

31st World Congress of the



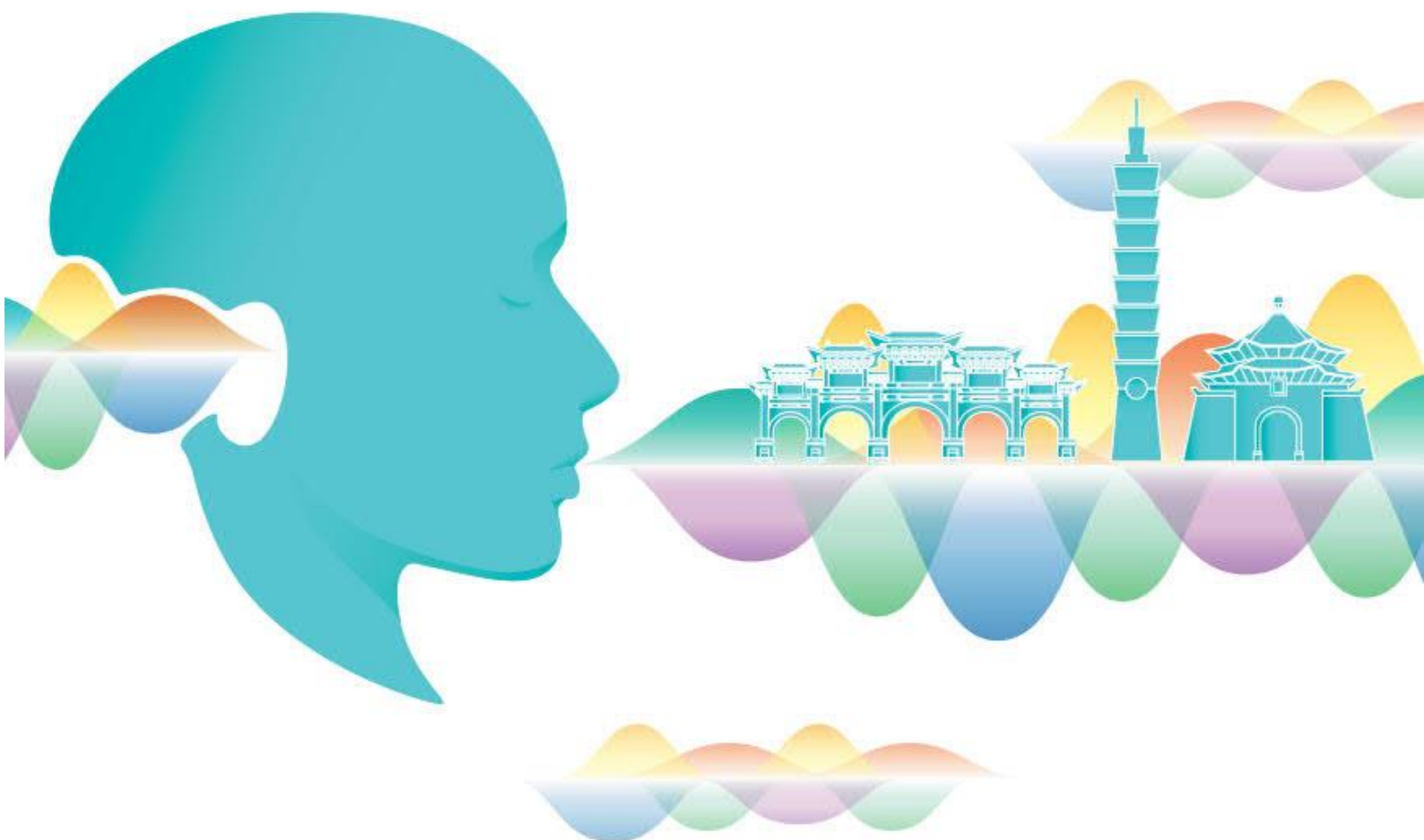
IALP

Innovations in Supporting Communication Participation

18-22 August 2019

Taipei, Taiwan

Evergreen International Convention Center



[The Abstract Book of Oral Presentations](#)

Jointly Organized by



Supported by





Oral Presentation: Session M2- AAC (I), Aug. 19th (Mon.) 11:00-12:15

Abstract No: 9951

Practical strategies for using AAC to support restorative and compensatory skills development for individuals with aphasia

Stephanie Ekis^{*1}

¹Research and Development - Clinical Content/ Tobii Dynavox/ United States

Abstract Content:

Aphasia is an impairment of language which affects the ability to produce and/or comprehend speech. It often also affects the ability to read and write. Aphasia does not, however, affect intelligence and a diagnosis does not imply that the person has co-existing cognitive impairment. The most common cause of aphasia is a stroke. It is estimated that 25 – 40% of stroke survivors will acquire aphasia (National Aphasia Association, 2018). Losing the ability to effectively communicate and interact in everyday activities, maintain employment and manage household duties can be devastating to both the individual with aphasia and their family.

Time spent in rehabilitation post-stroke often results in individuals being released from therapy with little to no functional methods of communication. This may be due to the use of traditional intervention practices with the primary goal of restoring pre-morbid speech and language ability. Augmentative and alternative communication (AAC) is often not introduced, or introduced late in the remediation process, due to the following reasons (Weissling, K. and Prentice, C., 2010):

1. Mutual exclusion, or lack thereof, of augmentative and alternative communication (AAC) and remediation of speech
2. Perception of “giving up” on the recovery of natural speech with the introduction of AAC
3. Acceptance of AAC as a supplemental communication tool rather than a “last resort”
4. Fear of the permanency of the use of AAC
5. Decreased understanding that AAC as a compensation can help with speech remediation.

In recent years, a “combined restoration-compensation approach” has been found to decrease the need for individuals with aphasia to depend solely on natural speech to meet daily communication needs. This can have a positive effect on both the quantity and quality of social interactions (Beukelman, Hux, Dietz, McKelvey, Weissling. 2015), decrease the risks of social isolation, and facilitate the psycho-social status of individuals with the ultimate goal of increasing overall quality of life for individuals with aphasia.

Recent research demonstrates that AAC can provide a way to increase engagement and participation for individuals with aphasia. These communication supports should begin early in the treatment process (Fried-Oken, M., Beukelman, D., Hux, K. 2012). Effective aphasia intervention requires that service providers identify both low (e.g., written choice) and high tech (e.g., speech-generating devices) AAC strategies to address the variety of interaction purposes.

This session will explore practical strategies for supporting meaningful communication, participation and independence for individuals with aphasia. Through demonstration, case study, and video, participants will discuss various low and high-tech AAC tools and techniques. Additional supports will include using visual scenes and photographs to share personal narratives. In addition, communication partner skills and training will be addressed. Participants will leave this session with a toolkit of resources and practical strategies that can be implemented immediately.

Learning Outcome:

- Discuss key benefits of using AAC for individuals with aphasia.
- Describe how AAC strategies and techniques can be used during the speech and language rehabilitation and support process.
- Identify 3-5 low/high-tech AAC strategies to support communication and participation in everyday environments for people with aphasia.

Keywords: aphasia; AAC; compensatory; restorative;



Abstract No: 9838

Effect of cognition, interface display, and social validity in facilitating AAC intervention in persons with aphasia

Rajinder Koul¹ ; Ralf Schlosser²

¹Communication Sciences and Disorders/ University of Texas at Austin/ United States, ²Communication Sciences and Disorders/ Northeastern University/ United States

Abstract Content:

Over the last two decades, significant advances have been made in development and implementation of augmentative and alternative communication (AAC) assessment and intervention strategies designed for persons with aphasia (PWA) who have severe communication impairments. AAC techniques and strategies are particularly important for PWA who may experience deficits in multiple modalities including spoken and written expression, as well as auditory and reading comprehension. AAC strategies are often used to support impairments in both expression and comprehension in PWA. This presentation will provide a summary of advances in AAC for PWA. Specifically, the following major themes will be presented for discussion: (1) Allocation of cognitive resources in relation to SGD use; (3) Message selection and enhancement approaches; and (3) Social validation.

Theme 1: Allocation of Cognitive Resources in Relation to SGD Use: The use of AAC strategies, techniques, aids and symbols imposes cognitive demands on PWA. Cognitive strategies that are critical to the use of AAC methods include perceptual processing, attention, memory, resource allocation and capacity. Previous research has indicated that PWA demonstrate deficits in resource allocation and such deficits may interfere with their ability to use both low-tech and high-tech AAC systems. We will examine to what extent impairments in resource allocation abilities in PWA interferes with their ability to successfully use both high-tech and low-tech AAC systems. Data regarding the impact of number and location of symbols on symbol identification and response latency and relative effectiveness of grid displays vs. visual scene displays will be presented.

Theme 2: Message Selection and Enhancement Approaches: One of the most challenging issues in AAC intervention is the manner in which the messages are organized in SGDs so that they can be easily retrieved by AAC users. Many of the currently available SGDs allow AAC users to access messages using a combination of a taxonomic grid and a visual scene display layout. We will compare and contrast the use of taxonomic and scene displays and discuss the challenges and benefits associated with implementing either interface when working with PWA.

Theme 3: Social Validation Framework: In aphasia intervention, direct, indirect, immediate community and extended community stakeholders are all important in the social context of ensuring successful communication. Materials and methods for evaluating intervention results in terms of their social validity will be discussed and examples will be provided, including rating scales and structured interview questions and responses. Discussion will focus on optimal ways to assess social validation in the context of AAC and aphasia. We will present data from qualitative research strategies such as interview analysis and other techniques with strong construct validity.

Learning Outcome:

1. Participants will discover ways to help bridge the gap between cognitive science, its application in aphasia rehabilitation, and AAC intervention for PWA.
2. Participants will learn about the role of stakeholders in determining social validity of AAC interventions for PWA.

Keywords: AAC, Aphasia, Cognition, Social Validity, Speech Generating Devices,



Abstract No: 9949

Supporting Successful Interaction with AAC: Three Communication Partner Techniques that Everyone Should Know

Stephanie Ekis^{*1}

¹Research and Development - Clinical Content/ Tobii Dynavox/ United States

Abstract Content:

In AAC assessment and intervention, much time is spent addressing and improving the communication skills of the individual with significant speech and language challenges. While this is definitely an important component, time must also be spent addressing the skills and abilities of the communication partners. Communication partners can have a significant impact on the successfulness of the communication interaction for individuals who use AAC systems (Buckley, 2016). This important role can build communicative independence and support the development and use of higher-level language skills. We all benefit from the support of a good communication partner. Whether they are asking the right types of questions, providing words when we can't think of them, or prompting us to provide more detail, communication partners can have a significant impact on how well a conversation might proceed. Whether the individual has an AAC system in place or if they are currently going through the evaluation process, the following strategies can be applied in everyday situations to improve communication success:

- 1. Create a positive communication environment.** The attitudes and way in which a communication partner responds to the communication attempts of an individual with significant communication disabilities can have either a positive or negative impact on the successfulness of the interaction. A positive communication environment is a place or situation (e.g., classroom, talking on the phone, etc.) where all types of communication are encouraged. Participants will discuss the key components that make up a positive communication environment for both children and adults.
- 2. Use modeling to teach appropriate use of the system.** Modeling is an input technique that helps establish receptive language skills while demonstrating appropriate use of the AAC system. The expectation is that expressive communication and learning will follow (Binger and Light, 2007). Participants will learn practical tips for including modeling as an intervention strategy.
- 3. Make a plan.** AAC implementation planning requires that the service delivery team identify everyday activities where communication skills will be taught and practiced. The plan ensures that appropriate goals, techniques (e.g., modeling), and supplementary materials (e.g., lesson plans) are aligned to activities that occur in the home, school and community. Participants will be provided with an AAC implementation worksheet and strategies for successful planning in all environments.

Using video examples and case studies, participants will receive numerous resources and tips for improving communication partner skills that will support children and adults with significant communication disabilities. While Tobii Dynavox software will be used for demonstration purposes, all strategies can be applied to any low or high-tech system.

Learning Outcome:

- Review partner strategies that improve communication success for children and adults with significant communication challenges.
- Discuss the key components of an AAC implementation plan.

Keywords: Partner skills; AAC implementation



Abstract No: 9724

Development of ICF-CY Core Sets for Assessing Communicative Competence of Children and Adolescents Who Use AAC

Meng-Ju Tsai^{*1} ; Wen-Shin Chang^{*1} ; Pei-Ying Chen^{*1}

¹Department of Speech Language Pathology and Audiology/ Chung Shan Medical University/ Taiwan

Abstract Content:

Background

Comprehensive description of functioning is important in providing augmentative and alternative communication (AAC) services for children and youth with complex communication needs. Measuring their communicative competence provides opportunities in fully understanding the functioning use of their AAC. Four specifically components of communicative competence have been proposed, including linguistic competence, operational competence, social competence, and strategic competence. However, items of measuring communicative competence of the people who use AAC have not further proposed and constructed. Several scholars concluded that International Classification of Functioning, Disability and Health- Children and Youth (ICF-CY) framework provides a way to understand communication competence (i.e., abilities) of these people, including children and youth, in their families, schools, and communities, which can be bases for intervention strategies.

Objective

The purpose of the current study was to develop the ICF-CY core sets at the two-level codes in measuring communicative competence for children and youth who use AAC.

Method

Two-step procedures were conducted in order to identify the relatedness and groups of each code among four components of communicative competence. First, The relatedness of each code was first conducted to obtain consensus from experts in the field of AAC through a Delphi procedures technique from 15 professionals (i.e., five SLPs, five special educators, and five scholars) who have experienced in providing AAC services and/or engaged in AAC field in Taiwan. The second step was to categorize each code that have been selected through the Delphi procedures technique into four components of the communicative competence.

Results

Three rounds of Delphi procedures were conducted through the online closed-ended questionnaires to obtain the consensus on the related codes. After the Delphi procedures Round 3, 112 codes at the second level were included, including 47 in body functions (b), 6 in body structures (s), 50 in activities and participation (d), and 9 in environmental factors (e). The final related codes were categorized into four components of the communicative competence (i.e., linguistic competence, operational competence, social competence, strategic competence).

Discussion

The development of the ICF-CY core sets could encourage a unified approach to practice and research and provide guidelines of interventions that may improve communicative competence of the children and youth who use AAC. A core set of the ICF-CY is also able to provide practitioners a practical tool in assessing communicative competence of these children and youth. The limitations of the current study and the further research directions are discussed.



Learning Outcome:

Learning Outcomes

1. The learners will learn the Delphi procedure in developing the ICF-CY core sets.
2. The learners will identify four components of communicative competence.
3. The learners will identify the ICF-CY core sets in measuring communicative competence for the children and youth who use AAC.

Keywords: Augmentative and Alternative Communication (AAC) ; Communicative Competence ;

International Classification of Functioning, Disability and Health- Children and Youth (ICF-CY) ; Delphi



Abstract No: 9741

"Reading" a symbol story: Motor, language and cognitive considerations

Martine Smith¹ ; Kristine Stadskleiv² ; Stephen Von Tetzchner²

¹*Clinical Speech & Language Studies/ University of Dublin, Trinity College/ Ireland, ²Dept of Psychology/ University of Oslo/ Norway (Norge)*

Abstract Content:

Background: Children who are acquiring language using aided communication systems must navigate the learning demands of both their aided communication system and the language of their environment. Research evidence suggests that shared reading experiences are supportive of language learning and of aided communication enhancement. Nonetheless, there is robust evidence to suggest that attainment of literacy skills is particularly challenging for children who use aided communication, even where their language and cognitive skills would be expected to support both reading and writing. The focus of this study was on the relationship between spoken language skills (receptive vocabulary and receptive syntax), cognitive abilities as measured by a nonverbal test, motor skills and performance on a story comprehension task.

Method: Participants were recruited as part of a large, international multi-site study. Eligible participants were children aged 5 to 15 years who used aided communication for at least 18 months prior to the commencement of the study, who were perceived by their educators or other professional as not having an intellectual disability. Using both standardized measures and rating scales, information was collected in relation to language, cognitive ability and motor skill, as well as experience using aided communication. Participants engaged in a range of communication problem-solving tasks, with partners that included parents, teachers, other professionals (e.g., speech language pathologists) and peers. One task (the focus of this study) involved reading a short story that was presented as a sequence of symbol utterances, using the symbol system appropriate to each participant. Participants were presented with the story and were advised that they would be asked a number of questions about the story, once they were satisfied they had read and understood it.

Results: This presentation presents findings from analysis of the relationships between language ability (as measured by the PPVT/BPVS and the TROG), motor skills (rated using the GMFCS), nonverbal ability (as measured by the Raven's Progressive Matrices) and performance on the story reading task (as measured by the proportion of questions answered appropriately).

Discussion: The findings are discussed in terms of overall patterns of relationship between these skill domains, as well as in relation to patterns related to age, duration of experience with aided communication, and language background. The implications are considered in relation to the supports required by children who are acquiring language using aided communication in order to exploit potential synergies between spoken and graphic-symbol learning as well as literacy skills.

Learning Outcome:

1. Participants will advance their understanding of the relationship between spoken language comprehension and comprehension of graphic symbol sequences
2. Participants will understand relationships between processing of graphic symbol utterances and cognitive and motor skills in children using aided communication

Keywords: aided communication; language skills; symbol story comprehension; motor skills; children



Oral Presentation: Session M4- Audiology (I), Aug. 19th (Mon.) 11:00-12:00

Abstract No: 9661

Singing Proficiency of Members of a Choir Formed by Deaf Children with Cochlear Implants

Li Xu^{*1} ; Jing Yang² ; Qi Liang³ ; Haotong Chen¹ ; Yanjun Liu³

¹Communication Sciences and Disorders/ Ohio University/ United States, ²Communication Sciences and Disorders/ University of Wisconsin Milwaukee/ United States, ³Audiology/ Aier Times Ltd./ China

Abstract Content:

Objective: The purpose of the present study was to evaluate the singing proficiency of a group of children with cochlear implants (CIs) who received rigorous music training after implantation. Their vocal singing performance was compared to that of children with CIs with little or no formal music training.

Background: CI has been successful in delivering speech information to the users. However, pitch information is poorly coded in the CI processing strategies. Previous studies have shown that vocal singing in prelingually-deafened children fitted with either CIs or hearing aids is usually poor. Recently, a group of ten prelingually-deafened children with CIs formed a choir and received 21 months of formal music training. Their success on the world stage challenges the view of many on singing ability of the CI children.

Method: The participants included all choir members (7 girls and 3 boys, mean age of 9.5 years old) who were unilateral CI users. Meanwhile, eight age-matched normal-hearing (NH) children were recruited as controls and were trained on one song for two weeks. Individual singing samples without instrument accompaniment were recorded from all participants. The singing samples were subject to detailed acoustic analysis in which the fundamental frequency (F0) of each note was extracted and the duration was measured. Six metrics were developed and computed to quantify the accuracy of their pitch and rhythm performance. The six metrics included (1) percent correct of F0 contour direction of adjacent notes; (2) F0 compression ratio of the tested notes; (3) mean deviation of the normalized F0 across the notes; (4) mean deviation of the pitch intervals, (5) mean deviation of adjacent note duration ratio; and (6) mean deviation of absolute note duration. Data from previous studies on CI children's singing were compared.

Results: The CI choir members demonstrated high accuracy in both pitch and tempo measures and performed on par with the NH children. The singing performance was significantly more accurate than that of CI children who received little or no formal music training. Early start of music training after implantation and use of bimodal hearing contributed to the development of music ability in these CI children.

Conclusion: These findings indicated that rigorous music training could facilitate high singing proficiency in prelingually-deafened children with CIs. The rigor and the length of training highlights the challenges that the CI children face in development of music ability.

Learning Outcome:

- (1) Understand the challenge of pitch perception and production in prelingually deafened children with cochlear implants
- (2) Understand acoustic analyses for singing proficiency
- (3) Describe the outcomes of rigorous training on vocal singing in children with cochlear implants

Keywords: pediatric, vocal singing, prelingual deafness, cochlear implants



Abstract No: 9673

The Importance of Early Intervention: Outcomes of Early-Stage Language Performance of Children with Auditory Neuropathy Spectrum Disorder

Pei-Hua Chen² ; Tang-Zhi Lim² ; Hsiu-Wen Chang¹

²Speech and Hearing Science Institute/ Children's Hearing Foundation/ Taiwan

¹Department of Audiology and Speech Pathology/ Mackay Medical College/ Taiwan

Abstract Content:

Objective: The purpose of this study was to explore the early-stage language performance (receptive language) and its relationship with early intervention of the Mandarin-speaking preschoolers with ANSD in Taiwan.

Background: According to the previous studies, children with auditory neuropathy spectrum disorder (ANSD) may face some difficulties in their language acquisition. Additionally, studies regarding effectiveness of early intervention and its benefits for language development of children with ANSD were scarce, especially for Mandarin-speaking ANSD children.

Method: We recruited 13 ANSD children aged 38 months to 91 months, and their average degrees of hearing loss ranged from mild to profound. All participants received auditory-verbal (AV) intervention (mean = 32.46 months, SD = 14.41) at a non-profit organization. The Peabody Picture Vocabulary Test-Revised (PPVT-R) was administered to examine the receptive vocabulary ability of children with ANSD in the present study. Additionally, we utilized multiple linear regression analysis to investigate whether unaided PTA, AV starting age, and AV duration are the factors to predict the performance of the children with ANSD in PPVT. Furthermore, Mann-Whitney *U* analyses were conducted to identify those factors which can benefit children with ANSD to reach their age-appropriate language level.

