

**Critical Review and Empirical Study:
Implementing research in clinical practice:
What factors limit the use of evidence-based practice in speech-language pathology?**

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Abstract

This study reports a critical review and empirical study examining the use of evidence-based practice (EBP) in speech-language pathology. For the critical review, studies evaluated included two studies with survey designs and one study with an interview design. Studies explored speech-language pathologists' (SLP) general use of EBP and also SLPs' use of outcome measures. In an empirical study, SLPs working in the preschool speech and language program in Ontario (n=37) were interviewed regarding their use of the Focus on the Outcomes of Communication Under Six (FOCUS). The FOCUS is an outcome measure mandated by the Ontario government for the preschool speech and language program. Results from both the critical review and empirical study suggest SLPs primarily struggle with outside barriers such as environmental and social barriers as well as personal barriers such as lacking skills or beliefs about the effectiveness of a measure.

Introduction

Evidence-based practice (EBP) is the integration of scientific evidence into clinical practice. EBP is crucial in providing high quality care in speech-language pathology and should always be considered in clinical-decision making (ASHA, 2005). EBP itself is vast and can be implemented in several different ways. One example of EBP is the use of outcome measures. An outcome measure is a tool that can detect change in a patient over time which can reflect treatment success and/or predict future outcomes (MacDermid et al., 2009).

The Focus on the Outcomes of Communication Under Six (FOCUS) is an outcome measure mandated in the pre-school speech and language program in Ontario. The FOCUS can provide evidence for the need of speech and language intervention and can aid a speech-language pathologist (SLP) in making clinical decisions (Weinstein et al., 1996). In clinical practice the FOCUS is often not completed despite its use being mandated in Ontario at regular 6-month intervals.

The current study will examine SLPs' use of the FOCUS through the Theoretical Domain Framework (TDF). This framework offers a comprehensive approach to organizing barriers/facilitators to implementing research into practice. The framework organizes barriers/facilitators into the following 14 categories: knowledge, skills, professional identity, beliefs about capabilities, optimism, beliefs about consequences, reinforcement, intention, goals, memory attention and decision processes, environmental context, social influences, emotions and behavioural regulation.

Although the literature may demonstrate a tool's importance, still many SLPs are not using these tools in practice. There is a need to explore the disconnect between a tool's importance according to the scientific literature and the clinical implementation of the tool. Without breaking down this disconnect; the field of speech-language pathology cannot advance. Identifying this disconnect can help clinicians better utilize the research that is available to them.

Objectives

The purpose of this study is two-fold. The first objective of this paper is to review existing literature exploring SLPs' implementation of EBP. The secondary objective of this paper is to further explore SLP's use of EBP by exploring their use of the FOCUS. The tertiary objective of this paper is to propose clinical implications for SLPs practicing in clinical settings.

Study 1: Critical Review

Methods

Search strategy:

Online databases searched included PubMed, psycINFO as well as Google Scholar using the following terms [(Focus on the outcomes of communication under six) OR (outcome measure*) AND (speech-language patholog*)] and [(Evidence-base*) AND (speech-language patholog*)].

Selection criteria:

Studies included for review were required to be peer-reviewed articles written in English which examined perceived barriers to the use of EBP in speech-language

pathology. Only studies involving the perspective of the SLP were included. Studies from the perspective of employers or clients/patients were not included.

Data collection:

Results yielded three articles to be used for critical analysis. These articles consisted of 2 survey designs and 1 interview design.

Results

Arnold et al. (2019) conducted a cross-sectional online survey involving 74 SLPs in Australia working with individuals with aphasia. Participants were required to have at least 1-year clinical experience, be English speaking, and have adequate vision to complete the survey. To recruit participants the researchers used “snowball” sampling. They recruited initial SLPs through avenues such as advertisements and special interest groups. Participants were then encouraged to share the survey with other professionals. The survey was open for 6 weeks. 100 SLPs began the survey but 22 had to be excluded as they did not finish.

