Using the American Speech Language & Hearing Association's EBP Toolkit During Supervised School-Based Practicum: Is There an Impact on Student Clinicians' Ratings of Self-Proficiency?

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ABSTRACT

The current position statement on evidence-based practice (EBP) published by the American Speech-Language and Hearing Association (ASHA), the national certifying organization for the profession of speech-language pathology states that it is the expectation for those who hold the Certificate of Clinical Competency (CCC) in SLP that they incorporate the basic tenets of EBP including research, clinical experience and expertise, and client and family perspectives (ASHA, 2022). Anecdotally, direct instruction of EBP can be little more than embedded information prior to practicum experiences. This is not to say that EBP methodology was not or is not adequately taught; rather, that varying teaching methodologies across the current generations of speech-language pathologists (SLPs) have resulted in different degrees of exposure and competency. ASHA recognized the inconsistency of EBP practices as an area of need in the early 2000s with a publicized dedication of resources for developing a better understanding of what type of guidance clinical professionals need to apply EBP effectively during client care. Among several documented reasons behind recognized inconsistencies in this area, lack of a systematic framework and practice for using it among graduate level students during practicum is evident in the literature.

The purpose of this study is to investigate relationships between these factors to add to the current body of literature and inform SLPs about best practice for educating graduate-level students. Such information is important for further developing EBP curriculum and universally recognized teaching methodology.

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DEDICATION

This dissertation is dedicated to my children, Trip, Emma, and Katie, for whom I hope to have demonstrated the values of dedication, perseverance, and curiosity to foster a lifelong path of learning. May you always seek to know more and nourish your ideas in all that you do!

Chapter I

Evidence-based practice (EBP) is a key element of the profession of speech-language pathology. Having emerged from the evidence-based medicine (EBM) movement and developed over the past three decades, it has become essential in reaching the ideal balance between professional judgement, current research, and client preferences.

The American Speech-Language and Hearing Association (ASHA) maintains a rigorous set of criteria for speech-language pathologists (SLPs) who meet qualifications for the Certificate of Clinical Competence in the profession. As part of the defining characteristics for expert status in the field, a foundational knowledge of evidence-based practice is required. Not only must one be able to demonstrate competency through education and examination, but one must also commit to ongoing education specific to EBP to perform supervisory duties among student clinicians and clinical fellows.

To this end, leaders in the field have acknowledged a lack of data related to teaching methodology among SLPs in supervisory roles. To date, various methods of teaching have been utilized including both direct and indirect models, which compounds the issue in that a wide berth of pedagogical practice creates many different teaching tools being used, or not used at all, within those teaching methods. The field of speech-language pathology is ripe for development in EBP, as ongoing data collection and analysis informs governing bodies of effective and practical teaching methodologies for consistent EBP use. Further exploration of the topic is essential for the development of competent and expert-level clinicians.

Chapter II

REVIEW OF THE LITERATURE

Evidence-Based Practice

History and Definitions

Evidence-based practice has its roots in evidence-based medicine (EBM); its modern version having emerged in the early 1990s. EBM is founded on the principle that there are three primary areas to consider when evaluating and making decisions for client outcomes: best quality research evidence, experienced clinical judgment, and individual client preferences (McCurtin et al., 2019; Sackett et al., 1996). EBM emerged as a movement wherein medical professionals sought to move away from clinical intuition and judgement as a central justification for assessment and course of treatment for clients, given the variability involved, and towards a research-based method. Sackett et al. (1996) and other EBM proponents recognized the need to minimize the use of ineffective assessment and treatment, increase objective decision-making, and consider the best clinical practice from an economic standpoint. In short, there were several key factors that drove the EBM movement. Over time, the movement was incorporated into other fields such as nursing, psychology, and physical therapy (McCurtin et al., 2019).

Regarding the field of speech-language pathology, Dollaghan (2007) refined the definition of EBP and coined the term E^3BP to focus on the types of evidence needed. The term E^3BP is defined as "the conscientious, explicit, and judicious integration of 1) best available external evidence from systematic research, 2) best available evidence internal to clinical practice, and 3) best available evidence concerning the preferences of a fully informed patient

(Dollaghan, 2007). Speech-language pathologists began to recognize the role of each individual factor as integral to pursuing and achieving the best possible outcomes for clientele. ASHA (2004, p. 1) officially defined evidence-based practice for the field as "the integration of (a) clinical expertise, (b) best current evidence, and (c) client values to provide high-quality services reflecting the interests, values, needs, and choices of the individuals we serve." This view structured the EBP tenets in a triangular integration of the components initially developed by Sackett et al. (1996) and Dollaghan (2007), now referred to as ASHA's EBP Triangle, as seen in Figure 1. As Brannick et al. (2022) suggest, these differences in terminology, though seemingly minor, between ASHA and leading experts in EBP, have been unclear and inconsistent. These authors point out that the concept of clinical expertise has become the crux of the differences in interpretation of EBP among Sacket and Dollaghan. For this reason, ASHA revised its 2004 model to include Dollaghan's explanation of clinical expertise as the interwoven concept that links internal and external evidence with client and family perspectives. To further complicate the issue, another model presented by Higginbotham and Satchidanand (2019) further distinguishes evidence as distinctly internal or external alongside the other accepted tenet of client/family perspectives and an additional tenet of clinical expertise and opinion. These examples demonstrate the propensity for confusion among professionals who do not have a consistent foundation of terminology to lean on, much less a framework for teaching. Even ASHA's current definition of EBP remains an unclear interpretation despite its representation of key elements identified by leading experts. Brannick et al. (2022) found that streamlining EBP language, that is, terminology, is a missing and necessary element in the current EBP interpretation and went on to suggest terms such as *clinical expertise* and *practice-based evidence* be used to create a universal vocabulary. As Witko et al. (2021) point out, a reasonable

continuation in building a clear EBP concept in speech-language pathology might also include developing a consistent teaching framework based on their data that suggests a correlation between such a framework and clinical success among students.

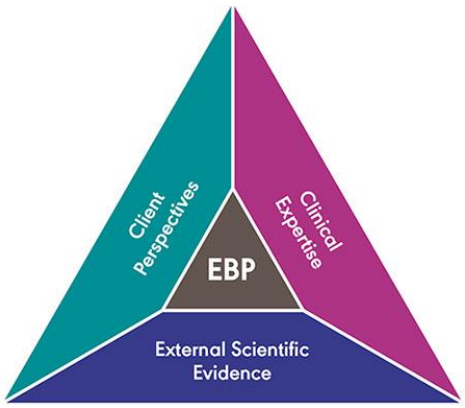

Figure 1. ASHA's Evidence-Based Practice Triangle

Currently, researchers in the field agree than EBP involves the gathering of relevant information to be interpreted and applied with consideration for client/patient preferences to answer a practical question in achieving the best outcome possible for a situation (Cohen & Hula, 2020; Thome et al., 2020). They, like those in the medical profession, observed a need to move beyond the sole use of clinical experience to drive clinical decisions (ASHA, 2004). The connection between EBM and EBP is clear regardless of the discrepancies in interpretation. EBP ensures that clinicians continuously increase their knowledge through experience and education, as well as the most current research data available (Nail-Chiwetalu & Ratner, 2006). It supports the development of methodologies even beyond the research phase that have reliably maintained their validity in real-world situations.

In its Standards and Implementation Procedures for the Certificate of Clinical Competence (CCC) in Speech-Language Pathology, the Council for Clinical Certification in Audiology and Speech-Language Pathology of the American Speech-Language and Hearing

Association (2020, p. 6, para. 19) states that an SLP "must have demonstrated knowledge of how to access sources of research information and must have demonstrated the ability to relate research to clinical practice." EBP is not only a standard that must be met to acquire the CCC, but also the standard of care in speech-language pathology outside of earning and maintaining the CCC (Fulcher-Rood et al., 2020). Hoffman et al. (2013) remind practitioners that even the Individuals with Disabilities Education Improvement Act of 2004 incorporates all the aspects of EBP to ensure its application among providers in school settings. The literature consistently recognizes that speech-language pathology is an ever-changing field that must include methodology for clinicians to interrogate research literature to determine best courses of action clinically (Nail-Chiwetalu & Ratner, 2006; Sackett et al., 1996). ASHA has made a determined effort to prioritize EBP coursework in its offerings for continuing education. However, as observed in their 2021 study, Greenwell & Walsh note that despite reports among SLPs that they were trained in EBP, it also needs to be more explicitly taught during the graduate practicum experience, as there is not a consistent set of tools used within the field. As a result, SLPs are generally able to name only one to two of the three components of EBP (Greenwell & Walsh, 2021). Corroborating this observation, McCabe (2018) notes that, while clinicians tend to report understanding what EBP is, they routinely express apprehension about expectations for use of EBP in their clinical roles. Also, Kleinhans et al. (2020) argue that adequate preparation for supervision requires accessing universal methodology and supporting frameworks for teaching. As a core competency of speech-language pathology, the role of an EBP framework specific to this field has been historically lacking until the 2004 position statement published by ASHA that included a strategic plan for better incorporation of EBP (ASHA, 2004; Hancock & Brundage, 2010). This position statement initially left clinicians without universal procedures in applying

EBP and continues to leave them to their own devices in teaching graduate students, despite the development and subsequent revision of a concise framework. To be clear, the framework for EBP has been developed and recently published by ASHA, but use of specific tools within that framework remains a variable among clinicians and supervisors (ASHA, 2005).

Despite the consensus among researchers regarding evident limitations to practical use of EBP, ASHA recognizes in its 2004 technical report on EBP that equipping clinical investigators; that is, scientific researchers and clinicians alike, must be prioritized within the field. As Lof (2011) points out, teaching the scientific method through EBP content requires supervisors to demonstrate how to engage the literature as a scientist would, which can eventually help reduce the communication gap between researchers and clinicians. In agreement with this notion, Nail-Chiwetalu & Ratner (2006) remind practitioners that it is critical to be "information literate" and to fully utilize the EBP process, regardless of the methods used to do so. Unfortunately, SLPs express feelings of incompetency when it comes to information literacy. This impacts the critical thinking aspect of EBP such as forming relevant questions and accessing current resources for clinical decision-making (Cobus-Kuo & Waller, 2016). Multiple researchers, such as Hoffman et al., (2013) and Cobus-Kuo & Waller (2016), found that strategies to increase information literacy for the purpose of applying EBP principles are best taught in a hands-on way. Utilizing the ASHA-vetted rubric-style strategy Population-Intervention-Comparison-Outcome (PICO) as a primary teaching tool during clinical practicum gives a firsthand experience of EBP. An example of a useful tool for putting PICO to use is ASHA's Evidence-Based-Practice Toolkit (EBP Toolkit) shown in Appendix A, which is a straightforward tool that supports direct instruction for developing EBP by determining a clear question, exploring current literature on the topic, and evaluating the information found (ASHA, n.d.b.). These are all steps identified in the

organization's field-specific definition. The toolkit provides strategic tools such as free access to peer-reviewed research, a guide for understanding types of studies, and assistance with determining what type of resources and study design are best for specific projects. There are also worksheets designed to help SLPs create relevant questions and frame them into a searchable topic while maintaining an organized cache of information. As posed by Nail-Chiwetalu & Ratner (2006), the intent of collegiate and graduate level learning is to develop lifelong learners, especially given the rate at which information is constantly updated in today's clinical settings. The ASHA Toolkit is a user-friendly collection of resources that promotes ongoing education and best practices in client care.

