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Katie Fowler

The Effect of Mindfulness Training on Stuttering Frequency and Attitudes Toward Speech in Individuals with Childhood-Onset Fluency Disorder: A Meta-Analysis

Abstract

Objective: People who stutter often experience negative affective behaviors as a component of their stuttering. These negative thoughts and feelings can lead to an overall decrease in self-confidence, quality of life, and self-acceptance, as well as a potential increase in stuttering severity. Incorporating mindfulness-based practices into fluency intervention is one method of addressing the affective components of a person’s stuttering experience. This meta-analysis analyzes existing literature and determines effect size for the following research question: What is the effect of mindfulness training on stuttering frequency and attitudes about speech in individuals with childhood-onset fluency disorder?

Methods: A systematic review of four databases was conducted using a search code. A total of 2,620 results were found. After removing 826 duplicates, 1,794 remaining articles were screened based on predetermined inclusion and exclusion criteria. Screening was conducted first by the abstract and then by full text. Five articles met all inclusionary criteria and are therefore included in this meta-analysis. Of these five articles, four provided data for the percentage of syllables stuttered (%SS) and three for attitudes toward speech. Both outcome measures were included in this meta-analysis.

Results: For %SS, the meta-analysis indicated a large effect size of -1.26, CI [-1.72 - -0.81] and a medium effect size of -.73, CI [-1.15 - -0.31] for attitudes toward speech.

Conclusions: The results of this meta-analysis support the incorporation of mindfulness practices into therapeutic intervention for adults with childhood-onset fluency disorders to target the individual’s overall stuttering frequency and their thoughts and feelings about their speech.

Breakout room 1
Karen Hennessee

The Effect of Alternative Augmentative Communication on the Expressive Vocabulary of Children: A Meta-analysis

Abstract

Purpose: One component of successful communication is expressive vocabulary, or the words one is able to produce through speech, gesture, or any other modality. Augmentative and Alternative Communication is one method of developing expressive vocabulary. Myths and barriers to implementation can prevent adoption of AAC-based communicative strategies; this can negatively impact children who are in a crucial linguistic development stage. This meta-analysis aimed to investigate the effect of AAC on the expressive vocabulary of children and contribute to the evidence surrounding the use of AAC as a vocabulary development tool.

Methods: The electronic databases CINAHL, ERIC, PsycINFO, PubMed, SCOPUS, and Web of Science were searched with the terms Augmentative Alternative Communication OR AAC AND child* OR youth* OR preschool* OR kid* AND vocabulary. A total of 3,360 results were returned. After removing duplicate articles, 2412 articles remained. After applying inclusion and exclusion criteria, 9 articles were included for meta-analysis. Effect size measures were calculated [Cohen’s d and Percentage of Non-Overlapping Data (PND)] with 95% confidence intervals.

Results: The calculated effect size, Cohen’s d, was determined to be 1.41[1.09, 1.73] which indicates a large effect size for research in the domains of Speech, Language and Hearing (Gaeta & Brydges, 2020). The PND was determined to be 82%; an effect size greater than 72% is considered to be effective (Parker et al., 2011). Neither of these measures cross the line of no effect. Effect sizes ranged from -0.24 [-0.90, 0.42] to 4.204 [3.36, 5.04].

Conclusions: The evidence from this meta-analysis supports the use of AAC intervention in children with complex communication needs to increase the size of their expressive vocabulary in any modality.

Breakout room 2
Delaney Jacob

The Effects of Inpatient Multidisciplinary Treatment on Oral intake in Infants and Children with Pediatric Feeding Disorders: A Meta-Analysis

Abstract

Purpose: Pediatric Feeding Disorders (PFDs) are common in infants and children and may be due to many factors (i.e., medical, psychosocial, nutrition, and feeding skill). Researchers estimate that up to 50% of healthy children and up to 80% of children with developmental disabilities experience feeding and swallowing difficulties (Bhattacharyya, 2015; Lefton-Greif & Arvedson, 2007; Sullivan et al., 2000). Children with PFDs may be treated in outpatient or inpatient settings. However, as children with PFDs are often medically complex, an inpatient multidisciplinary setting can be used to manage both the PFD as well as comorbid diagnoses. This meta-analysis aims to find supplemental evidence for speech-language pathologists to refer to when assessing and treating infants and children with pediatric feeding disorders (PFDs) in an inpatient setting on multidisciplinary teams.

Methods: A comprehensive search of five academic databases, Pubmed, Scopus, Cinahl (Ebsco), APA Psycinfo, Web of Science, was completed. Out of 529 articles, six met the inclusion criteria and were coded and appraised for study characteristics and internal and external validity.