The study explored perceived barriers and facilitators to utilizing outcome measures in aphasia management. First, the participants’ practice was examined. The participant selected/listed different outcome measures they frequently used with their clients. Then barriers/facilitators were explored using the TDF. Various statements were created to each target different domains according to the TDF. The participants rated how much they agreed or did not agree with each statement. The average of these scores reflected which domains of the TDF were most reported as either facilitators or barriers to implementing outcome measures.

The survey was created through SurveyMonkey, data was exported from SurveyMonkey to Microsoft Excel. The researchers then used Statistical Package for the Social Sciences (SPSS) Version 25.0. For the TDF statements, an average score was calculated for each statement. Statements with negative phrasing were reversed for these calculations. The average score for each TDF domain was then also calculated. The domains with the highest scores were considered the key facilitators and those with the lowest scores the key barriers.

The SLPs who completed the survey appeared to understand the importance of outcome measures. On a whole the SLPs identified more facilitators than barriers in implementing outcome measures in aphasia management. Of the barriers mentioned, the largest barrier was determined to be “behavioural regulation”.

This barrier refers to the actions an SLP can themselves take to ensure they complete the outcome measure (Cane et al., 2012). This barrier insinuates SLPs do not have a clear strategy for tracking that they have completed an outcome measure for each client. Another domain identified as a barrier was “memory, attention and decision processes”. This barrier can refer to an SLP’s ability to remember to complete the outcome measure. From the specific statements the statement that was the largest barrier was related to “skills”. In this regard, SLPs identified a need for further training on the outcome measures.

Overall, this study provides suggestive evidence regarding SLPs’ use of outcome measures. As the study was conducted through an online survey; the design allows the possibility of sampling biases. It is possible the sample was not representative as SLPs who are willing to partake in the study may have similar thoughts on EBP. The sample was also limited in its representativeness and thus lacking in generalizability. Also, the survey itself was highly structured limiting respondents’ responses. Respondents only answered how much they agreed with statements and were not able to generate their novel responses. The study did provide us with valuable information on some of the areas SLPs struggle to implement outcome measures but due to the challenges in the experimental design further research is warranted.

Cunningham et al. (2019) surveyed 54 SLPs to explore their perception of the barriers to new assessment procedures. SLPs were chosen from a study the researchers had previously conducted. The new assessment procedures the SLPs learned about for the study were for outcome monitoring and vulnerability tests for children who are deaf or hard of hearing. The clinicians watched learning modules explaining the procedures online. The researchers structured the surveys using the Ottawa Model of Research Use. The Ottawa Model of Research Use assess barriers through the practice environment, knowledge skills and beliefs and evidence-based innovation (Logan & Graham, 1998).

SLPs primarily identified barriers in the practice environment and the evidence-based innovation of the programs. Practice environment refers to barriers within the workplace structurally, socially or patient related. Evidence based innovation refers to whether SLPs agree with the science behind the development and content of the tool.

The study provides an interesting and ingenious design. As the researchers introduced SLPs to the assessment procedures the researchers were able to control for the

evidence-based assessment. All SLPs were responding to the new assessment procedures to which none of them had prior knowledge or biases. Although the study provided informative results the study was conducted through online surveys, similar to the study above, attrition may have caused sampling issues and potential biases. This study also allowed for little variability in answers due to the survey's design. Due to these challenges the survey provides us with suggestive evidence of the barriers to implementing new assessment procedures.

Foster et al. (2015) conducted an interview-based study regarding SLPs' use of EBP in acute aphasia management. The study consisted of 14 SLPs based in Australia recruited from forums, special interest groups and email. SLPs were required to be working or have worked in an acute hospital setting in Australia within the last 12 months. The researchers chose 15 SLPs of the 36 who expressed interest. The 15 SLPs chosen had to meet the above selection criteria. SLPs were also specifically selected to have varied backgrounds from one another. One of the SLPs were later excluded as their work was not primarily acute based.