Results: The bivariate correlation analysis results showed that receptive vocabulary is negatively correlated with the AV starting age. That is, the earlier the intervention starts, the better vocabulary abilities they have ($r = -0.792, p < .05$). Furthermore, the results of multiple regression indicated that the joint semi-partial R^2 of the AV starting age variable was 0.594 of 0.667 and AV starting age was found to be a significant predictor to the receptive vocabulary ($\beta = -0.896, t = -4.765, p < 0.05$). Overall, half of the children ($N = 6$) reached age-appropriate receptive vocabulary level. Finally, results of Mann-Whitney *U* analyses indicated that children who achieved age-appropriate language level show statistically-significant early starting age of AV than those who failed to achieve ($U = 3.500, p < .05$).

Discussion: Children with ANSD who received auditory-verbal intervention earlier, tend to have better performance on their receptive vocabulary ability. Furthermore, children who achieved age-appropriate receptive vocabulary level started AV earlier than children who failed (achieved: $M = 14.33$ months, $SD = 5.47$; failed: $M = 35.43$ months, $SD = 14.60$). Results here implied the importance of timely/early intervention for children with ANSD.

Learning Outcome:

- (1) Describe the relationships between the AV and the receptive vocabulary ability of children with ANSD.
- (2) Demonstrate the importance of early intervention for children with ANSD.

Keywords: ANSD, Language Development, Early Intervention



Abstract No: 9834

Development of social communication skills in children with hearing impairment between the ages of 4 and 6 years

Krista Wallenius¹ ; Soile Loukusa¹ ; Taina Välimaa¹ ; Heikki Löppönen² ; Sari Kunnari¹

¹Research Unit of Logopedics / University of Oulu/ Finland (Suomi), ²Department of Otorhinolaryngology/ University of Eastern Finland/ Finland (Suomi)

Abstract Content:

Objective The first aim of this study was to find out, how social communication skills develop in children with hearing impairment (HI), who have got hearing aids (HAs) or cochlear implants (CIs) at an early age. The second aim was to investigate connections between social communication and linguistic skills.

Background Social communication skills are known to be associated with self-image, academic skills, and the quality of relationships. Previous research has shown that HI may affect communicative development in many ways. However, there are only a few studies published on the development of social communication skills in children with HI. Thus, investigating this area is highly important.

Methods The participants of this study were 12 children with bilateral HAs, 12 children with bilateral CIs, and 12 children with normal hearing (NH). The children were assessed at the chronological ages of 4, 5, and 6 years with the Pragma Test. This test includes 39 questions that require understanding implied meanings of utterances. In addition, the parents and the kindergarten teachers of the participants filled in the Finnish version of the CCC-2 questionnaire.

In order to investigate connections between social communication, and linguistic skills, the EOWPVT-4 and three linguistic subtests (comprehension of instructions, narrative memory, and sentence repetition) of the NEPSY-II were carried out.

Results All of the children showed development in their social communication skills between the ages of 4 and 6 years, but there was variation in their developmental trends. Early diagnosis, and getting HAs/ CIs early, did not necessarily prevent social communication problems. They may still occur at the chronological age of 6 years, even if linguistic skills are within the normal range.

Discussion For better clinical practice, it would be crucial to find out, which areas in social communication are affected, and what the factors are that correlate with social communication skills in children with HI. Furthermore, there is a need to find out, whether the low-performing children with HI will catch up with their peers with NH.

Learning Outcome:

Based on the presentation, listeners will be able to explain:

- how social communication skills develop in children with HI between the ages of 4 and 6 years
- how social communication skills are associated with linguistic skills

Keywords: hearing impairment, social communication, pragmatics



Abstract No: 9904

Revisiting the etiologies and outcomes of pediatric auditory neuropathy by using an integrative audiologic, genetic and imaging approach

Ko-Yin Chiang¹ ; Chien-Wen Lee^{*1} ; Pei-Hsuan Lin¹ ; Chen-Chi Wu¹ ; Tien-Chen Liu¹

¹Department of Otolaryngology/ National Taiwan University Hospital/ Taiwan

Abstract Content:

ABSTRACT

Objectives: Auditory neuropathy is an important entity in childhood sensorineural hearing loss. The management of auditory neuropathy is challenging due to heterogeneity in the etiologies and the diversity of clinical features. The purpose of this study was to revisit the etiologies and outcomes of pediatric auditory neuropathy using an integrative audiologic, genetic, and imaging approach.

Design: Eighty-five patients diagnosed with pediatric-onset bilateral auditory neuropathy at a tertiary referral center were enrolled. Medical and family histories, genetic results, and imaging findings were ascertained, and the patients were divided into 4 groups based on the following etiologies: acquired, genetic, cochlear nerve deficiency-related, and indefinite auditory neuropathy. The results of a battery of audiologic tests, including behavioral audiometries, distortion product otoacoustic emissions, auditory brainstem responses, and auditory steady-state responses were analyzed in the patients in the 4 groups.

Results: Of the 85 patients enrolled, 40 (47.1%), 21 (24.7%), 8 (9.4%), and 16 (18.8%) were determined to have acquired, genetic, cochlear nerve deficiency-related, and indefinite auditory neuropathy, respectively. Prematurity and *OTOF* mutations were the leading causes of acquired and genetic auditory neuropathy, respectively. Patients with distinct etiologies had pathologies at different sites and exhibited different audiologic findings. Specifically, the onset of hearing loss was earlier in patients with acquired auditory neuropathy (odds ratio, 6.17; 95% confidence interval, 1.63-23.31), whereas the presence rate of distortion product otoacoustic emissions was higher in patients with genetic auditory neuropathy than in those in the other 3 groups (odds ratio, 16.7; 95% confidence interval, 2.1-132.56). Moderate correlations (Pearson's $r = 0.50$ to 0.76) between behavioral thresholds and auditory steady-state response thresholds were observed in patients with different etiologies or sites of pathology.

Learning Outcome:

Conclusions: The etiology can be determined in approximately 80% of the children with auditory neuropathy using comprehensive history-taking, genetic examinations, and imaging studies. Different etiologies are associated with different audiologic features and outcomes, and auditory steady-state responses might serve as an objective measure for estimating behavioral thresholds after calibration.

Keywords: Auditory neuropathy; etiology; audiologic features, genetic examination; imaging.



Oral Presentation: Session M5- Educational SLP (I), Aug. 19th (Mon.) 11:00-12:00

Abstract No: 10030

Using Drivers of Change to Redesign Speech-Language Pathology Educational Paradigms for the Future

Sharon Moss^{*}; Lemmietta McNeilly^{*}; Tommie Robinson, Jr.^{*}

Abstract Content:

There are drivers of change that will significantly impact the preparation of professionals in the discipline of Communication Science and Disorders (CSD) educated to deliver services to individuals with communication disorders. The scope of thinking cannot be limited to the current or short term perspectives. But rather, employing perspectives that are broader, deeper and wider when considering and acting upon possible futures that impact the CSD discipline. A few examples of weak signals that may drive change in future of the discipline of CSD are the Aging World, Anticipatory Intelligence, Higher Education, Mentoring, and Work Redefined. Institutions of higher education and professional societies each play a role in making changes that will empower professionals and educate them to deliver services within health care systems and culturally diverse communities across the globe. This session will (a) provide an overview of the importance of adopting a culture of foresight based on the research conducted by the American Society of Association Executives (ASAE); (b) describe the application of futurist thinking for business practices; (c) highlight some specific drivers of change that impact CSD; and (d) offer recommendations for educational programmatic redesigns. Foresight is a systematic multi-dimensional process of examining various perspectives or variables (e.g., societal, technological, economic, cultural, and political) within the environment and their potential impact on an industry or discipline. It is critical that associations, regardless of size, geographical location, global footprint or structure, adopt and integrate futurist thinking into strategic planning to facilitate current, relevant and well positioned operations. According to ASAE, associations are the largest provider of post-secondary education and play a leading role in developing, defining and implementing curricula for the professionals they represent.

Learning Outcome:

1. The learner will apply principles of foresight to education and training in communication sciences and disorders
2. The learner will design interventions based on evidence from foresight research

Keywords: futurist; academic training; foresight; professional development; curricula



Abstract No: 9816

Teachers as learners: Training and supporting speech pathology academics teaching in the online environment

Catherine Easton^{*1} ; Lisa Brown^{*1}

¹School of Community Health/ Charles Sturt University/ Australia

Abstract Content:

Online teaching and learning has been acknowledged as the way of the future for educators in the health professions including Speech and Language Pathology for over a decade (Williams, 2006). Recent advances in and improved access to technology enable the re-imagining of speech pathology education designed and delivery (McCormack, Easton, & Morkel-Kingsbury, 2014).

This paper expands on a growing area of interest in the scholarship of teaching and learning, namely, the training and support needs of academics teaching in online environments. It focusses on a case study of Speech and Language Pathology academics teaching in an online Master of Speech Pathology course in regional Australia.

While the delivery and evaluation of distance education is not new, much of the research on distance education has focused on: comparing online and traditional on-campus delivery of learning; exploring the effectiveness of specific technologies; assessing the outcomes achieved by students, or their satisfaction with the online learning experience. There is a need for a stronger emphasis in academic development to enable academics to reimagine their teaching for technology-enriched learning spaces and better adapt to online teaching and learning environments (Steel & Andrews, 2012). In particular, the application of this to professional entry courses, including Speech and Language Pathology, provides insight into online learning and teaching spaces.

The project is based evaluation of current research through a literature review, and a thematic analysis of data from focus groups with speech pathology academics. In these focus groups, the academics discussed their experiences of teaching in online environments, and their needs for ongoing support extending beyond increasing digital literacy and online pedagogies to issues of student management and the development of students' professional competencies.

Secondly, innovation of training and support for academics following this research is described through case examples. Factors that facilitated or hindered the effectiveness of these innovations are discussed. Finally, we discuss the need for further training and support for academics along with parallel research to ensure effective teaching and learning in Speech Pathology courses in online environments as well as possible implication for telehealth and online service delivery.

References

- McCormack, J., Easton, C., Morkel-Kingsbury, L. (2014). Educating speech-language pathologists for the 21st century...in the 21st century: Course design considerations for a distance education Master of Speech Pathology program. *Folia Phoniatrica et Logopaedica*, 66(4-5), 147-157.
- Steel, C., & Andrews, T. (2012). Re-Imagining Teaching for Technology-Enriched Learning Spaces: An Academic Development Model. In M. Keppell, K. Souter, & M. Riddle (Eds.) *Physical and Virtual Learning Spaces in Higher Education: Concepts for the Modern Learning Environment* (pp. 242-265). Hershey, PA: Information Science Reference. doi:10.4018/978-1-60960-114-0.ch015
- Williams, S. L. (2006). The effectiveness of distance education in allied health science programs: A meta-analysis of outcomes. *American Journal of Distance Education*, 20(3), 127-141.

Learning Outcome:

Participants will identify and evaluate models of support and training for speech pathology academics teaching in the online environment

Participants will evaluate the appropriateness of a range of case examples presented in the case study for their own context.

Participants will consider the impact of technology on their own teaching and/or clinical contexts.



Keywords: education; online teaching and learning; academic development



Abstract No: 9689

Growing an online community of practice through Twitter Journal Clubs: experiences from UK and Germany

Wiebke Scharff Rethfeldt¹ ; Hazel Roddam²

¹Faculty 3, Angewandte Therapiewissenschaften/ City University of Applied Sciences Bremen/ Germany
(Deutschland), ²School of Health Sciences/ University of Central Lancashire/ United Kingdom

Abstract Content:

Introduction:

In spite of the universal rhetoric of Evidence-Based Practice (EBP), there continues to be an acknowledged implementation gap between research and practice across all fields of healthcare (Greenhalgh, 2014). In Speech and Language Therapy (SLT) there remain considerable challenges to self-efficacy in EBP for students (Spek et al, 2014) and experienced practitioners (Foster et al, 2014). The factors of awareness and confidence for implementation of research in practice are further compounded by issues of access to relevant evidence sources for many sectors of our professional community (Roddam and Skeat, 2010).

Aims:

A Community of Practice is defined as a group who share a strong identity and commitment to a common purpose. The community fosters sharing of ideas, advice and peer-support for learning towards specified goals (Wenger, 2002). Group members also collectively generate informed opinion and a body of expertise, to motivate and encourage others. The Research Support Network (ResNet) launched in 2015 as a web-based resource to promote increased engagement by practitioners with the research environment through increased skills and confidence for embedding evidence-based practice, as well as actively promoting engagement in practice-based research and mentorship (Finch et al, 2013). In 2016 a new monthly Twitter journal club was launched (#ReSNetSLT), to harness the power of social media to facilitate greater interactive participation (Lizarondo et al, 2010, 2012). In 2018 a similar Twitter journal club was launched as a German language forum – (#Logo_JC).

Methods:

Based on a pre-specified published paper, each one-hour chat comprises a blend of discussion on topical professional issues and guided critical appraisal to highlight relevant considerations about research design and processes. Where papers were not already published as open access, the relevant journal editors and publishing companies were contacted and all readily agreed to give open access to our chosen papers for this purpose.

Summary of results:

The reach and impact of engagement with these new online communities was analysed from the Twitter transcripts, web analytics and soft intelligence feedback. The analysis has shown that geography is no barrier, with international participation in both forums. We also noted that many other healthcare professions have regularly joined our discussions, enriching the multi-professional dimensions of the learning experience. Some of the paper authors have also joined the discussions.

Contribution to new knowledge:

These original findings provide important insights into how online learning communities function and develop. The findings illustrate the potential for online media to contribute towards effective continuing professional development of skills and confidence in research engagement, as also reported recently in



other healthcare disciplines (Hughes, 2018). The engagement with these two Twitter learning communities of practice has demonstrated national and international reach, with a clear focus on promoting increased implementation of evidence-based practice improvement.

Learning Outcome:

- Gain insights into the potential impact of Twitter for promoting research engagement
- Understand the processes for establishing and sustaining an online community of practice
- Gain insights into a range of approaches for evaluating the reach and impact of online learning activities

Keywords: online learning; community of practice; continuing education; EBP; journal club;



Oral Presentation: Session M10- Audiology (II), Aug. 19th (Mon.) 14:30-15:00

Abstract No: 9787

Listening Effort: measures, clinical population

Riki Taitelbaum Swead^{*1}

¹*Communication disorders/ Ariel University/ Israel*

Abstract Content:

Listening to speech, especially in challenging listening conditions (such as with background noise) requires effort which may cause long-term fatigue. "Listening effort" (LE) is a concept that refers to the cognitive resources needed to perceive speech. When there are conditions that negatively affect access to auditory speech signal, either hearing impairments or external sources that degrades the auditory signal, the listener spends an increased effort in understanding speech. In a clinical setting, the listeners are required to correctly identify the speech signals. However, there is a growing evidence suggesting that receiving the same accuracy scores does not reflect differences in the effort one may invest while processing speech. There is no direct relationship between the results of speech perception and the effort experienced by the listener. To date, there is no clinical measure that would allow quantifying LE. The aim of this talk is to present a variety of objective (pupillometry) and behavioral measures, that we use in our lab to test LE in different clinical populations such as hearing impaired, ADHD, and older adults, as compared to controls. The behavioral measures include two kinds of dual tasks and a recall-based task. In a dual-task paradigm, the participants perform primary and secondary task simultaneously, and the performance is compared to the performance of each one of them separately. The decline in the secondary task defined as LE. In this presentation, we used auditory speech perception as a primary task and the secondary task was either (1) simple motor visual probe, or (2) semantics decision of presented words. In the recall-based task, target sentence lists were aurally presented with and without competing four-talker babble noise. After each sentence list, free recall of sentence-final words was prompted. In the pupillometry, the pupil size, which dilates while increasing cognitive load, represents LE. In this lecture, we will present the findings of the various measurement methods and discuss the advantages and disadvantages of each method and its clinical and theoretical implications.

Learning Outcome:

- The listener will be familiar with concepts regarding listening effort, cognitive load, and fatigue.
- Acquaintance with different behavioral and objective study paradigms to test LE and how it may be manifested by different clinical populations.

Keywords: listening effort, cognitive load



Abstract No: 9893

Behavioral and Neural Assessment of Auditory Discrimination Ability in Early Infancy: An Audiological Update for Speech-Language Pathologists

Hsiuwen Chang^{*1} ; Shu-Ting Chang² ; Yi-Ping Chang²

¹*Department of Audiology and Speech Language Pathology/ Mackay Medical College/ Taiwan,*

²*Speech and Hearing Science Research Institute/ Children's Hearing Foundation/ Taiwan*

Abstract Content:

Objective: This study aims to introduce a comprehensive battery of auditory assessment tools to evaluate the auditory discrimination ability after hearing aid (HA) fitting or cochlear implantation (CI) in infants with hearing loss. The test battery compensates the current clinical assessments by providing information of infants' early speech discrimination skills. The assessments include Visual Reinforced Infant Speech Discrimination (VRISD), Cortical Auditory Evoked Potentials (CAEP), Auditory Skills Checklist (ASC), and Parent's Evaluation of Aural/Oral of Children (PEACH). These assessment tools include behavioral testing (VRISD), electrophysiological testing (CAEP), and parent questionnaires (ASC and PEACH).

Background: With universal newborn hearing screening (UNHS), infants with hearing loss are identified earlier and enroll in early intervention at a younger age. However, currently there is a lack of clinically available assessments for evaluating infant's speech discrimination skills.

Method: Four infants (all boys), aged between 5 months and 3 years, participated in this study. A baseline evaluation was administered before the child was fitted with HAs or implanted. After amplification or CI activation, follow-up evaluations were conducted at 1-month intervals for 3 months. Two infants were in the HA group and the other two were in the CI group.

Results: For the HA group, VRISD results revealed that their discrimination skills steadily progress in the three follow-ups after HA fitting. In general, the performance was best for vowel discrimination, followed by consonant contrast, and then tone discrimination. The CAEP waveforms in response to the three speech stimuli (low-, mid-, and high-frequency) presented at typical conversational level showed typically-developing morphology. This result indicated that, with amplification, the children were able to receive speech sounds at the cortical level. In addition, the scores of ASC and PEACH also steadily improved with time.

On the other hand, the CI group's performance of VRISD was more complex. Possibly due to the fact that CI mapping is still in progress in the first three months following activation, the VRISD performance did not always show improvement for each follow-up. With increasing CI use experience, more CAEPs could be recorded in response to the speech stimulus sounds and the waveform morphology is more typical-looking. The scores of ASC and PEACH generally improved after CI implantation although some drops may be observed in some follow-ups.

Discussion: With the proposed assessment battery, it is possible to gain insight into the auditory development trajectory between the HA group and CI group. Generally speaking, the HA group's auditory ability steadily improved for all of the assessments. However, the CI group's performance was more complex as revealed by the results of VRISD, although progress was observed for CAEP and parent questionnaires. The assessment results can provide relevant information for auditory and speech rehabilitation plans, HA validation, and CI mapping.

Learning Outcome:

Upon completion of this oral presentation session the attendants will be able to:

1. Describe the differences in the auditory development progress between children using CI and HA.
2. Incorporate the results of behavioral and neural assessments of infants' auditory development into the intervention plans.



*Keywords: Auditory discrimination ability; Auditory Skills Checklist; Cortical Auditory Evoked Potentials;
Visual Reinforced Infant Speech Discrimination; Parent's Evaluation of Aural/Oral of Children*



Oral Presentation: Session M14- Voice (I), Aug. 19th (Mon.) 16:40-18:40

Abstract No: 9990

Cross-cultural Adaptation and Validation of the Hong Kong Chinese Child Voice Handicap Index-10 (CVHI-10)

Ka Ni Cheung¹ ; Elaine Kwong ¹

¹*Department of Chinese and Bilingual Studies/ The Hong Kong Polytechnic University/ Hong Kong*

Abstract Content:

Voice problem can have great negative impacts on a child's quality of life (QOL) in terms of psychological, social and functional aspects. Comprehensive voice assessment should always include both subjective and objective measures. Specifically, self-assessment tool helps clinicians to identify the possible causes of voice problem from the clients' perspectives. It is also helpful in early identification of dysphonic children and those who are at risk of voice problem. To date, there is no self-reported quality of life measurement tool available for the pediatric population in Hong Kong. The purpose of the current study is to develop a Hong Kong Chinese version of the Child Voice Handicap Index-10 (CVHI-10(HK)) (Ricci-Maccarini et al., 2012), and to examine its psychometric properties as a QOL measure for dysphonic children. A cross-sectional study design was adopted. The development of CVHI-10 (HK) was forward and back translated by two Chinese/English bilingual translators, so as to evaluate the equivalence of meaning between the original version and target questionnaire. Next, the translated version was reviewed by three qualified speech therapists who specialises in voice disorders. Further, 15 participants (5 dysphonic and 10 vocally-healthy) were involved in the commenting and revision process of the translated questionnaire. The final translated version was sent to three voice therapists to rate the relevance of the items for content validity measurement. Fifty children (20 dysphonic and 30 vocally-healthy) were involved in the validation process of the questionnaire by completing it and self-rate their dysphonic severity. Thirty percent of the 50 participants were randomly selected to obtain data for test-retest reliability analysis. Test-retest reliability, internal consistency, contents validity, clinical validity and construct validity were obtained. Results on the psychometric properties of the CVHI-10 (HK) will be discussed in the presentation. It is hypothesized that CVHI-10 (HK) demonstrates excellent validity and is easily administered by children. Also, it provides comprehensive description of how a child perceives his voice problem.

Learning Outcome:

The audience will be able to learn more about the pediatric quality of life measure (CVHI-10 -HK) for children in Hong Kong.

Keywords: Pediatric voice disorders, Quality of Life Questionnaire, Child Voice Handicap Index



Abstract No: 9984

Assessing Vocal Stimulability: Where to go from There

Sarah Schneider^{*1}

¹Otolaryngology Head and Neck Surgery / University of California San Francisco/ United States

Abstract Content:

Identifying appropriate therapy candidates is crucial to maximize voice therapy outcomes. Assessing a patient's stimulability to make vocal change is a fundamental part of this. This session will focus on the key aspects of vocal stimulability testing (Gillespie & Gartner Schmidt 2016, Bonilha & Dawson 2012) including the choice of trial techniques guided by the patient's voice use patterns and hypothesized biomechanical inefficiency. The results of stimulability testing will be explored in the context of the patient's awareness and the clinician's observation of change.