Hoffman et al. (2013) and Cobus-Kuo & Waller (2016) concur that frequent exposure to EBP methodology is critical at all stages of learning, especially since their studies and those by Fulcher-Rood et al. (2020) and Greenwell & Walsh (2021) recognize that application during graduate coursework and practicum leads to an increased likelihood of the same beyond collegiate training. Another argument made among recent studies is that, even with an ASHA approved EBP framework, consistent use of it in educating future practitioners is lacking, and practitioners must adapt to learners' needs to secure the best outcomes not only for SLPs but for clientele as well (Fulcher-Rood et al., 2020; Sackett et al., 1996; Thome et al., 2020). Again, though limited, current data support direct instruction of EBP during graduate-level practicum and the clinical fellowship year given its predicted use in post-graduate clinical practice (Cobus-Kuo & Waller, 2016). Fulcher-Rood et al., 2020). ASHA (2004) recognizes the need for consistent guidelines for applying EBP and established the EBP framework to address it but also recognizes that there continues to be a need for ensuring that consistency is present among individual organizations. A critical step in doing so includes incorporating EBP in educational

experiences before joining the workforce. The additional step to drive consistency among the tools used within the framework continues to develop but is not yet fully in place for graduate practicum, currently focusing on the professional learning of clinicians already in the workforce (ASHA, 2004).

Components of Evidence-Based Practice

While SLPs recognize the agreed-upon definition of EBP to be the integration of clinical expertise and expert opinion, internal and external research evidence, and the perspectives of clients, patients, and their caregivers, there is little evidence to support an in-depth understanding of these components (ASHA, 2022). Among those researchers who have delved into this aspect of the field more deeply, there is consistent recognition of four stages of EBP, outlined by ASHA (2020), including framing a question, exploring existing information, evaluating the information through synthesis and comparison to what is already known, and making a clinical decision having determined the value or discrepancies among the data found (Ginsberg et al., 2016; Hart & Kleinhans 2014; McCurtin et al., 2019; Nail-Chiwetalu & Ratner, 2006; Thome et al., 2020). Appendices C, D, and E show examples of worksheets that assist clinicians in performing these tasks.

The Four Stages of Evidence-Based Practice.

Framing the Question.

It is critical when framing a question that an investigator consider the population involved, how to carry out the intervention being examined, the results of the intervention compared to others (or no intervention), and what the outcome for the client was or is intended.

Gathering Evidence.

Investigating clinicians must also look at the current evidence and determine how it relates to the situation at hand. Integration of others' data with one's own internal data is part of that process. Consideration of the kind of information needed is required and a plan for lack of research data on the topic formed. Not only does a clinical investigator determine what kind of information is needed; how and where to find it must be determined too.

Assessing Evidence.

Both internal and external evidence are an important part of this step. The clinical investigator will examine the relevance of the external evidence available, its level of validity, and conclusions drawn by other researchers. Not only that, but the investigator will also consider internal evidence such as what is happening in the current clinical situation, whether it is significant and should be continued, and how to adjust interventions if needed based on client outcomes.

Making a Clinical Decision.

In this stage, the EBP Triangle plays a significant role. By integrating evidence, clinical expertise, and client preferences, the clinical investigator determines how to proceed in the current situation. ASHA developed the DECIDE Framework to complete this step (ASHA, n.d.a.). Included in the framework are the following components, which can be found in Appendix B: Define the question, Extrapolate internal and external data, Consider clinical expertise, Incorporate client and family preferences, Develop an assessment or treatment plan, and Evaluate the clinical decision (ASHA, n.d.a.).

All these steps are included in those four components of EBP. The EBP process may appear complicated to clinicians, which is why the EBP Toolkit was developed by ASHA (ASHA, n.d.b.). It provides a simple framework for incorporating all the necessary pieces of ensuring best practice through practical action steps. Hancock and Brundage (2010) explain this type of framework eloquently in their reference to using a rubric system to give formative feedback to students as they become professionals. They state that efficiency, transparency, and use of quantifiable data drive accountability to the graduate-level clinicians during mentorship. This also helps define a consistent frame of reference for field-related concepts for lifelong learners. However, it must be considered that use of a consistent teaching framework does not mean presenting EBP as a one-size-fits-all concept (Sackett et al., 1996). Rather, use of such a framework for instruction should promote exploration of what is best for the whole client in each individual clinical situation. ASHA recognizes that, even with a consistent EBP framework, such a protocol must even go beyond that and incorporate the collective areas represented in the profession's scope of practice, including "measurement technologies, screening, diagnosis, intervention, prognosis, safety, efficacy, effectiveness, and prevention" (ASHA, 2004, p. 2, para. 1). The literature presents a collective argument that a rubric system promotes the systematic and direct instruction needed by students and seasoned SLPs alike as they navigate fresh information (Hancock & Brundage, 2010; McCurtin et al., 2019; Spek et al., 2013a). Rubrics are also viewed as appropriate for supervisors to use to teach EBP components while maintaining the integrity of the clinical circumstances specific to each client (Cobus-Kuo & Waller, 2016; Hancock & Brundage, 2010; Hoffman et al., 2013). ASHA's EBP Toolkit, which includes the DECIDE framework and strategic worksheets to develop a question, search evidence adequately, and monitor results of the search provides just such a rubric (ASHA, 2004; ASHA, n.d.a.; ASHA

n.d.b.). Direct use of the toolkit to teach the framework supported by field leaders can enable SLP supervisors to impart practical EBP strategies to future clinicians.

Barriers to Evidence-Based Practice

Evidence-based practice is a key component in providing the most appropriate speech language pathology services for clientele, especially in a time when so much information is available that clinicians often experience an overload (Nail-Chiwetalu & Ratner, 2006). However, teaching master's level student clinicians about EBP and putting it into practice can be challenging. Multiple researchers have confirmed this research phenomenon as an ongoing barrier (Crowe et al., 2018; McCabe, 2018). Ongoing partial and unorganized knowledge indicates at least some degree of success of an embedded approach that many SLPs have experienced as graduate students while also demonstrating the knowledge gaps that many report as a barrier to consistent use of EBP. Further, as Ginsberg et al. (2016) point out, if the struggle as clinicians to fully understand, define, and apply EBP exists in practice, it is less likely that student clinicians will be effectively taught how to do it adequately. As Halle et al. (2021) indicate in their findings, use of direct instruction for EBP has resulted in SLPs now frequently recognizing common EBP terminology and using it interchangeably within the field. They are becoming more proficient in differentiating the conceptual characteristics of EBP. Given ASHA's commitment to develop consistent use of EBP curricula among university instructors, the lack of a common terminology and curricula is currently receiving attention as an area where real progress can be made and, as Halle et al. (2021) suggest, has seen some success in increasing consistency thus far.

Evidence of the past fifteen years has consistently shown that EBP is more than conceptual and encompasses practical strategies that must be learned in the field. *In the field* now

more than ever means not only application of EBP strategies by clinicians already in the workforce, but also those clinicians in practicum experiences on the cusp of independent practice. This indicates a need for curriculum development for this phase of learning, as Spek et al. (2013a, 2013b) note in their two studies that attitudes supporting later use of EBP can be impacted by methods used during education. This leads one to hypothesize that part of the problem may be that, at the career outset, clinical supervisors, while in agreement that EBP is crucial to successful intervention, are very individual when applying each of the three elements of EBP (Thome et al., 2020). Hart and Kleinhans (2014) found that supervisors expect a basic scientific understanding of EBP on the part of their student clinicians, but that linking the science with the other elements of EBP can be challenging. Nevertheless, teaching how to bridge foundational knowledge into assessment and treatment has been shown to be best taught during clinical practice (Hart & Kleinhans, 2014). Ratner (2006) pointed out that written curriculum alone has not significantly influenced clinical behavior and that because of this, hands-on fieldwork curriculum must be incorporated into practicum experiences.

Collectively, researchers have reached the conclusion that use of common EBP terminology between onsite and offsite supervisors when teaching concepts is needed to best teach EBP to master's level student clinicians (Hart & Kleinhans, 2014). A higher level of consistency at this level of instruction is something the current research reflects as lacking, and as Crowe et al. (2018) contend, can be addressed with ongoing analysis of both successful and unsuccessful EBP practices and patterns for the mutual benefit of SLP supervisors and graduate clinicians, as well as the clients they serve. ASHA’s EBP Framework clearly addresses the need to merge academic instruction with clinical instruction. The problem, then, lies in the consistent use of universal terminology with related tools and methods so that practitioners at all levels

have the same understanding of how to best implement EBP for the sake of proficiency. As Crowe et al. (2018) and McCabe (2018) suggest, SLPs must, as a profession, recognize these consistent patterns regarding knowledge of EBP to inform the process, thereby taking a step towards a stronger foundation in how to teach it to graduate clinicians.

Further exploration among the literature revealed that barriers to using EBP are typically related to one of three categories: clinician, organization, and evidence, as described here (Fulcher-Rood et al., 2020). An additional category of Education-Based barriers is also included for review.

Clinician-Based Barriers

When considering individual factors related to clinicians, variables such as one's own perspectives on using EBP based on educational level and self-confidence, training experiences, and personally valued resources emerged as problematic in working towards a cohesive understanding of EBP (Fulcher-Rood et al., 2020). For the clinical professional, this highlights challenges in establishing a mutual understanding and universal terminology when working towards EBP (ASHA, 2004). Individuality in supervising SLPs' teaching methods is part of this barrier too (Hart & Kleinhans, 2014). Individual SLPs are just that - individual. Each has his/her own perspective, experience, drive, and ethical compass. These characteristics affect one's personal and professional decisions. The resulting individuality is not wholly negative, of course, but it undeniably affects clinical perspectives.

One clinician-based characteristic included in the literature on this topic, albeit minimally, is education. Given the academic nature of data collection and other elements of research, it is easy to assume that those SLPs best equipped for pursuing EBP are those with

research experience that is typically gained during the doctoral level degree process. However, at least one study by Thome et al., (2020) shows that, despite master's level SLPs' descriptions of a lack of comfort engaging in research-related tasks, there is only minor difference between master's level and doctoral level expertise in defining EBP and in their reported use of EBP.

Training differences, however, are a significant factor when exploring individual clinicians' use of EBP. As Fulcher-Rood et al., (2020) point out, it is typical for SLPs to utilize formal training resources through graduate programs, national and state associations, and continuing education seminars and workshops. Notably, those practicing clinicians with ten years or less of experience tend to rely on more formal training methods when using EBP. More experienced clinicians, they explain, look more to clinical expertise/experience and critical reasoning when integrating EBP, which highlights a discrepancy in teaching methods when it comes to development and use of critical thinking skills, an essential component of the EBP process. Hoffman et al. (2013) and Chu et al. (2021) conclude that less experienced SLPs underwent more formal EBP training than seasoned SLPs, which supports Witko et al.'s (2021) finding that younger clinicians tend to use EBP more than their elder colleagues given their higher level of familiarity with the concept. Much of ASHA's current effort in this area targets clinicians in the workforce through continuing education aimed at closing the gap between former and current educational practice (ASHA, 2004).

Also recognized in the current literature is that there is a general lack of information regarding why SLPs choose the sources they choose when making clinical decisions, and it is likely that additional training is needed at the individual level for applying the evidence they find to their own clinical practice (Thome et al., 2020). Regulatory compliance dictates that clinicians must be able to determine if available evidence is appropriate to their situations regardless of

individual learning experiences (Donohue et al., 2021). Simply understanding where to look and how to access evidence among SLPs is a factor that can be pared down to the individual SLP (Greenwell & Walsh, 2021; Nail-Chiwetalu & Ratner, 2006). Practicing SLPs view the value of evidence obtained based on very individual perspectives that guide their impressions of what is valid and legitimate based not only on the amount or type of training received, but individual preferences as well. As Cunningham et al. (2019) indicate, individual attitudes, knowledge, and beliefs impact an SLP's willingness to employ certain aspects of EBP, and these can be quite different among those in the profession. It is left to the clinicians to take the initiative to inform their own EBP practices, and this may not happen depending on the individual. Reluctance to change the way one does things in the field is a clinician-based barrier that McCabe (2018) came upon as well, as she notes that it is not uncommon for clinicians to feel that, if current assessment and treatment methods are working, further exploration is just not needed. How to properly search for research evidence can be daunting as well, which is another area targeted by leaders in the field through initiatives to provide vetted sources of valid information with easy access and low cost. This has become an invitation for even the least confident clinicians to explore existing data more.