Results: Patient data regarding changes in percent of oral intake from their baseline to discharge of the hospital program were used to establish comparable effect sizes d values across five of the included studies. A meta-analysis found the overall weighted average Cohen's d effect size to be 1.10 [0.83, 1.38]. This finding suggests an overall large, positive gain in oral intake in children treated by a multidisciplinary team in an inpatient treatment program.

Conclusion: Overall, infants and children with pediatric feeding disorders treated in a multidisciplinary inpatient setting observe significant short-term increases in their percent of oral intake. This meta-analysis provides evidence that future research should prioritize conducting studies that compare inpatient and outpatient feeding treatment, that seek to standardize practice in inpatient feeding treatment, that investigate outcomes in a broader range of ages (0-18 years), and that follow the outcomes of children with PFDs long-term after hospital discharge.

Breakout room 3
Abstract

**Purpose:** In the research that exists for chronic aphasia, the most convincing evidence for continued recovery stems from studies evaluating the effectiveness of high-intensity treatments that involve massed practice (e.g. 10-15 hours per week). One intervention, constraint-induced aphasia therapy (CIAT), has gained popularity since its inception in 2001, but has also been met with skepticism. This meta-analysis analyzes existing literature and aims to answer the following research question: In adults with chronic aphasia as the result of a stroke, what is the effect of constraint-induced aphasia therapy on severity as measured by the Western Aphasia Battery-Revised Aphasia Quotient (WAB-R AQ)?

**Methods:** A comprehensive search of electronic databases CINAHL, PsycINFO, PubMed, and Web of Science was done to assess the existing literature for constraint-induced aphasia therapy in the post-stroke chronic aphasia population. Articles were excluded if they were not written or available in English, were not a research study, were not specific to chronic aphasia, did not implement constraint-induced aphasia therapy, implemented constraint-induced aphasia therapy in conjunction with other treatment(s) such as pharmaceuticals, and if they did not assess severity as measured by the Western Aphasia Battery-Revised Aphasia Quotient (WAB-R AQ).

**Results:** Overall, the collective studies analyzed for this meta-analysis determined that constraint-induced aphasia therapy (CIAT) had a significant effect in improving (i.e. lessening) aphasia severity for individuals with chronic aphasia post-stroke (d=1.03, 95% CI [0.60, 1.46]).

**Conclusion:** The results of this meta-analysis suggest that constraint-induced aphasia therapy is effective in improving (i.e., lessening) aphasia severity in persons with chronic aphasia post-stroke.

**Breakout room 4**
The Effect of Melodic Intonation Therapy on Connected Speech in Adults: A Meta-Analysis

Abstract

Introduction: Melodic Intonation Therapy (MIT) is a structured treatment using intoned patterns to exaggerate the melody of speech. MIT is a treatment commonly used with persons with nonfluent aphasia. It is distinguished by the use of intonation and rhythmic tapping to promote speech production. The purpose of this meta-analysis was to investigate the effectiveness of MIT on fluent connected speech in adults with chronic nonfluent aphasia, as measured by correct information units (CIUs). It was hypothesized that MIT would increase the production of connected speech.

Methods: A systematic search of the electronic databases CINAHL, PsycInfo, PubMed, and Web of Science using a search criterion focused on MIT yielded 1,187 results. After screening abstracts, 60 full-text articles were assessed for eligibility and 11 met inclusion criteria.

Results: Six of the 11 studies were included in statistical analyses. Results indicated that participants receiving MIT increased their use of CIUs compared to baseline productions. Specifically, for CIUs, a medium effect size was observed (0.78, 95% Confidence Interval 0.28 - 1.29).

Conclusion: Data from this meta-analysis support the use of MIT to increase CIUs for patients with chronic, nonfluent aphasia. However, several limitations of this analysis exist including human error, publication bias, language bias, a lack of uniformity among included studies, and a limited population sample; Therefore, further research is recommended.
**Mackenzie Minner**

**In people with dysphagia, what are the effects of thermal-tactile stimulation on pharyngeal transit time and airway protection measures?**

**Abstract**

**Purpose:** Thermal-tactile stimulation has been used clinically since the 1980s as a treatment for dysphagia and a delayed or absent swallow response. The goal of this meta-analysis is to review the effects of thermal tactile stimulation, specifically using a cold laryngeal mirror or swab on the faucial pillars. Outcome measures of interest include pharyngeal transit time and penetration/aspiration scores.

**Methods:** A search using the search term ((dysphagi* OR swallow* OR deglut* OR (therm*))) was done through PubMed, PsychINFO, CINAHL and Web of Science. This search yielded a total of 1205 results. After exclusionary criteria were applied, six articles were included in this review. All articles were reviewed to determine the efficacy of TTS, and they were coded for study characteristics and quality markers. All data was analyzed with the effect size Cohen’s D.