Guided by the result of stimulability testing and the patient's awareness of these changes, the therapeutic treatment plan will be discussed. Considerations for various voice therapy techniques will be presented with a basic primer on three common voice therapy techniques – Stretch and Flow Voice Therapy (Watts et al 2015), Resonant Voice Therapy (Verdolini et al 1998), and Conversational Training Therapy (Gartner-Schmidt et al 2016). Concepts will be highlighted with case examples and therapy demonstration.

Learning Outcome:

1. Describe the goals of stimulability testing
2. Assess patient's ability to effect a change in vocal ease and/or quality
3. Identify voice therapy techniques based on stimulability

Keywords: voice, stimulability, voice therapy, candidacy, voice disorders



Abstract No: 9981

Exploring Patterns of Maximum Phonation Performance in Patients with Vocal Cord Disease

Hsin-Hua Chen^{*1} ; Ting-Shou Chang¹ ; Yaoh-shiang Lin¹

¹Department of Otolaryngology, Head and Neck Surgery/ Kaohsiung Veterans General Hospital/ Taiwan

Abstract Content:

Sustained phonation /a/ and /s/ and /z/ representing three types of position and movement of vocal cords were commonly applied to evaluate aerodynamic efficiency in voice assessment. This study was to explore patterns of maximum phonation /a/ and /s/ and /z/ in patients with vocal cord disease receiving two types of treatment approach: vocal cord medialization and removal of vocal cord lesions. Our interest was to identify patterns of pathological changes revealed by maximum phonation performance in relation to other measures of phonation ability. Data was obtained from seventy-seven dysphonic patients. Maximum phonation time (MPT) and expiratory volume (EV) of three types of sustained phonation were analyzed using the Phonatory Aerodynamic System (PAS, Model6600). The Voicing Efficiency protocol of the PAS was applied to obtain measures of airflow rate, air pressure, and laryngeal airway resistance. Cepstral- and spectral-based measures of voice quality (CPP, L/H, and CPP F0) was analyzed using the Analysis of Dysphonia in Speech & Voice (ADSV) program. Results of repeated measures ANOVA and correlation analysis showed that MPT significantly correlated with most measures of the Voicing Efficiency in the Medialization groups (both male and female) while none of these measures correlated with MPT in the Removal groups. A relatively stable pattern of EV between pre- and post- treatment was also observed in the Removal groups. MPT/a/ and MPT/z/ had highly strong correlation with each other in post-treatment condition and both showed significantly longer duration in post- treatment condition, except that MPT/z/ did not reach a significant level in the group of female patients receiving medialization approach. No specific correlation pattern between maximum phonation and voice quality was found, and CPP was the only voice quality measure showed significant improvement between pre- and post-treatment in all group conditions. Although there was no specific pattern of S/Z ratio observed in our results, all groups had S/Z ratio drop closely to 1 except the group of male patients receiving medialization approach. In conclusion, maximum phonation performance can solely be performed as a simple, adequate test of phonation ability. Patients with glottal incompetence might perform differently depending on individual condition of aerodynamic efficiency. More results and limitation of this study will be further discussed.

Learning Outcome:

There were patterns of maximum phonation performance when effect of vocal cord disease and its treatment approach was considered

Keywords: Maximum phonation, aerodynamic efficiency, voice quality, vocal cord disease



Abstract No: 9863

Recent Advancements in Acoustic Analysis for Assessing Laryngeal Function

Jack Jiang^{*1}

¹Department of Surgery - Division of Otolaryngology/ University of Wisconsin - Madison/ United States

Abstract Content:

Introduction: Acoustic analysis is a non-invasive and objective method for distinguishing normal from disordered patients. Traditional analysis includes perturbation parameters and nonlinear dynamic methods such as correlation dimension and Lyapunov exponents. While these nonlinear dynamic methods are successful in distinguishing between chaos and periodicity, error frequently occurs in the analysis of highly disordered voice signals or what is now considered type 4 voice. The voice typing paradigm was first introduced by Titze to describe type 1 voice which is nearly periodic, type 2 voice which is primarily periodic with subharmonics and bifurcations, and type 3 voice which is aperiodic and chaotic. Type 4 voice was later introduced to describe chaotic signals that contain a significant portion of stochastic noise, stemming from turbulent air in the vocal tract. More recent analyses have successfully differentiated between type 3 and 4 voices; however, they only produce singular values and simply reflect the degree of aperiodicity or disorder in a voice signal. In reality, periodic elements and complex nonlinear phenomena, such as subharmonic frequencies, bifurcations, deterministic chaos and stochastic noise, are simultaneously present in voice.

Methods: Two parameters, the intrinsic dimension and diffusive chaos methods, were recently developed to analyze the distribution of voice type components (VTCs) that are present in the voice signal. The intrinsic dimension represents the lowest dimension at which the data remains fully intelligible, and this method functions by making multiple estimates of local dimension throughout the signal. Diffusive chaos analysis is a signal processing technique that functions by repeatedly assessing the bounded or unbounded trajectories of two variable parameters within the time series. Both methods output the percentage of voice type components 1, 2, 3, and 4 that are present. To assess the effectiveness of these parameters, 135 disordered voice samples of sustained /a/ vowels were selected from the Disordered Voice Database 4337, classified according to the voice type paradigm using spectrogram analysis, and analyzed with diffusive chaos and intrinsic dimension analyses.

Results: Both methods demonstrate that the distribution of VTCs varies distinctly across traditional voice type groups. Highly disordered type 4 voices contain high proportions of voice type component 4 (VTC4), indicating the presence of noise; however, there are also smaller proportions of VTC1, indicating an underlying periodicity. Notably, the VTCs of type 3 voices are all significantly different from the VTCs of type 4 voices ($P < 0.001$). These results were compared to calculations of correlation dimension and spectrum convergence ratio, which both demonstrated limited effectiveness in differentiating between all four voice types.

Conclusions: These analyses provide a comprehensive description of the signal elements present in the voice, thus, they have the potential to provide a more complete and quantitative evaluation of the voice and treatment efficacy.

Learning Outcome:

1. Understand that voice signal types are characterized by a range of periodic, subharmonic, chaotic, and stochastic signal elements.
2. Learn how highly disordered voices contain a distribution of voice type components that varies distinctly from less severely disordered voices.

Keywords: Voice; Acoustic Analysis, Chaos



Abstract No: 9986

Closing the Gap: Evaluation and Management of Unilateral Vocal Fold Paralysis

Sarah Schneider^{*1}

¹*Otolaryngology Head and Neck Surgery / University of California San Francisco/ United States*

Abstract Content:

Patients with vocal fold paralysis (VFP) may present after iatrogenic or traumatic injury or due to idiopathic cause. While nerve recovery can occur up to one year after injury (Sulica 2008), patients do not have to wait for treatment. Due to the reduced frequency of exposure, SLPs across settings would benefit from continued access to evidence based evaluation and treatment methods for patients with VFP (ASHA 2015). Due to nature of this diagnosis, interdisciplinary assessment by a laryngologist and voice trained speech language pathologist is necessary to optimize voice outcomes.

The components of the behavioral evaluation will be highlighted with focus on instrumental evaluation including acoustic, aerodynamic and laryngeal imaging (Roy et al 2013; Patel et al 2018, Gillespie et al 2014). A framework for nomenclature (Rosen et al 2016) will be presented along with considerations regarding characteristics of vocal fold vibration and closure. Stimulability testing (Gillespie & Gartner Schmidt 2016, Bonilha & Dawson 2012) will also be discussed to provide guidance on therapeutic candidacy.

Learning Outcome:

Learner Outcomes

1. Identify and describe the hallmarks of the behavioral voice evaluation of patients with vocal fold motion paralysis
2. Define steps to assess stimulability for change and candidacy for voice therapy
3. Explain the role of voice therapy in the management of vocal fold paralysis

Keywords: vocal fold paralysis, voice therapy, voice evaluation, candidacy, voice disorders



Abstract No: 9676

Variations in Voice Onset Identified Through High Speed Video

Thomas Murry¹ ; Wenli Chen¹ ; Peak Woo¹

¹Otolaryngology Head and Neck Surgery/ Loma Linda Health University/ United States

Abstract Content:

High-speed videoendoscopy (HSV) captures direct cycle-to-cycle visualization of vocal fold movement in real-time. This ultra-fast recording rate is capable of visualizing the vibratory motion of the vocal folds in normal and disordered phonation, as well as providing a direct method for examining vibratory changes following vocal fold surgery. Videostroboscopy fails to capture the cycle-to-cycle vibratory motion of the vocal folds and objective vibratory information. Moreover, videostroboscopy does not identify the vibratory characteristics at the onset of phonation. Two such conditions that often provide a diagnostic challenge are muscle tension dysphonia (MTD) and adductor spasmodic dysphonia (AdSD). In cases such as AdSD and MTD, HSV may provide additional evidence for accurate diagnosis. High-speed videoendoscopy (HSV) captures direct visualization of vocal fold movement in real-time at frame rates of 2,000 to 10,000 frames per second prior to and at the onset of phonation. Therefore, this ultra-fast recording rate is capable of visualizing the entire cycle-to-cycle vibratory motion of the left and right vocal folds individually in normal speaking adults and in disordered phonations such as MTD and AdSD. Digital kymography utilizes HSV to examine the precise vibratory characteristics of each vocal fold at one or multiple locations of the vocal folds. Therefore, DKG spectrum presents as a useful tool to quantify direct cycle-to-cycle vocal fold vibration, as well as the specific vibratory changes following surgical intervention. In this presentation, examples of normal and disordered vocal folds will be analyzed to identify differences in pre-phonatory and phonatory voice onset with applications to diagnostic specificity.

Learning Outcome:

Be able to see the differences in voice onset between normal and pathological voice disorders
Evaluate the importance of voice onset in patients when diagnosis is questionable



Abstract No: 9134

Relation between credibility and different styles of communication of TV reporters and video professionals

Maria Stier¹ ; Fernando Pianaro¹

¹*Communication/ Companhia da Fala/ Brazil (Brasil)*

Abstract Content:

The cultural and social changes impacted by the new technologies have presented new perspectives and challenges to telejournalism. The increasing need to approach and interact with the viewer directly influences how reporters convey the information. The objective of this research is to study the relationship between the credibility of information and the style of communication adopted by television reporters and video professionals. The sample consisted of three groups evaluated: casual, laid-back reporters, serious reporters, and YouTubers. To compose the group of evaluators, 101 volunteers participated in this study. The analyzed material consisted of videos with live entries for reporters and videos with at least 30 views for YouTubers. For this evaluation, the *eye-tracking* device was used: a neuromarketing technology that analyzes the reaction to visual stimuli and later provides biometric data for measurement. Four metrics were analyzed: time of first fixation; time spent on fixations; number of fixations; and percentage of fixations. The data obtained were submitted to statistical analysis. It is concluded that there is a relationship between the credibility of an information and the style of communication adopted by television reporters and video professionals. Credibility is associated with how the video professionals behave in relation to the environment, being that serious reporters convey more credibility and trust to the evaluators. It is hoped that this research may contribute to the practice of videojournalism. It is expected that the results will instigate the reporter to envision a very prosperous and creative future. By carrying their experiences and mastery of communication skills to other media, they will bring together a legacy, which is a great differential in the transmission of information with credibility.

Learning Outcome:

Aspects of naturalness and credibility in video communication

Keywords: Communication; Credibility; Neuromarketing; Eye-Tracking.



Abstract No: 9662

Customized Vocal Warm-up Program for an Amateur Choir Using the EASE Scale

Daniel Lucas Picanço Marchand¹ ; Isadora De Oliveira Lemos¹ ; Diego De Souza Leal¹ ; Kariny Zencke da Silva¹ ; Jade Zaccarias Bello¹ ; Camila Dalbosco Gadenz¹ ; Mauriceia Cassol^{*1}

¹*Department of Speech, Language and Hearing Sciences/ UFCSPA/ Brazil (Brasil)*

Abstract Content:

Background

The Evaluation of the Ability to Sing Easily (EASE) scale is an instrument developed to evaluate the immediate use of voice in singers. Due to its recent nature, its use mainly on professional singers, and the shortage of studies that approach the development of vocal warm-up justify its application on amateur singers. In this way, the present study aims to evaluate the effectiveness of the EASE protocol in the development of a vocal warm-up program in participants of an amateur choir.

Methods

This is a prospective experimental study with pre- and post-intervention results in two moments, of which 44 choralists completed a questionnaire characterizing the sample and applications of the EASE protocol. The first applications (A1 and A2) were aimed at determining the vocal demands of the study group and, based on the results obtained, voice therapy techniques were selected for a customized vocal warm-up program. The second applications (B1 and B2) pointed out the self-perception of choralists before and after using this new warm-up.

Results

In the pre-warm-up evaluations (A1 vs B1), there was no statistical difference, demonstrating similar expectations regarding the intervention before singing. In the post warm-up interphase comparison (A2 vs B2) a statistically significant reduction was observed in 16 (72.7%) questions after the intervention.

Conclusions

The EASE scale has proven to be a valuable tool and its use can help speech therapists develop customized vocal warm-up programs for professional and amateur singers. In addition, the study allowed evaluated choralists to reflect on the healthy use of their voices and brought direct benefits to the practice of the group studied.

Learning Outcome:

1. EASE assists in the development of customized vocal warm-up programs.
2. Qualitative data from protocol analysis allows the voice therapist to better understand the individual or group.

Keywords: Voice Training; Voice Quality; Clinical Protocols; Larynx



Oral Presentation: Session M15- Dysphagia (I), Aug. 19th (Mon.) 17:10-18:40

Abstract No: 9652

Implementation of a telehealth service for the clinical assessment of dysphagia across five (5) service sites.

Elizabeth Ward^{1 2} ; Clare Burns^{2 3} ; Brooke Cowie⁴ ; Robyn Saxon⁵ ; Amy Gray⁶ ; Lisa Baker⁶ ; Sarah Bignell⁷ ; Jodie Turvey⁸ ; Natalie Winter⁹ ; Rukmani Rusch⁹

¹Centre for Functioning and Health Research/ Metro South Hospital Health Service / Australia, ²School of Health & Rehabilitation Sciences/ The University of Queensland/ Australia, ³Speech Pathology/ Royal Brisbane & Womens Hospital/ Australia, ⁴Caboolture Hospital/ Metro North Hospital and Health Service/ Australia, ⁵Sunshine Coast University Hospital/ Sunshine Coast Hospital and Health Service/ Australia, ⁶Gayndah Community Health/ Wide Bay Hospital and Health Service/ Australia, ⁷Charleville Hospital/ South West Hospital and Health Service/ Australia, ⁸Quality and Safety Unit/ South West Hospital and Health Service/ Australia, ⁹Cairns Hospital / Cairns and Hinterland Hospital and Health Service/ Australia

Abstract Content:

Background:

The delivery of dysphagia services is impacted by travel distance; a geographically disperse population; and access to a skilled local workforce. As such, many patients face challenges accessing services and receiving necessary dysphagia management in a timely an efficient management. These issues may be alleviated with telepractice. Although recent evidence has established a safe and valid method for performing clinical swallow assessment via telepractice, widespread implementation of this service model is yet to be achieved.

Objective(s):

To examine the service outcomes, costs, consumer satisfaction and factors influencing the implementation of telepractice services for clinical dysphagia examinations (CSE) across 5 health services.

Method(s):

Clinics were established in 5 health services, involving 18 clinical settings. Data was collected on waiting times, clinical and session outcomes, service costs, and consumer satisfaction. Referrals to the telehealth clinic were then simulated against the usual standard care practices in each site to determine time saved to management of referral, travel savings and overall costs of clinician time per patient. In addition, at 1 year post service implementation, the process of implementing the services was examined in interviews with each site, and coded across the constructs and domains of the Consolidated Framework for Implementation Research (CFIR), including rating domains for Strength (2=strong, 1=weak, 0=neutral) and Direction of Influence (+ive/-ive), using set coding conventions.

Result(s):

Forty CSE sessions were conducted between 8 speech pathologists and 30 patients using videoconferencing and following published methodology. Telepractice services enabled a reduction in patient waiting times (m=2 days); saved clinical time through avoided clinician travel; creating cost savings (m=\$230/appointment). Sixty-two percent of patients required diet/fluid changes post assessment. Patient and clinician satisfaction was high. CFIR constructs: *Relative Advantage*; *Design Quality & Packaging*; *Innovation Participants*, and; *External Change Agent* were perceived as vital. Constructs that challenged implementation were: *Structural Characteristics* and *Available Resources*.



Discussion:

Telepractice can enable patients to access CSEs in a more efficient manner, optimising safety and enhancing service and cost efficiencies. Insights from implementation analysis can be used to assist future service establishment and ongoing service sustainability.

Learning Outcome:

1. To understand the clinical, financial and client benefits achieved through implementing a telepractice service for clinical dysphagia assessment.
2. To identify barriers and facilitators in the implementation on telepractice services, to assist future service implementation.

Keywords: clinical swallow assessment, telepractice, implementation



Abstract No: 9103

Normal and abnormal swallowing as investigated by Videofluoroscopy

Tamer Abou-Elsaad¹

¹Phoniatric Unit, ORL department/ Faculty of Medicine, Mansoura University/ Egypt, Arab Rep.

Abstract Content:

Videofluoroscopic swallow study (VFSS) or modified barium swallow (MBS) study is one of the gold standards for evaluating the possible breakdowns in the physiological and biomechanical neuro-motor events of swallowing. It is a radiographic procedure that provides a direct, dynamic view of oral, pharyngeal, and upper esophageal function during swallowing. A MBS is indicated when there is a need to observe oral preparatory, oral transit, pharyngeal, and/or esophageal phases of swallowing and/or the need to determine treatment or management strategies to minimize the risk of aspiration and increase swallow efficiency. The MBS shows the characteristics of the swallow and the patterns of bolus movement, including, but not limited to, initiation of the swallow, nasopharyngeal reflux, pharyngeal clearance, and laryngeal penetration and aspiration. The MBS can also be used to explore the effectiveness of modifications to improve swallowing safety. The aims of this presentation are to:

- 1- Highlight the types of normal systemic changes in oropharyngeal swallow physiology e.g. changes in the bolus characteristics (volume/ viscosity), changes during chewing and changes with age.
- 2- The various physiological breakdowns of oropharyngeal swallowing will be demonstrated .
- 3- Demonstrate the temporal measures of the videofluoroscopic study of swallowing e.g. Oral transit duration, Oral clearance duration, Pharyngeal transit duration, Pharyngeal clearance duration, Total swallow duration, Masticatory duration ...etc. The participants will learn how to record and calculate these events.
- 4- Cost-effectiveness of Videofluoroscopy will be discussed.

Various MBS videos will be included in the presentation demonstrating examples of radiological signs that reflect aspects of oropharyngeal dysphagia. Also, the participants will recognize how the MBS evaluates the swallowing therapy procedures.

Learning Outcome:

The learners will be able to:

- 1- Differentiate between normal and abnormal oro-pharyngeal swallowing.
- 2- Recognize the possible breakdowns in the physiological and biomechanical neuro-motor events of swallowing.
- 3- Learn how to record and calculate the temporal measures of oropharyngeal swallowing.

Keywords: videofluoroscopy, modified barium swallow, Dysphagia, Abnormal swallowing



Abstract No: 10078

EFFICIENCY OF A FOLDING, TRANSPORTABLE DEVICE FOR MAINTAINING SEATED POSTURE ON SWALLOWING DISORDERS

Virginie Woisard¹ ; Mireille Costes¹

¹Voice and Deglutition Unit ENT department/ Toulouse University Hospital/ France

Abstract Content:

Introduction: A Folding, transportable device for maintaining seated posture *to place on a standard seat was created (PATENTEE WO 2011121249 A1) for helping patient to modify their positioning when eating.* The main objective of this study is to validate the efficiency of this device on swallowing, measuring the hyoid bone movement (HBM) on video fluoroscopy of swallowing (VFS) after one month of use. The secondary objectives are: measures of the seated adaptation positioning control (MCPAA), others VFS parameters (PAS, NIHSS) and Functional Oral Intake Scale (FOIS).

Methods: *monocentric comparative clinical trial randomized by superiority in 2 parallel groups. The arm without the device (D-) have had as the arm with the device (D+) an training session but the D- group didn't keep the device to support the positioning correction. The "unknow" was not possible for the patient. The membership group of the patient was without knowing the examiner who estimates the main assessment criterion. Inclusion criteria were: Dysphagia Handicap index up to 11, score up to 0 at the pelvic subscale of the MCPAA. The whole assessment (MCPAA, VFS, questionnaires and medical parameters) was performed at T0: before the training session and at T1: 2 months after the end of the training. Bivariate analysis was used for comparing the 2 groups, multivariate analysis for the main assessment criterion.*

Results: *56 patients ended the study: 26 D+, 30 D-, 35 men/21 women, mean age 62 ys, varied aetiologies of SD were with 43% of degenerative diseases. MCPAA is improved with a significant positive difference for the D+ ($p < 0,001$). It seems that the intervention has an effect on the global HBM ($p = 0,061$). This difference is significant for the horizontal part of the HBM ($p = 0,038$) and not for the vertical one. With a linear regression for modeling the hyoid bone movement (multivariate analysis) the effect of the device is confirmed. In initial severity, prognosis and associated treatment equal, the global HBM is significantly better (0,37cm, IC95 % = [0,20; 0,53]) in D+ ($p < 0,001$). No significant difference of the measurements used for the secondary objectives: PAS & NIHSS of VFS and FOIS.*

In conclusion, *using a device for maintaining seated posture has an impact of the movement of the hyoid bone during swallow. The fact that the population included in this study presents different aetiologies could explain the lack of effect on other swallowing parameters.*

Learning Outcome:

- 1/ Description of the treatment approach using a customized transportable seat
- 2/ Understanding the impact of posture correction on the biomechanics of swallowing
- 3/ Understanding the limitation of the outcome of our study
- 4/ Discussion about the perspective of this approach

Keywords: *posture, Hyoid bone motion, dysphagia*



Abstract No: 9988

Comparison of two expiration training devices for improving swallowing functions in nasopharyngeal cancer survivors.

