likert-type and prompted SLPs to state the degree in which they agreed with various statements.

Survey responses were exported from Qualtrics to a Microsoft Excel file.

Responses were then coded and scored numerically.

#### *Reliability and Validity*

Prior to distribution, the survey was reviewed by several members of the Communication Sciences and Disorders department at the University of Mississippi. The final survey is a result of the corrections and suggestions made by the faculty members. Their expertise on the topic ensured the face and content validity of the survey.

Two possible threats to validity were social desirability responding and fence-sitting. To control for social desirability responding, the survey was completed anonymously and each question had a prefer not to answer option. This was done to ease participant fear that each question had a right or wrong answer. To decrease fence sitting, the tendency to always select the neutral option, neutral options were removed from most

questions. For example, for all Likert-type questions, there was only an even numbered set of response options, such as 1-4 instead of 1-5.

This survey was comparable to Nail-Chiwetalu and Ratner's (2007) survey conducted on a similar topic. The comparability between the two surveys to measure similar variables ensures their reliability.

## Chapter III

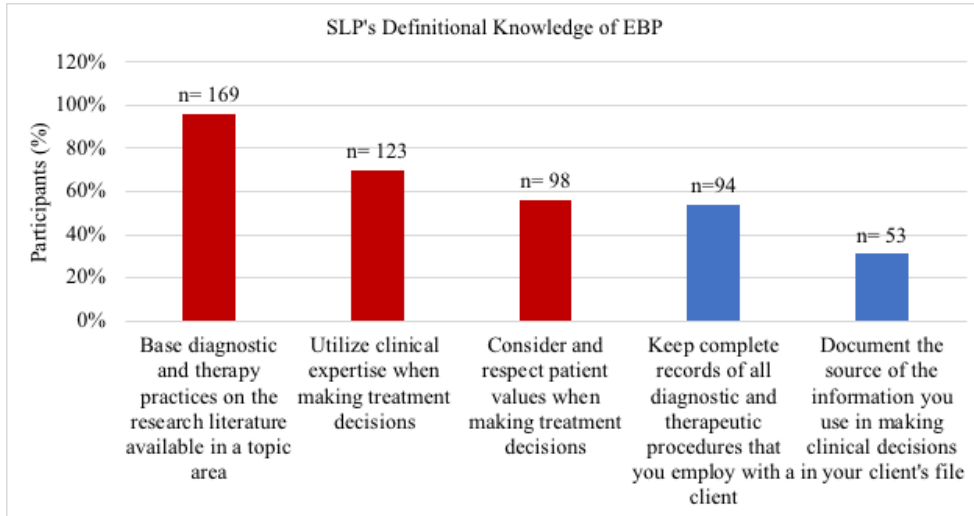
### RESULTS

*Aim 1: Measure SLPs' knowledge of EBP.*

How knowledgeable are SLPs regarding the definition of EBP and the different levels of evidence, as provided by ASHA?

When asked to select the complete, three-part definition of EBP, respondents provided 176 viable responses. Overall, participants endorsed each of the three correct components more often than the two distractors. However, only 13% (23/176) of respondents were able to accurately select the entire three-part definition of EBP. The most correctly selected component was the portion of the definition dealing with research, while the most missed component was the portion of the definition dealing with considering and respecting client values. Ten percent of SLPs (18/176) selected two accurate components of the complete definition and no incorrect components, and 17% (30/176) of participants selected one correct component and no incorrect components. The most common answer, though, at 22% (39/176), was the adoption of all five possible response options, including the two distractors. The complete list of potential answer options can be found under Appendix A. Figure 1 represents the percentage of participants that selected each of the available answer choices.

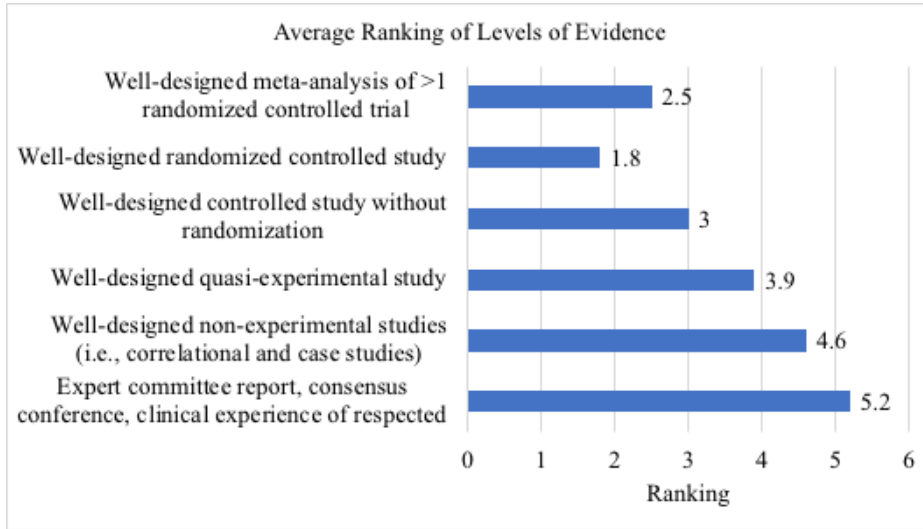
Figure 1: SLPs' knowledge of the definition of EBP



In ranking the six levels of evidence, 171 viable responses were reported.

Participants were given a randomized list of the six sources and asked to rank them in order of level of evidence, with 1 indicating that it provides the highest level of evidence and 6 the lowest level of evidence. On average, well-designed randomized control studies received the lowest score (1.8), indicating that this was rated as the highest level of evidence by respondents; this was followed by meta-analysis (2.5). Thirty-five percent (59/171) of respondents ranked meta-analysis as the strongest level of evidence, and 74% (126/171) were able to identify meta-analysis among the top half of levels of evidence. Similarly, 36% (62/171) were able to rank randomized controlled studies as the second level of evidence while 92% (157/171) were able to rank randomized controlled studies among the top half of levels of evidence. In contrast, 61% (105/171) could rank expert committee report, consensus conference, and clinical experience of those respected as the weakest level of evidence, and 80% (152/171) could rank that level of evidence among the bottom half. Figure 2 represents the average ranking of each level of evidence.