The interviews were analyzed using thematic analysis as outlined by Braun and Clarke (2006). The researchers identified initial codes which were then categorized into themes. Themes were discussed until all researchers were in agreement. To ensure the results were accurate different individuals checked transcript accuracy, the researchers engaged in joint coding, the researchers held regular team discussions, the primary researcher kept a detail log and feedback was sought after and welcomed from clinicians.

SLPs depicted difficulties with both personal and environmental barriers including a limited perception of EBP, perceived lack of usefulness in clinical practice, clinical decision-making that conflicted with EBP and lack of resources related to time and staffing.

Overall, the study provides suggestive evidence. The interview design of the study allowed for a rich explanation of SLP's opinions. Although this design allowed SLPs to give great detail regarding their responses there were few participants in the study and although they tried to create a diverse participant pool, they did limit the participants to those practicing in Australia, limiting the study's generalizability. The study provides a base to further explore EBP in acute aphasia management across different countries.

Discussion

The results of the three reviewed studies provide information on the barriers impeding SLPs from fully incorporating EBP. Overall, the literature indicates SLPs have difficulty incorporating EBP due to their workplace environment, their own understanding of the literature/access to literature and their own beliefs about the literature. Many of the articles in this field focus on SLPs in hospital settings, primarily those in aphasia management, further research is warranted on SLPs working with children and other fields within speech-language pathology.

Study 2: Empirical Study

Rationale

Generally, research in this field is conducted primarily within SLPs working in aphasia management. EBP is important for SLPs in all areas of speech-language pathology. In Ontario, although the FOCUS is mandated to be completed for all children in the preschool speech and language program every 6-months, it is often not being completed. The researchers sought to further explore the barriers that impede SLPs from completing this outcome measure.

Methods

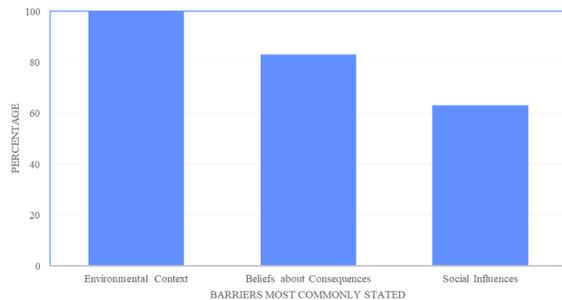
The current study uses an interview-based design. All 37 SLPs interviewed assess and treat children in the preschool speech and language program in Ontario. The SLPs were interviewed over the phone regarding their use of the FOCUS. The interviews were then transcribed. Research assistances were trained on coding using the TDF. Excerpts were coded from the transcripts as either facilitators or barriers to SLPs using the FOCUS. The coding was compared to the primary investigators coding and discrepancies were discussed. Codes were finalized once all researchers were in agreement. As the purpose of this paper is to explore the limitations of SLPs using EBP, only barriers from the study will be discussed.

Results

Figure 1 shows the top three barriers most mentioned by SLPs treating preschool children. The three most common barriers were environmental context, beliefs about consequences and social influences. All SLPs interviewed stated that their "environmental context" limited their ability to use the FOCUS. "Environmental context" includes circumstances independent of the SLP such as a lack of time or resources to implement the FOCUS. The FOCUS is to be completed every 6-

months. Often SLPs found that the 6-month intervals did not align well with their intervention or they simply did not have the resources/time to be completing it this often. The second most cited barrier was “beliefs about consequences”. This barrier depicts SLPs’ belief that the outcome measure lacks benefit in clinical practice or the SLPs did not believe the data being collected was useful for clinical practice or for the government. The third most cited barrier was “social influences”. Social influences indicate that the SLPs’ motivation to complete the FOCUS was lessened by negative reactions from families. At times, families found the FOCUS difficult to complete as their child would score quite low on each statement. Filling out the forms was a reminder to the parents that their child was not on level with others their age.

Figure 1: SLPs’ perceived barriers to implementing the FOCUS



Discussion

The present study was designed to determine the barriers that limit the ability of an SLP in the preschool speech and language program to implement the FOCUS. The findings from this study depict the three most common barriers for SLPs are due to “environmental context”, “beliefs about consequences” and “social influences”.