Karen M.K. Chan¹ ; Rachel L.Y. Siu¹ ; Dai Pu¹ ; Kelly L.K. Ho¹

¹Swallowing Research Laboratory/ The University of Hong Kong/ Hong Kong

Abstract Content:

Objective: The study aims to compare the effect of expiratory muscle training with and without resistance on swallowing functions in nasopharyngeal cancer (NPC) survivors.

Background: NPC survivors often experience changes in pharyngeal and laryngeal functions as the head and neck muscles are often affected following radiotherapy. Increased pharyngeal residue, penetration and aspiration may occur a few years after radiotherapy in NPC survivors. Expiratory muscle strength training (EMST) has been recently proposed as a rehabilitative swallowing exercise for head-and-neck cancer survivors, however, further evidence is needed.

Method: Twenty-four NPC survivors were recruited and randomly assigned to one of two groups: a resistance training group (RT) and a no resistance training group (NR). All participants were assessed before and after treatment. The swallowing outcome measures included amount of residue, penetration and aspiration as assessed with fiberoptic endoscopic evaluation of swallowing (FEES). The maximum expiratory pressure and pitch range were also included as outcome measures. Both groups received four weekly training sessions that included tongue exercises, effortful swallow and pitch glide. The RT group was further trained with the EMST 150™ device and the NR group was trained with an exhalation training tool with minimal resistance.

Results: The resistance training group had significant improvement in maximum expiratory pressure and pitch range but the same improvement was not observed in the no resistance training group. Both group showed changes in penetration and aspiration.

Conclusions: The study suggested that traditional swallowing exercises together with expiratory muscle training with resistance were effective in improving the pharyngeal and laryngeal functions in nasopharyngeal cancer survivors.

Learning Outcome:

1. Participants will learn about expiratory muscle strengthening training (EMST) for nasopharyngeal cancer survivors.
2. Participants will learn how swallowing training can help to improve pharyngeal and laryngeal functions in nasopharyngeal cancer survivors.

Keywords: dysphagia, nasopharyngeal cancer survivors, expiratory muscle strengthening training

(EMST)



Abstract No: 9646

Office-based cricopharyngeus balloon dilation for post chemoirradiation dysphagia in nasopharyngeal carcinoma patients: A pilot study

Raymond Fong^{*1 2} ; Nikie Sun³ ; Yiu-Wing Ng³ ; Anna F. Rumbach² ; Elizabeth C. Ward⁴ ; King-Yin

Raymond Tsang³

¹Speech Therapy Department/ Queen Mary Hospital/ Hong Kong, ²School of Health and Rehabilitation Sciences/ The University of Queensland/ Australia, ³Department of Surgery/ Queen Mary Hospital/ Hong Kong (香港), ⁴Centre of Functioning and Health Research/ Metro South Hospital and Health Service/ Australia

Abstract Content:

Objective:

To evaluate the impact of balloon dilation to the cricopharyngeus and cervical esophagus on overall swallowing competence in a pilot cohort of NPC patients treated with chemo/radiotherapy and presenting with cricopharyngeal dysfunction.

Background:

Dysphagia is a common sequela post chemo/radiotherapy for nasopharyngeal carcinoma (NPC), with cricopharyngeal dysfunction often a contributing factor. This study examined the impact of balloon dilation of the cricopharyngeus and cervical oesophagus on swallow competence for dysphagic patients with cricopharyngeal dysfunction post NPC.

Methods:

Patients with NPC were screened for dysphagia and cricopharyngeal dysfunction using fiberoptic endoscopic evaluation. Thirteen symptomatic patients, median 14.1 years post chemoradiotherapy for NPC, then underwent balloon dilation using Controlled Radial Expansion balloon dilator under local anesthesia. Before and 1-month post dilation, swallow function was assessed with fluoroscopy, and rated using the Penetration-aspiration Scale, temporal swallowing measures, and MBSImP pharyngoesophageal segment opening and esophageal clearance parameter. The MD Anderson Dysphagia Inventory (MDADI; Chinese version) and the Functional Oral Intake Scale (FOIS) were collected pre-, 1 month, and approximately 3 months post-dilation.

Results:

Post-dilation, significant improvements were noted in mean FOIS scores (5.00 to 5.62), duration of cricopharyngeus opening (0.42s to 0.53s), MBSImP pharyngoesophageal opening scores (1.61 to 1.08), Penetration-aspiration scale scores (4.85 to 3.92) and MDADI Composite score (46.48 to 52.43). At 3 months post dilation, the MDADI Composite score showed sustained benefit. The procedure was well tolerated and without complication.

Discussion:

In patients with cricopharyngeal dysfunction post NPC, balloon dilation significantly improved swallow function, reduced aspiration risk and improved quality of life. Evidence from a larger cohort with long-term follow-up is warranted to determine sustained benefit.

Learning Outcome:

1. Participants should be able to recognise the presence of dysphagia and cricopharyngeal dysfunction in patients with nasopharyngeal cancer after chemo/radiotherapy.
2. Participants should be able to explain the treatment efficacy of balloon dilation to the cricopharyngeus for dysphagia in this population.



3. Participants should be able to recommend suitable patients for balloon dilation as dysphagia treatment in this population.

Keywords: Nasopharyngeal carcinoma; dilation; swallowing treatment; cricopharyngeal dysfunction



Abstract No: 9043

Managing dysphagia: an educational care approach

Virginie Woisard^{*1} ; Mathieu Balaguer^{*}; Gaëlle Soriano^{*}

¹Unité de la Voix et de la Déglutition/ Hôpitaux de Toulouse/ France

Abstract Content:

Impacts of dysphagia on lung status, nutritional status and quality of life are well known. To prevent health risks associated with dysphagia, recommendations have often been provided by several health professional: speech therapist, nurses, medical practitioner, dietitian, occupational therapists ... Adapting food intake as well as environment are often problematic for patients and their caregiver, leading to a low compliance and a poor quality of life. Moreover, lack of patients' awareness of their own troubles can hamper compliance with rehabilitation strategy, diet modifications, postural techniques and maneuvers.

Therapeutic Patient Education (TPE) enables people with chronic diseases to manage their illness and yields benefits by allowing them to empower, acquire and maintain skills to better live their pathology. Many health care providers, however, lack the skills to provide their patients with such an education. TPE appears to be complementary to the usual reeducation therapy in a rehabilitation approach, placing the patient at the heart of his/her care, offering him/her specific educational tools to increase his/her skills.

Recently, French scientific committees (such as SOFMER – French Society of Physical Medicine and Rehabilitation, 2011) developed clinical recommendations about the TPE approach in ENT. Based on these guidelines and considering our clinical experience, we have developed in our clinical team a TPE program that can be provided to dysphagic patients. This workshop will present the content of programs and will allow to discuss about identified obstacles to be overcome and recommended action to be undertaken by health care institutions and educators.

Learning Outcome:

Participants should be able to manage patients with dysphagia in an interdisciplinary team.

Keywords: Dysphagia ; education ; patient ; multidisciplinarity



Oral Presentation: Session M16- Audiology (III), Aug. 19th (Mon.) 16:40-18:25

Abstract No: 9919

Systematic Review of Diabetes and Hearing Study in 500 Out-Patients at Community Hospital in Texas

Sumalai Maroonroge^{*1} ; Santiago Perez¹ ; Hsiao Chuan Chen^{*2} ; Connie Barragan³ ; Chih-Yung Kuo^{*4}

¹*Communication Sciences and Disorders/ Texas A&M International University/ United States,* ²*Special*

Education/ National Kaohsiung University/ Taiwan, ³*Otolaryngology/ LBJ Hospital/ United States,*

⁴*Otolaryngology/ Raymond L Yung, MD/ United States*

Abstract Content:

Abstract:

This presentation will highlight the systematic review of diabetes and hearing research conducted at LBJ Hospital in the last five years. Information related to audiometric and medical records from 500 diabetic patients were examined using multiple factor analysis. The presentation will describe essential factors including race, age, gender, hearing status, tinnitus, dizziness, ear infection, hypertension, cholesterol and depression as related to diabetes and A1C levels.

Background:

Diabetes is a serious, costly, and increasingly common chronic disease that can have severe complications of heart disease, kidney failure, blindness and hearing loss, which can result in long-term disability and premature death. Studies suggest that diabetes-related mortality currently listed as the third-leading cause of death in the United States (CDC 2017). The prevalence and mortality rates of diabetes are higher along the southern border of Texas. Understanding the impact of diabetes and medical treatment can reduce the burden of diabetes. Diabetes and hearing loss are two of America's most widespread health concerns. Nearly 30 million people in the U.S. have diabetes and 84 million adults with prediabetes. Scientists are not entirely sure why diabetes negatively impacts the sense of hearing; however, they suspect high blood glucose levels cause damage to the small blood vessels in the inner ear and results in a high-frequency sensorineural hearing loss. National Institutes of Health (NIH, 2008) found that hearing loss is twice as common in people with diabetes than individuals without the disease. The occurrence of high-frequency hearing loss was 54% in people with diabetes and 32% in non-diabetics. Additional literature using data from 13 studies with more than 20,000 participants concluded similar findings.

Objective:

The purpose of this presentation is to provide a systematic review of diabetic research conducted at LBJ Hospital in Houston, TX. The review is based on a 5-year study on various diabetic topics on hearing and associated disorders in patients from multiple diverse racial backgrounds.

Method: This is a retrospective study of 500 patients who were referred for hearing evaluation at the otolaryngology clinic. Information from audiograms and medical records were investigated to obtain relevant information for appropriate statistical analysis. Hearing loss was defined as a pure tone average of greater than 25 dB at 500, 1K and 2 K Hz.

Results:

The results indicated a significantly higher incidence of hearing loss in the diabetic group. Hispanics, Africa Americans, and Asians showed a higher percent of diabetes and associated disorders. The results further indicated diabetes is connected with hearing loss, hypertension, high cholesterol, tinnitus, dizziness, and ear infection.

Discussion:



Hearing loss is common but under-diagnosed in patients with diabetes. Outcome measurement from this study indicated urgent needs for audiology intervention in diabetes.

Learning Outcome:

- 1: Upon completing the presentation, the audiences will demonstrate good comprehension of diabetics and hearing loss.
- 2: Upon completing the presentation, the audiences will be able to identify various factors related to diabetics and associated disorders.

Keywords: Diabetes; Hearing Loss; Dizziness; Tinnitus, Ear infection



Abstract No: 9959

Sibilant production by hearing impaired speakers with different experience of auditory compensation

C. T. Justine Hui¹ ; Shruthi Raghavendra² ; Sungmin Lee² ; Takayuki Arai¹ ; Chin-Tuan Tan^{2 3}

¹Graduate School of Science and Technology/ Sophia University/ Japan, ²Department of Electrical and Computer Engineering/ University of Texas at Dallas/ United States, ³School of Behavioral and Brain Sciences/ University of Texas at Dallas/ United States

Abstract Content:

Speech produced by hearing impaired speakers often sounds different from that produced by normal hearing speakers. Previous studies have found distinctive differences in hearing impaired speech production, such as phoneme omission and substitution, as well as errors in manner and place of articulation for consonants due to the lack of feedback from their hearing deficits. As most hearing impairment, particularly with the aging population, often occurs at high frequencies, consonant (for instance, sibilants /s/ and /sh/) perception and production tend to be difficult for the hearing impaired listeners, and their performance for these consonants is often used as a metric to gauge the amount of auditory feedback they received from their assistive hearing devices.

Previous studies have found that with the use of amplification such as cochlear implant (CI), hearing impaired listeners were able to restore their phonetic contrast between /s/ and /sh/ (Matthies, 1996; Kishon-Rabin, 1999). These studies tracked the changes in speech production of one controlled set of CI participants over a period of time after implantation. However, we also know that there is a large variability in the hearing impaired population in terms of their experiences such as amplification method and starting age of amplification, which could be factors that contribute to how they speak.

In the current study, we analysed the mid to high intelligible deaf speech data from Mendel (2017) and focused on sibilants /s/ and /sh/ production. The Mendel (2017) deaf speech corpus comprises of 30 hearing impaired speakers aided with different assistive devices, age of first amplification, daily communication modes and language onset. Our acoustic analysis with speech produced by the 17 more intelligible speakers showed that the different factors from the hearing impaired speakers' experience affect how their /s/, and to a lesser extent, /sh/, are produced in terms of spectral moments and duration. We also found significant differences in the duration, the first and second spectral moments (centre of gravity and standard deviation) of /s/ but not the centre of gravity for /sh/ between the speech of those marked as high intelligible compared to the speech classified to be medium intelligible, particularly among the hearing aid only users. While /sh/ production may be less affected by different hearing experiences, /s/ production remains affected by the speaker's hearing deficits even when aided with acoustic hearing aid. This may be due to the high frequency components in /s/ being beyond the frequency range compensated by existing hearing aids technology. On the other hand, cochlear implants may be providing the necessary high frequency feedback for better /s/ production.

Learning Outcome:

Significant differences in /s/ productions for duration, intensity, first and second moments between high and medium intelligible speakers were observed.

Significant differences in duration and second moment, but not intensity or first moment were observed for /sh/.

Different factors from hearing impaired speakers' experience affect how their /s/, and to a lesser extent, /sh/, were produced.

The intensity and first moment measurement for CI and bimodal users were similar to normal hearing values from previous literature.

Keywords: hearing impaired speech; speech production; sibilant production, assistive hearing device



Abstract No: 9643

ASSESSMENT OF HEARING SENSITIVITY IN INTENSIVE AND LONG TERM GSM MOBILE PHONE USERS

Majun Poothatta Parambath^{*1} ; Sunil Kumar Ravi² ; Krupa Saira George³

¹Audiology/ Labat Asia Pvt. Ltd./ India, ²Speech & Hearing/ Sravana Speech & Hearing Institute/ India,

³Audiology/ Naseema Institute of Speech & Hearing/ India

Abstract Content:

Introduction:

Operating in the frequency range of 450MHz to 2.2GHz, mobile phones act as low powered radio frequency transmitters, with an electro-magnetic-field generated to a value of 0.1 -2 watts. Although safety guidelines set cell phones to adhere to the specific absorption rates of 1.6 & 2 W/kg, to regulate thermal effects of radiation; the non-thermal effects of these magnetic field on the hearing function during intensive and long term usage is an area of concern.

Objective:

Assessing the influence of intensive long-term electromagnetic radiofrequency radiation from GSM mobile phones on human hearing function.

Subjects & Method:

100 subjects in the age range of 28-38 years, divided into two groups of 50 each were studied. Group–A, the experimental group(36 males & 14 females) were using GSM mobile phones (handset at ear during conversation) intensively for the past 6 years, with an average usage of not less than 4 hours a day. Group–B, the control group(25 males & 25 females), whose average usage of GSM mobile phones were limited to less than 30 minutes/day. Subject selection involved: 1.) An interview followed by a questionnaire that determined the eligibility criteria for either groups. 2.) Assessment of ear(otoscopy) & Middle Ear Analysis for either groups with additional assessment of hearing thresholds for the control group to qualify for the study. Test Protocol involved octave test measures of puretone audiometry(250Hz-8000Hz), Extended high frequency audiometry(10KHz-20KHz), TEOAE & DPOAE measures for the probable outcome of the study.

Results:

Independent sample t-test revealed statistically significant differences ($p<0.05$) in the mean hearing threshold levels(HTLs) at discrete test frequencies(except 500Hz for Right ear) & frequency groupings (HF, EHF), as well in the mean SNR values during DPOAE(except 8000Hz) and TEOAE between two groups for both ears.

Statistically significant difference was absent in the mean HTLs of frequency grouping(LF) for both ears between the two groups.

One way repeated measure analysis of variance also revealed statistically significant differences between the mean hearing thresholds of the frequency groupings, when paired(LF-HF, LH-EHF, HF-EHF) within the experimental group for both ears.

Conclusion:

This study reveals greater risk as well impaired sensitivity of human hearing function for those long term GSM mobile phone users exceeding 6 years duration with intensive average usage not less than 4hours/day. (Handset at the ear)



Elevation in hearing thresholds are greater at the extended high frequencies with diminishing effect towards the high & low frequencies respectively; suggesting larger effects at the basal end of cochlea than its apical end.

Normal hearing acuity with reduced SNR values at lower frequencies is a strong indicator of an early biomarker of the potential adverse effects of GSM radio-frequency radiation from mobile phones.

Learning Outcome:

Prolonged Intensive ear-level exposure to GSM radio-frequency waves from mobile-phones risks the hearing sensitivity from Hidden to Evident Hearing Loss.

Keywords: Human Hearing; GSM Mobile phone; Specific Absorption Rate; Electromagnetic Radiation;

Hidden Hearing Loss.



Abstract No: 8984

Spotlight on Auditory Processing disorders in non-classical Cases

Somia Tawfik¹

¹*Audiovestibular Medicine, ENT department/ Ain Shams University/ Egypt, Arab Rep.*

Abstract Content:

Spotlight on Auditory Processing disorders in non-classical Cases

Auditory processing disorders (APD) in children can occur as an isolated deficit or in association with other comorbid conditions. The most common two conditions are attention deficit disorders (ADHD) and specific language impairment (SLI). Other conditions include otitis media with effusion and severe to profound sensory neural hearing loss (SNHL). Diagnosis of APD in these conditions is challenging and requires multidisciplinary approach with special protocols that focus on electrophysiological measures. Intervention plans should be individualized according to each child condition. Case studies will be presented to show appropriate management protocol in each co-morbid condition in order to achieve successful outcome.

Keywords: APD, SLI, ADHD, SNHL



Abstract No: 9912

Managing Central Auditory Process Disorder- a view from Alaska!

Vidya Hoskote Oftedal¹

¹Speech Language Pathology/ Alaska Communicative Services/ United States

Abstract Content:

Objective:

To highlight the importance of team collaboration and speech language therapy outcome for students with speech and language processing disorders as a result of CAPD, in Alaska.

Background:

Alaska's unique circumstances are due to its remoteness and that the 710,000 people spread across 570,380 square miles. As Alaska is not connected to mainland USA, health related services face a great challenge. Due to the comorbidity nature of auditory processing with language and learning, Speech language pathologists are the first in schools to understand and identify children and provide therapy/intervention who are experiencing the behavioral characteristics of central auditory process disorder (weakness in speaking, listening, ADHD, spelling, reading and writing).

Comprehending sentences, connected discourse, following classroom and test instructions, mastering content area, develop peer interaction and social skills require language knowledge skills and strategies that are beyond 'auditory skills'.

Method:

Eight students between the ages of 6 -9 year were referred for a speech language assessment due to poor Response to Intervention (RTI). Each of the students received speech language therapy for 60 minutes a week for 9 months.

Test of Language Development-P: 4 (TOLD-P: 4) was used to assess the oral language abilities in the area of Listening, Organizing and Speaking. The core subtest is built in to represent the semantic abilities, grammatical abilities, listening abilities and speaking abilities.

RTI team gathered information on the student's early reading skills history by interviewing the parents in the following areas: 1. Motivative to Read, 2. Pragmatics of Language skills, 3. Appropriate use of book and 4. Letter knowledge. Five students were diagnosed with a speech and language disability as they were between 2-3 standard deviations below the mean.

Results:

There was significant improvement observed in their overall language skills and also as reported by families. They are as follows:

1. Visualize and Verbalizing- what one hears and verbalize- from a baseline of 40% to an increase of 70%
2. Active 'whole body' listening-maintaining an active listening posture rather than passive- from a baseline of 7 prompts to a minimum of 3 prompts.
3. Self-advocacy - learning to modify one's own listening environment- there was no advocacy observed.
4. Self-instruction - talking oneself through task or steps in task-from a baseline of 'no self-talk' to 50% increase.

Consistent attendance for speech language therapy was a challenge due to the weather conditions and illness. Hence the delivery of the services was interrupted



Learning Outcome:

Learn the importance of Speech Language Pathologist, the Reading specialist and the Special Education Interventionist work collaboratively to 'get to CAPD individuals' through language, in Alaska.

Keywords: Central Auditory Processing Disorder; School-age Children; Intervention; Remote; Collaboration; Kenai Peninsula, Alaska



Abstract No: 9670

Intellectual Disabilities and Hearing Loss: The Forgotten Many

Gilbert Herer^{*1} ; Judy Montgomery^{*1}

¹Communication Sciences and Disorders/ Chapman University/ United States

Abstract Content:

Evidence from a public health model of hearing health care reveals that significant amounts of hearing loss exist among adults with intellectual disabilities (ID). A convenience sampling of over 9900+ adults with ID participating at Special Olympics sports events worldwide reveals an overall hearing loss rate of 1.4 times greater than documented for the general population. For respective age decades from 20 through 59 years, the rates for those with ID range from 2 to 10 times greater hearing loss than found in the typical adult population. The hearing loss for many of these individuals with ID was previously undetected or unserved. The implications of these findings are striking with regard to identification and treatment planning for a country's population with ID. However compelling, these convenience sampling outcomes should lead to population studies in respective countries to confirm and illuminate the hearing loss status of adults with ID. The public health model of hearing health care would facilitate such population studies. Equally compelling is the need to explore the possible underlying causes for hearing loss of these individuals with ID including cardiovascular, endocrinological and environmental factors. Large-scale population studies of the hearing health of adults with intellectual disabilities would benefit the goals of prevention, treatment and care planning for these vulnerable individuals living in all countries worldwide.