Figure 2: Average ranking of each level of evidence



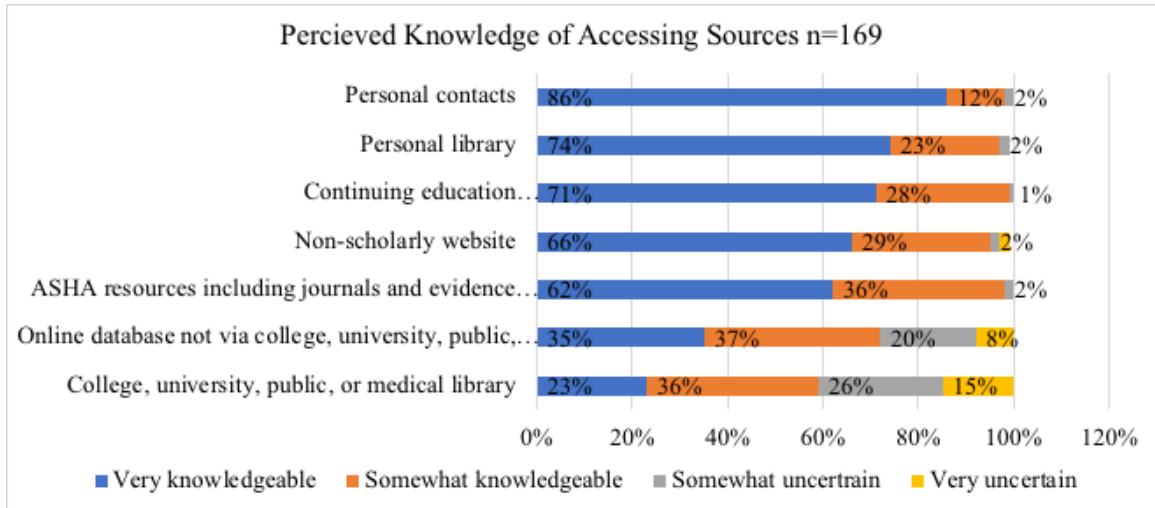
*Aim 2: Assess SLPs' perceived knowledge and confidence to accessing sources.*

How knowledgeable and confident are SLPs regarding accessing different sources of information?

The next category of questions asked SLPs to report their knowledge of how to access various sources of information relevant to clinical cases. These questions produced 169 viable responses. Participants reported being “very knowledgeable” about utilizing personal contacts (86%, 146/169), personal libraries (74%, 125/169), continuing education workshops (71%, 120/169), non-scholarly websites (66%, 112/169), and ASHA resources (62%, 105/169). However, there was a greater spread of scores regarding knowledge and confidence when accessing databases. When accessing college university, public, or medial libraries, 23% (39/169) reported feeling “very knowledge” about accessing these sources, 36% (60/169) reported feeling “somewhat knowledgeable”, 26% (44/169) reported feeling “somewhat uncertain”, and 15% (26/169) reported feeling “very uncertain”. When accessing online databases not via a college, university, public, or medical library, 35% (59/169) reported feeling “very

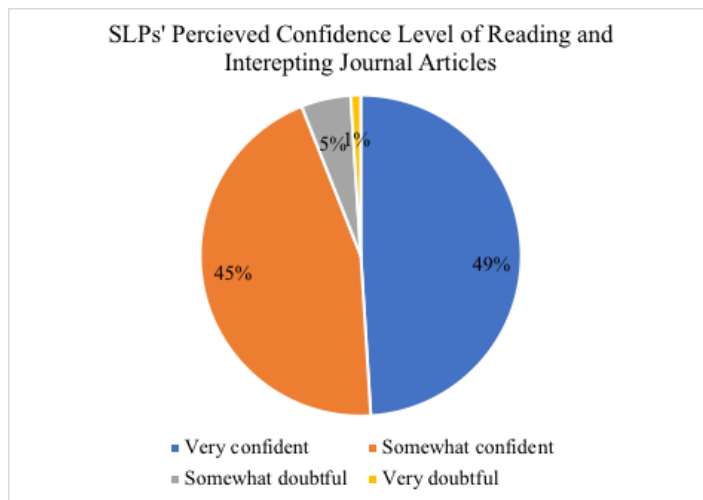
knowledgeable” about accessing these types of sources. Thirty-seven percent (63/169) reported feeling “somewhat knowledgeable”, 20% (34/169) reported feeling “somewhat uncertain”, and 8% (13/169) reported feeling “very uncertain”. Figure 3 represents SLPs’ perceived knowledge about accessing different sources.

Figure 3: Perceived knowledge level of SLPs’ ability to access sources



In addition, participants were asked to report their confidence level in their ability to read and interpret research studies from professional journals. This question also resulted in 169 viable responses. The largest percentage of participants reported their confidence level as “very confident” (49%, 82/169) in their ability to read and interpret research studies from professional journals. Forty-five percent (76/169) reported themselves as being “somewhat confident”, 5% (9/169) reported themselves as “somewhat doubtful”, and only 1% (2/169) reported themselves as “very doubtful”. Figure 4 represents SLPs’ confidence level in their ability to read and interpret research studies from professional journals.

Figure 4: SLPs' self-reported confidence in reading and interpreting studies from professional journals



What is the most frequently accessed source used by SLPs to answer questions for professional information needs?

When asked to rank the sources they are most likely to use when seeking a professional information need, SLPs produced between 167 and 173 viable responses. Cited among “most likely” were ASHA resources including journals and evidence maps (52%, 90/173) and personal contacts (colleagues, supervisors, former or current classmates, etc.; 21%, 37/173). These were followed by continuing education workshops/seminars/courses/conferences which were labeled most frequently as “likely” (23%, 40/173) and personal libraries (texts, journals, newsletters, etc., including online databases of these sources) were most frequently labeled as “neither likely or unlikely” (25%, 42/171). Online databases not via college, university, public, or medical library (e.g. Google Scholar, etc.) were most frequently labeled as “unlikely” (29%, 49/169). College, university, public, or medical library (including online databases of these sources; 35%, 59/167) and non-scholarly websites (e.g. websites found via Google, Yahoo, or Bing search engine; 43%, 73/170) were labeled most frequently as “least



likely”. Table 4 represents the most likely and unlikely sources reportedly used for a professional information need.