It is possible that those who chose to participate in the study may have inadvertently happened to have similar views regarding the barriers of EBP. Future studies could expand on these findings by possibly creating a shorter response system to allow the incorporation of more SLPs with potentially differing interests or views. The current study provides a starting point for examining what measures can be taken to increase the FOCUS completion.

General Discussion

Both the critical analysis and the current study provide enlightening information for future studies on the barriers and facilitators in applying EBP in speech-language pathology. Studies focusing on EBP in SLPs

working in aphasia management reported difficulties with resources such as staffing and time management, beliefs about consequences and their own skills. Similarly, pediatric SLPs faced many of the same challenges such as environmental limitations and beliefs about consequences. In the current study, preschool SLPs in Ontario showed many of the same difficulties as all SLPs interviewed reported environmental barriers were present in their workplace.

Although most of the evidence in this field is suggestive, the majority of the research comes to similar conclusions. Most SLPs had some difficulty with environmental barriers. It is evident overhauling current guidelines in the workplace could ease this burden on SLPs and in turn aid SLPs in incorporating EBP. Future research should focus on exploring possible guideline changes.

One limitation of this critical review is too broad of a focus, the articles reviewed came from many different areas of speech-language pathology. Although it can be beneficial to examine the use of EBP across different areas of speech-language pathology, we can draw stronger conclusions by narrowing our focus. Future reviews could focus on one area of speech-language pathology, such as, only focusing on SLPs working with preschool children. Future reviews could also narrow their focus to solely examine the use of outcome measures or another EBP tool SLPs use in their practice. Stronger conclusions can be garnered from examining the use of the same tools or measures in different practices.

Clinical Implications

As EBP is an integral component of speech-language pathology it is important we identify the barriers and facilitators to SLPs implementing EBP. Identifying the barriers in implementing EBP provides a basis for determining how to aid SLPs in better incorporating EBP in assessing and treating their clients/patients. From the literature and the current study, we can hypothesize that something as straightforward as developing more supports in the workplace could have a beneficial impact on SLPs implementing EBP. With small changes we could enable SLPs to better serve their clients and incorporate further literature findings into their practice.

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References

- American Speech-Language-Hearing Association. (2005). *Evidence-based practice in communication disorders* [Position Statement]. Available from www.asha.org/policy.
- Arnold, H., Wallace, S.J., Ryan, B., Finch, E., & Shrubsole, K. (2019). Current practice and barriers and facilitators to outcome measurement in aphasia rehabilitation: A cross-sectional study using the theoretical domains framework. *Aphasiology, 1*(34), 47-69.
- Braun, V., & Clarke, V. (2006). Using thematic analysis in psychology. *Qualitative Research in Psychology, 3*, 77-101.
- Cane, J., O'Connor, D., & Michie, S. (2012). Validation of the theoretical domains framework for use in behaviour change and implementation research. *Implementation Science, 7*, 37.
- Cunningham, B.J., Daub, O.M., & Cardy, J.O. (2019). Barriers to implementing evidence-based assessment procedures: Perspectives from the front lines in pediatric speech-language pathology. *Journal of Communication Disorders, 80*, 66-80.
- Foster, A., Worrall, L., Rose, M., & O'Halloran R. (2015). 'That doesn't translate': the role of evidence-based practice in disempowering speech pathologists in acute aphasia management. *International Journal of Language & Communication Disorders, 50*(4), 547-63.
- Logan, J., & Graham, I. D. (1998). Toward a comprehensive interdisciplinary model of health care research use. *Science Communication, 20*(2), 227-246.
- MacDermid, J.C., Grewal, R., & MacIntyre, N.J. (2009). Using an evidence-based approach to measure outcomes in clinical practice. *Hand Clinics, 25*(1), 97-111.
- Weinstein, M.C., Siegel, J.E., Gold, M.R., Kamlet, M.S., & Russell, L.B. (1996). Recommendations of the panel on cost-effectiveness in health and medicine. *Journal of the American Medical Association, 276*(15), 1235-58.