This session at the 31st World Congress of the IALP 2019 conference will describe the *screen, identify and refer* protocol of the public health model (PHM) for hearing health care. It will highlight the PHM's ease and usefulness in detecting hearing loss in persons with ID; and will display detailed outcome data from the PHM's use with large numbers of such individuals. This session's information will also highlight the need for planned follow-up procedures to assure appropriate care provision for those not passing the PHM's screening protocol. The session will encourage the exploration of specific health issues in the population of people with ID that may threaten their hearing, e.g. cardiovascular status, diabetes and noise exposure. Such investigations may lead to protocols for prevention and early intervention that benefit their hearing status.

This session also supports the overarching concept that a country's public health policies need to embrace the hearing health care needs of all its citizens with intellectual disabilities. The public health model of hearing care facilitates this goal within its framework of early detection and immediate intervention. This endeavor offers a country's population with intellectual disabilities the opportunity for improved quality of life.

Learning Outcome:

Participants will be able to

1. List the four hearing test procedures used for screening purposes in the Public Health Model (PHM) of Hearing Health Care
2. Describe the types of hearing loss/ear conditions identified by the PHM requiring intervention

Keywords: Intellectual Disabilities; Hearing Loss; Public Health Model; Earliest Detection; Immediate Intervention



Abstract No: 9821

Assessment of Hearing of Orchestra Artists with Visual Impairment

Arya Kesavan¹ ; Rangasayee Raghunathrao^{*2}

¹Audiology/ Aanvii Hearing Care, Whitefield/ India, ²Audiology and Speech Language Pathology/ Ex-Director Technical, Dr.S.R.Chandrasekhar Institute of Speech and Hearing/ India

Abstract Content:

Objective: The study focuses on the measurement of the noise level at an orchestra and assesses the effect of noise on the hearing level of the participating artists who are visually impaired.

Methods: The study is done in a survey design. A total of 40 ears were taken for the study. Participants were adults(18 – 60 years age) who were bilaterally visually impaired holding a govt. issued disability certificate with 40 per cent or more severity of disability.

Study was carried out in three different phases. First phase mainly focussed on the measurement of the noise level in an orchestra by placing a calibrated SLM in different positions. The second phase was taking the informed consent and case history of the visually impaired performing artists. Third phase included the evaluation of their hearing through various audiological tests.

Results : The noise level measured showed a level above the permissible noise level given by NOISH, 1998 known to cause adverse effects on hearing. The audiological findings showed that 90% of the visually impaired artists showed hearing impairment. There was no age and gender variation. 30% of the ears showed a dip at 4KHz which is a typical indication of Noise Induced Hearing Loss. OAE was absent in 10 percent of subjects implying outer haircell involvement. The duration of exposure showed less significance in the present study. Over 66.7% had a complaint of tinnitus which is an indication of damaging outer hair cells.

Discussion: Reduced hearing sensitivity reduces the ability to use auditory skills and hence affect Orientation and Mobility and restrict activities and participation. The artists must be educated about the need and methods of hearing conservation since the Blind individuals depend on their hearing far more than the sighted persons.

Learning Outcome:

Monitoring the hearing of music exposed persons with visual impairment is indicated.



Oral Presentation: Session M17- Multilingual Affairs (I), Aug. 19th (Mon.) 15:30-17:30

Abstract No: 10076

Unexpected Cultural Competence: A Qualitative Study of SLP Services for Immigrant and Refugee Families in a U.S. Early Intervention Program

Camilo Maldonado^{*1} ; Alejandro Ashe^{*1} ; Kerri Bubar^{*1} ; Jessica Chapman^{*1} ; Sarah Scala^{*1} ; Jessica Star^{*1}

¹Speech-Language Pathology/ SUNY Buffalo State/ United States

Abstract Content:

Although current U.S. legislation stipulates that native language be considered when clinical services are planned, a practical dilemma exists. There is a significant shortage of practitioners who are multilingual and credentialed to provide services within the educational and rehabilitative arenas (Barrera, 1994). Consequently, English-speakers are frequently called upon as service providers, often without benefit of translation for the targeted child and/or family. How clinicians are supported and trained to provide effective services remain to be explored in depth.

Despite current U.S. political positioning or stances regarding immigration or refugee status, Fike, Chung, and Riordan (2015) noted more than 8,000 immigrants and refugees settled in the authors' home community since 2002. It was determined that useful insights derived from this study could be disseminated and implemented to other SLPs working with this population. Semi-structured interviews were conducted with ten monolingual, English-speaking clinicians in order to examine the ways in which they provided intervention for immigrant/refugee clients from limited or non-English-speaking families. Frustrations, attitudes, and feelings toward pre/in-service training in the area of inter-cultural engagement, clinical and interpretive support, and development of cross-cultural competence were explored.

This study yielded four notable findings: (1) Interpretive services, though stipulated by federal legislation for assessment, were largely absent from daily intervention. Although all respondents observed that initial evaluations were appropriately translated using a local interpretive service, regular therapy sessions were unsupported. Clinicians were left to their own devices, frequently using gestures, pictures, bilingual siblings, and electronic translators to communicate effectively with families. (2) SLPs all noted the importance of preservice training (e.g., graduate coursework in multiculturalism), but none could appreciate the necessity of such academic requirements until they were working in the field. (3) Few clinicians had a clearly articulated understanding of federal legislation that undergirded service provision with the CLD population (see IDEA, 2014). (4) All respondents viewed working with CLD service recipients as a transformative experience that left them more socially aware and culturally enriched.

Given the homebased and family-focused nature of Early Intervention, policies and practices described in the results of this study seem to counter current legislation (e.g., IDEA, 2014) and language policy (see Hopkins, 2016; Mueller, Singer, & Grace, 2004) as well as literature concerning evidence-based practice. Kohnert, Yim, Nett, Kan, and Duran (2005) stated it was crucial that speech-language pathologists, as well as related service providers, support children by facilitating skills in their native language. Surprisingly, despite the challenges espoused, respondents noted that continued training in the area of multicultural service provision was desired and of paramount importance. Additionally, they felt that interactions with the immigrant and refugee communities served to increase their own cultural competencies.

Learning Outcome:

1. Participants will be able to describe the training SLPs require to competently serve immigrant and refugee populations.
2. Participants will discuss how services can be provided when service recipients are non-dominant-language speakers.



Keywords: Cultural Competence; Limited English Proficiency; Immigrants & Refugees; U.S. Early Intervention Program



Abstract No: 10027

Immigrant Children Separated from their Families: What Professionals Need to Know

Tommie Robinson, Jr.^{*}; Lemmietta McNeilly^{*}; Sharon Moss^{*}

Abstract Content:

The number of individuals and families migrating to different countries across the world has increased. People are fleeing hostile environments, harsh living conditions, and seeking asylum for example. Families are moving to countries that were not typically considered in the past. Issues regarding housing, safety, access to social services and education are a few of the factors that professionals working with the new immigrants will need to consider. Languages spoken or understood by the family may not be languages that are understood by the healthcare professionals in the new country and there may not be interpreters available who are familiar with some of the languages spoken by the recently immigrated families, resulting in the establishment of communication barriers. In the United States, there is an additional confounding variable involving the forced separation of children from their parents at the border in an effort to deter illegal entry into the U.S.. Young children typically do not talk to strangers and may not be familiar with English. These conditions present challenges in assessing the language needs of unaccompanied minor children. This presentation will address the challenges, barriers and considerations for structuring appropriate assessment and intervention plans when working with immigrant children who are separated from their families. Short term considerations will be discussed as well as long term ramifications of these conditions on the children's wellbeing and development related to cognition, all aspects of language (semantics, pragmatics, syntax, morphology, phonology and pragmatics) and psychosocial behaviors. Issues regarding effective triage of communication and swallowing needs as well as the necessary information that the team members need to know and understand will be addressed. Advocacy and prevention activities, as well as opportunities for identifying successful strategies for these young children and the professionals working with them will be explored.

Learning Outcome:

1. Learners will be able to identify factors that influence clinical service delivery to immigrant children separated from their families
2. Learners will be able to describe appropriate assessment and intervention strategies for collaborative teams
3. Learners will be able to design advocacy and prevention activities relative to working collaboratively with interprofessional teams

Keywords: immigrants; children; assessment; intervention; teams



Abstract No: 9877

What do speech pathologists think about working with professional interpreters in a hospital setting? Findings from in-depth interviews.

Samantha Siyambalapatiya^{*1 2} ; Petrea Cornwell^{1 2} ; Bronwyn Davidson³ ; Tami Howe⁴ ; Anne Huang^{1 2}

¹*Menzies Health Institute Queensland/ Griffith University/ Australia*, ²*School of Allied Health Sciences/ Griffith University/ Australia*, ³*Department of Audiology and Speech Pathology/ University of Melbourne/ Australia*, ⁴*School of Audiology and Speech Sciences/ University of British Columbia/ Canada*

Abstract Content:

Background

Speech pathologists are increasingly working with more culturally diverse caseloads in many regions of the world. When a clinician does not share the language spoken by a patient, it may be necessary to work with professional interpreters. Delivering speech pathology services in conjunction with professional interpreters can lead to many challenges, particularly when treating adults with acquired communication disorders (ACDs). Common challenges reported by speech pathologists in the limited existing research literature include: being unsure about the accuracy of interpretations, lack of clarity regarding the roles of both speech pathologists and interpreters, and difficulties accessing professional interpreters. To improve service delivery in this area, more in-depth research is needed to specifically explore speech pathologist and interpreter perspectives regarding their interprofessional practice.

Aims

This study aimed to identify challenges and facilitators that influence interprofessional practice between speech pathologists and professional interpreters in the delivery of speech pathology services for culturally and linguistically diverse (CALD) adults with acquired neurogenic communication disorders. This presentation will report on the perspectives of speech pathologists working with interpreters in the acute hospital setting.

Method

A qualitative descriptive investigation underpinned by a constructivist paradigm was used to address the research aim. Eleven speech pathologists from four metropolitan hospitals in Queensland, Australia participated in in-depth, semi-structured interviews that were audio-recorded for later verbatim transcription. A topic guide was used to explore perceived challenges and facilitators when working with interpreters to manage CALD adults with ACDs. Qualitative content analysis was used to analyse the data.

Results

Analysis identified a broad range of challenges and facilitators relevant to working with professional interpreters when delivering speech pathology services to CALD adults with ACDs. These findings were grouped into categories and three higher-level categories: Place, People, and Process. The higher-level category of 'Place' included 'Context'; 'People' included 'Language Factors', 'Education and Experience', 'Interpreter Factors' and 'Relationships'; and 'Process' included 'Logistics' and 'Clinical Processes'.

Discussion

This study identified specific challenges reported by speech pathologists working with interpreters in the delivery of speech pathology services to adults with ACDs; along with facilitators that may enhance interprofessional practice with this caseload. These novel findings build on the emerging evidence base in this area and have the potential to guide speech pathologists regarding how to improve their service delivery when working with professional interpreters. Clinical implications, future directions for research



and limitations of the study will be discussed. The study highlighted the importance of speech pathologists and interpreters working together effectively in order to improve speech pathology services and health outcomes for CALD adults with ACDs.

Learning Outcome:

1. Describe potential challenges faced by speech pathologists when working with professional interpreters to manage CALD adults with ACDs.
2. Identify specific facilitators that may enhance clinical practice when working with professional interpreters to manage CALD adults with ACDs.

Keywords: interpreters; culturally and linguistically diverse; acquired communication disorders; aphasia; interprofessional



Abstract No: 10074

Factors supporting language maintenance amongst the Vietnamese community in Australia

Sharynne McLeod^{*1}; Sarah Verdon^{*2}; Cen (Audrey) Wang¹; Van Tran^{*1}

¹Teacher Education/ Charles Sturt University/ Australia, ²Community Health/ Charles Sturt University/ Australia

Abstract Content:

Objective: This paper will describe factors supporting language use, proficiency, and home language maintenance amongst the Vietnamese community in Australia.

Background: Vietnamese is one of the most commonly spoken languages in the world, and in the top 5 languages spoken in Australia. Speech-language pathologists' support for language maintenance is underpinned by knowledge about the populations they serve.

Method: This study is a part of an Australian Research Council funded study titled *VietSpeech: Vietnamese-Australian children's speech and language competence*. Data were collected via an anonymous self-report questionnaire developed on a comprehensive review of literature addressing multilingualism and language maintenance. The survey was available in both Vietnamese and English and could be completed online and in hard copy

A total of 271 participants completed the survey, with 87.3% born in Vietnam and 9.4% born in Australia. Quantitative data were analysed using SPSS, while extended response data were interpreted using a content analysis in NVivo.

Results: Vietnamese was identified as the first language by 94.3% of the participants and the most proficient language by 78.5%. In terms of language proficiency, more than 83% of the participants rated their ability to speak Vietnamese as well or very well across the four domains (speaking, understanding, reading, writing). A slightly lower percentage of participants (between 68% and 74%) rated their English proficiency as well or very well across the four domains. Participants reported using mostly Vietnamese at home and with family, and using mostly English at work and in educational contexts. Strategies used to maintain Vietnamese included using only Vietnamese with family and friends and choosing to read, watch, and listen to Vietnamese media.

A cluster analysis was undertaken to consider factors relating to language proficiency. Three clusters were identified: Proficient in Vietnamese only (31%), Proficient in both Vietnamese and English (52%), and a Proficient in English only (17%). There was no gender difference across the profiles. Participants who were proficient in Vietnamese only were older than those in the other clusters. Participants who were proficient in Vietnamese only and who were Proficient in both Vietnamese and English were more likely than expected to be first generation immigrants. Participants who were only proficient in English were more likely than expected to have bachelor's degree and were more likely to have the highest income and had lived a significant longer time in English speaking countries. Participants who were proficient in Vietnamese only and who were proficient in both languages indicated important reasons for home language maintenance were to "help build friendships" and "improve your academic study (school, university)".

Discussion: The findings provide language-specific data to support speech-language pathologists' culturally responsive practice when working with multilingual clients of Vietnamese-Australian heritage.

Learning Outcome:

1. To consider factors that relate to home language maintenance.
2. To understand



Keywords: multilingualism, home language maintenance, language, culturally responsive practice, Vietnames



Abstract No: 10011

Language intervention practices in Hungary and in Europe: Comparing survey results on serving multilingual/multicultural children with developmental language disorder

Krisztina Zajdó^{*1}

¹Special Education/Speech-Language Pathology/ Széchenyi István University/ Hungary

Abstract Content:

Objective:

The European Union funded COST Action IS1406 research project aims to map out current practices in language intervention for children with developmental language disorder. One section of the survey conducted focused on language intervention for children with DLD reared in culturally and/or linguistically different families. Survey results gathered in 2017 are available on a.) assessment and treatment practices, b.) training in multicultural issues for clinicians, c.) confidence level of clinicians in their own clinical skills when providing intervention, and d.) parent participation in intervention, when serving these families across EU and neighboring countries, including Hungary. The objective is to discuss results pertaining to Hungary and compare and contrast these data with pan-European results.

Background:

To date, data is unavailable on assessment and intervention practices of clinicians for children with developmental language disorder (DLD) in Hungary, including those living in a bi/multilingual-bi/multicultural home environment. Additionally, practices of Hungarian SLTs have never been compared to results from the EU and neighboring countries before.

Methods:

Members of the Action developed a part of an online survey, to gather data that helps answer the questions examined in this study. The survey was conducted in 30 languages, including Hungarian. The online questionnaire was filled in by more than 5000 practicing SLT professionals from EU and neighboring countries, including 185 practitioners from Hungary. The online survey was made available through SurveyMonkey (SurveyMonkey, Inc., 2017). Statistical analysis of the results were conducted by using the STATISTICA software program (version 13.2; DELL, Inc., 2016). Qualitative data was analyzed through manual coding.

Results:

Results show that 48% of SLTs working in Hungary reported that assessment for children with DLD who are reared in multilingual/multicultural environments is only available in the mainstream language. SLTs reported applying intervention indirectly considerably less frequently than directly for this population. 57% of SLTs stated that assessment in more than 2 languages is typically not available for these children. 50% stated that bi/multilingual clients are not getting more services than monolinguals. 61% of clinicians reported providing intervention in the mainstream language only. Further, remedial services at schools are only available for these children in 16% of the cases. Disappointingly, 10% of the respondents reported not knowing the answer to the questions posed, indicating a lack of knowledge about the knowledge areas examined. Results contrasted with pan-European data show important similarities and, in some cases, major differences.

Discussion:

Currently, the target population is severely underserved in many aspects by Hungarian SLTs, including both assessment and intervention practices for children with DLD from multilingual/multicultural environments. Some clinicians reported a lack of knowledge in the areas examined. Results are important for guiding SLT training practices for students and practitioners.



Learning Outcome:

Audience members will be able to

-develop an understanding of SLT practices in Hungary and in Europe when serving children with DLD reared in multilingual/multicultural families;

-compare and contrast results of the survey gained in Hungary vs. overall in the EU;

-summarize current needs of clinicians with respect to further training in multilingual/multicultural issues and practices.

Keywords: multilingual; multicultural; developmental language disorder; survey; Hungary.



Abstract No: 9924

Speech Language Pathologists' Views on Communication Issues Related to Dysphagia Assessment in Bilingual Taiwan: A Qualitative Study

Tzu-Pei Tsai^{*1} ; Chen-Chen Cheng¹

¹*Division of Otorhinolaryngology/ Cheng Hsin General Hospital/ Taiwan*

¹*Department of Special Education/ National Kaohsiung Normal University/ Taiwan*

Abstract Content:

OBJECTIVE. This study utilized qualitative methods to illustrate and conceptualize communication and interaction experiences of 10 speech language pathologists (SLPs) who have provided dysphagia assessment services for clients speaking Taiwan Southern Min (TSM) in Taiwan.

BACKGROUND. Communication issues related to culture and linguistic diversity (CLD) are important in speech language pathology since service quality is predicated on rapport building and communication between clinicians and their clients with CLD backgrounds. CLD issues in dysphagia are generally focused on cultural aspects of eating customs and food preference. However, language and communication issues when providing clinical services to a bilingual population from the same society may also be worthy of exploring. The statement is especially true in Taiwan, where an ongoing process of language shift is present in the bilingual and diglossic society.

METHOD. 10 SLPs with diverse sociolinguistic backgrounds and work experiences participated in the study. Qualitative data were collected through one-on-one in-depth interviews. Interviews were audio-recorded, transcribed verbatim, and were further analyzed through 3-level thematic analysis in constant comparison. Measures to assure research quality were taken.

RESULTS. Collective themes emerged as considerations and strategies. The considerations were as follow: (a) language competence and preference; (b) social identities and relationship; (c) availability of dysphagia assessment tools for TSM speakers; (d) the complementary social status and function of Mandarin and TSM. The strategies included: (a) language adjustment; (b) avoidance of professional terminologies; (c) translation and interpretation; (d) use of nonverbal means for illustration.

DISCUSSION. Verbal and nonverbal instructions were given in swallowing assessment to collect sufficient clinical data. However, the clinical interactions between the SLP and the TSM speaking client with dysphagia during assessment was not only about the client's swallowing abilities. Our results showed that sociolinguistic consideration and strategies were also essential in building rapport that may facilitate data collection and establish the SLP's professional image. Comparison with practice in other bilingual societies will be discussed.

Learning Outcome:

You will be able to:

1. Identify sociolinguistic factors affecting a swallowing assessment.
2. State at least three ways to assess swallowing abilities in a bilingual society.

Keywords: clinical sociolinguistics; dysphagia; bilingualism; assessment; qualitative



Abstract No: 9906

Early language assessment and intervention by speech-language pathologists working with culturally and linguistically diverse families: A comparison between Australia and Hong Kong

Taiying Lee¹; Sarah Masso¹; Anita Wong²; Natalie Munro¹; Elise Baker¹; Stephanie Stokes²

¹Speech Pathology/ The University of Sydney/ Australia, ²Division of Speech and Hearing Sciences/ The University of Hong Kong / Hong Kong

Abstract Content:

Background: With increased mobility and migration between countries, speech-language pathologists (SLP) face increased demands for services for children and families from culturally and linguistically diverse (CALD) backgrounds. The challenges and opportunities that accompany a CALD caseload may impact SLPs differently depending on their country and/or city of practice. To capture the diversity of caseloads, we investigated SLP practices for young children who were monolingual with a common language (Mono-C); monolingual with no common language (Mono-NC); multilingual with a common language (Multi-C); multilingual with no common language (Multi-NC).

Aim: To identify, compare, and contrast the early language assessment and intervention practices of speech-language pathologists working with children (< 3 years of age) from CALD backgrounds in Australia and Hong Kong.

Method: A total of 207 SLPs in Australia (n = 125) and Hong Kong (n = 82) completed online questions specific to language assessment; a total of 163 SLPs in Australia (n = 97) and Hong Kong (n = 66) completed questions specific to language intervention.

Results: Most Australian and Hong Kong SLPs completed assessments for children under 3 years. The majority of assessments were completed for children who were possible 'late talkers'. In Australia (n=125), 73.1% of these were for Mono-C; 42.8% Mono-NC; 46.8% Multi-C; 8.3% Multi-NC. In Hong Kong (n=82), 60.0% Mono-C; 35.7% Mono-NC; 37.0% Multi-C; 50% Multi-NC. The assessment methodology utilised differed depending on whether the SLP had a language in common with the child. In Australia, SLPs were actively involved and included the carer for Mono-C (65.5%) and Multi-C (52.3%) context, while SLPs utilised observations for Mono-NC (76.2%) and Multi-NC (66.7%) contexts. A similar pattern was observed in Hong Kong with observations for Mono-NC (80%) and Multi-NC (25.0%) contexts.