Organization-Based Barriers

Cunningham et al. (2019) and Harold (2019) observed the same clinician-related phenomenon discussed above, as well as reports among SLPs, that organizational challenges such as little or no time for EBP tasks, limited resources, and unsupportive team members make EBP difficult. Nail-Chiwetalu & Ratner (2006) note that organizational barriers can lead to even more individuality among SLPs' EBP methods as they inform their own practice, further broadening the divide between EBP knowledge and practice. When examining the components

of an organization, there are several types of factors that can pose challenges to implementing EBP. These include policies and procedures, political and personality-based differences, and client participation (Cunningham et al., 2019). Even factors such as funding and client access to services impact a clinician's ability to access and utilize the elements of EBP to consistently inform their clinical decisions (McCurtin et al., 2019). ASHA (2004) recognizes that, if SLPs do not have the support of their employing organization in time and access to resources, they are less likely to engage in adequate EBP practices. Organizations may or may not provide access to peer reviewed research depending on cost and frequency of use by clinicians. Caseload numbers impact an organization's willingness to allow designated time for EBP research in many cases with an ever-present emphasis on efficiency in the workplace. Appropriately, organizations routinely place client care at the forefront of day-to-day operations, but this may be misdirected under the onus that direct client care is the only component to best practice. Arguments that time reserved for consideration of published research evidence should be built into workplace standards are prevalent, but this is rarely the case among organizations employing the very clinicians making those decisions (ASHA, 2020; Greenwell & Walsh, 2021; Nail-Chiwetalu & Ratner, 2006).

McCabe (2018) states that, given the busy schedules of SLPs, decisions are made based on those elements that allow for optimal time management and availability of limited resources. This is not necessarily a reflection of lack of knowledge on best practices using EBP; rather it demonstrates the reality that time is a luxury so few clinicians have anymore. Fulcher-Rood et al. (2020) show that on average, SLPs required 3-7 hours of dedicated EBP time to make an informed decision, which, for many, is just not realistic within the parameters of a workday. Likewise, if an organization does not or cannot provide access to best practice tools to clients,

this limits the use of EBP. Often, the expense of using the latest and most effective methods is just too great. Yet, this remains important to investigate, as the EBP process itself can assist in justifying a match between methods and clientele. If something is consistently unused due to cost, this can be considered ahead of time as part of the client-centered aspect of EBP.

In addition, McCabe (2018) also states that support from colleagues is an important influence of what SLPs do and do not do in the work environment, and use of EBP is no exception. Interactions between colleagues based on social norms and the culture of the workplace weigh on consideration of EBP, both generally and specifically to each step of the process. McCabe (2018) argues that part of why SLPs do not consistently use and teach EBP as a profession is because of these factors, not just experience and ability.

Training within an organization can also be a barrier, at times. If an organization determines the content for professional learning and does not include EBP as a topic, it stands to reason that SLPs in that organization cannot depend on the workplace as a provider of ongoing learning support in EBP. Additionally, if the organizational attitude is that training leads to action, this may not support the exploration phase of EBP and deter an SLP from engaging in it. Interestingly, Greenwell & Walsh (2021) identify a positive correlation between EBP training within an organization/workplace and perceived time barriers when applying EBP principles. Those SLPs without EBP training reported significantly increased time requirements for using the EBP framework. ASHA continues to make concerted efforts towards addressing these factors in its 15-year progression of strategic EBP education (ASHA, 2004). Fulcher-Rood et al. (2020) observe that quite often, the organizations SLPs work with determine assessment and treatment practices simply by building them into their policies and procedures. Legalities, including federal and state requirements, can become an argument for employing only certain tools and methods

as well, but if used correctly, EBP assists practitioners in maintaining legal and regulatory compliance while incorporating innovative ideas and practices. However, if organizational leaders are not careful in how policies and procedures are interpreted, they can be misinterpreted as predetermination in clinical practice.

Evidence-Based Barriers

There is a consensus among researchers that many areas in Communication Sciences and Disorders simply have little to no research information available coupled with an observable gap between research data and its practical application in the field, and rigorous EBP presents as a difficult concept to achieve (Fulcher-Rood et al., 2020; McCabe, 2018; Nail-Chiwetalu & Ratner, 2006; Thome et al., 2020). This disconnect between research and practice is unfortunately not specific to speech-language pathology and impacts similar professions such as psychology, medicine, and occupational therapy. Like speech-language pathology, when connections are made, they simply are not numerous (Nail-Chiwetalu & Ratner, 2006). Additionally, speech-language pathology routinely and rapidly changes to such an extent that it can be difficult to keep up with current trends if one is not poised to do so.

Thome et al. (2020) further identify the gap between research evidence and clinical practice as reflective of difficulty among SLPs in translating research results, particularly when it involves statistical analysis. Lack of time, access to external research data, understanding where to look for research data and how to examine it once found, as well as interpreting it for practical application, are all areas that deter the average SLP from fully embracing EBP, despite the frequently reported desire to do so (McCabe, 2018; Thome et al., 2020). As mentioned earlier, ASHA is making a concerted effort to ease accessibility for SLPs through vetted research sources. The gap, therefore, is not purely based on a lack of information. It also involves

accessibility of the information, preventing the consistent use of EBP by clinicians, both in supervisory and student roles.

What this means for SLP supervisors is that they are not only dealing with the cognitive dissonance of knowing EBP would inform clinical processes and not having the ability to apply it adequately, but they are also tasked with teaching the newer generations of SLPs with how to achieve a balance among the very same barriers. Interestingly, accessing research evidence in the process of clinical instruction is an area where the clinical expertise of instructors can aid the student clinician while the student's often-superior knowledge of technology can help the instructor. The mutually beneficial aspect of using the supervisory experience to increase student confidence regarding research is an added advantage. In addition, use of EBP during practicum is mutually beneficial to students and supervisors in that data acquired during instruction is available for practice in EBP use as well as informing ongoing assessment and treatment specific to caseload (Witko et al., 2021).

When considering barriers to using EBP due to issues with the available evidence, one must also consider a common complaint among clinicians that there is an inability to translate methods presented in research studies to the practical setting. This may be due to differences in population, access to resources, and the afore-mentioned lack of common terminology. Fulcher-Rood et al. (2020) show that, oftentimes, researchers do not provide access to materials or explicitly show how modifications were made. Cunningham et al. (2019) further argue that researchers' consideration of clinical factors throughout their scientific exploration might be helpful to clinicians who may later attempt to employ the same methods beyond the research setting. Use of a basic common set of vocabulary is part of this. Likewise, McCurtin et al. (2019) reveal the benefit of clinicians and researchers working together in the sense that SLPs are as

responsible for examining the information coming from research studies as researchers are for sharing it in such a way that the non-scientific professional can utilize. As mentioned earlier, approaching practical elements through the lens of science (i.e., the Scientific Method) as included in the EBP protocol established by ASHA, evidence is strengthened and the gap between researchers and clinicians is diminished (Lof, 2011).

Also discussed in many studies on this topic is the fact that evidence in the field of speech-language pathology many times simply does not exist or exists only in limited quantities (Fulcher-Rood, 2020; Thome et al., 2020; Zhu & Luke, 2022). Beyond understanding the information available, SLPs must also consider that, sometimes, there is little to be had at all. The opposite can also be true when an SLP experiences information overload due to the sheer number of choices in reviewing pertinent evidence on a particular topic (Dollaghan, 2007; McCabe, 2018; Nail-Chiwetalu & Ratner, 2006). Following research rules-of-thumb such as limiting sources to only those within the most recent ten-year period are simple ways to make a plethora of data manageable. Concerted efforts by ASHA to streamline the EBP process reflect not only a commitment to ensuring reliable and valid information is readily available, but also consider the logistics of time constraints and potential benefits of a common tool for clinicians at all levels (ASHA, 2004).

Education-Based Barriers

At the heart of this study is collection and review of data to determine if changes in educational pedagogy regarding EBP is a valid consideration for current and future SLPs as they seek to employ best practice in this area. Given that regulatory requirements include mandatory use of science-based techniques in SLP, it is increasingly important to hone in on all aspects of EBP that might be tweaked for better outcomes (Hoffman et al., 2013). Hoffman et al. (2013)

note a distinction between early career SLPs and those who have practiced for more than ten years. Their research results indicate that the profession is in a unique circumstance where less experienced clinicians report more graduate training, as part of ASHA's initiative to boost EBP education at this level, while more experienced clinicians report more EBP training as part of a continuing education paradigm, having not received the same graduate-level training. This trend reflects increased growth in EBP research, despite the overall dearth of information thus far (Chu et al., 2021). As Hoffman et al. (2013) indicate, there remain several aspects of EBP that still lack inquiry, but at the forefront, pedagogy for addressing graduate level learning is evident, especially given their study results that SLPs themselves report a need for further training.

Education presents a barrier to EBP in several ways. One of these is the previously mentioned information literacy piece that Cobus-Kuo & Waller (2016) identified as an area of significant weakness for practicing SLPs who struggle to retrieve information succinctly. They discovered in their research that increased training in this area leads to more effective application of EBP principles with exposure to EBP in practice during graduate level instruction, predicting positive attitudes towards EBP later during one's post-graduate career. As Donohue et al. (2021) found, however, SLPs often do not have adequate training at this stage. These authors state that, to develop the critical thinking skills needed for making clinical decisions, both time and practice are required and are an essential part of the EBP practicum curriculum. Spek et al. (2013a, b), in two separate studies, found that for clinical behavior to change, one must believe that the targeted behavior is both desirable and attainable. However, behavior change to date for teaching EBP has not been valued when developing practical curriculum, and studies at the undergraduate level did not result in significant behavior change due to hypothesized lack of hands-on training (Spek et al., 2013a, b).

As discussed earlier, Ratner (2006) recognizes a lack of impact from written curriculum alone when attempting to adjust clinical behavior with a conclusion that further exploration of the potential benefits of face-to-face instruction is warranted. Spek et al. (2013b) state that for students to gain competency in EBP, they must not only be confident in its use, but they must also value its contribution to clinical outcomes. They contend that competency and the confidence to apply it require active engagement in the practicum setting with curriculum that addresses these needs. Halle et al. (2021) draw attention to the expectation within the field of SLP that following theoretical teaching as a part of graduate-level academia, student clinicians are expected to apply EBP during clinical practicum. Still, there is a current lack of unanimity for a framework on teaching it. As Witko et al. (2021) indicate, both academic and clinical teaching have their place in SLP training, as there is a significant impact on student confidence. Pedagogy at each stage is critical. In agreement with Ratner (2006), Spek et al. (2013b), and Donohue et al. (2021), Halle et al. (2021) report that the most effective teaching style for EBP to date is that which incorporates real clinical components as part of the teaching process. Despite this recognition, the lack of consensus within the field for a specific supervisory framework for EBP instruction has been problematic, much like the impact of variable terminology among professionals when referring to EBP (Halle et al., 2021).