Table 4: Most accessed sources used for a professional information need

	Very likely	Likely	Somewhat likely	Neither likely nor unlikely	Somewhat unlikely	Unlikely	Very unlikely
	<i>n, %</i>						
College, university, public, or medical library	14, 8%	17, 10%	16, 10%	14, 8%	25, 15%	21, 13%	<b>59, 35%</b>
Online databases, not via college, university, public, or medical library	11, 7%	22, 13%	22, 13%	16, 9%	39, 23%	<b>49, 29%</b>	10, 6%
Non-scholarly website	3, 2%	7, 4%	11, 6%	16, 9%	23, 14%	37, 22%	<b>73, 43%</b>
Personal library	7, 4%	25, 15%	29, 17%	<b>42, 25%</b>	37, 22%	20, 12%	11, 6%
ASHA resources including journals and evidence maps	<b>90, 52%</b>	29, 17%	28, 16%	16, 9%	6, 3%	4, 2%	0, 0%
Personal contacts	<b>37, 21%</b>	32, 18%	35, 20%	28, 16%	12, 7%	24, 14%	5, 3%
Continuing education workshops/seminars/courses/conferences	18, 10%	<b>40, 23%</b>	34, 20%	39, 23%	24, 14%	13, 8%	4, 2%

*Note:* The most popular answer choices for each category are indicated in bold.

Similarly, participants were asked to report the level of helpfulness of each source. This question resulted in between 160 and 165 viable responses. Level of helpfulness was ranked identically (i.e. ranked in the same order) to how likely an SLP was to access that source. Cited among “most helpful” were ASHA resources including journals and evidence maps (46% 76/165) and personal contacts (colleagues, supervisors, former or current classmates, etc.; 27%, 45/164). Continuing education workshops/seminars/courses/conferences were labeled as “somewhat helpful” (26%, 42/164). Personal libraries (texts, journals, newsletters, etc. including online databases of these sources) were ranked as “neither helpful nor unhelpful” (30%, 49/163). Online databases not via college, university, public, or medical library (e.g. Google Scholar, etc.)

were labeled most frequently as “somewhat unhelpful” (39%, 63/161). College, university, public, or medical library (including online databases of these sources) (36%, 58/160) and non-scholarly websites (e.g. websites found via Google, Yahoo, or Bing search engine; 35%, 57/162) were labeled most frequently as “unhelpful”. None of the sources were labeled “somewhat helpful”. Table 5 represents an SLP’s reported level of helpfulness for each source.

Table 5: Sources’ Perceived Level of Helpfulness

	Very helpful	Helpful	Somewhat helpful	Neither helpful nor unhelpful	Somewhat unhelpful	Unhelpful	Very unhelpful
	<i>n, %</i>						
College, university, public, or medical library	9, 6%	12, 8%	18, 11%	16, 10%	21, 13%	26, 16%	<b>58, 36%</b>
Online databases, not via college, university, public, or medical library	8, 5%	14, 9%	19, 12%	19, 12%	28, 17%	<b>63, 39%</b>	10, 6%
Non-scholarly website	3, 2%	10, 6%	10, 6%	29, 18%	38, 23%	25, 15%	<b>57, 35%</b>
Personal library	6, 4%	21, 13%	27, 17%	<b>49, 30%</b>	29, 18%	16, 10%	15, 9%
ASHA resources including journals and evidence maps	<b>76, 46%</b>	25, 16%	35, 21%	11, 7%	13, 8%	4, 2%	1, >1%
Personal contacts	<b>45, 27%</b>	37, 23%	31, 19%	23, 14%	12, 7%	11, 7%	5, 3%
Continuing education workshops/seminars/courses/conferences	26, 16%	<b>42, 26%</b>	33, 20%	28, 17%	15, 9%	13, 8%	7, 4%

*Note:* The most popular answer choices for each category are indicated in bold.

*Aim 3: Determine perceived barriers to engaging in EBP, including employer emphasis and SLPs’ opinions toward EBP.*

What are the perceived barriers to engaging in EBP?

SLPs were asked to rank their perceived barriers to engaging in EBP. Six common barriers were listed as answer options, and participants were asked to rank each potential barrier, with one indicating the most common barrier and six indicating the least

common barrier. This question resulted in between 161 and 165 viable responses. The most common barrier (i.e., the option most often ranked as 1) was “lacking time to search and read the literature” (51%, 85/165), followed by “gaining access to the information (costs of obtaining full-text articles or database access”; 27%, 44/163), and “lacking relevant available information to my typical cases” (24%, 38/161). The fourth most common barrier was “knowing where to find the appropriate information” (27%, 44/163). The fifth most common barrier was “knowing how to employ effective search techniques within databases” (26%, 42/161). Finally, participants reported the least common barrier to be “interpreting the available information on a topic” (33%, 53/162). Table 6 represents the ranking of the most common and least common barriers to engaging EBP.