For intervention, most Australian and Hong Kong SLPs carried out intervention for children under 3 years. Intervention for children who were possible 'late talkers' differed between the two countries. In Australia (n=97), 67.4% of these were for Mono-C; 53.3% Mono-NC; 46.2% Multi-C; 16.7% Multi-NC. In Hong Kong (n=66), 42.6% Mono-C; 0% Mono-NC; 50.0% Multi-C; 0% Multi-NC. The most common focus of language intervention, across both countries, was vocabulary/semantics. In Australia, the focus of intervention differed depending on whether SLPs had a common language with the child or not. Intervention focused on syntax when there was a common language while pragmatics was most often the focus when there was no common language.

Conclusion: Language assessment and intervention practices of SLPs working with young children from CALD backgrounds in Australia and Hong Kong followed similar trends with some specific contextual differences. These may be attributed to demographic features of the SLP workforce. Further results and implications of the Australian and Hong Kong contexts on SLP practices will also be discussed.

Learning Outcome:

- 1) Describe key similarities and differences in SLP practice with early **language assessment** between contexts of differing linguistic diversity



- 2) Describe key similarities and differences in SLP practice with early **language intervention** between contexts of differing linguistic diversity

Keywords: Cultural and linguistic diversity; speech pathology practice; language; assessment; intervention



Abstract No: 9836

Speech and language therapists' knowledge and practice with culturally and linguistically diverse populations in (re)habilitation services in Denmark and Sweden

Maja Sigurd Pilesjö^{*1} ; Jytte Isaksen^{*1} ; Samantha Siyambalapatiya^{*2} ; David Trembath³

¹*Department of Language and Communication/ University of Southern Denmark/ Denmark (Danmark),*

²*School of Allied Health Sciences; Menzies Health Institute Queensland/ Griffith University / Australia,*

³*Speech Pathology, School of Allied Health Sciences/ Griffith University/ Australia*

Abstract Content:

Background: High levels of migration to Sweden and Denmark in recent decades have led to speech and language therapists (SLTs) serving increasingly multilingual populations. The changing caseload has placed new demands on clinical practice in relation to assessment, work with interpreters, intervention, and cultural competence. Previous research has investigated the provision of speech and language therapy to culturally and linguistically diverse (CLD) populations in some regions of the world; however, this question remains unexplored in Denmark and Sweden, particularly for adult populations and children with developmental disorders. Identifying possible challenges in providing SLT services to CLD populations in Denmark and Sweden is an essential step in developing appropriate resources and service delivery for this caseload.

Objective: This study aimed to provide an overview of Danish and Swedish SLTs' training and knowledge, clinical practices, and views on barriers and facilitators to service delivery when working with CLD adult populations with neurogenic communication disorders and CLD child populations with neurogenic developmental disorders.

Methods: A 19-item web-based survey with mainly closed questions was developed based on previous research and a pilot study with five SLTs in Sweden and Denmark. It was distributed to Danish and Swedish speech and language therapists through personal contacts, social media and professional associations. Results were analysed using descriptive statistics and thematic analysis.

Results: Preliminary results will be presented based on a subset of the final sample, since data collection is ongoing. Many of the SLTs reported little or no training in assessment, intervention and counselling of multilingual populations. Few formal assessment materials and intervention resources exist in languages other than Swedish or Danish. Respondents reported that intervention was challenging due to language barriers and many relied on counselling instead. Preliminary results also indicated differences between SLTs working in Denmark and Sweden, where the SLTs in Sweden seem to use interpreters more frequently than Danish SLTs. The survey findings suggest the need for improved training of SLTs to work with CLD populations, along with more linguistically and culturally appropriate resources. These findings may be relevant for SLT management of CLD populations in other regions.

Learning Outcome:

1. Participants will be able to describe SLTs knowledge and practices with CLD (re)habilitation caseloads in Sweden and Denmark.
2. Participants will be able to describe current strengths and weaknesses in assessment, intervention and counselling in SLTs' (re)habilitation services for multilingual populations in Sweden and Denmark.
3. Participants will be able to identify potential strategies and resources that may improve SLT practice with CLD populations.

Keywords: CLD, SLT practice, multilingualism



Oral Presentation: Session M17- Aphasia (I), Aug. 19th (Mon.) 17:40-18:40

Abstract No: 9989

Computerized revised token test for assessment of reading and listening comprehension in Cantonese speakers with aphasia

Mehdi Bakhtiar^{*1} ; Min Ney Wong^{*1} ; Wing Yung Yvonne Suen¹ ; Fuk Yeung Kelvin Cheung¹ ; Wai Sin Sylvia Wan¹ ; Malcolm R Mcneil² ; Neil Szuminsky³

¹*Department of Chinese and Bilingual Studies/ The Hong Kong Polytechnic University/ Hong Kong,*

²*Department of Communication Science and Disorders/ University of Pittsburgh/ United States,*

³*Necessity Consulting/ Necessity Consulting/ United States*

Abstract Content:

Background: The number of stroke patients in Hong Kong has increased steadily over the years and many stroke survivors suffered from different types and severities of aphasia. However, there are only a limited number of tests available for the assessment of aphasia in Cantonese speakers.

Objective: This preliminary study intended to report the concurrent validity and test-retest reliability of a newly adapted Cantonese Computerized Revised Token Test (CRTT) to evaluate the sentence comprehension ability in people with aphasia versus healthy controls.

Method: The English CRTT was translated and adapted into Cantonese by a panel of professional translators and speech therapists. Standard Chinese was used for the reading version of CRTT (CRTT_R) and formal Cantonese was used for the listening version of CRTT (CRTT_L). 15 native Cantonese speakers with aphasia (PWA) and 15 native healthy speakers of Cantonese (HC) matched for age, gender and education level were initially recruited for this study. All the participants had more than six years of formal education with no premorbid history of speech, language, hearing and learning disabilities. All the participants completed the Cantonese Aphasia Battery (CAB), Hong Kong Oxford Cognitive Screen (HK-OCS), Snellen visual test, pure tone hearing screening test, and CRTT pretests in the first session. Then they completed the Cantonese CRTT-L and CRTT_R, in a random order, across 2 separate sessions with at least one-week interval. All of the HC were retested by both versions of CRTT whereas seven PWA were randomly retested using CRTT-L, and eight PWA were randomly retested using CRTT-R.

Results: Statistical analyses revealed (1) a significant difference between PWA and HC groups on the overall and efficiency scores of the Cantonese CRTTs, (2) a significant concurrent validity in terms of the correlation between Cantonese CRTTs scores and CAB scores, and (3) a significant test-retest reliability in terms of the correlation between overall and efficiency scores of Cantonese CRTTs across the test and retest applications. Moreover, there was a significant correlation between the CRTT-L and CRTT-R with the CRTT's overall ($r = 0.83, p < .001$) and efficiency scores ($r = 0.839, p < .001$).

Discussion: The preliminary results suggested that Cantonese CRTT can significantly differentiate the reading and listening comprehension of PWA from HC. The preliminary findings provided a relatively high concurrent validity and test-retest reliability for Cantonese CRTTs. High correlation between the CRTT-R and CRTT-L in PWA might suggest that each version can be used interchangeably for assessment of language comprehension, especially among the patients with modality specific impairment such as auditory agnosia. Further research using a larger sample size will be needed to establish other psychometric properties of Cantonese CRTT including the development of normative data, cut-off scores, internal validity and consistency.

Learning Outcome:

1. The findings suggested that the newly adapted Cantonese CRTT can significantly differentiate PWA from HC.



2. High concurrent validity, test-retest reliability and correlation were reported for the Cantonese CRTT.

Keywords: CRTT; Aphasia; Reading comprehension; Listening comprehension; Cantonese



Abstract No: 9907

Outcome measures for evaluating conversation in aphasia research: A descriptive review

Jamie Azios^{*1} ; Brent Archer² ; Jack Damico³

¹Speech & Hearing Sciences/ Lamar University/ United States, ²Communication Sciences and Disorders/ Bowling Green State University/ United States, ³Applied Language & Speech Sciences / University of Louisiana at Lafayette/ United States

Abstract Content:

Background:

Aphasia is a condition that can result in intense loneliness, a reduction of a person's social network, and an overall decrease in life participation (Northcott, Moss, Harrison, & Hilari, 2016). To persons with aphasia (PWA) and their family members, participation in meaningful activities and being able to communicate with friends and family are important factors in living successfully with aphasia (Brown, Worrall, Davidson, & Howe, 2012). Since conversation is considered the most frequent communication activity in daily life, it is no surprise that the ability to converse with others has been prioritized by PWA and their families (Wallace et al, 2017). Despite the opinions of these important stakeholders, few studies examine outcome measures related to conversation. In studies that do exist, outcome measures represent considerable heterogeneity. This presentation will include a descriptive review of approaches used to measure conversation outcomes in aphasia intervention and the application of one approach to data gathered during a conversation intervention study.

Method & Results:

The authors identified and examined research articles that reported conversation outcomes in aphasia therapy. The literature search is ongoing, but currently 16 research articles have been identified and reviewed. Each article has been inspected to identify key elements of the approaches used to measure outcomes. At this stage of the analysis, key elements include a thorough description of the outcome measure(s), methods for obtaining and analyzing samples, primary theoretical orientation, and psychometric properties. After all articles have been identified and reviewed, key elements will be compared and contrasted and approaches will be organized into a taxonomy.

The second part of the presentation will contain information on the development of a conversational outcome measure based upon findings from the descriptive review. The authors will present data collected from a recent investigation of a one-on-one conversation therapy for PWA and discuss advantages and caveats for applying this approach to conversation data. The authors will also present inter-rater reliability for determining behavioral change across four separate facilitative conversation behaviors: iconic gestures, drawing, writing, and word substitution.

Discussion:

Implications for selecting outcomes measures for clinical practice and for research in aphasia will be discussed. There will be a particular focus on 1) the clinical utility of current available tools and 2) the importance of measuring real-world interactions for assessment and intervention in aphasia.

References:

Brown, K., Worrall, L. E., Davidson, B., & Howe, T. (2012). Living successfully with aphasia: A qualitative meta-analysis of the perspectives of individuals with aphasia, family members, and speech-language pathologists. *International Journal of Speech-Language Pathology*, 14(2), 141-155.

Northcott, S., Moss, B., Harrison, K., & Hilari, K. (2016). A systematic review of the impact of stroke on social support and social networks: associated factors and patterns of change. *Clinical Rehabilitation*, 30(8), 811-831.



Wallace, S. J., Worrall, L., Rose, T., Le Dorze, G., Cruice, M., Isaksen, J., ... & Gauvreau, C. A. (2017). Which outcomes are most important to people with aphasia and their families? An international nominal group technique study framed within the ICF. *Disability and Rehabilitation*, 39(14), 1364-1379.

Learning Outcome:

The learner will discuss some of the challenges related to measuring conversation in clinical or research settings.

The learner will identify two outcome measures designed to examine conversation during aphasia intervention.

The learner will describe the advantages of integrating conversational assessments and outcome measures into clinical practice.

Keywords: aphasia; conversation; outcomes; review; intervention



Abstract No: 9835

nDo SLPs measure communication and participation outcomes? A cross-sectional survey of current practice and barriers/facilitators to optimal aphasia outcome measurement.

Sarah Wallace^{*1} ; Hayley Arnold¹ ; Brooke Ryan¹ ; Emma Finch¹

¹*School of Health and Rehabilitation Sciences/ The University of Queensland/ Australia*

Abstract Content:

Background: Outcome measurement in clinical practice is important and challenging. To capture the outcomes of treatment, relevant and meaningful outcomes must be paired with valid, sensitive and reliable outcome measurement instruments (OMIs). In aphasia rehabilitation, outcomes and OMIs are not always aligned. SLPs often use 'functional' (activity/participation) therapy approaches and equate the success of intervention with improvements in functional communication, however predominately use impairment-focused OMIs. A better understanding of the factors motivating SLP outcome measurement practices is needed in order to support the development of interventions tailored to address barriers to optimal outcome measurement.

Aims: This study aimed to explore current clinical practice and perceived barriers and facilitators to aphasia outcome measurement, from the perspective of Australian SLPs.

Methods and Procedures: A cross-sectional survey design was used. Questions related to: current outcome measurement practices (including outcome constructs measured and outcome measurement instruments or approaches used) and perceived barriers and facilitators to routine outcome measurement. Quantitative survey data were analysed using descriptive statistics (frequencies, counts and cross tabulations). Identified barriers and facilitators to outcome measurement were mapped to the Theoretical Domains Framework (TDF) and Behaviour Change Wheel (BCW).

Outcome and Results: Data from 74 Australian SLPs were included in this study. 100% of participants indicated that they measure outcomes for their clients with aphasia. SLPs most frequently reported always or often measuring communication (84%) and language (82%); psychological outcomes (27%) and carer/significant others (12%) were measured least. The most frequently used outcome measurement instruments/methods were: The Western Aphasia Battery – Revised (WAB-R) for language (74%); the Therapy Outcome Measures/ Australia Therapy Outcome Measures (TOMs/AusTOMS) for communication (55%), participation (62%), and quality of life (61%); and Goal Attainment Scaling for psychological (30%) and carer/significant other (42%) outcomes. SLPs reported barriers to outcome measurement which most frequently mapped to the Capabilities domain of the TDF (e.g., knowledge, behaviour regulation and memory, attention and decision processes), with facilitators most frequently mapped to the Motivation domain (e.g., social/ professional role, optimism, intentions, goals and beliefs about consequences).

Conclusions: Australian SLPs consistently measure outcomes with people with aphasia and most often measure outcomes relating to communication and language. SLPs were motivated to measure outcomes, however perceived gaps in knowledge, skills and systems/strategies were identified as barriers to optimal practice. Best practice recommendations and synthesised information about available outcome measures may assist SLPs to bridge these gaps.

Learning Outcome:

1. Participants will gain an understanding of current practice and barriers and facilitators to outcome measurement in aphasia rehabilitation.
2. Practical ideas / resources which target known barriers to aphasia outcome measurement in clinical practice will be discussed.

Keywords: aphasia; outcome measurement; clinical practice; barriers and facilitators



Abstract No: 9638

Can you hear me? Audiology protocols in diagnosis and treatment of aphasia

Limor Lavie^{*}; Michal Biran; Daria Tal

Abstract Content:

Background: Stroke is a major cause for disability in adults, and its' frequency increases with age.

While stroke might cause hearing loss, usually, stroke that causes aphasia does not involve hearing loss, because the loci of lesions are different. However, since in many cases aphasia (due to stroke) occurs in old age, and because the prevalence of age-related hearing loss is high and increases with age, it is reasonable to assume that a large proportion of adults with aphasia may also have some degree of hearing loss. Difficulties and errors in perception and comprehension of speech are a major consequence of untreated hearing loss. Oral communication has a crucial role both in diagnosis and in language treatment. Thus, for aphasic patients with hearing loss, the assessment of language abilities might be inaccurate, and their difficulties during treatment can be more severe. Moreover, effective oral communication with post-stroke patients is relevant also in other rehabilitation treatments – physical therapy, occupational therapy, etc.

Objectives: The aim of the current study was to investigate the awareness of speech-language pathologists to the hearing status of patients with aphasia, and to map the actions taken to diagnose and rehabilitate hearing during language treatment.

In Israel, speech-language pathology and audiology are taught as a unified profession, and the formal professional licensing is for speech-language and hearing clinicians (communication disorders clinicians). However, the majority of the clinicians choose to work and practice only in one of the fields.

Method: We applied clinicians, who work with people with aphasia, through professional social networks. Clinicians who gave their consent to take part in the survey were asked to answer a series of questions regarding their awareness of their patients' hearing status, and actions they take when hearing loss is suspected or identified. The questions referred to the existence of structured protocols for hearing screening, use of audiometers and providing amplification in the clinic when required. Fifty-two speech-language pathologists who work with patients with aphasia in rehabilitation hospitals, community rehabilitation centers and private clinics, filled out the questionnaires.

Results: The results indicated large variance in awareness and knowledge among speech-language pathologists regarding hearing impairments and amplification devices.

Discussion and implications: The results indicate that many speech-language pathologists who work with aphasic patients are not aware of and do not consider the possibility that their patients might have hearing loss in addition to aphasia, and that evaluation of patients' hearing status is not included in the diagnosis and treatment protocols.

Raising awareness to this possibility is highly important for improving the effectiveness of language treatment for patients with aphasia.

Learning Outcome:

1. Considering hearing impairment in aphasia treatment.
2. Awareness of SLPs to the hearing status of patients.



Oral Presentation: Session M18- AAC (II), Aug. 19th (Mon.) 15:30-17:30

Abstract No: 9876

Speech output technologies in AAC intervention: Research to Practice

Rajinder Koul^{*1 2} ; Ralf Schlosser

¹*Communication Sciences and Disorders/ University of Texas at Austin/ United States* ²*Communication Sciences and Disorders/ Northeastern University/ United States*

Abstract Content:

One of the most significant advances in enhancing the communicative abilities of individuals with severe communication impairment has been the development of speech generating devices (SGDs). The use of SGDs for interpersonal communication by individuals with severe communication impairment has increased substantially over the past two decades. This seminar has three general aims. The first aim is to review the literature on the perception of synthetic speech by individuals with language and intellectual impairments. The second aim is to use that review to understand the effects of degraded acoustic input on the synthetic speech perception by individuals with developmental communicative and intellectual impairments. The final aim is to present the research on the effects of synthetic speech output on targeted outcome variables such as graphic symbols, spelling, requesting, and speech production by individuals with developmental disabilities such as ASD.

Learning Outcome:

1. Learn about perception of synthetic speech in typical individuals and individuals with developmental disabilities
2. Learn about effect of synthetic speech output on acquisition of graphic symbols , requesting behavior, and spelling.

Keywords: Synthetic speech perception, graphic symbols, speech generating devices, digitized speech, intellectual impairment, autism



Abstract No: 9747

Adjusting aided utterances: Co-constructing meaning in conversations involving aided communication

Kirsi Neuvonen¹ ; Kaisa Launonen¹ ; Martine M. Smith² ; Stephen Von Tetzchner³

¹Faculty of Medicine, Department of Psychology and Logopedics/ University of Helsinki/ Finland

(Suomi), ²Clinical Speech & Language Studies/ University of Dublin, Trinity College/ Ireland,

³Department of Psychology/ University of Oslo/ Norway (Norge)

Abstract Content:

Background and objective

Children who use aided communication may need to develop specific strategies to express more complex meanings with their available communication means. Communication partners who use natural speech are used to negotiating meaning in spoken conversations, but more inference and interpretation may be needed in conversations involving aided communication, especially in situations involving potentially ambiguous graphic utterances (Jagoe & Smith, 2016). This multi-case study describes some of the ways young aided communicators may express meanings related to issues that are unknown to their communication partners. Furthermore, this presentation illustrates how different strategies and creative usages of graphic symbols may affect the ways the communication partners attempt to interpret message meaning.

Method

The present study is a part of an international project addressing aided language development and communicative problem solving in children and adolescents using aided communication (von Tetzchner, 2018). The participants in the present study were five Finnish children, aged 5–11 years, who used graphic symbols as their main means of expressive communication. All five children had severe motor impairment (GMFCS levels IV-V) and fewer than ten intelligible spoken words. According to their teachers, the young aided communicators were not intellectually disabled. The task of the aided communicators was to describe events in videos which they (but not the communication partner) had seen. The analyses first identified ways in which the aided communicators constructed and modified their utterances when describing events in the videos. After that, the utterances were analyzed in relation to how the aided constructions were adapted to the communication partners' inferences and interpretations.

Results

The aided communicators used a range of strategies to make their meaning clear to their communication partners. These strategies included using graphic symbols in line with their conventional meaning as well as modifying symbol use by referring to parts of the symbols or to an association connected with the symbol. Moreover, they used different modalities (such as eye gaze, pointing, vocalization) in expressing their intentions, for example when repairing and specifying previous utterances.

Discussion

Knowledge about how meaning is co-constructed in conversations involving aided communication is important for understanding how young aided communicators develop in language using a communication aid. Furthermore, understanding the features communication partners using natural speech are attending to, increases professionals' ability to guide both partners in conversations involving aided communication.

References

Jagoe, C. & Smith, M.M. (2016). Relevance, multimodality and aided communication. In Martine M. Smith and Janice Murray (Eds.) *The silent partner? Language, Interaction and Aided Communication* (pp. 229-246) Surrey, UK: J&R Press.



von Tetzchner, S. (2018). Introduction to the special issue on aided language processes, development and use: an international perspective. *Augmentative and Alternative Communication*, 34, 1-15.

Learning Outcome:

- 1) Participants will be able to describe different strategies young aided communicators may use in expressing themselves
- 2) Participants will be introduced to information about strategies communication partners may use in interpreting meaning in conversations involving aided communication

Keywords: Aided communication, Communication partners, Co-construction



Abstract No: 9994

Culturally and Linguistically Appropriate Augmentative & Alternative Communication Family Collaboration, Training, and Implementation

Greta Tan¹ ; Orin DSilva²

¹*Pupil Services/ Cupertino Union School District/ United States*, ²*Special Education/ Santa Clara County Office of Education / United States*

Abstract Content:

It is well documented that partial or complete AAC abandonment may occur when family input is not considered during AAC intervention (Parette, Brotherson, & Huer, 2000). Furthermore, given the changing demographics, it is imperative to consider how AAC devices are utilized and perceived by individuals from culturally and linguistically diverse (CLD) backgrounds and their families (Kulkarni & Parmar, 2017).

In this presentation, we will discuss family participation and collaboration during the assessment process in order to identify each AAC user's unique home language features and communication needs. Strategies such as family interview, home observation, as well as working with an interpreter will be reviewed.