Importance of EBP in Speech Language Pathology

While barriers to EBP are a reality practitioners face, the benefits of EBP to speech language pathology are equally impactful. First, EBP helps advance the profession by eliminating ineffective assessment and treatment approaches and development of new methods based on data gathered in scientific research as well as day-to-day client care (Cohen & Hula, 2020; Dollaghan, 2007). Second, as Fulcher-Rood et al. (2020) recognize, it provides a

structured framework for SLPs to rationalize their clinical decisions, keeping them compliant with legal, ethical, and regulatory requirements as well. With these being defined elements of ASHA's supervisory requirements, EBP is beneficial for the student clinician and the supervisor who seeks to ensure teaching of best practices (ASHA, 2020). EBP enables identification of effective and ineffective interventions (Lof, 2011). Not only that, Thome et al. (2020) show that while SLPs tend to report EBP as a critical element of practice, there is another benefit in the consensus that ongoing training is needed beyond the graduate school level. The tenets of EBP therefore not only inform clinical situations, but they also provide a framework for ongoing learning of ever-changing best practices in the profession. Further, even the area of cultural competency is incorporated in EBP. Horton & Munoz (2021) find that there is an added benefit of built-in cultural consideration when using a consistent EBP framework in that it allows for universal inclusion of this critical component in client/patient care. Knowing now that the literature supports increased exposure to EBP at the practicum level based on post-graduate EBP use, its importance to all areas of the field is evident (Greenwell & Walsh, 2021). These same authors contend that it cannot be ignored that teaching and promoting EBP during graduate work, early career, and through professional learning as one's career continues are equally impactful to embracing best practices among the profession. Zhu and Luke (2022) agree that current evidence reflects a firm link between the supervision process and long-term outcomes for professionals. This shows that those concepts directly taught during the graduate practicum significantly impact later practice among SLPs. Finally, as observed in Fulcher-Rood et al.'s (2020) synthesis of evidence, EBP can also be used as a framework for researchers and clinicians to work together to bridge the gap that exists between the two aspects of speech language pathology. It allows for strategic action that includes both parties incorporating the other in their

daily practices. By employing the DECIDE method as part of the EBP Toolkit produced by ASHA, each experiential end of the field's spectrum can glimpse the other when considering best practice for a specific circumstance.

In its 2004 technical report on EBP, ASHA recognizes that one of the critical steps for providing dependable evidence that supports clinical decision-making is to target faculty by offering shared instructional tools. One can extend this idea to include off-campus supervisors who are part of the educational process. It is important to remember that EBP is not always applied the exact same way given the nature of the individual client, clinician, and situation involved. However, a consistent framework that allows for individuality in these critical areas yet still maintains a uniform methodology is worth considering when examining all the benefits and challenges of actively applying EBP.

ASHA's 2004 position statement also recognizes that, depending on the parameters of the situation, whether it involves "screening, diagnosis, treatment, prevention, prognosis, or some other aspect of clinical practice," its certified professionals can still maintain a uniform methodology for identifying, evaluating, and applying credible evidence for the purpose of providing the best client care available.

Additionally, ASHA (2004) recognizes that teaching this skillset in such a way that it is practical for the workplace is critical. Not only does it accomplish efficient decision-making in the workplace, consistent use of an EBP tool such as the ASHA EBP Toolkit also provides scaffolding for critical thinking among student clinicians and a structure for formative assessment. Such a tool is useful in that it documents whether a student clinician exhibits competency in this area (Hancock & Brundage, 2010). These same authors go on to state that what is gained from utilizing a consistent tool such as the EBP Toolkit is an efficient method for

directly teaching a concept, delivering feedback, and developing critical thinking skills. Its comprehensive structure scaffolds SLPs' clinical reasoning process by framing the question, gathering evidence, assessing evidence, and making a clinical decision, as these are the steps included in this tool.

From the perspective of a graduate program, not only are short term objectives met to the benefit of the individual student, but program development also continues with real-time feedback from the tool that is easily accessible. Ginsberg et al., (2016) point out that the development of critical thinking skills is paramount to increasing the depth and application of student knowledge, and by using a common tool, supervisors in the field can commonly assess and strengthen graduate clinicians' skills as they move toward entering the work force. They, along with McCabe (2018), further argue that students truly need the direct instruction that such a tool offers.

While EBP should inhabit a primary place among continuing education topics, it should also be a primary focus among clinical educators. Again, as research has shown, there is a positive correlation between exposure to EBP in graduate level practicum and the use of EBP in post-graduate clinical work (Cobus-Kuo & Wallers, 2016; Fulcher-Rood et al., 2020; Greenwell & Walsh, 2021). Paramount to championing universal EBP practice even among quite different clinical situations are internal consistency and efficiency (ASHA, 2004). ASHA's Report of the Joint Coordinating Committee on Evidence-Based Practice (2004) outlines the need for standards in knowledge of the three EBP elements, the steps involved in managing EBP, and recognizing the many areas within the SLP scope of practice when applying EBP. Sackett et al. (1996) frame EBP as a concept to be employed at all clinical levels: undergraduate, graduate, and continuing education. As Hancock and Brundage (2010) concur, doing so through a

universal rubric that records the graduate clinician's competency covers the necessary elements to ensure proficiency while also allowing for efficiency in the process. They further express that such a tool allows transparency between the supervisor and the student with comprehensive and up-to-date feedback to shape learning according to the student's needs. Formative assessment, as a central part of the supervisory process, is supported by universal tools such as the ASHA EBP Toolkit, allowing for consistent communication and evaluation among students and supervisors alike. In their 2014 study, Hart and Kleinhans (2014) also conclude that a uniform set of vocabulary among supervisors would be beneficial for promoting use of EBP. Ginsberg et al. (2016) also argue that students really need direct instruction. Being able to clearly connect clients to current research data is essential and requires ease of navigation. In McCurtin et al.'s 2019 study, they share that the ever-changing databases used by SLPs are ripe for integrating common tools for accessing the information they contain. They continue by adding that such consistency among practitioners might generate an easy-to-use methodology that will move the field forward from antiquated practices in treatment and assessment related to habitual, traditional, or cultural methods typically used with little substantiating evidence. This supports ASHA's 2020 Standards and Implementation Procedures for the CCC in SLP in that it allows for the administration of appropriate evaluation and treatment procedures. A common tool can give practitioners a platform for using a common language to communicate about the many areas of the field (Cohen & Hula, 2020). As supervisors, SLPs can use such a tool to not only provide EBP in that realm of the profession, but also to teach it to the graduate clinicians who seek to experience the realities of clinical decision-making while still under the purview of a mentor. As Kleinhans et al. (2020) state, it is beneficial to the supervisor in preparation of teaching to have a common tool for adequate use of current pedagogical methods. They further acknowledge that

implementing new clinical knowledge into a graduate clinician's repertoire requires the incremental steps that a tool such as ASHA's EBP Toolkit offers. As Zhu and Luke (2022) agree, a universal EBP tool can assist supervisors in designing clinical experiences for student clinicians as well.

Problem Statement

As a clinical supervisor of graduate speech language pathology students beyond the academic setting, one often finds that SLP student interns lack familiarity with how to find and use evidence-based methods and tools. It is often apparent that student clinicians feel overwhelmed by the multitude of assessment and treatment methods which can lead to use of the first seemingly viable tool one can access without fully researching its validity and reliability. Pressure to be efficient and effective may influence an intern's drive to fully explore existing literature on whether a certain tool or method should be used. The problem identified is that student clinicians do not exhibit a full grasp of where to find practical evidence and how to make decisions on use of a particular tool or method beyond clinical instructors simply telling them it is valid and reliable, or that it is the most accessible in the clinical situation. One of the first ideas that a supervisor must impart on a student clinician is that use of EBP is a way of integrating what is already known with what the clinician wants and needs to know to help a client rather than treating EBP instructional tasks as generalized assignments only (Nail-Chiwetalu & Ratner, 2006).

As recognized in Greenwell and Walsh's 2021 study on current EBP trends, SLPs consistently report that there is a lack of training and resources for applying EBP effectively. Student clinicians require direct instruction through a common tool so they may learn how to integrate the different areas (i.e., screening, assessment, treatment) and to develop plans for

clientele (Ginsberg et al., 2016). Zhu and Luke (2022) point out the need for a systematic approach to supervision, and the area of EBP is certainly included. Use of a tool like the EBP Toolkit is lacking, and the ramifications are inconsistent terminology and supervisory practice. Zhu and Luke (2022) also contend that developing skills during supervision is an area poorly researched in that data tends to be inconsistent and difficult to find. Additionally, while the ASHA EBP framework supplies a common set of terminology and methodology to ensure clinical proficiency in this area, the inconsistent use of specific tools can lead to confusion when trying to gauge the best methods available in any given clinical situation for improved client outcomes. The literature shows that using a tool like the EBP toolkit in rubric form allows a supervisor to document skill level and provide formative feedback as well as support the core competencies of the CCC during the learning process (Hancock & Brundage, 2010). As Kleinhans et al. (2020) point out, such a rubric also allows supervisors the advantage of an outline of the pedagogy behind the instruction and application of EBP. The field of SLP is significantly impacted by these compounded problems in that a fundamental understanding of what EBP is and how to determine how to establish best practices is essential to client improvement. It is a problem at the core of assessment and intervention for enhancing quality of life among the communicatively impaired population.

Purpose of the Study

As described by several researchers who have conducted studies on this topic, the current literature since the time ASHA formally implemented EBP as a professional standard in the field of speech-language pathology is limited, though recently observed to be growing (Chu et al., 2021; Thome et al., 2020). In its 2004 technical report, ASHA recognizes that the concept of applying EBP guidelines to communication sciences and disorders is an area of great need in

terms of requiring more information. Data are simply lacking for global understanding of how EBP is taught and applied among working professionals and graduate level clinicians alike. Sackett et al. (1996) acknowledge that there is ongoing evolution of the many facets of the medical field on top of the evolving concept of evidence-based medicine itself. Likewise, proponents of developing best practice in application of evidence-based practice in speech-language pathology recognize the same growth pattern in the field that must be addressed through ongoing research exploration (Nail-Chiwetalu & Ratner, 2006). Such ongoing change requires constant adaptation of teaching methods, especially in how clinicians approach evidence-based practice strategies. An objective in identifying current trends in EBP practice and teaching is whether instruction is delivered directly or indirectly. As defined by the Great Schools Partnership in its Glossary for Education Reform for Journalists, Parents, and Community Members (2013), *direct instruction* is a form of teaching in which the instructor leads the student through discourse and demonstration specific to the topic being addressed. It is structured and ordered specifically to the concept being taught. Ruutmann & Kipper (2011) state that one of the defining characteristics of direct instruction is "consistent use of effective classroom organization and management methods." Indirect instruction, according to these same authors, is more student-centered and includes such strategies as self-evaluation, simulation, and instructors in the role of facilitator versus manager. The purpose here includes examining whether direct or indirect instruction of EBP is more prevalent and, when direct instruction is in use, whether the ASHA EBP Toolkit is a tool consistently utilized for the task.

There is an especially shallow pool of information when looking at student perceptions of confidence when it comes to EBP (Ginsberg et al., 2016). To improve understanding of the clinical utility of EBP, Ginsberg et al. (2016) argue that examination of not only the clinical

approach to patients, but also the supervisory approach to students is imperative. This study seeks to add to the current body of information to better understand teaching EBP specific to this field. Determining if relationships between a more strategic use of ASHA's EBP Toolkit and student proficiency outcomes exist may impact the instruction of new clinicians. The immediate impact this study may have on speech-language pathology is two-fold. First, there may be a correlation in the level of proficiency that graduate students experience, which could further drive use of specific teaching methods. Also, supervising clinicians may develop more current skills in accessing technology related to research resources and the teaching concepts needed to instruct student clinicians in this area. Long-term impacts to the profession may include changes to the methods the SLP supervisor uses in developing competency in this area if correlations between specific methodology and increased student proficiency are observed. Research in this area also helps provide accountability among ASHA's membership (clinicians and researchers), educators (academic and clinical), and students (Hancock & Brundage, 2010). The project seeks to gather evidence to help with determination of the best practice for teaching the same topic. In a field where practitioners integrate data from research, experience, and client factors, EBP aids in decisions that impact not only clinician-reported outcomes, but client-reported outcomes as well (Cohen & Hula, 2020). Professionally, a more direct approach to ensuring SLPs' knowledge of how to conduct EBP could lead to improved client outcomes. The purpose of this study is to investigate the relationship between clinical supervisors' use of ASHA's defined procedures for teaching evidence-based practice through their EBP Toolkit and master's level student clinicians' self-ratings of proficiency in evidence-based practice.