Table 6: SLPs’ self-reported perceived barriers to engaging in EBP

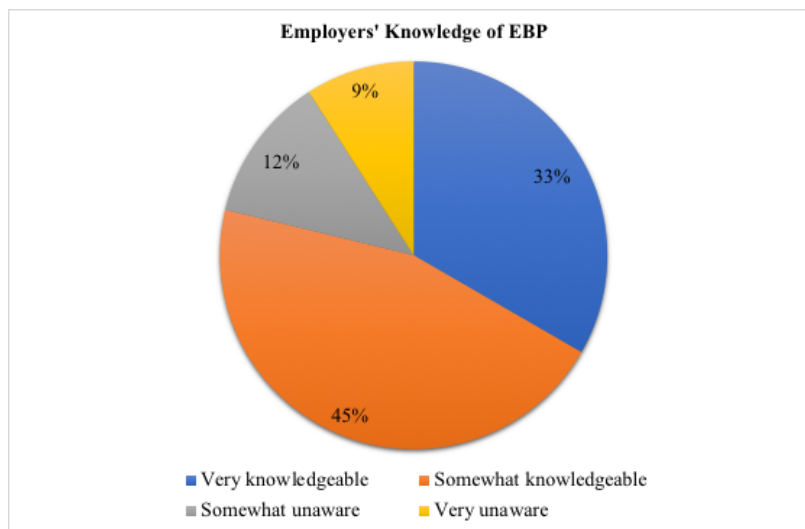
	Lacking time to search and read the literature	Gaining access to the information (costs of obtaining full-text articles or database access)	Lacking relevant available information to my typical cases	Knowing where to find the appropriate information	Knowing how to employ effective search techniques within databases	Interpreting the available information on a topic
	<i>n, %</i>					
1: most common	<b>85, 51%</b>	31, 19%	11, 7%	22, 13%	10, 6%	9, 6%
2	32, 19%	<b>44, 27%</b>	<b>38, 24%</b>	14, 9%	23, 14%	13, 8%
3	19, 12%	31, 19%	33, 20%	30, 18%	26, 16%	24, 15%
4	12, 7%	25, 15%	20, 12%	<b>44, 27%</b>	30, 18%	24, 15%
5	7, 4%	16, 10%	31, 19%	23, 14%	<b>42, 26%</b>	37, 23%
6: least common	10, 6%	21, 13%	28, 17%	29, 18%	28, 17%	<b>53, 33%</b>

*Note:* The most popular answer choices for each category are indicated in bold.

How much emphasis do SLPs feel their employers place on EBP?

When asked to report their employer’s knowledge of EBP, participants produced 169 viable responses. A majority of participants felt their employer was knowledgeable about EBP. Thirty-three percent of participants (56/169) reported their employer as being “very knowledgeable” about EBP, and 45% (76/169) reported their employer as being “somewhat knowledgeable”. Twelve percent (20/169) reported their employer as being “somewhat unaware”, and only 9% (16/169) reported their employer as being “very unaware”. Figure 5 represents employers’ knowledge of EBP as reported by SLPs.

Figure 5: Employers’ knowledge of EBP

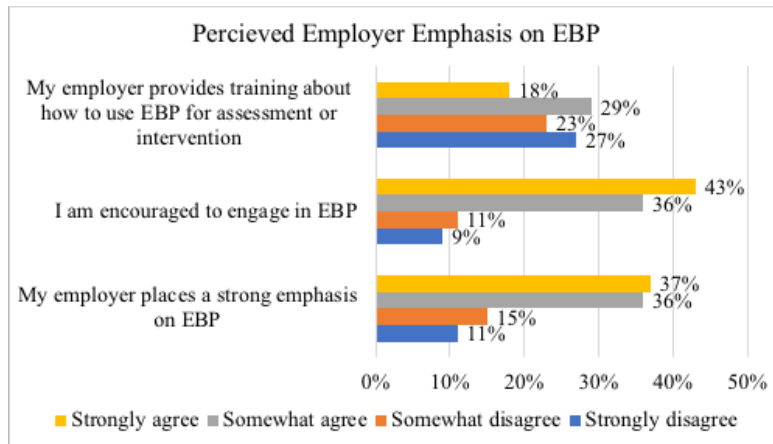


SLPs were then asked to report their level of agreement with several statements regarding the emphasis their employer places on EBP. First, SLPs were asked to report their level of agreement with the statement “my employer places a strong emphasis on EBP”. This question also yielded 169 responses. The most common response was “strongly agree” (37%, 62/169). The least common response was “strongly disagree” (11%, 19/169).

Next, SLPs were asked to rank their level of agreement with the statement “I am encouraged to engage in EBP”. The most common response again was “strongly agree” (43%, 72/169), and the least common response was “strongly disagree” (9%, 16/169).

Finally, SLPs were asked to rank their level of agreement with the statement “my employer provides training about how to use EBP for assessment or intervention”. Participants were more variable in their responses to this question. The most common response was “somewhat agree” (29%, 49/169). However, almost an equal number of participants reported that they strongly disagreed with the statement (27%, 46/169), and the least common response was “strongly agree” (18%, 30/169). Figure 6 represents SLPs’ perceived emphasis that their employers place on EBP.

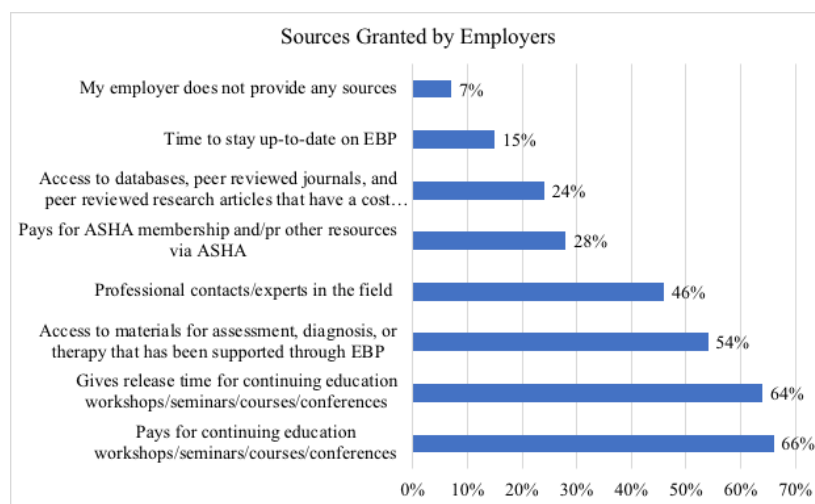
Figure 6: Employer emphasis on EBP



SLPs were also asked to report the types of sources their current employer provides access to that allow them to engage in EBP. Participants were asked to select all relevant sources. Participants produced 168 viable responses. The majority of SLPs reported that their employers pay for (66% ,111/168) and give release time for (64%, 108/168) continuing education workshops/seminars/courses and

conferences. Similarly, the majority of SLPs (54%, 91/168) reported that their employer provides access to materials for assessment, diagnosis, or therapy that has been supported through EBP. In contrast, less than one quarter of participants reported that their employer provides access to databases, peer reviewed journals, and peer reviewed research articles that have a cost to access (24%, 41/168) or time to stay up-to-date on EBP (15%, 25/168). Figure 7 represents the various sources provided to SLPs by their employers.