We will address goal setting considerations as suggested by Soto (2014):

- Family's preferred language and communication needs
- Views on the child's communication disability
- Level of involvement and participation the family is comfortable with

We will discuss possible barriers affecting AAC access at home, as well as the following questions (McCord & Soto, 2004):

- What does the individual who will be using the AAC device need and want to be able to say to his/her family?
- What language will this individual need to communicate in at home
- What are culturally appropriate communication styles for the AAC user?
- When will it be appropriate for the AAC user to use the device at home?

AAC devices selection/customization based on the client's cultural and linguistics identities will also be discussed. Moreover, we will review AAC devices and language systems with bilingual features*.

Lastly, we will discuss strategic plans for family training and implementation in order to foster sustained AAC use and optimized communication. The following will be addressed:

- AAC Competencies
- Family Training Plan
- Family Implementation Strategies

*Disclaimer: The authors do not receive compensations of any type from the vendors and manufacturers of products mentioned in the abstract and presentation. The information is provided for reference purposes only.

References:

Kulkarni S. S. & Parmar, J. (2017) Culturally and linguistically diverse student and family perspectives of AAC, *Augmentative and Alternative Communication*, 33:3, 170-180.

McCord, M. S., & Soto, G. (2004). Perceptions of AAC: An ethnographic investigation of Mexican-American families. *Augmentative and Alternative Communication*, 20(4), 209–227.



Parette, H. P., Brotherson, M. J., & Huer, M. B. (2000). Giving families a voice in augmentative and alternative communication decision-making. *Education and Training in Mental Retardation and Development Disabilities*, 35, 177–190.

Soto, G. (2012). Training partners in AAC in culturally diverse families. *SIG 12 Perspectives on Augmentative and Alternative Communication*, 21(4), 144–150.

Soto, G., & Yu, B. (2014). Considerations for the provision of services to bilingual children who use augmentative and alternative communication. *Augmentative and Alternative Communication*, 30(1), 83–92.

Learning Outcome:

The Participants will be able to

1. Identify at least 2 cultural and linguistic factors that may affect AAC access at home
2. Provide basic information of the four AAC competencies
3. Outline at least two cultural and linguistic considerations regarding device and vocabulary selections
4. Describe at least 2 home AAC training strategies

Keywords: AAC, Family collaboration, Cultural & Linguistic Diversity, Language, communication disability



Abstract No: 10002

Augmentative and Alternative Communication Intervention for Children with Little to No Functional Speech in Belize

Kris Brock^{1 2} ; Mollie Mindel² ; Jeeva John² ; Ellen McKamey²

¹*Communication Sciences and Disorders / Idaho State University / United States*, ²*Communication Sciences and Disorders / Therapy Abroad/ United States*

Abstract Content:

Introduction-5-minutes

Augmentative and alternative communication (AAC) systems can “compensate for the temporary or permanent impairments, activity limitations, and participation restrictions...” (ASHA, 2005, para. 1) by incorporating “... tools and strategies [such as symbols] that an individual uses to solve every day communicative challenges” (ISAAC, 2017, para. 1).” AAC is an evidence-based solution for children with little to no functional speech (Allen et al., 2017; Sennott & Light, 2017).

AAC Belize-15-minutes

AAC is associated with high-technology systems such as speech generation. However, countries with limited resources cannot afford this technology. High-technology is not a sustainable option, but professionals can utilize low-technology communication books (Johnston, et al., 2012). In addition, local AAC stakeholders (professionals/caregivers) in Belize had AAC knowledge and access barriers. That is, they were unsure about how to implement symbol-based communication, with limited access to printers to create the symbol-based communication displays.

Method-15-minutes

In 2017, Dr. Brock and colleagues, with the support of the Ministry of Education, implemented the first 2-week AAC camp experience for individuals with little to no functional speech, their caregivers, and local professionals. The AAC camp followed a therapeutic camp experience (see [Tykes Speech Station](#) for specifics). Stations such as pretend play engaged clients.

Seven clients (6-22 years) with various diagnoses (autism) were administered the Communication Matrix (Rowland, 2018), the AAC Evaluation Genie, an informal symbol syntax test, and an aided language sample. All clients were beginning communicators with less than 50 spoken words. Comprehension skills were relatively intact.

Each client had individualized AAC goals based on their cognitive-linguistic skills that were targeted in a group setting (5 sessions lasting 3-hours over a 2-week period). However, a universal goal was also created: expressive syntax and aided message length. Clients were equipped with low-tech core and fringe vocabulary boards to develop communication skills. The boards were in English, Kriol, and Spanish depending on the languages spoken in the client's home. The communication boards included free Widget symbols and were organized based on English semantic-syntactic formation (i.e, subject, verb, object). This was intentional because the national language of Belize is English, which is used in school settings and most work environments.

Caregivers and local professionals also underwent AAC training. Pre-determined topics included supporting communication, aided modeling, and behavioral challenges. Parents also brought up concerns about sexuality and aggression with peers and family.

Results-10-minutes



Pre- and post-measures for aided message length indicated that all clients increased the number of symbols per message compared to baseline. Expressive syntactic ability increased in three of the clients. Caregivers reported a change in communication skills as well (communication initiation).

Discussion/Questions-15-minutes

Discussion of the results will include: best practice vs. sustainable practice, multicultural aspects of AAC intervention, caregiver buy-in, and developing an AAC camp for attendees' international endeavors.

Learning Outcome:

Attendees will:

1. Be able to discuss the multicultural aspect of AAC intervention in Belize
2. Be able to modify this AAC camp experience for their own international endeavors
3. Be able to identify and discuss the empirical support or lack of support for various AAC augmented input interventions

Keywords: Augmentative and alternative communication, symbols, syntax, Belize, group intervention



Abstract No: 9950

5 Things to Consider When Developing AAC Programs for Children with Autism

Stephanie Ekis^{*1}

¹Research and Development - Clinical Content/ Tobii Dynavox/ United States

Abstract Content:

Children with autism present unique needs and interests and often require direct intervention to ensure that they reach their full potential. While deficits in communication and social skills development often exist, many children with autism possess numerous strengths that enable them to successfully use augmentative and alternative communication (AAC) systems. When strategies are chosen correctly, a well-developed communication system can increase engagement and participation as well as support language and literacy learning.

Providing the right tools is imperative to overcoming potential barriers (Donato, Spencer, Arthur-Kelly, 2018) and ensuring effective communication and achievement. In this session, participants will receive practical strategies for decision making when prescribing and implementing AAC for children with autism. Using demonstration, case studies and video examples, the following considerations will be discussed:

Consideration 1: The AAC system should support social skills development. Unfortunately, many children with autism have limited access to social experiences and often do not have access to the supports that they need in social situations. Participants will identify three ways to support social skills development through social stories and scripting.

Consideration 2: The AAC system should support literacy development. The ability to read and write is one of the most important skills a student will learn in school. Without literacy, an individual is significantly limited in the educational, vocational, and social opportunities found in almost all activities of daily living. Participants will learn ways to support literacy learning using core words and meaningful literacy experiences.

Consideration 3: The AAC system should support positive behavior. Behavior is a form of communication and for some children with autism behavior may be the only means by which they have to communicate a need or frustration (Wetherby and Prizant, 2000). In this session, participants will discuss key benefits to providing positive behavior supports (e.g., visual schedules) directly on the device.

Consideration 4: The AAC system should be appropriate for both current and future communication needs. Participants will review the continuum of communication independence (Dowden, 2005) and learn to identify the communication ability level of children in their classrooms or on their caseloads. Gathering this information will provide insight to current and potential target skills and strengths, as well as identify a program that will support language development and growth.

Consideration 5: The AAC system should support independence. Given the right tools, children with autism can demonstrate increased independence during everyday tasks (Parker and Kamps, 2010). Participants will apply traditional visual supports strategies to identify ways to support independence for children with autism.

While Tobii Dynavox software will be used for demonstration purposes, all strategies can be applied to any low or high-tech system.

Learning Outcome:

- Identify three strategies for support language growth and vocabulary learning.
- List three ways to support social skills development through social stories and scripting.
- Discuss practical strategies to support literacy learning using core words and meaningful literacy experiences.



Keywords: AAC; autism; positive behavior; social skills; literacy



Abstract No: 9772

Language profiles and communication patterns of children using Minspeak as they solve communication problems

Janice Murray^{*1} ; Martine Smith^{*1} ; Beata Batorowicz; Gloria Soto; Judith Oxley; Stephen Von Tetzchner;

Sally Clendon

¹*Health Professions/ Manchester Metropolitan University/ United Kingdom*

Learning Outcome:

1. participants will gain an understanding of the language development opportunities afforded by Minspeak symbol communication systems.
2. participants will be offered a critique of the organisational features of Minspeak compared with other available systems.

Abstract Content:

Typically developing children frequently perceive themselves through their interactions with others, and, at the same time, their active engagement in interactions is crucial for the development of their identity, well-being, social competence and cognitive abilities. This opportunity is a markedly different experience for children who have little or no intelligible speech and who use Augmentative and Alternative Communication (AAC). As for their peers, for the young people who use AAC the active participation in interactions and conversations can be critical for their social inclusion, participation and development of self-advocacy. The current study has been drawn from 85 conversations between children with communication impairment who use AAC aids to aid their communication and typically speaking conversation partners (CPs). The study explored the conversational patterns emerging from the interactions between the young person using AAC and their CP. In the field of AAC research, this is an unusually large data set. It allowed us to systematically investigate the distribution of conversational control (initiations vs. responses vs. recodes) and summoning power (obliges vs. comments), and explore the conversational patterns occurring in interactions with different numbers of CPs (dyadic vs. multi-person interactions). The findings suggest that (a) conversations are characterised by asymmetrical conversational patterns i.e. CPs assumed most of the conversational control; (b) patterns varied markedly across the two types of conversations i.e. multi-person interactions were noticeably more symmetric compared to dyadic. Clinical implications and best practice recommendations are discussed, as well as suggestions for future research.

Abstract Content:

Background: Children who are acquiring language using aided communication systems must navigate the learning demands of their aided system and the language of their environment. One challenge relates to the relationship between vocabulary in their communication aid and the vocabulary presumed to be part of their emerging internal lexicon. As the external lexicon increases, ensuring reliable and easy access to that vocabulary becomes challenging. One early technological was Semantic Compaction (Baker, 1988), a system of icon sequencing that is central to the language systems under the umbrella name of Minspeak. Users of these systems must learn defined icon sequences in order to access vocabulary; as such they rely on recall rather than recognition and are often perceived to be cognitively demanding. However, over time, the consistent location of symbols is cited as a feature that is invaluable in freeing up cognitive resources to focus on communication. Minspeak systems contrast with vocabulary organisation systems that rely on layering of folders of symbols that must be navigated in constantly varying patterns in order to access specific lexical items. Given that these two vocabulary organisation systems represent contrasting cognitive demands, there may be implications for the language skills of those using Minspeak as well as how they use these systems in interactions. This presentation focuses on a group of individuals who have used a Minspeak-based system for at least 18 months and explores how they use their aided communication as they solve communication problems in interactions with a range of communication partners.



Method: Participants were recruited as part of an international multi-site study. Eligible participants were children aged 5 to 15 years who used aided communication for at least 18 months, and who were perceived by professionals as not having an intellectual disability. Using both standardized measures and rating scales, information was collected in relation to language, cognitive ability and motor skill, as well as experience using aided communication. Participants engaged in a range of communication problem-solving tasks, with partners that included parents, teachers, other professionals and peers. All interactions were recorded and transcribed for detailed analysis.

Results: This presentation outlines the characteristics of the sub-group of participants who used Minspeak-based communication aids, in terms of their language ability (as measured by the PPVT/BPVS and the TROG), motor skills (rated using the GMFCS), and nonverbal ability (as measured by the Raven's Progressive Matrices). In addition, it explores expressive language structure evident in the output of participants across tasks involving picture and video event description, both contexts where extended stretches of discourse were anticipated.

Discussion: The findings are discussed in terms of implications for supporting the emergence of language skills and the unique resources and challenges facing individuals who use Minspeak-based systems.

Keywords: Augmentative and Alternative Communication, Minspeak symbol communication, children, language



Abstract No: 9902

Coaching paraeducators to support children who use AAC in classroom settings

Shubha Kashinath^{*1} ; Elena Dukhovny^{*1}

¹Speech Language Hearing Sciences/ California State University East Bay/ United States

Abstract Content:

There is a need for an evidence-based protocol to facilitate paraeducators' implementation of evidence-based support strategies for children who use Aided Augmentative and Alternative Communication (AAC) in the classroom. Successful paraeducator training models in AAC typically involve coaching strategies such as skill explanation and modeling by an expert, practice by the trainee with expert feedback, and planned generalization of the paraeducator's new skill to broader contexts. Although models are available, specific, data-driven paraprofessional training protocols for AAC support strategies are lacking (Shire & Johnson, 2015). We hypothesize that individualized coaching during naturalistic interactions will lead to (a) increased use of communicative support strategies by paraeducators and (b) improved use of AAC tools by students.

Procedures: A single subject multiple baseline study across 6 paraeducator-child dyads was conducted. For each participating dyad, pre-intervention surveys on attitudes and perceptions regarding AAC were completed. Baseline data was gathered on the frequency of paraeducators' use of specific AAC support strategies and on use of AAC by target children. Specific AAC support strategies include pre-intervention skills, such as device charging, and within-interaction scaffolding, such as expectant waiting, balanced turn-taking, use of open-ended questions, and aided language modeling at the level of the student (Sennott, Light & McNaughton, 2015). Paraeducators' use of support strategies in baseline sessions was analyzed and discussed collaboratively with paraeducator and teacher to identify 1-2 target AAC support strategies appropriate for coaching.

Intervention: After baseline, paraeducators attended a brief introductory workshop on best practices in AAC support strategies, then participated in coaching to improve implementation of chosen AAC support strategies. Intervention included an explicit plan for skill maintenance and generalization by the paraeducator.

Data collection:All sessions were videotaped and coded for paraeducator use of AAC support strategies and for student's expressive language. Fidelity of intervention was measured using an intervention checklist. In addition to objective data gathered during intervention, post intervention surveys will be used to gather stakeholder perceptions regarding the utility of the intervention.

Results and discussion:Speech language pathologists have limited evidence-based protocols for working collaboratively with caregivers to promote positive communication outcomes for children who use an AAC system. This study is in progress. Based on initial results we expect to see paraeducator use of AAC scaffolding strategies become more frequent and consistent with intervention. Para-educators play an important role in supporting students who use AAC, but frequently have limited training in AAC. Results of this study will add to the limited research on effects of coaching on AAC scaffolding by paraeducators and communication outcomes for children who use AAC.

Learning Outcome:

1. Attendees will list best practice strategies for facilitating use of aided AAC
2. Attendees will list best practice coaching strategies relevant to communication partners of AAC users

Keywords: AAC, coaching, classrooms, aided modeling, paraeducators



Oral Presentation: Session M18- Child Language (I), Aug. 19th (Mon.) 17:40-18:40

Abstract No: 9124

The diagnostic accuracy of sentence recall and past tense marking for children's language impairments depends on the target

Sean Redmond¹

¹*Communication Sciences and Disorders/ University of Utah / United States*

Abstract Content:

Objective: Diagnostic accuracies associated with sentence recall and past-tense marking index measures for English-speaking children were examined relative to five different reference standards: receipt of services, clinically significant levels of parental concern, low performance on language measures, a composite requiring at least two of these indicators, and a composite requiring convergence across all indicators.

Background: In a meta-analysis of diagnostic studies, Pawlowska (2014) identified lack of a common standard for language impairment, spectrum bias, and limited use of blinding procedures as key limitations associated with the evidence base. Spectrum bias refers to the problem of estimating the performance of diagnostic tests on the basis of only a subset of those affected by a condition (e.g. the most severe cases) and a subset of those unaffected (e.g. only cases of typical development). We addressed these limitations and examined the impact of different standards in our evaluation of previously vetted sentence recall and past tense marking measures (Redmond, 2005; Rice & Wexler, 2001).

Method: Recruitment targeted children enrolled in regular education as well as children receiving services for language impairments, learning disabilities, or emotional/behavioral disorders. 1,060 K-3rd children participated in school-based language screenings (age range: 5;-0-9;7). All children who failed the screenings and a random sampling of those who passed were invited to participate in confirmatory assessments. The community sample was supplemented by an independent sample of 58 children receiving language intervention. 254 children participated in confirmatory testing. Examiners were naïve to children's status. Parental concern was assessed using the General Communication Composite of the Children's Communication Checklist-2 (CCC-2 Bishop, 2006). Language measures used in the study to help confirm language impairment status included the Clinical Evaluation of Language Fundamentals-4th Edition (CELF-4 Semel, Wiig, & Secord, 2006), the Test of Early Grammatical Impairment (TEGI Rice & Wexler, 2001), and Dollaghan and Campbell's (1998) nonword repetition (NWR) task. Optimal cutoffs on the sentence recall and past tense marking measures were identified using Youden's J statistic.

Results: Diagnostic accuracies for the sentence recall and past tense marking index measures ranged from "poor" to "excellent" across different reference standards (areas under the ROC curve: .67 to .95; all *p* values <.0001). Higher levels of convergence occurred with reference standards based on language measures. Language impairments defined by receipt of services and/or parental ratings tended to be less severe than those defined by language measures. The most common combination of indicators involved low performance on the TEGI and NWR measures.

Discussion: Results provide additional support for the adaptation of sentence recall and past tense marking to screen for a variety of language impairments. However, the limited alignment between clinical markers of language impairment and receipt of services and parental concern requires additional investigation.

Learning Outcome:

1. Attendees will be able to explain the importance of spectrum bias to the evaluation of clinical markers of language impairment.
2. Attendees will be able to compare the diagnostic accuracies of sentence recall and past tense marking for different reference standards.



Keywords: diagnostic accuracy, clinical markers, specific language impairment, developmental language disorder, comorbidity



Abstract No: 9778

Social and pragmatic inference in typical development, autism spectrum disorder and developmental language disorder as assessed by the Pragma Test

Soile Loukusa¹ ; Leena Mäkinen¹ ; Ilaria Gabbatore² ; Krista Wallenius¹ ; Hanna Ebeling³ ; Eeva Leinonen⁴

¹Research Unit of Logopedics/ University of Oulu/ Finland (Suomi), ²Department of Psychology/ University of Turin/ Italy (Italia), ³Department of Child Psychiatry/ University of Oulu and Oulu University Hospital/ Finland (Suomi), ⁴Office of the Vice Chancellor/ Murdoch University/ Australia

Abstract Content:

Objective: This study investigates how the recently developed Pragma Test shows the pattern of development of social and pragmatic inferencing skills in typically developing (TD) four- to eight years old children. It also examines how children with autism spectrum disorder (ASD) and children with developmental language disorder (DLD) comprehend socially and pragmatically challenging scenarios as compared to the TD children.

Background: Many simultaneous contextual factors continuously impact upon utterance interpretation. In addition, social perception plays an important role in understanding, since a person needs to take other people's emotions and intentions into account. To understand the complex nature of utterance interpretation, there is a need for studies investigating both pragmatic and social perception factors in interpretation.

Method: Children's social and pragmatic inferencing skills were assessed using the Pragma Test which assesses how children manage to derive conclusions by retrieving and integrating contextual information. Questions in the Pragma Test are divided into five question types: Contextual inference with Theory of Mind (ToM) demand, Contextual inference without ToM demand, Relevant use of language, Recognition of feelings and Understanding of false beliefs. In addition, children were asked to provide explanations for their correct answers to explore if they were aware of how they had derived the answers based on the context.

Participants: This study had 224 children with TD, 13 children with high-functioning ASD and 19 children with DLD. All children were four- to eight years of age. To examine the children's language skills, the Token Test for Children and the Finnish version of the Test of Word Finding were carried out for all children.

Results: For the TD children the number of correct answers increased as a function of age, especially between the ages of four and seven. Questions demanding contextual processing without ToM were the easiest to understand, followed by questions demanding processing of others' feelings and false beliefs. Questions demanding contextual inference with ToM, together with questions demanding understanding of relevant language use, were the most challenging. Compared to TD children, children with ASD and DLD showed a different developmental pattern and the differences were the greatest in relation to the most challenging questions (Contextual inference with ToM demand and Relevant use of language). When compared to the TD children both the ASD and DLD children had also difficulty in giving explanations for their correct answers.

Discussion: This study showed that by using the Pragma Test, it is possible to explore the developmental pattern of social and pragmatic inferencing skills and detect inferencing difficulties in children with ASD and DLD. The study also showed that when contextual and social inferencing complexity increased the differences between the TD children and those with ASD and DLD increased.



Learning Outcome:

Participants will recognize how social and pragmatic inferencing typically develops between ages of four and eight.

Participants will be able to recognize common social and pragmatic inferencing weaknesses in children with ASD and DLD.

Keywords: Pragmatic; social; typical development; autism spectrum disorder; developmental language disorder



Abstract No: 9977

Development and validation of the Vietnamese Language Screener

Sarah Verdon^{*1} ; Averil Ivey¹ ; Ben Pham¹

¹Faculty of Science/ Charles Sturt University/ Australia

Abstract Content:

Background

When assessing the language of a multilingual child it is essential that all of the languages spoken by the child are considered. However, there is currently a paucity of assessment tools available in languages from the Majority World. As SLPs strive to engage in culturally responsive practice, there is a need for culturally and linguistically appropriate tools to be developed to assess all of the languages that a child speaks.

Objective

The aim of this presentation is to describe the development and validation of the Vietnamese Language Screener (VLS) and to provide guidelines for the development of future assessment tools for languages in which such tools may not currently exist.

Method

The conceptualisation and operationalisation of the VLS has been undertaken in collaboration between Australian and Vietnamese professionals. The VLS has been validated on 127 children from Northern Vietnam to ensure that the assessment was robust and culturally and linguistically appropriate for its target population.