Research Questions

As mentioned, the purpose of this study is to explore relationships between methods of teaching EBP during clinical practicum and students' perceived level of competency in EBP. The questions the researcher seeks to answer are:

1) Will SLP supervisors of graduate clinicians in Georgia and Florida with more clinical experience rank themselves as knowledgeable in EBP?
2) Are SLP supervisors of graduate clinicians in Georgia and Florida, who rank themselves as knowledgeable in EBP at intermediate and advanced levels, directly teaching evidence-based practice during master's level clinical instruction?
    a) What are the tools being used?
3) Is the ASHA EBP Toolkit a tool used by school based SLP supervisors?
4) What level of proficiency in using EBP do student clinicians consider themselves when direct instruction is conducted during school-based clinical practicum?
5) Is the ASHA EBP Toolkit a tool used by graduate student clinicians during school-based practicum?

Hypotheses

Based on these questions, the following hypotheses were developed:

1) SLP supervisors in Georgia and Florida with more clinical experience will rank themselves as more knowledgeable in EBP.
2) Higher rankings of EBP knowledge by SLP supervisors in Georgia and Florida will lead to greater reports of direct instruction use.
3) Higher rankings of direct instruction use by SLP supervisors in Georgia and Florida will result in increased familiarity with the ASHA EBP Toolkit.

4) Higher rankings of learning through direct instruction will result in higher rankings of EBP proficiency among SLP interns.
5) Higher reports of familiarity of the ASHA EBP Toolkit will lead to higher rankings of EBP proficiency among SLP interns. To better understand the best practice for conducting research in this area, multiple studies were reviewed. As mentioned throughout the literature review, more than a few researchers have explored the understanding of evidence-based practice among speech language pathologists. They researched SLPs' reported usage of EBP including barriers to use. The authors note that SLPs, at the core of professional certification, must use EBP as a way of best practice in assessment, diagnosis, and treatment of clientele. ASHA officially recognized EBP as a component of the professional standards in 2004, bringing SLPs to a higher caliber of practical performance with the addition of the EBP Framework.

Chapter III

METHODS

Participants

Recruitment and Informed Consent Procedures

Following approval by the Internal Review Board at Valdosta State University during the Spring 2024 semester as indicated in Appendix G, participant recruitment and data collection took place beginning near the midpoint of the semester on February 19, 2024, and a near-endpoint of March 22, 2024. Using non-probability purposive sampling, two groups of participants were devised. Participants were sought based on specific characteristics. The first included school-based clinical practicum instructors who hold the ASHA CCC, while the second included master's level student clinicians at the off-campus practicum level of clinical education. Attestation for meeting the required criteria was included in the study participation agreement on each survey. Potential participants were not permitted to continue without specifying having met the minimum credentials.

SLP Supervisors. Recruitment of school-based SLP supervisors of master's level student clinicians occurred via invitation using public email lists of professionals and discussion boards of ASHA Special Interest Groups (SIG), including SIG1 Language Learning and Literacy, SIG10 Issues in Higher Education, SIG11 Administration and Supervision, and SIG14 Cultural and Linguistic Diversity. Supervisors were required to be ASHA certified and have actively supervised a master's level student clinician within the past 2 years (since ASHA’s most recent update to their Knowledge & Skills in Supervision statement). Twenty-seven individuals who

met these criteria participated in the study. One participant did not complete the survey as shown in Appendix E, and the partial data were discarded.

SLP Student Clinicians. Recruitment of master's level student clinicians occurred via email invitation of students through regional associations and public contacts. Students were required to be currently enrolled in a master's level program and either currently participating in clinical practicum or to have recently completed it. Thirty individuals responded to the survey as shown in Appendix F. Of those responses, three were incomplete and therefore discarded.

Setting

The setting of the study was online inclusion of regionally based SLP professionals in Florida and Georgia who supervise student clinicians from accredited speech language pathology graduate (master's level) programs as well as regionally based student clinicians in those same states. Specific institutions and programs were not targeted.

Timeframe

The timeframe for the current study was five weeks. It took place during the Spring semester of 2024. Data collection was initiated near the midterm point and concluded near the end of the semester.

Procedures for Data Collection

SLP supervisors were sent an anonymous supervisor survey via Qualtrics with a group-specific questionnaire. Each participant in this group was presented with a multiple-choice question to gauge actual knowledge of EBP principles. Self-rating prompts were used for determining types of instructional methodology, EBP tools used, and perceived level of

competence. Open response for indicating years of experience and further explanation of ratings and/or use of tools was also included.

SLP student clinicians were also sent an anonymous student survey via Qualtrics with a group-specific questionnaire. Each participant in this group was given a multiple-choice question to gauge actual knowledge of EBP principles. Self-rating prompts for determining actual clinical experience and perceived competence levels were used for this group too. Additionally, open response was used to allow for further explanation of ratings and/or use of tools.

The SLP Supervisor survey presented participants with questions regarding years of experience and self-reported level of EBP knowledge. Years of experience data were examined as individual data points to best represent the central tendencies in the sample. Reported level of EBP knowledge was rated by each participant as none, beginner, intermediate, or advanced. Actual EBP knowledge was gauged by asking participants to identify the three main tenets of EBP using a multiple-choice question. They were then asked to describe the type of EBP instruction used when supervising student clinicians. The two types presented were direct and indirect. Direct instruction was described as a teaching method in which the instructor leads the student through structured discourse and demonstration specific to a topic and serves as the manager. Indirect instruction was described as a student-centered approach that includes strategies like self-evaluation, simulation, and instructors as facilitators rather than managers. They were then given three choices regarding how much of their instruction falls into each category: mostly direct, equally direct and indirect, and mostly indirect. For this question, the term “mostly” was defined as 75% or more of the time, and “equally” was defined as both types of instruction occurring 50% of the time. Participants were then asked to elaborate on their teaching methodology by indicating whether they use the ASHA EBP Toolkit followed by an

opportunity to give a brief explanation of how they do so. In the case of not using this tool, they were asked to briefly tell why the tool is not used. They were also prompted to list other tools used in EBP instruction with a brief explanation.

The SLP Student Clinician Survey presented participants with questions regarding the stage of off-campus clinical learning and self-reported level of EBP knowledge. Learning stage was divided into three categories of beginner, intermediate, and advanced. Reported level of EBP knowledge was also rated by each participant as beginner, intermediate, or advanced. Actual EBP knowledge was gauged by asking participants to identify the three main tenets of EBP using a multiple-choice question. They were then asked to describe the type of EBP instruction used by their supervisor(s) during clinical practicum. The two types presented were direct and indirect. Again, direct instruction was described as a teaching method in which the instructor leads the student through structured discourse and demonstration specific to a topic and serves as the manager, and indirect instruction was described as a student-centered approach that includes strategies like self-evaluation, simulation, and instructors as facilitators rather than managers. They were then given three choices regarding how much of the instruction they experienced can be categorized as mostly direct, equally direct and indirect, and mostly indirect. The terms "mostly" and "equally" were defined as 75% or more of the time or occurring 50% of the time, respectively. Participants were then asked to elaborate on their instructor's teaching methodology by indicating whether they use the ASHA EBP Toolkit followed by an opportunity to give a brief explanation of how it is used. If this tool was not used, they were asked to briefly tell why it is not used. They were also prompted to list other tools used in EBP instruction with a brief explanation.

Chapter IV

RESULTS

The purpose of this study was to investigate the potential relationship between clinical supervisors' use of ASHA defined procedures for teaching evidence-based practice through their EBP Toolkit and master's level student clinicians' self-ratings of proficiency in evidence-based practice. A mixed methods approach was used to analyze the data collected. Data from each group of participants were compiled separately. Responses were first divided into categories based on question type (i.e. multiple choice, rating scale, or open response). They were then further categorized by participant characteristics using structured coding. Descriptive coding was used to organize additional response trends.

Central Tendencies and Descriptive Data

Supervisory Experience and Competency. Using descriptive statistics, central tendencies were determined. SLP Supervisor participants reported years of experience. Through grouped frequency distribution, Figure 1 shows both the reported information and frequency of recurring data points. The range of experience level is six to thirty-six years with a mode of 15. The mean among this data set is 19.5 years, and the median experience level is 13.5 years among supervisory participants. Based on this information, the average supervisory participant has had access to continuing education components provided by ASHA since the development of the EBP standards and the updated supervision requirements in the past few years. Competency among intermediate and advanced supervising SLPs was determined by requiring an accurate demonstration of the three tenets of ASHA's EBP Triangle via a series of questions targeting this

information. Participants who did not demonstrate competency on all questions were not included in further analysis, as the investigator attributed inability to demonstrate this basic level of knowledge as having less knowledge of EBP. For each practitioner who indicated at least the median experience level, 25% reported their level of knowledge to be intermediate while 75% reported an advanced level of knowledge. All practitioners with 20+ years of experience reported advanced knowledge of EBP. Both pools of data reflect a positive correlation between level of experience in the field and level of knowledge specific to EBP.

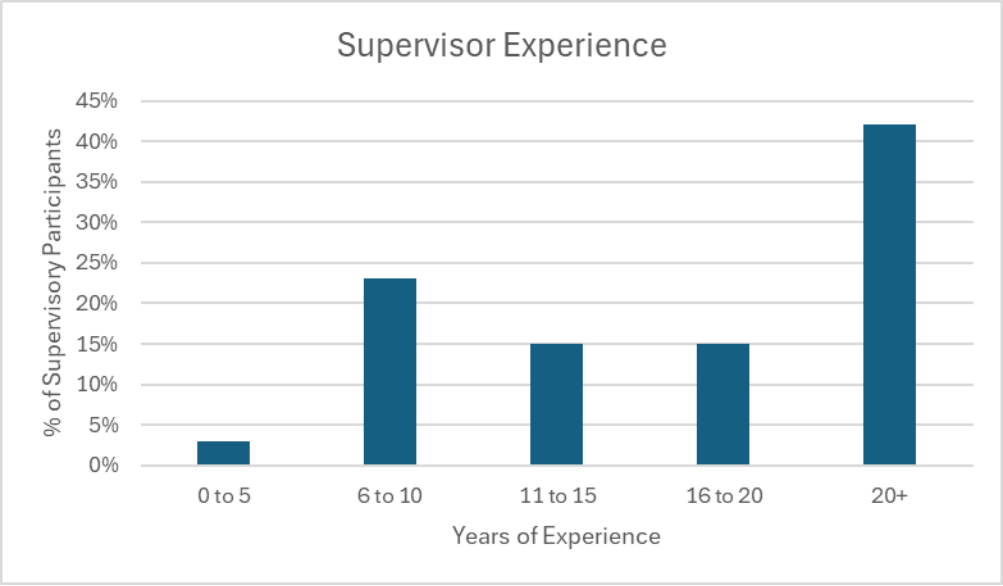

Figure2. Experience of SLP Supervisory Participants

Student Learning Stage and Competency. Descriptive traits for the SLP student clinician sample were also determined. Student clinician participants reported learning level and competency during the school-based off-campus practicum period. Figure 3 shows both the learning stage and frequency of recurring data points. Nineteen percent of respondents indicated a beginning learner status, 7% indicated intermediate, and 74% indicated an advanced stage. Based on the five stages of skill acquisition reviewed by McCrea and Brasseur (2020), the term *beginner* in this study refers to those graduate students who, having completed academic study

requirements, are involved in the first stage of their practicum, which is often referred to as an "advanced beginner" in McCrea and Brasseur's text. Additionally, the terms *intermediate* and *advanced* in the study correlate with the "competent" and "proficient" stages of the five-stage model (McCrea & Brasseur, 2020). Most of the student participants reported competency at an advanced level.