Figure 7: Sources provided to SLPs by their employers



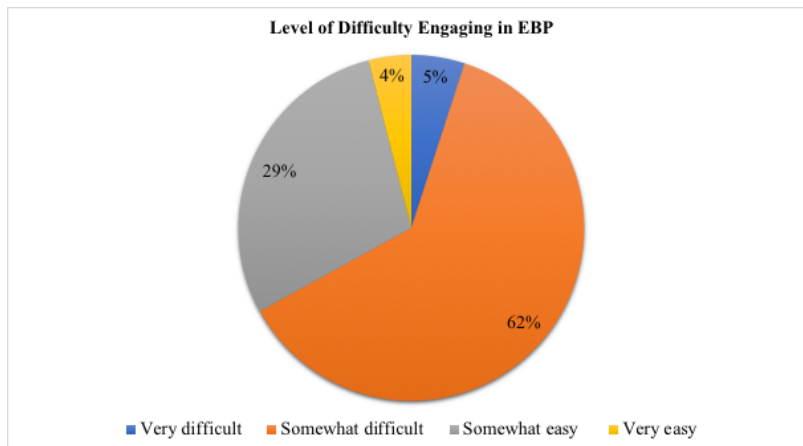
What are SLPs’ opinions regarding the benefits, importance, and difficulty level of engaging in EBP?

SLPs were then asked to provide their opinion regarding various aspects of EBP. First, participants were asked to report how beneficial they feel EBP is in providing the best treatment options to patients. This question resulted in 175 responses. The majority of SLPs reported EBP was either “very beneficial” (68%, 119/175) or “somewhat beneficial” (31% (55/175) for providing the best treatment options to patients. None of the participants reported EBP as being harmful.

Next, participants were asked to report how important they feel it is to engage in EBP. Seventy percent (122/175) felt that it is “very important” to engage in EBP. Interestingly, 29% (51/175) reported that it is only “somewhat important”, but only 1% (2/175) felt that it is “somewhat unimportant”. Zero participants reported that EBP is “not at all important”.

Participants were also asked to report how difficult it is for them to engage in EBP. The most common response (62%, 108/175) reported that engaging in EBP is “somewhat difficult”, and only 4% felt that it is “very easy” (7/175). Figure 8 represents the level of difficulty SLPs experience when engaging in EBP.

Figure 8: Difficulty level of engaging in EBP



## Chapter IV

### DISCUSSION

The purpose of the present study was to examine SLPs' understanding and use of EBP. Aim 1 examined SLPs' knowledge of EBP. Aim 2 examined SLPs' perceived knowledge and confidence of accessing sources. Aim 3 examined the perceived barriers to engaging in EBP, including employer emphasis and SLPs' opinions toward EBP.

Aim 1 examined SLPs' knowledge of EBP in two ways. First, SLPs were asked to select the complete, three-part definition of EBP. Next, SLPs were asked to rank the six levels of evidence in the order suggested by ASHA. The results indicate that SLPs have a basic understanding of EBP but may lack knowledge of the definition's fine details. When asked to identify the three-part definition, almost all participants were able to select research as a component of EBP. They also selected the three components of EBP more often than the distractor answer options. However, a large percentage of participants incorrectly labeled keeping complete records of clinical cases as a component of EBP. While important, this is not a facet of EBP defined by ASHA. This could indicate that while SLPs are not aware of ASHA's full definition of EBP, they are aware of what constitutes quality clinical practices. This may also indicate that certain SLPs achieve more through their clinical practices than EBP encourages by adopting clinical practices in addition to those outlined by EBP.



When asked to rank order the six levels of evidence, few participants could accurately rank all six levels of evidence in the order suggested by ASHA. Fortunately, SLPs showed a firm understanding of the strongest and weakest levels of evidence as a whole as opposed to individual units. In addition, SLPs were also able to determine that randomized studies are stronger than non-randomized studies. This may indicate that SLPs have a basic knowledge of the levels of evidence but may lack the deeper understanding needed to accurately rank all six. Similarly, ASHA's ranking of the six levels of evidence is not the only published format. SLPs may have learned a different format in their educational years or through a different organization. While it is discouraging that few SLPs could accurately rank all six levels of evidence, it is encouraging that SLPs have a strong grasp of the strongest and weakest levels of evidence.

Aim 2 examined SLPs' knowledge and confidence level when accessing sources in three ways. First, SLPs were asked to report how knowledgeable they are about accessing the most common sources. Next, SLPs were asked to report their confidence level in reading and interpreting journal articles. Finally, SLPs were asked to rank the likelihood of accessing each source and the level of helpfulness each source provides. The data showed a large amount of variability in SLPs' opinions towards databases. SLPs reported the lowest level of knowledge when accessing databases but reported that they are confident in their ability to read and interpret journal articles. This could indicate that SLPs are not able to access databases themselves but are able to understand research that has been recommended to them by a colleague. A potential reason SLPs lack knowledge about how to access databases may be due to a lack of funding from employers to access

databases. In contrast, SLPs may have false confidence in their ability to read and interpret journal articles.