**Results:** No effect was found on PTT after TTS as indicated by the Cohen’s d of .08. Articles reviewed qualitatively agree with this conclusion, indicating that TTS does not significantly reduce PTT. There was insufficient data to obtain an overall effect size regarding airway protection, however, an effect size of -2.848 was calculated from SFSS in one article, indicating a large effect on airway protection. (Freed et al., 2001) More research is needed to assess overall effect of TTS on airway protection.

**Conclusions:** Overall, TTS was found to have no effect on PTT, and there was insufficient evidence to assess the effect on airway protection. However, TTS is still used clinically; therefore, it is important that more research is conducted regarding effects of transit times and airway protection after TTS, and various types of stimulation.

**Breakout room 6**
Abstract

**Purpose:** This meta-analysis synthesizes results from published studies to examine how the utilization of semantic feature analysis (SFA) during language treatment affects word-finding ability for persons with non-fluent aphasia (PWNFA). Multiple theoretical frameworks support semantic mapping and lexical processing improvement related to SFA. The researcher hypothesizes positive treatment outcomes across studies.

**Methods:** The available literature was assessed across 4 databases using the search code ((non-fluent OR nonfluent) AND aphasia) AND semantic AND (naming OR word*). After applying exclusionary criteria, eight studies were included for the meta-analysis. Additionally, included studies were assessed to address validity and risk of biases.

**Results:** Results indicated that utilizing trained items had a larger effect than untrained items during SFA treatments when measuring confrontation naming abilities in PWNFA. For trained items, the overall average effect size is 3.24 with a confidence interval of [2.30, 4.17]. Untrained items yielded an effect size of 1.89 and a confidence interval of [1.10, 2.69]. These effect sizes are both in the “large” range according to Gaeta and Brydges (2020).

**Discussion:** Multiple biases, threats to validity, and overall limitations are present that impact the results of this meta-analysis.

**Conclusions:** These findings suggest that SFA may be beneficial in treating word-finding deficits present in PWNFA. Future research is warranted to further investigate the use of SFA with larger, more diverse populations and standardization across treatment to allow for a more robust and accurate measure. This finding informs clinical practice, and can allow for an understanding of the use of SFA to target the activity and participation domains of the ICF framework.

Breakout room 7
Abstract

**Purpose:** The purpose of this meta-analysis was to evaluate the effectiveness of interventions targeting joint attention (JA) with some component of caregiver implementation on the language outcomes of children with autism spectrum disorder (ASD).

**Methods:** A systematic review was completed according to PRISMA guidelines, and 15 studies met inclusion criteria, with 13 studies included in the subsequent meta-analysis. A combined effect size of studies was calculated using Cohen's d, and moderator analyses were completed to evaluate the possible impact of verbal ability of participants and degree of caregiver implementation on intervention effectiveness.

**Results** Meta-analysis suggested a significant, small, positive effect of these JA interventions on language outcomes of children with ASD (d=0.38, 95% CI [0.21, 0.55]). Moderator analyses suggested: 100% caregiver implementation was just as, if not more, effective than implementation by both clinician and caregiver; these JA interventions did not have a statistically significant effect on the language outcomes of minimally verbal children with ASD.

**Discussion and Conclusion:** JA interventions with some degree of caregiver implementation have clinical value in larger language intervention programs for verbal children with ASD. More research is needed to determine the long-term effect of teaching JA to children with ASD, particularly those who are minimally verbal.

Breakout room 8
Coursework in Evidence-Based Practice

As a requirement for graduation, students in our graduate program in Communication Sciences take a course on evidence-based practice for communication disorders. Evidence-based practice requires careful consideration of external evidence (i.e., research outcomes), clinician expertise, and patient preferences before adopting a diagnostic or treatment approach. To master the art of a search for external evidence, our students complete meta-analyses on diagnostic and treatment procedures for a particular patient population. The result is an incredibly diverse collection of topics, all within the scope of practice of speech-language pathologists. A number of our graduates have published these analyses in eHearsay, the peer-reviewed publication of the Ohio Speech-Language-Hearing Association and some have presented their work at the annual convention of the American Speech-Language-Hearing Association.

Who we are

The Department of Psychological Sciences, Program in Communication Sciences, prepares undergraduate and graduate students to address broad issues of human communication processes and disorders through the application of cutting-edge technology and rigorous clinical training. We provide a comprehensive foundation in normal and disordered human communication and combine it with innovative interdisciplinary experiences that capitalize on the extensive resources of the University and medical community that surround the Department.