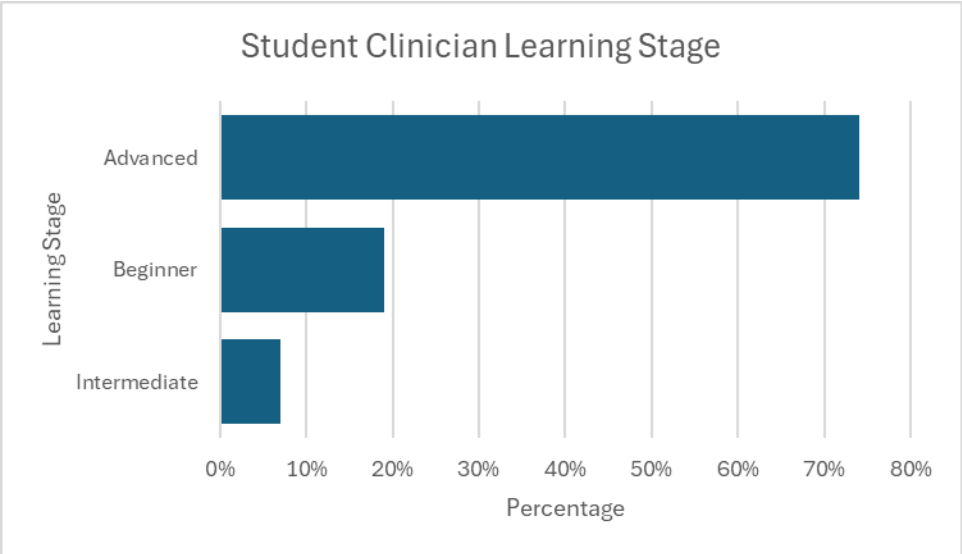

Figure 3. SLP Student Clinician Learning Stage

Teaching Methodology. To understand teaching methodology used by supervisory participants, they were asked to report whether they used direct instruction, indirect instruction, or both. One hundred percent of supervisors reported that they use both methods. They were then asked to describe if they use mostly direct instruction (≥ 75%), mostly indirect instruction (≥ 75%) or equally direct and indirect instruction (50% each). Only supervisors who reported their EBP knowledge level as intermediate or advanced were included as higher ranked as stipulated in the hypotheses. Of those supervisory participants who demonstrated competence, 26% primarily use direct instruction, 21% primarily use indirect instruction, and 53% use each method equally, as shown in Figure 4. Due to the small study sample, Fisher's Exact Test was

used for statistical analysis which allows for an exact measure of deviation from the null hypothesis (Table 1 and Figure 5). For this variable, the Fisher exact test statistic value is 0.5055, which indicates that the result is not significant at $p < .05$. you have a small sample size; statistics are likely not needed

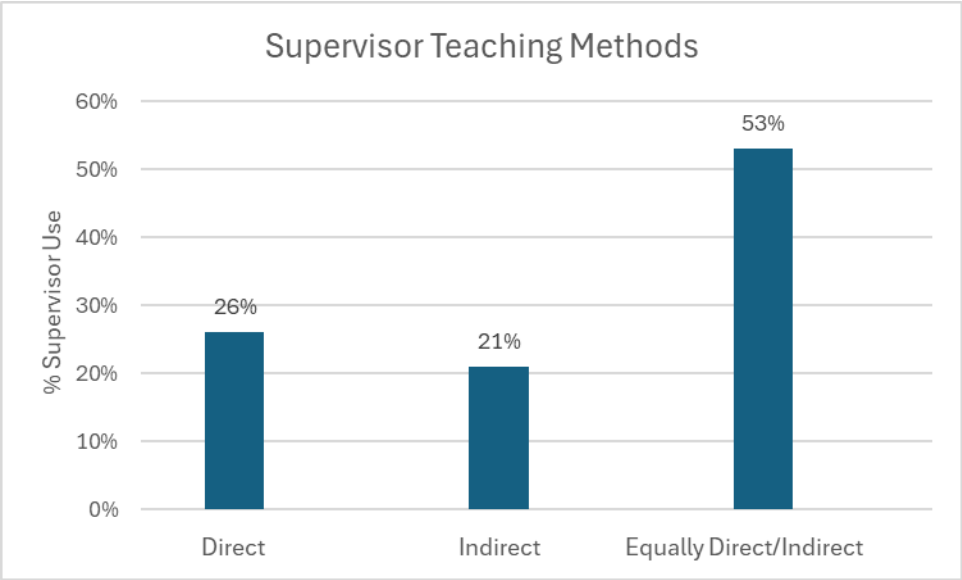

Figure 4. Supervisor Teaching Methods

	Direct Instruction	Equally Direct/Indirect Instruction	Row Totals
Advanced	5	7	12
Intermediate	0	2	2
Column Totals	5	9	14

$p = 1$

Table 1. Data Set A

Participants in the supervisory group were also asked if they used the ASHA EBP Toolkit in their instruction, regardless of methodology. No participant in the study answered this question. Follow-up questions to allow brief explanations of how this tool is used were embedded in the survey based on yes or no answers generated by the participants. However, without the initial response to show whether the ASHA EBP Toolkit is used or not, further

extrapolation based on how it is used is simply not possible. This avoidance phenomenon leaves reporting of using the ASHA EBP Toolkit for this study for the student clinicians in the second sample. Notably, supervisory participants did respond to questions regarding the use of other tools. Seventy-nine percent of respondents indicated use of other EBP tools, and 21% indicated that they do not use other tools. Of those who responded "yes" to the question, 80% reported use of mostly direct instruction, while 20% reported equal use of direct and indirect instruction. Use of mostly indirect instruction was not included due to a singular focus on some degree of direct instruction (primarily or equally) for the purpose of this study. Again, statistical analysis using the Fisher Exact Test was performed and revealed a value of one. The result is not significant at $p < .05$. Data points are displayed in Table 2.

	EBP Tools Are Used	EBP Tools Are Not Used	Row Totals
Direct Instruction	12	3	15
Equally Direct/Indirect Instruction	3	1	4
Column Totals	15	4	19

$p = 1$

Table 2. Data Set B

Student clinician reports indicate that, despite supervisor reports of primarily equal use of direct and indirect instruction methods, students did not experience this. Only students who reported their EBP knowledge level as intermediate or advanced were included, as the hypotheses specify participants with higher rankings of proficiency. Of those student participants who demonstrated competence in addition to their elevated self-ranking, 39% stated that their supervisors primarily use direct instruction, and 33% primarily use indirect instruction, while 22% use each method equally, as shown in Figure 6. The remaining 6% of the respondents did

not provide an answer. Figure 7 shows a visual comparison of supervisory data and student clinician data. As with the supervisory participants, the student clinician sample is small. For this variable, the Fisher exact test statistic value is one, which indicates that the result is not significant at $p < .05$.

Interestingly, student clinician data specific to use of the ASHA EBP Toolkit was difficult to come by, as was the case with supervisory participants. Of the student respondents, only one answered the question pertaining to use of the tool. That person indicated that they are not familiar with the ASHA EBP Toolkit, nor was it used in their clinical instruction. However, also like the supervisory participants, student clinicians indicated use of several other tools. In fact, 100% answered that they used other EBP tools during their clinical instruction. While specific information about the ASHA EBP Toolkit is lacking, this limitation inadvertently identifies an area for further study. It should be considered here that this particular data set does not include student clinicians and supervisors that work together. Rather, both samples are random and unrelated. Further investigation into the relationships among supervisors and student clinicians who physically work together would likely be a stronger indication of actual relationships between teaching methods and learning styles encountered.

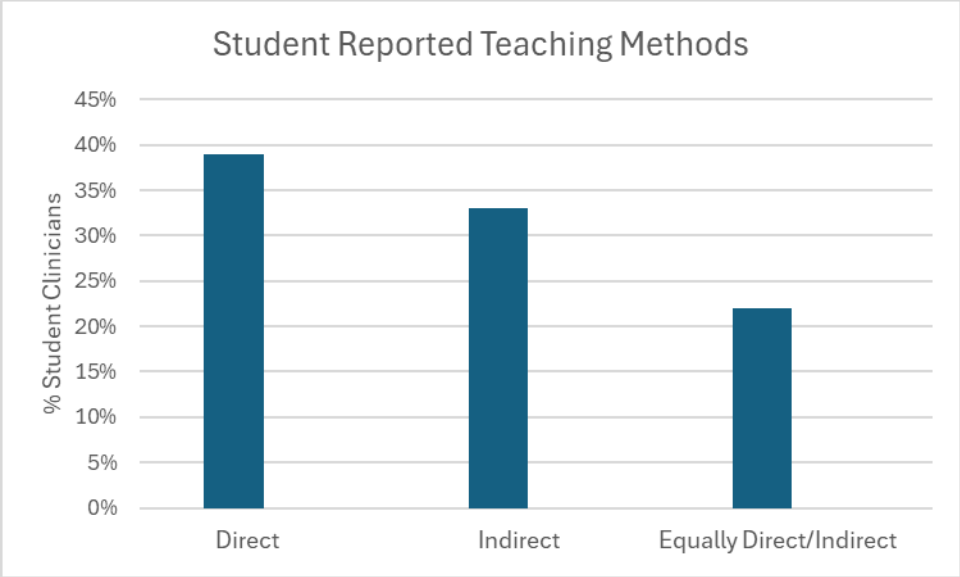

Figure 5. Student Reported Teaching Methods

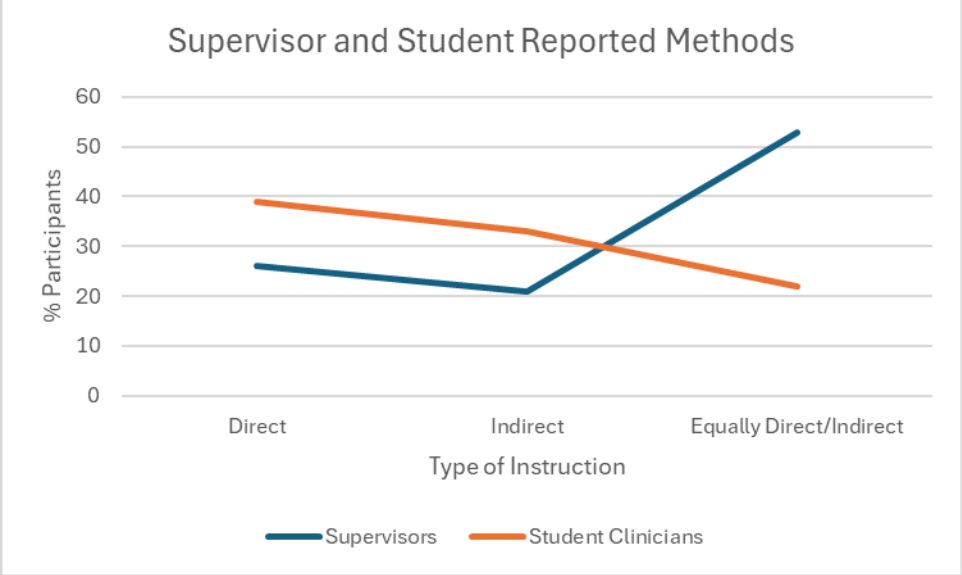

Figure 6. Comparison of Supervisor and Student Reported Instruction Methods

	Direct Instruction	Equally Direct/Indirect Instruction	Row Totals
Advanced	7	5	12
Intermediate	0	0	0
Column Totals	7	5	12

$p = 1$

Table 3. Data Set C

Tools Utilized (Supervisor). Despite the lack of information specific to the ASHA EBP Toolkit originally sought by the author, qualitative data regarding the actual tools used by supervisory participants was forthcoming. Within the realm of direct instruction, tools reportedly used by supervisors include resource libraries, professional and scientific articles, the ASHA Practice Portal (including published evidence maps), clinical appraisal tools, case-based learning, and team input. Tools used during indirect teaching methods include peer teaching and case simulation.

Tools Utilized (Student Clinician). Like the supervisory participants, student clinicians indicated several key tools for incorporating EBP into their clinical practice as used during direct instruction. These tools include resource libraries, professional and scientific articles, the ASHA Practice Portal (including published evidence maps), case-based learning, and team input. Again, like the supervisory respondents, indirect teaching modalities used tools such as peer teaching and case simulation.