Of all the sources, SLPs were least knowledgeable about how to access online databases. However, they reported feeling confident in their ability to read and interpret research articles. Of all the sources, SLPs were also least likely to access databases and reported databases as the least helpful for clinical practices. This may be a reflection of their lack of knowledge regarding how to access databases. If they do not know how to access databases, they are less likely to access them than other sources and are less likely to find them helpful. This hypothesis is further supported by the high ranking of ASHA resources, which also includes journal articles, as being highly utilized and helpful. SLPs may find accessing ASHA resources easier than online databases and use this as an outlet for finding the current literature base. Providing SLPs training in how to access databases may improve the number of SLPs who access and utilize peer-reviewed research articles for clinical practice. Though they reported high levels of confidence in reading and interpreting research articles, they may have access to a greater number of peer-reviewed journals if they knew how to access databases outside of ASHA.

The results also indicated that SLPs reported the highest level of knowledge when accessing personal contacts. Similarly, SLPs reported personal contacts among the most likely accessed and most helpful sources. While personal contacts can be helpful, a misinformed contact can lead to the spread of inaccurate information and inadequate clinical practices. SLPs found non-scholarly websites to be unhelpful and reported that they are unlikely to access them. This is encouraging because, similar to personal contacts, non-scholarly websites may contain inaccurate information. Non-scholarly

websites could also lead to the spread of inaccurate information and inadequate clinical practices.

Participants showed similar response patterns when asked to rank the likelihood of accessing a source and the helpfulness of that source. Similarly, the same sources were reported as being the most likely accessed and the most helpful. The direction of this finding is unknown, given its correlational nature. Perhaps SLPs are more likely to access sources they find most helpful. Alternatively, SLPs may find sources they have access to and know how to access, most helpful. Future research may wish to examine this further, including if teaching SLPs the benefits of how to access evidence-based sources would increase the likelihood of their utilization.

Aim 3 sought to determine the barriers SLPs face when attempting to engage in EBP. This was examined in one of three ways. First, SLPs were asked to label the barriers to engaging in EBP. Next, SLPs were asked to report the level of emphasis they feel their employer places on EBP. Finally, SLPs were asked to give their opinions about EBP. Lack of time was cited as the largest barrier to engaging in EBP. This could, in part, be explained by the large caseloads and by the reported small percentage of employers who offer time during the workday to engage in EBP. In addition, SLPs ranked accessing monetized journals as a barrier to engaging in EBP. This may be explained by the small percentage of employers who offer to pay the fees needed to access sources. Alternatively, SLPs were likely to access ASHA resources, which they would have access to given their certification requirements.

Interestingly, though participants reported a low level of knowledge about accessing sources via online in Aim 2, they did not report “knowing how to employ

effective search techniques within databases” as a common barrier. This may be due to a high level of knowledge when accessing certain databases but a low level of knowledge about accessing databases overall. Similarly, some SLPs may not turn to online databases when seeking information and therefore do not feel it is a barrier to engaging in EBP. Further, SLPs reported a high level of confidence in reading and interpreting research articles from professional sources. Therefore, it is understood why reading and interpreting research was not cited as a large barrier to engaging in EBP.

When asked to report on the relationship between employers and EBP, the data showed stability in the agreement of the statements “I am encouraged to engage in EBP” and “my employer places a strong emphasis on EBP” but variability in the level of agreement with “my employer provides training about how to use EBP for assessment or intervention”. This may be due to the fact that few employers give time in the workday for SLPs to stay up-to-date on EBP and therefore do not grant time during the workday to provide training in EBP. Overall, the data shows that while employers want SLPs to engage in EBP, they do not provide many sources to allow them to do so.

### *Implications*

The results of this study indicate a need for increased training in EBP, especially in how to access databases. Since EBP fosters high-quality clinical practices, the field of Communication Sciences and Disorders will benefit from SLPs who have a higher level of knowledge of EBP and how to access these sources. This may be achieved by adding undergraduate or graduate coursework relevant to EBP or encouraging employer-led workshops on EBP. In addition, SLPs could be required to self-report the degree in which their current clinical practices align with EBP. Due to the fact that EBP strives to improve

clinical practices, SLPs should be able to self-regulate their involvement in EBP by determining whether or not they are truly engaging in EBP.

The results of this research can provide a helpful tool for SLPs who are trying to improve their clinical practices. SLPs can determine the EBP gaps in their field and apply them to their individual practices. For example, this study may encourage SLPs to learn more about the levels of evidence. This could lead to SLPs ensuring that their clinical practices are supported by the strongest levels of evidence. An increased focus on EBP by all SLPs will lead to an overall increase in the clinical practices of SLPs and, in turn, an overall increase in the clinical experiences of clients.

In addition to helping SLPs as a whole, this study can be especially beneficial to SLPs who entered the field before EBP was implemented. The results of this study will allow pre-EBP SLPs to compare their current practices with the standards of EBP. This will aid SLPs in advancing the parts of their practice that align with EBP and modify the parts of their practice that do not align with EBP.

Finally, the results of this study show a need for employer-funded access to journals. This will allow SLPs increased opportunities to engage in EBP as they will not be financially responsible for accessing journal articles. Employers may choose to fund the most commonly used journal databases and encourage SLPs to browse those databases before making clinical decisions.

Similarly, SLPs can utilize free journal databases to access research articles. For example, ASHA lists PubMed, PubMed Central, ERIC, and Google Scholar as free access databases (ASHA n.d.-b). Each database houses thousands of research articles

relevant to the field of CSD. While they may seem overwhelming, the majority of databases are relatively easy to use.

### *Limitations and Future Directions*

The largest limitation of this study is the small sample size. The intended sample size was 250; 176 responses were collected. While the sample size was smaller than intended, a wide variety of states were represented in the sample. Another limitation of the study was the attrition rate among participants. Sixty-six of the participants that started the survey did not complete it. The high attrition rate could have been due to a multitude of factors such as not enough time to complete the survey or a loss of interest in the topic. Another limitation is self-reporting issues such as social desirability responding. In addition, SLPs who have a special interest in EBP may have been the ones who agreed to participate. However, if this occurred, the data most likely would have shown a higher level of knowledge about EBP. In contrast, SLPs who had little knowledge about EBP may have elected to not take the survey.

To expand upon the current study, several follow-up research questions could be asked. For example, an investigation into the claim that SLPs are knowledgeable about reading and interpreting journal articles may be useful in determining if participants overestimated their perceived knowledge level. In addition, a secondary study could investigate regional variations in EBP use. This study could aim to find a correlation between the region of the U.S. where an SLP earned their degree or is currently practicing and their level of involvement in EBP. Another follow-up question could investigate a change in opinion about EBP for SLPs who entered the field before EBP was implemented compared to SLPs who entered the field after EBP was implemented. In

addition, a comparative study could be conducted asking employers to report the degree to which their employees are engaging in EBP. Results of that study could be compared with the results of the current study to determine if SLPs are noticeably portraying EBP in the workplace.

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## APPENDIX

### **Assessing Speech-Language Pathologist's Methods of Obtaining Knowledge**

**Description:** The purpose of this research project is to learn about the ways speech-language pathologists obtain their knowledge. This project will investigate the most popular and unpopular methods as well as determine how these methods meet the requirements of Evidence Based Practice. We would like to ask you some questions about your training and knowledge obtaining practices.

**Cost and Payments:** It will take you approximately 10-20 minutes to complete this survey. After completing the survey, your email address will be entered into a drawing for one of five \$25 Amazon gift cards.

**Risks and Benefits:** It is possible that some of the questions may make you feel uncomfortable, for example, if you feel that your methods for obtaining knowledge are inadequate. We do not think that there are any other risks. Many people enjoy completing questionnaires as you may learn something about yourself.

**Confidentiality:** At the end of the survey, we will ask for your email address so that we can contact you if you are one of the raffle winners. Your email address will be stored separately from your survey responses at all times, so your data will be completely anonymous. Your data will also be kept confidential.

**Right to Withdraw:** You do not have to take part in this study and you may stop participation at any time. If you start the study and decide that you do not want to finish, you are free to exit the survey without completing it. You may skip a question if you prefer not to answer it.

**IRB Approval:** This study has been reviewed by The University of Mississippi's Institutional Review Board (IRB). If you have any questions, concerns, or reports regarding your rights as a participant of research, please contact the IRB at (662) 915-7482 or [irb@olemiss.edu](mailto:irb@olemiss.edu).

1. By checking this box and completing the survey, I certify that I have read and understand the above information.

I consent to participate in this study

2. By checking this box, I certify that I am 18 years or older.

I am 18 years or older

3. What is your sex?

- Male
- Female
- Prefer not to answer

4. What is your race? Select all that apply.

- American Indian or Alaska Native
- Asian
- Black or African American
- Native Hawaiian or Other Pacific Islander
- White
- Other
- Prefer not to answer

5. What is your ethnicity?

- Hispanic or Latino
- Not Hispanic or Latino
- Prefer not to answer

6. If applicable, which year did you complete the following degrees? Select all that apply.

- B.A. or B.Sc. \_\_\_\_\_
- M.A. or M.Sc. \_\_\_\_\_
- Ed.D. or Ph.D. \_\_\_\_\_
- I do not hold any of the degrees listed above
- Prefer not to answer

7. In which state did you complete training for your highest degree in speech-language pathology?

▼ Prefer not to answer ... Non-US Location

8. What type of licensure do you currently hold?

- CCC-SLP
- Clinical Fellowship Year -- in progress
- SLP-A or similar
- I do not currently hold licensure
- Other (please explain) \_\_\_\_\_
- Prefer not to answer

9. If applicable, in what state do you hold licensure? If you have licensure in more than one state, select the primary state in which you work.

▼ Prefer not to answer ... Non-Us Location

10. How would you describe the location where you work? If you work in more than one location, select the primary type of location in which you work.

- Rural
- Small Town
- Suburban
- City
- Prefer not to answer

11. What is/are your primary work setting(s)? Select all that apply.

- Early intervention program
- Preschool
- Elementary school
- Middle school/junior high
- High school
- College/university
- Private practice
- Hospital
- Medical clinic/outpatient facility
- Nursing facility
- Other (please specify) \_\_\_\_\_
- Prefer not to answer

12. How many years have you been in your current position?

▼ Prefer not to answer ... 25+

13. ASHA standards now require SLPs to employ Evidence-Based Practice (EBP). As you understand it, this requirement includes which of the following? (select all that apply)

- Keep complete records of all diagnostic and therapeutic procedures that you employ with a client
- Consider and respect patient values when making treatment decisions
- Base diagnostic and therapy practices on the research literature available in a topic area
- Document the source of the information you use in making clinical decisions in your client's file
- Utilize clinical expertise when making treatment decisions
- Prefer not to answer

14. Without using any outside resources, please rank the following levels of evidence from 1-6 (with 1 being the strongest level of evidence and 6 being the weakest level of evidence).

- Well-designed quasi-experimental study
- Well-designed randomized controlled study
- Expert committee report, consensus conference, clinical experience of respected authorities
- Well-designed meta-analysis of >1 randomized controlled trial
- Well-designed controlled study without randomization
- Well-designed non-experimental studies (i.e., correlational and case studies)

15. How beneficial do you feel Evidence-Based Practice is in providing the best treatment to patients?

- Very beneficial
- Somewhat beneficial
- Somewhat harmful
- Very harmful
- Prefer not to answer

16. How important do you feel it is to engage in Evidence-Based Practice?

- Very important
- Somewhat important
- Somewhat unimportant
- Not at all important
- Prefer not to answer

17. How difficult do you feel it is to engage in Evidence-Based Practice?

- Very difficult
- Somewhat difficult
- Somewhat easy
- Very easy
- Prefer not to answer

18. For what professional purposes have you regularly needed information about since you graduated? (check all that apply)

- Specific question I have about patient or client care
- Specific question that I was asked by a patient, client, or family member
- Specific question that I was asked by a colleague
- In-service presentation
- Presentation at a professional meeting
- Writing a journal article or similar contribution
- Teaching undergraduate and graduate students
- Other (please specify) \_\_\_\_\_
- Prefer not to answer

19. When you have a professional information need, where are you most likely to turn? (please select and rank your answer choices 1-7 with 1 being the most likely place you would turn and 7 being the least likely place you would turn)

- College, university, public, or medical library (including online databases of these sources)
- Online databases, not via college, university, public or medical library (e.g. Google Scholar, PubMed, etc..)
- Non-scholarly website (e.g. websites found via Google, Yahoo, or Bing search engine)
- Personal library (texts, journals, newsletters, etc., including online databases of these sources)
- ASHA resources including journals and evidence maps
- Personal contacts (colleagues, supervisors, former or current classmates, etc.)
- Continuing education workshops/seminars/courses/conferences

20. Are there any other sources you are likely to turn to for professional information needs? If so, please list them here.