A chi-square test of independence was conducted to determine if a relationship exists between use of EBP tools by supervisors and use of tools by student clinicians. Test results indicate a statistic of 3.1872 with a p-value of .527007. This is not significant at $p < .05$. However, the data clearly reflects a high incidence of commonality among tools used by both groups. This may be coincidental, or it may indicate a degree of teaching methodology that leads to use categorically organized EBP tools other than the one explored here. Further exploration is needed.

Inter-rater and Intra-rater Agreement. Data were categorized using a hybrid coding approach that incorporates both deductive and inductive analysis. Pre-established categories include those related to participant characteristics and type of instruction. Emergent codes include categories of EBP tools used. All responses were numbered then coded according to mutually agreed upon headings via group consensus of two school based SLPs. The headings of Resource Library/Professional Articles, ASHA Resources, Clinical Appraisal Tool/Case-Based Learning, Team Input, and Peer Teaching and Student-Directed Research were developed by the author to allow for Chi-Square analysis. Two SLPs reviewed participant responses from each group and nested the information under the heading that best described the type of tool used. To determine inter-rater reliability, a simple percentage was used to show whether both SLPs categorized the tools under the same heading or not. Both SLPs categorized each of the reported tools under the predetermined headings with 100% inter-rater agreement. Additionally, both SLPs later performed the same task to show whether intra-rater agreement held for the same set of categories. On the thirteen data points, SLP1 maintained 100% agreement. SLP2 maintained 92% agreement. Overall, for the two raters 96% of intra-rater agreement was observed.

Chapter V

DISCUSSION

Current Guidelines and Research

The four-step process of EBP, framing a question, gathering evidence, assessing evidence, and making a clinical decision, can seem like a complicated task for SLP clinicians. For this reason, ASHA developed a framework to support EBP called the ASHA EBP Framework. As mentioned in the research by Hancock and Brundage (2010), a rubric system to give formative feedback to students as they become professionals has been shown to be an effective tool for students and supervisors alike. The efficient and transparent use of quantifiable data leads to supervisors being held accountable to graduate-level clinicians. The benefit to supervisors is consistent scaffolding for teaching in the clinical setting. Sackett et al. (1996) cautioned, however, that consistency in EBP instruction methods does not mean settling for a one-size-fits-all approach and should ultimately maintain focus on the client. In essence, as stated in the literature, a rubric system allows for the client-based focus while also providing the systematic and direct instruction needed by students and experienced SLPs both as they experience novel concepts during clinical practice (Cobus-Kuo & Waller, 2016; Hancock & Brundage, 2010; Hoffman et al., 2013; McCurtin et al., 2019; Spek et al., 2013a).

The purpose of this study was to investigate the relationship between clinical supervisors' use of ASHA's defined procedures for teaching EBP using the ASHA EBP Toolkit and student clinicians' perception of competence.

The first hypothesis of the study states that SLP supervisors in Georgia and Florida with more clinical experience will rank themselves as knowledgeable in EBP. This hypothesis was

supported by the data, as SLP supervisors with 20 or more years of clinical experience reported an advanced knowledge level of EBP. wThe second hypothesis states that SLP supervisors in Georgia and Florida who rank themselves as knowledgeable in EBP at intermediate and advanced levels use direct instruction. This hypothesis was not supported by the data collected. Whether supervisors indicated higher levels of EBP competence had no significant impact on their use of direct versus indirect teaching methodology.

The third hypothesis states that SLP supervisors in Georgia and Florida who use direct instruction are more familiar with and use the ASHA EBP Toolkit. Unfortunately, participant responses in this area were not forthcoming and a correlation specific to this tool was therefore not determined.

Regarding the student clinician sample, the fourth hypothesis states that graduate students in Georgia and Florida who report being taught through direct instruction report intermediate or advanced level of EBP proficiency. Analysis showed that there is no significant relationship between these factors. Student competence is not related to the type of instruction they receive.

The final hypothesis states that graduate students who report intermediate and advanced knowledge of EBP during direct instruction use the ASHA EBP Toolkit. As with the supervisor portion of the sample, responses to survey prompts specific to this specific tool were lacking. A meaningful investigation could not take place.

Beyond the scope of the hypotheses explored, the author observed additional trends worthy of mention. SLP supervisors who indicate intermediate and advanced EBP knowledge levels also consistently report using EBP tools during instruction. While extrapolation of the data does not indicate a significant relationship between this and method of instruction, anecdotally, it

shows a level of consistency among the participants that illustrates best practice as discussed in the literature. Also, SLP student clinicians who report intermediate and advanced levels of EBP competency consistently report use of EBP tools under their clinical instructors' tutelage. Data analysis does not support a significant relationship in this area, but it certainly informs the literature base regarding student learning through use of specific categories of EBP tools during clinical instruction. It appears that participants in this study likely do not know about the ASHA EBP Toolkit resource, but does this have a significant impact on whether EBP is being taught and used during graduate supervision? These results argue that both seasoned practitioners and the student clinicians they train do, in fact, have adequate knowledge of EBP and implement it during student supervision, which ultimately, is the body of information to which this the study sought to contribute.

Limitations and Recommendations for Future Research

The limitations of this study lead to considerations for future research. The size of the sample groups included here is limited. A larger number of participants would first generalize the data to the regional population better with the potential to be further generalized to an extended geographical area. In addition, survey prompts to report individual criteria as it pertains to level of competence should be more specifically defined and explicitly stated to ensure full understanding among participants. This study defines these levels within the surveys, but analysis revealed a minimal level of specificity that could be further developed to better secure a consistent understanding among participants. Future research might also include examination of a broader set of EBP tools, as the data collected here shows consistency of use that a more representative dataset could show is correlated with EBP competence in support of ideas expressed in the literature that a one-size-fits-all approach through use of one specific tool is not

a likely precursor to successful evidence-based practice. The surveys also should bear a required response for advancement through the prompts, as this would prevent the absence of critical data experienced during this study. Finally, inter-rater and intra-rater agreement to control for subjectivity between SLPs tasked with categorizing data was determined by a simple percentage. This method does not account for chance agreement, nor does it stipulate agreement beyond that which is absolute.

Chapter VI

CONCLUSION

The results of this study were inconclusive regarding use of the specific tool, ASHA EBP Toolkit, in relation to SLP student clinicians' perspectives on their own levels of competency. Based on ASHA initiatives developed to promote evidence-based practice, the ASHA EBP Toolkit was chosen because of its accessibility, inclusion of accepted EBP tenets, and rubric style framework. However, the two samples in the study did not indicate any significant interaction with it. Despite this unfortunate lack of information, both populations reported use of several categories of other tools that promote the same field recognized EBP tenets. While type of instruction experienced by each group did not have a significant influence on establishing higher competency levels among student clinicians, there was a consistent report of using tools that emerged during data analysis that does appear to have had an impact. The study sought to inform teaching practices by examining the use of a specific tool. What the data showed, however, is consistent use of a greater set of tools that may correlate with student competency in EBP concepts.

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Appendix A:

ASHA EBP Toolkit PICO Worksheet

CREATE A **PICO QUESTION**

Fill in each component to make your own PICO question.

P POPULATION	**Example:** adults with TBI
I INTERVENTION	**Example:** cognitive rehabilitation
C COMPARISON	**Example:** no treatment
O OUTCOME	**Example:** improved cognitive communication

EXAMPLE PICO QUESTION: Is cognitive rehabilitation an effective treatment for improving cognitive-communication in adults with TBI?

PICO QUESTION: _____

_____

www.asha.org/research/ebp

ASHA American Speech-Language-Hearing Association

Appendix B:

ASHA DECIDE Framework

THE **DECIDE** FRAMEWORK

DEFINE your clinical question (Step 1), gather evidence (Step 2), and appraise the evidence (Step 3): complete the first three steps of EBP.

ASK YOURSELF:

- Step 1: What is my Clinical Question?
- Step 2: Have I gathered internal and external evidence?
- Step 3: What have I learned from my client's internal evidence?
- What is the quality and strength of the external research evidence?

Related Resources: PICO printable PDF; Client baseline data/progress reports; Research printable PDF; Appraisal checklists

EXTRAPOLATE clinically applicable information from the external research evidence.

ASK YOURSELF:

- What is the main take away from the research evidence?
- Do the results of the external evidence tell me anything about the possible effects of the treatment or assessment approach?
- How does my internal evidence relate to the research?
- If the research is inconclusive or there is no research, have I considered research on similar populations or interventions?

Related Resources: Found within the results, discussion, and/or conclusion sections of any external research studies reviewed; Client case history or baseline data

CONSIDER your clinical expertise and the expertise of others.

ASK YOURSELF:

- What do subject matter or clinical experts recommend?
- What is my experience, knowledge, clinical, and cultural competence level for this population or intervention?
- Are there interprofessional practice considerations?
- Is this approach within scope of practice and ethical?

Related Resources: Guidelines; Position Statements; Cultural competence test; IPP/IPE resources; ASHA Scope of Practice; ASHA Code of Ethics; state/federal laws and regulations

INCORPORATE your client's perspectives and needs.

ASK YOURSELF:

- What are the needs and goals of my client?
- What are my client's priorities, preferences, and expectations?
- What is my client's cultural or linguistic background?
- Does my client have barriers or limitations to access services?

Related Resources: Client and/or caregiver interview; Case history

DEVELOP a treatment plan by bringing together the three components of EBP.

ASK YOURSELF:

- What is my plan: implement, adapt, or combine treatments?
- What is the timeframe for implementation?
- How will I measure the efficacy of my plan?
- Have I informed my client and set expectations?

Related Resources: Treatment materials/protocols; Calendar or Schedule; Data Sheet

EVALUATE your clinical decision.

ASK YOURSELF:

- Review new internal evidence – is my client progressing?
- Does this treatment plan still align with client needs?
- Do I have other questions or priorities for this client?

Related Resources: Progress reports; Multi-disciplinary team discussion; Client and/or caregiver interviews

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Appendix C:

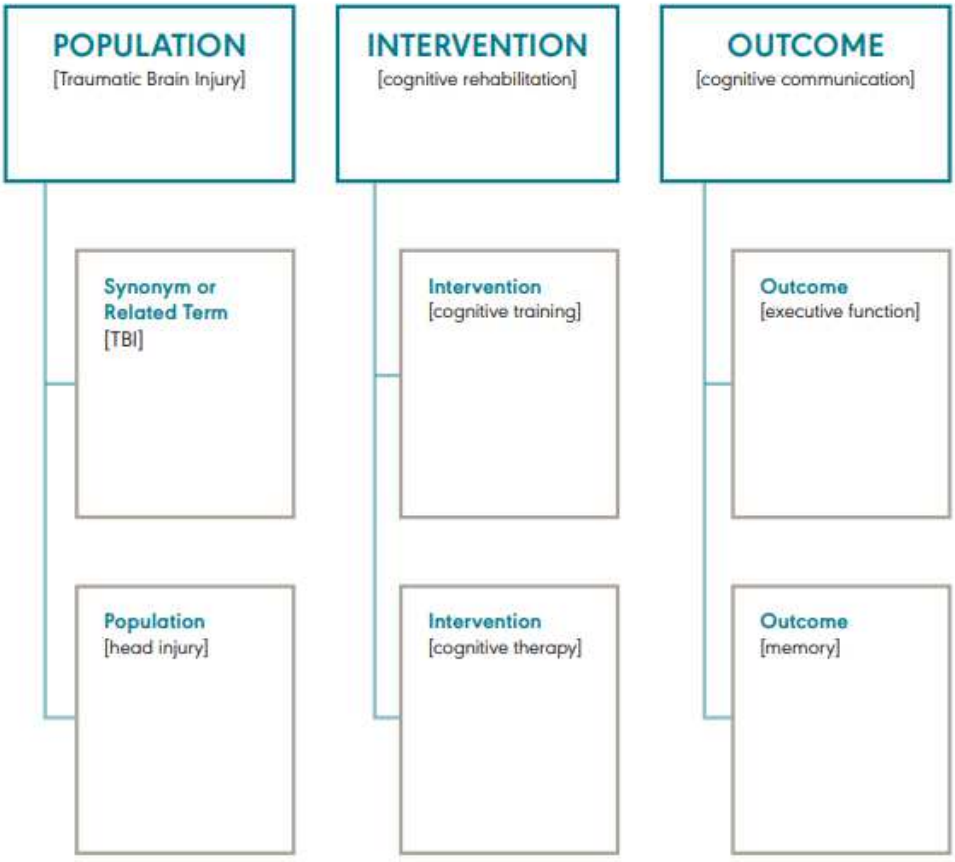
ASHA EBP Toolkit Search String Worksheet

CREATE A **SEARCH STRING**

Fill in keywords and Boolean Operators (AND, OR) to create a search string.