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	Very knowledgeable	Somewhat knowledgeable	Somewhat uncertain	Very uncertain	Prefer not to answer
College, university, public, or medical library (including online databases of these sources)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Online database not via college, university, public, or medical library (e.g. Googlescholar, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Non-scholarly website (e.g. websites found via Google, Yahoo, or Bing search engine)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal library (texts, journals, newsletters, etc., including online databases of these sources)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
ASHA resources including journals and evidence maps	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personal contacts (colleagues, supervisors, former or current classmates, etc.)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Continuing education workshops/seminars/courses/conferences	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

21. When you have a professional information need, which sources do you find most helpful? (please select and rank your answer choices 1-7 with 1 being the most helpful source and 7 being the least helpful source)

\_\_\_\_\_ College, university, public, or medical library (including online databases of these sources)

\_\_\_\_\_ Online database, not via college, university, public or medical library (e.g. Googlescholar, PubMed, etc..)

\_\_\_\_\_ Non-scholarly website (e.g. websites found via Google, Yahoo, or Bing search engine)

\_\_\_\_\_ Personal library (texts, journals, newsletters, etc., including online databases of these sources)

\_\_\_\_\_ ASHA resources including journals and evidence maps

\_\_\_\_\_ Personal contacts (colleagues, supervisors, former or current classmates, etc.)

\_\_\_\_\_ Continuing education workshops/seminars/courses/conferences

22. Are there any other sources you find helpful when you have a professional information need? If so, please list them here.

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23. How knowledgeable do you feel about how to access the sources listed below?

24. How confident are you in your ability to read and interpret research studies from professional journals? (e.g. American Journal of Speech-Language Pathology, Journal of Speech, Language, and Hearing Research, etc.)

Very confident

Somewhat confident

Somewhat doubtful

Very doubtful

Prefer not to answer

25. Have you ever consulted a non-academic website (e.g. website found via Google, Yahoo, or Bing search engine) to gain information about a clinical case?

Yes

No

Prefer not to answer

26. If yes, how frequently do you consult non-academic websites to gain information about a clinical case? (e.g. website found via Google, Yahoo, or Bing search engine)

Frequently (once a week or more)

Sometimes (once every few weeks)

Rarely (once every few months)

Never (I do not consult these types of sources)

Prefer not to answer

27. Are there any websites or online databases that you routinely visit as part of your professional work?

Yes. If yes, please provide a few examples

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No

Prefer not to answer

28. If yes, how frequently do you consult the websites listed as examples?

- Frequently (once a week or more)
- Sometimes (once every few weeks)
- Rarely (once every few months)
- Never (I do not consult the websites listed as examples)
- Prefer not to answer

29. How familiar are you with ASHA's evidence maps?

- Very familiar
- Somewhat familiar
- Somewhat unaware
- Very unaware
- Prefer not to answer

30. How often do you use ASHA's website (including evidence maps) to look for Evidence-Based Practice guidelines/suggestions?

- Frequently (a few times a week)
- Often (once a week)
- Sometimes (once every few weeks)
- Rarely (once every few months)
- Prefer not to answer

31. What do you perceive to be the barriers to obtaining good quality information to assist you in clinical decision making? (please rank your order 1-6 with 1 being the most common barrier and 6 being the least common barrier)

- Knowing where to find the appropriate information
- Knowing how to employ effective search techniques within databases
- Gaining access to the information (costs of obtaining full-text articles or database access)
- Interpreting the available information on a topic
- Lacking relevant available information to my typical cases
- Lacking time to search and read the literature

32. Are there any other perceived barriers to obtaining good quality information to assist you in clinical decision making? If yes, please list and describe them below.

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33. To what degree do you agree with this statement: The curriculum of my undergraduate and graduate experience adequately prepared me to handle my lifelong learning needs.

- Strongly agree
- Somewhat agree
- Somewhat disagree
- Strongly disagree
- Prefer not to answer

34. How knowledgeable is your current employer about Evidence-Based Practice?

- Very knowledgeable
- Somewhat knowledgeable
- Somewhat unaware
- Very unaware
- Prefer not to answer

35. To what degree do you agree with the following statements:

	Strongly agree	Somewhat agree	Somewhat disagree	Strongly disagree	Prefer not to answer
My employer places a strong emphasis on Evidence-Based Practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
I am encouraged to engage in Evidence-Based Practice.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
My employer provides training about how to use Evidence-Based Practice for assessments or intervention.	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

36. What types of sources does your current employer provide to allow you to engage in Evidence-Based Practice? (select all that apply)

- Professional contacts/experts in the field
- Pays for continuing education workshops/seminars/courses/conferences
- Gives release time for continuing workshops/seminars/courses/conferences
- Access to databases, peer reviewed journals, and peer reviewed research articles that have a cost to access
- Pays for ASHA membership and/or other resources via ASHA
- Access to materials for assessment, diagnosis, or therapy that has been supported through Evidence-Based Practice
- Time to stay up-to-date on Evidence-Based Practice

My employer does not provide any sources

Prefer not to answer

37. Are there any other sources that your current employer provides to allow you to engage in Evidence-Based Practice? If yes, please list them below.

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If you have any questions regarding this survey or the research being conducted, feel free to contact the investigators or the Institutional Review Board.

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Thank you completing the survey. Please click "next" to enter your email address and be entered for a chance to win a \$25 Amazon gift card.