NOTE: You can use more keywords to narrow your search or use fewer keywords to broaden your search

EXAMPLE: adult AND ("traumatic brain injury" OR TBI OR "head injury") AND ("cognitive training" OR "cognitive therapy" OR "cognitive rehabilitation") AND (executive OR communication OR memory)



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ASHA

Appendix D:

ASHA EBP Toolkit Results Tracking Worksheet

TRACK YOUR RESULTS

Database: Key Words:

Citing Information (e.g., author, year, title)	Study Design (e.g., randomized controlled trial)	Participant Characteristics (e.g., total number, diagnosis)	Key Findings	Study Limitations

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ASHA American Speech-Language-Hearing Association

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Appendix E:

Supervisor Questionnaire with Consent to Participate

Supervisor Questionnaire

About this survey:

You are being asked to participate in a survey as part of a research project that is being conducted by Mary Gebel, a doctoral student in Communication Sciences and Disorders at Valdosta State University. The title of the study is "Using the American Speech-language & Hearing Association's EBP Toolkit During Supervised School-Based Practicum: Is There an Impact on Student Clinicians' Ratings of Self-Proficiency?" The purpose of this study is to determine relationships between evidence-based practice (EBP) methods and student clinicians' ratings of EBP proficiency. You will receive no direct benefits from participating in this research study. However, your responses may help us learn more about methodologies used in teaching about Evidence-Based Practice and the impact on student competency. There are no foreseeable risks involved in participating in this study other than those encountered in day-to-day life. Participation should take approximately 5 minutes to complete. This survey is anonymous, confidential, and voluntary. No one, including the researcher, will be able to associate your responses with your identity. You may choose to stop responding at any time or to skip any questions that you do not want to answer. Respondents must be at least 18 years of age, ASHA certified SLPs who supervise graduate student clinicians in a non-university school-based setting. By choosing "I consent" below, I give my consent for participation in this research study.

 I Consent

By choosing "I Agree" below, I agree that I am at least 18 years of age, certified by the American Speech-Language & Hearing Association in the field of Speech-Language Pathology, and I currently work in a non-university school setting.

I Agree

How many years have you been working as a Speech-Language Pathologist?

0 5 10 15 20 25 30 35 40 45 50

Years of Experience

[Likert Rating Scale Graphic]

Please rate your knowledge level of what Evidence-Based Practice (EBP) is:

None Beginner Intermediate Advanced

My Knowledge Level

[Likert Rating Scale Graphic]

Which of the following options do you feel most closely matches the component of EBP based on the American Speech-Language Hearing Association (ASHA) definition?

Research evidence, clinical expertise, and client perspectives

Proof, discussion, and intervention

Client impact, clinician impact, and community impact

As a supervisor, do you primarily use direct instruction or indirect instruction based on the following definitions?

Direct Instruction: instructor leads the student through structured discourse and demonstration specific to topic & serves as a manager

Indirect Instruction: student-centered and includes such strategies as self-evaluation, simulation, and instructors in the role of facilitator

I Use Only Direct Instruction

I Use Only Indirect Instruction

I Use Components of Both Direct and Indirect Instruction

If Answer was *I Use Components of Both Direct and Indirect Instruction* Display This Question:

Please estimate the amount of direct instruction and indirect instruction you use.

Mostly Indirect (75% or more of the time)

Equally Indirect and Direct (50% for both)

Mostly Direct (75% or more of the time)

If Answer was *I Use Only Direct Instruction* Display This Question:

You indicated that you primarily use direct instruction to teach EBP. Do you use the ASHA EBP Toolkit in your instruction?

Yes, I use this tool

No, I do not use this tool, though I AM familiar with it

No, I do not use this tool and AM NOT familiar with it

If Answer was *Yes, I Use This Tool*, Display This Question:

Briefly explain how you use ASHA's EBP Toolkit

_____

If Answer was *No, I Do Not Use This Tool*, Display This Question:

Briefly tell more about why you do not use ASHA's EBP Toolkit (ex: have not heard of it, do not know how to access it, etc.)

_____

If Answer was *I Use Only Indirect Instruction* Display This Question:

You indicated that you primarily use indirect instruction to teach EBP. Do you use the ASHA EBP Toolkit in your instruction?

Yes, I use this tool

No, I do not use this tool, though I AM familiar with it

No, I do not use this tool and AM NOT familiar with it

If Answer was *Yes, I Use This Tool*, Display This Question:

Briefly explain how you use ASHA's EBP Toolkit

_____

If Answer was *No, I Do Not Use This Tool*, Display This Question:

Briefly tell more about why you do not use ASHA's EBP Toolkit (ex: have not heard of it, do not know how to access it, etc.)

_____

Do you use other tools to teach EBP?

Yes

No

If Answer was *Yes*, Display This Question:

Please list other EBP tools you use in your teaching.

_____

Questions regarding the purpose or procedures of the research should be directed to ***Mary Gebel*** at ***mlgebel@valdosta.edu***. This study has been exempted from Institutional Review Board (IRB) review in accordance with Federal regulations. The IRB, a university committee established by Federal law, is responsible for protecting the rights and welfare of research participants. If you have concerns or questions about your rights as a research participant, you may contact the IRB Administrator at 229-253-2947 or irb@valdosta.edu

Appendix F:

Student Clinician Questionnaire with Consent to Participate

Student Questionnaire

About this survey:

You are being asked to participate in a survey as part of a research project that is being conducted by Mary Gebel, a doctoral student in Communication Sciences and Disorders at Valdosta State University. The title of the study is "Using the American Speech-language & Hearing Association's EBP Toolkit During Supervised School-Based Practicum: Is There an Impact on Student Clinicians' Ratings of Self-Proficiency?" The purpose of this study is to determine relationships between evidence-based practice (EBP) methods and student clinicians' ratings of EBP proficiency. You will receive no direct benefits from participating in this research study. However, your responses may help us learn more about methodolgies used in teaching about Evidence-Based Practice and the impact on student competency. There are no foreseeable risks involved in participating in this study other than those encountered in day-to-day life. Participation should take approximately 5 minutes to complete. This survey is anonymous, confidential, and voluntary. No one, including the researcher, will be able to associate your responses with your identity. You may choose to stop responding at any time or to skip any questions that you do not want to answer. Respondents must be a current graduate level student clinician in speech-language pathology enrolled in an off-campus school-based practicum (or have completed an off-campus school-based practicum within this academic year). By choosing "I consent" below, I give my consent for participation in this research study.

 I Consent

By choosing "I Agree" below, I agree that I am at least 18 years of age and currently a graduate level student clinician in speech-language pathology enrolled in an off-campus school-based practicum (or have completed an off-campus school-based practicum within this academic year).

I Agree

Please indicate your current stage of off-campus clinical learning.

Beginner

Intermediate

Advanced

Please rate your knowledge level of what Evidence-Based Practice (EBP) is:

	None	Beginner	Intermediate	Advanced
My Knowledge Level				

[Likert Rating Scale Graphic]

Which of the following options do you feel most closely matches the component of EBP based on the American Speech-Language Hearing Association (ASHA) definition?

Research evidence, clinical expertise, and client perspectives

Proof, discussion, and intervention

Client impact, clinician impact, and community impact

What type of instruction did/does your clinical supervisor use, direct or indirect, based on the following definitions?

Direct Instruction: instructor leads the student through structured discourse and demonstration specific to topic & serves as a manager

Indirect Instruction: student-centered and includes such strategies as self-evaluation, simulation, and instructors in the role of facilitator

Only Direct Instruction

Only Indirect Instruction

Components of Both Direct and Indirect Instruction

If Answer was *Components of Both Direct and Indirect Instruction* Display This Question:

Please estimate how much of your supervisor's instruction is direct and how much is indirect.

Mostly Indirect (75% or more of the time)

Equally Indirect and Direct (50% for both)

Mostly Direct (75% or more of the time)

If Answer was *Only Direct Instruction* Display This Question:

You indicated that your supervisor primarily used/uses direct instruction to teach EBP.

Did/do you use ASHA's EBP Toolkit when learning about EBP?

Yes, I use this tool

No, I do not use this tool, though I AM familiar with it

No, I do not use this tool and AM NOT familiar with it

If Answer was *Yes, I Use This Tool*, Display This Question:

Briefly explain how you use ASHA's EBP Toolkit

_____

If Answer was *No, I Do Not Use This Tool*, Display This Question:

Briefly tell more about why you do not use ASHA's EBP Toolkit (ex: have not heard of it, do not know how to access it, etc.)

_____

If Answer was *Only Indirect Instruction* Display This Question:

You indicated that your supervisor primarily used/uses indirect instruction to teach EBP. Did/do you use ASHA's EBP Toolkit when learning about EBP?

- Yes, I use this tool
- No, I do not use this tool, though I AM familiar with it
- No, I do not use this tool and AM NOT familiar with it

If Answer was *Yes, I Use This Tool*, Display This Question:

Briefly explain how you use ASHA's EBP Toolkit

_____

If Answer was *No, I Do Not Use This Tool*, Display This Question:

Briefly tell more about why you do not use ASHA's EBP Toolkit

(ex: have not heard of it, do not know how to access it, etc.)

_____

Have/do you use other EBP tools when making clinical decisions??

- Yes
- No

If Answer was *Yes*, Display This Question:

Please list other EBP tools you use in your teaching.

_____

Questions regarding the purpose or procedures of the research should be directed to ***Mary Gebel*** at ***mlgebel@valdosta.edu***. This study has been exempted from Institutional Review Board (IRB) review in accordance with Federal regulations. The IRB, a university committee established by Federal law, is responsible for protecting the rights and welfare of research participants. If you have concerns or questions about your rights as a research participant, you may contact the IRB Administrator at 229-253-2947 or irb@valdosta.edu.

Appendix G:

Institutional Review Board (IRB) Protocol Exemption Report

Institutional Review Board (IRB)
for the Protection of Human Research Participants

PROTOCOL EXEMPTION REPORT

Protocol Number: 04476-2023

Responsible Researcher: Mary Gebel

Supervising Faculty: Dr. Gabriela Smeckova

Co-Investigator: n/a

Project Title: *Using the American Speech Language & Hearing Association's EBP Toolkit During Supervised School-Based Practicum: Is There an Impact on Student Clinicians' Ratings of Self-Proficiency?*

INSTITUTIONAL REVIEW BOARD DETERMINATION:

This research protocol is **exempt** from Institutional Review Board (IRB) oversight under 45 CFR 46.101(b) of the federal regulations, **category 2**. If the nature of the research changes such that exemption criteria no longer apply, please consult with the IRB Administrator (irb@valdosta.edu) before continuing your research study.

ADDITIONAL COMMENTS:

- *Upon completion of the research study all data (e.g. data, pseudonym list, email lists, transcript, etc.) must be securely maintained (e.g. locked file cabinet, password protected computer, etc.) and accessible only by the researcher for a minimum of 3 years. At the end of the required time, collected data must be permanently destroyed.*

☒ ***Please submit any documents you revise to the IRB Administrator at tmwright@valdosta.edu to ensure an updated record of your exemption.***