Results

The purpose of the VLS is to gain insight into children's competencies in the domains of vocabulary and grammar by asking them to answer questions about a series of pictures. The pictures used in the test were created by a Vietnamese artist to ensure their cultural relevance and validity. The test is intended for Vietnamese-speaking children aged 3;0 to 7;11 and is designed for use by speech-language pathologists and educators. The VLS kit consists of a picture booklet, a manual booklet, and a score form which are available in both Vietnamese and English to facilitate its use with Vietnamese-speaking children in English-speaking countries as well as in Vietnam. The first edition of the VLS will be published in 2019.

Conclusion

This presentation provides information that will increase SLPs' awareness of the VLS and its possible usefulness in their practice. Furthermore, the description of the tool's development will provide guidelines to support the development of tests in other languages in which tools for assessment may not be currently available.

Learning Outcome:

1. Attendees will learn about the Vietnamese Language Screener and its potential uses in both clinical practice and research
2. Attendees will learn about the process of developing a language screener

Keywords: child; language; assessment; test development



Abstract No: 10068

A CROSS- LANGUAGE PERSPECTIVE IN ANALYZING PERSONAL NARRATIVES

Kakia Petinou^{*1} ; Androulla Athanasiou^{*2} ; Christina Giannikas^{*2}

*¹rehabilitation Sciences / Cyprus University of Technology/ Cyprus, ²rehabilitation Sciences and
Language Center/ Cyprus University of Technology/ Cyprus*

Abstract Content:

ABSTRACT:

Several studies indicated that for typically developing toddlers (TD) personal narrative (PN) skills indicate the child's ability to express linguistic coherence, topic maintenance and communicative initiative according to macrostructure analysis parameters which can be employed cross-linguistically. Data on microstructure protocols in PE analysis remain sparse and variable due to the typological differences characterizing a given language. In the current study the authors discuss the implementation of microstructure regimes including class analyses (nouns, verbs, adjectives, prepositions, pronouns and clitics) according to C -units and T – unit utterances. Such parameters provide valuable information regarding linguistic profiling of children along with suggestions regarding the implementation of such regimes in cross-language research.

Learning Outcome:

Learning Outcomes: Participants will be able to appreciate the importance of microstructure information analysis as well as its implementation via specific parameters cross-linguistically. Also they should begin to understand how they can rethink intervention practices on the basis of the characteristics of individual languages.

Keywords: NARRATIVES;MICROSTRUCTURE ANALYSIS; CROSS-LANGUAGE



Oral Presentation: Session M19- Educational SLP (II), Aug. 19th (Mon.) 17:10-18:40

Abstract No: 10018

Characterising facilitator-student reflective conversations during interprofessional simulation-based teaching

Bianca Jackson^{*1} ; Anna Miles¹ ; Philippa Friary^{*1} ; Julia Sekula² ; Andrea Braakhuis²

¹Speech Science/ University of Auckland/ New Zealand, ²Nutrition & Dietetics/ University of Auckland/ New Zealand

Abstract Content:

Background: Simulated learning environments are increasingly common in clinical interprofessional education. The use of reflective conversation has been proposed to enhance clinical education. Despite a wealth of simulation research, there has been little focus on conversations during the debrief phases of simulation, and little is known about the nature of reflection during these conversations.

Aim: To characterise the conversations between experienced clinical facilitators and allied health students (Dietetics, Speech-language therapy) during interprofessional simulated case scenarios.

Method: Two case scenarios were devised and interprofessional groups of pre-qualifying students participated in both. Conversations between experienced facilitators and students were recorded during the time-out pauses between simulated scenario phases. All utterances were transcribed. Transcripts were analysed for speech acts, question types and elements of interprofessional education (IPE) (clinical reasoning, roles and responsibilities, client and family centred care, interprofessional collaboration, clinical procedural tasks).

Results: Analyses highlight similar patterns of conversational speech acts and questioning between facilitators despite different clinical scenarios, with the exception of higher overall request acts by one facilitator in one of the scenarios. Facilitators used a higher proportion of open compared with closed questions and higher level problem-solving questions predominated in comparison to simple factual questioning. Facilitators used more requests for action and attention and students displayed more performative and responsive acts ($p < .05$). Students were exposed to all elements of IPE throughout all the conversations.

Discussion: The conversations analysed in this study were all within-simulation debriefs with a focus on preparing for the next phase of the time-limited simulated scenario. This type of debrief supports conversations consistent with a reflection-for-action model. Conversations during pauses in immersive simulated scenarios between facilitators and students enable rich IPE opportunities and higher-level problem solving. Facilitators encouraged students to problem-solve amongst themselves with open questions and provided few factual responses to questions themselves rather diverting questions back to the students. This data can support educators designing interprofessional simulations in the future.

Learning Outcome:

1. To characterise elements of facilitator-talk that promote reflection in action.
2. To identify question-types and responses that facilitate higher-level problem solving amongst allied health students during simulation.

Keywords: debriefing; simulation; reflective learning; conversational analysis; interprofessional learning



Abstract No: 10000

Effective Academic and Clinical Teaching Pedagogies in Communication Sciences and Disorders

Melissa Garcia^{*1}

¹Communication Sciences and Disorders/ Texas A&M International University/ United States

Abstract Content:

This presentation will discuss innovative pedagogical approaches in clinical teaching which have been implemented at Texas A&M International University (TAMIU). In today's classrooms, the traditional student population seen in the past has been replaced. The traditional student is composed of some students from the Millennial generation and most from the Gen X generation who because of the digital age, bring a unique characteristic to the classroom. Traditional teaching approaches may not address the unique learning style of the Gen X student. As clinical educators, we try to find ways to link academic knowledge to clinical practice. This presentation will provide a background of the Millennial and Gen X generation's learning styles and provide teaching ideas that enhance their learning in the classroom and in clinical practice.

The implementation of an apprenticeship model can be used to enhance student learning in a clinical setting. The learning is interactive and collaborative. Learning is also a shared thinking process between the student and supervisor or professor. When used during the supervision process it allows for a tailored approach to clinical teaching. Another focus of clinical teaching is the writing process in which students often find challenging as clinical writing differs from the type of writing they have been taught. Clinical writing may be considered as an artifact of the clinical experience. During the first clinical experiences, a student often requires more of a guided experience composed of verbal and written feedback. Other approaches that enhance the students clinical experience is the integration of 1:1 or small group conferences, self-reflection, guided journal writing, data journals and verbal and written feedback pre and post clinical sessions. Models that can be implemented in the classroom will be discussed. Problem-based learning is based on a constructivist principle in which the student learns academic material via immersive experiences and reflection. Case-based learning is when a student is assigned a case study to work through, the process includes the application of academic knowledge, its application and critical and analytical thinking. Lastly, peer teaching in which students are assigned a topic to research and learn in order to lead discussions with peers.

Learning Outcome:

The learner will be able to list three teaching pedagogies that enhance academic learning.

The learner will be able to list three clinical teaching pedagogies that enhance clinical learning.

Keywords: learning; pedagogies, academic; clinical



Abstract No: 9999

Effective Clinical Education: Connecting Clinical Teaching to Clinical Practice

Melissa Garcia¹ ; Rosa Robledo¹

¹*Communication Sciences and Disorders/ Texas A&M International University/ United States*

Abstract Content:

A major challenge that communication sciences and disorders (CSD) supervisors and educators face is to devise learning experiences that will equip the learner with the skills to transfer classroom knowledge to clinical practice. This presentation reflects on the interrelatedness of the systematic transfer of the training model and emphasizes the importance of considering all elements that influence the success of the undergraduate CSD students' clinical practice. Learning is a self-active process; transfer of clinical skills demands the students' conscious realization that transfer is possible. Students need to be committed to the belief that particular facts in the classroom study are pertinent in other situations. To promote transfer, the curriculum must be designed in such a way so that it has transfer value in terms of the students' goals and purposes. Unfortunately there is an insufficient amount of evidence as to which teaching strategies promote transfer of learning. The goal for the CSD faculty is to guide the student to assimilate, accommodate and transfer information to clinical practice. The CSD faculty at Texas A&M International University collaborated in the development of intentional practices of these clinical opportunities. This four year study looks at pedagogical strategies that help the CSD student transition from the classroom to the clinic setting. Manifestations of problem areas were identified during active participation of an initial therapeutic session as a student aide post the observation experience. Academic performance, personal development of the students' oral skills, ability to solve problems in clinical situations; and flexibility in the exercise were evaluated for the effect of fragmentation of holistic patient care; and apathy towards clinical practice. These activities have been integrated into undergraduate CSD courses at Texas A&M International University (TAMIU). In order to enhance transfer, CSD students were given opportunities to apply the learned principles in a variety of simulated clinical situations. Multiple practice opportunities were crucial to the transfer of classroom knowledge to clinical practice. Practice opportunities were provided in three stages; (a) the observation course (b) clinical practicum-1 and (c) clinical practicum -2. The teaching pedagogies employed by the professor's fostered growth and confidence in skills necessary for clinical practicum. These skills were developed through the use of activities including reflection practices, critical thinking activities, journaling and activities which developed emotional intelligence.

Learning Outcome:

1. Identify perspectives of CDS student clinician and clinical educator regarding educational design and transfer climate that influence transfer of learning.
2. Develop simulation opportunities to develop clinical skills in the CSD student.
3. Integrate deliberate practice to include active monitoring of the students active learning and regular feedback.

Keywords: academic; clinical; student



Abstract No: 9871

Facilitators and Barriers to Clinical Supervision of Speech Language Pathology Students in South Africa: Pilot Study

Anniah Mupawose^{*1} ; Skye Adams¹ ; Sharon Moonsamy¹

¹*Speech Language Pathology and Audiology/ Witwatersrand University/ South Africa*

Abstract Content:

PURPOSE: Historically, in South Africa, Speech Language Pathology (SLP) service provision and clinical training was conducted in areas that had good access to health services, benefits and resources. There is currently a move to readdress the inequalities of health service provision by considering teaching methods that transform the way in which SLP students are being trained. The SLP curriculum is now moving towards placing students in contexts where they provide services to previously disadvantaged, marginalised, multi-lingual black populations. However, majority of supervisors come from a background of privilege and training that promoted services in high-middle income contexts. This exacerbates the need for clinical educators to become better equipped in training students from diverse cultures to work in under-resourced and disadvantaged contexts. To this end, clinical educators play a pivotal role in ensuring the supervisory process facilitates transformation of student clinical training in order to promote positive client outcomes. The purpose of this study was to gain a better understanding from the perspectives of clinical educators on facilitators and barriers to the supervisory process when training undergraduate SLP students, in under-resourced contexts.

METHOD: A qualitative approach, using a survey and a focus group discussion were employed. Data was gathered from 8 clinical educators around their experiences of the supervisory process. Themes were identified and analysed using thematic content analysis.

RESULTS: Findings showed that student attitudes, levels of preparedness for particular communication disorders and the appropriateness of clinical sites were identified as barriers to the supervisory process. Facilitators to the supervisory process were identified as supervisor/student feedback, departmental support as well as appropriate communication between the supervisor and the student as well as between the course coordinator and the supervisor.

CONCLUSION: From these findings, it was suggested that supervisors require additional time, support and training to assist them with clinical supervision. Moreover, the supervisory process is dynamic, depending on the student's engagement and clinical practice. Numerous factors can either negatively or positively impact on the experience of both the supervisor and the student. As the supervisory process is part of the development of student training and experience, its value should not be underestimated.

Learning Outcome:

1. Describe facilitators and barriers to the supervision process when working in under-resourced and disadvantaged contexts.
2. Self-asses personal frames of reference during the supervisory process when providing services in culturally and linguistically different contexts.

Key words: Clinical eductors;, supervision process; clinical context; facilitators; barriers



Abstract No: 9817

Solution-focused approaches in the education of SLT students: Students' strengths at the end of the last clinical practice period

Terhi Hautala¹

¹Faculty of Humanities: Research Unit of Logopedics/ University of Oulu/ Finland

Abstract Content:

Introduction:

Solution-focused methods are based on interaction, where the focus is on analysing people's strengths, and using them as tools in problem-solving, pursuing goals, and enhancing changes (Grant, 2011). Reflection is a multidimensional learning process, combining cognitive and affective domains of learning; it is important for students when sharing their learning experiences with clinicians (McAllister & Lincoln, 2004; McCormic, 2015).

Objectives:

Previously, the discussions of professional growth with students after their last clinical practice, were based on written reports and mostly teacher-led. Consequently, it was important to enable students to verbalise their learning experiences. This study explored the use of solution-focus methods in these discussions. Here, only questions concerning students' professional strengths are analysed.

Methods:

I used the action research method in developing better practice. The data was collected from discussions with 142 students. I used solution-focused questions to promote dialogue with students, and my actions followed the principals of appreciative interaction and giving space to students' narratives on learning (Whitworth et.al.,2009). The answers were analysed to identify which particular strengths emerged. Eleven main themes were identified from 669 answers and combined into 7 categories.

Results:

Most (22,7%) answers fell into the category *Strengths concerning personal qualities and professional growth*. Students reported e.g. having more courage to handle situations spontaneously in therapy, increased self-confidence, courage to consult colleagues, analytical and critical thinking towards work. 21,7% of the answers fell into the category of mentioned *Strengths concerning interaction skills and creating therapeutic and confidential relationships with clients and their relatives*. The development of interaction skills was mentioned by 80 % of the students. 15,5% of the answers mentioned *Strengths concerning non-verbal elements of therapy*; e.g. learning to adjust their actions to the client's, considering the client's initiations, appreciative presence, non-verbal interaction, and accepting people's individuality. *Strengths concerning rehabilitation method and tasks included* 10,2% of the answers. Essential outcomes included increased flexibility and situational awareness concerning the task used, choosing a suitable level of difficulty and timing for cueing became easier, and the readiness to change way of doing increased. 8,2% of the comments fell into the category *Strengths concerning the utilization of theoretical information*, 6,1% were *Strengths concerning routines and teamworking skills*, and 4,4% *Strengths concerning the assessment of clients' linguistic skills, and therapy skills*. In addition, there were some other mentions e.g. treating voice disorders, using AAC-methods.

Conclusions:

It was concluded that the most important learning outcomes for the students were professional growth and interactions skills, personal qualities and sensitivity about non-verbal elements of therapy. Therefore, the students' strengths were ones that are important in clinical work.



Learning Outcome:

Learning outcomes:

The methods were helpful in activating students to better analyse and verbalise their learning. These discussions inspired the development of teaching.

Keywords: Professional growth, Solution-Focused methods, Students' strengths



Abstract No: 9716

It Takes a Village: Three key strategies for successfully managing community based externship experiences.

Kari Comer^{*1} ; Andrew Clare^{*1}

¹*Speech, Language, and Hearing Sciences/ The George Washington University/ United States*

Abstract Content:

The George Washington University (GWU) Speech, Language and Hearing Sciences Department has developed relationships with a large number of externship partners in the Washington D.C. area, some of which are world renowned. Externship placements at these prestigious sites are a significant draw to our program for prospective students, and managing student expectations with site availability and requirements can be very challenging for a large graduate program. Students are placed in a variety of settings including outpatient clinics, hospitals, private practices and schools. Community supervisors have often received little to no training in the supervision process, and standards vary greatly from site to site. A need to establish and maintain consistency in the provided supervision, and in student assessment processes was identified.

We will share the following three key strategies that we have developed for managing the issues outlined above.

1) Externship Placement Methodology

Over the years, it became clear that there was a need to balance a student's clinical and academic competency, learning style, and professionalism, with their desire for a 'prestigious', or 'preferred' placement. In order to maximize student acceptance to, and successful completion of externship placements, we devised our own 'placement methodology' that has led to better outcomes for placements year on year. This has reduced the administrative burden on the department in having to find new placements, and has increased site satisfaction – sites get students that are a better fit, and more likely to complete their rotation successfully.

2) Development of a 'Unified Assessment Framework'

Both the American Speech and Hearing Association (ASHA) and the Council of Academic Programs in Communications Sciences and Disorders (CAPCSD) provide National Level standards for assessment (ASHA Standard V-B, 2020 & CAPCSD 2017). In order to ensure that all aspects of these standards are consistently incorporated into our student evaluations, we combined them into an integrated tool that is used across our program as the basis for our formal assessment protocol - both on-site, and off. This ensures that all of the key areas of assessment are taken into consideration during any of our student's placements, at any type of site.

3) University Vetted Continuing Education Provision

Starting in 2020, the ASHA has mandated that all SLP student supervisors will require at least two continuing education hours in supervision related learning, per 2 year certification / membership cycle. Where, and how, a supervisor acquires these hours is not mandated. At GWU, we have taken it upon ourselves to provide free access to vetted continuing education courses in order to meet these requirements. In doing so, we are able to help our community partners to meet their ASHA mandated learning needs, while ensuring consistency in provision of appropriate supervision theory amongst our supervisors.

Learning Outcome:

- a. The learner will be able to describe a methodological approach used to place students in clinical practicums to maximize success.
- b. The learner will identify strategies for facilitating consistency in student assessment in community based clinical externships.



- c. The learner will identify strategies for facilitating consistency in supervision theory in community based clinical externships.

Keywords: Supervision; Externships; University; Community; Graduate Students



Oral Presentation: Session TU14- Multilingual Affairs (II), Aug. 20th (Tue.) 17:10-17:40

Abstract No: 9120

Jamaican Children's Narrative Comprehension and Fictional Storytelling Skills

Karla Washington¹ ; Carol Westby^{*2} ; Kristina Fritz³ ; Melanie Basinger¹ ; Onnie Middendorf¹ ; Hubert Devonish⁴

¹*Communication Sciences and Disorders/ University of Cincinnati/ United States, ²None/ Bilingual Multicultural Services/ United States, ³Psychology/ University of Sydney/ Australia, ⁴Language, Linguistics and Philosophy/ University of the West Indies/ Jamaica*

Abstract Content:

Objective: To compare the narrative comprehension and fictional storytelling skills in each language spoken by Jamaican Creole (JC) and English-speaking preschoolers. This group of bilingual speakers represents an understudied language pairing, that is, a Creole language and its lexifier.

Background: Most Jamaican children speak Standard (Jamaican) English, hereafter referred to as English, and JC. This linguistic group represents a growing population in the North American context; however, in contrast to the well-studied Spanish-English bilinguals, there is no published information available for JC-English bilinguals' narrative development, a requisite component of communication development. This information is needed to: (1) broaden our theoretical and clinical understanding of bilingual development in children whose linguistic background falls outside the traditional Spanish-English paradigm; and (2) support an appropriate characterization of storytelling and comprehension skills in a bilingual context. For JC-English bilinguals, an important consideration is co-development of the two languages to determine developmental status. This developmental benchmark is useful in guiding service provision for children from diverse cultures who speak more than one language on a daily basis.

Method: One-hundred 4-to-6-year-old typically developing children were recruited within a cross-sectional design. Children completed two narrative tasks in each language, which was counterbalanced across languages: (1) Task 1 –story generation in response to a language specific picture-sequence; and (2) Task 2 –response to two levels of inferential comprehension questions about the story. These tasks were completed with language specific speech-language pathologists in an authentic environment that mirrored the classroom context at each child's school. Task 1 was analyzed using the Monitoring Indicators of Scholarly Language (MISL), an instruments for measuring narrative macrostructure and microstructure. Task 2 was analyzed using Blank's question hierarchy, which considers levels of both literal and inferential skills. Analyses for both tasks were completed by trained coders not involved in the data collection process. Reliability, inter and intra, was greater than 90%.

Results: Children's MISL and Blank's comprehension scores demonstrated co-development across JC and English, with specific storytelling and story comprehension patterns observed for each language. In particular, narrative macrostructure (i.e., story elements) demonstrated similar patterns across language. In contrast, narrative microstructure (i.e., grammatical elements) demonstrated differences. For story comprehension, accuracy in response to question abstractness increased with age for each language.

Discussion: While co-development of narrative production and comprehension is observed in this bilingual context, similarities and differences are noted in the profiles of bilingual JC and English speaking preschoolers. These results highlight the importance of considering cross-linguistic development in children who use two languages on a daily basis. Implications for other cases of bilingualism in a creole language and its lexifier (e.g., Haitian Creole and French) as well as bidialectal development (e.g., Standard English and African American English) are highlighted.

Learning Outcome:



1. Participants will be able to discuss theoretical and clinical implications for measuring narrative discourse and comprehension in bilingual preschoolers
2. Participants will identify narrative tools appropriate for bilingual preschoolers to support cross-linguistic characterization of skills



Oral Presentation: Session TU15- ASD (I), Aug. 20th (Tue.) 17:10-17:55

Abstract No: 9934

Impact of the Picture Exchange Communication System - PECS in the non-adaptative behaviors of children with Autism Spectrum Disorders

Ana Carina Tamanaha¹ ; Dayane F O Olivatti¹ ; Mariana Ishihara¹ ; Mayara Sugahara¹ ; Patricia Santos¹ ; Jacy Perissinoto¹

¹Speech Language Hearing Sciences/ Federal University of São Paulo / Brazil

Abstract Content:

Introduction: The Picture Exchange Communication System- PECS is currently one of the alternative communication systems most used worldwide for autistic children. This system is composed of figures/photographs selected in accordance to a lexical repertoire of each individual and it involves not only the substitution of speech for a picture, but it also inspires an expression for needs and desires. The objective of this study was to analyze the impact of PECS in the non-adaptative behaviors of children with Autism Spectrum Disorders (ASD). **Methodology:** The sample comprised 20 children with ASD: 18 boys and 4 girls; with average ages of 7 to 12 (the median age is 8 years and 2 months), attended by PECS Implementation Program of Department of Speech Language and Hearing Sciences at Federal University of São Paulo. To outline non-adaptative behaviors applied to these children we interviewed the mothers using the Autism Behavior Checklist – ABC (Krug et al, 1993) in two moments: beginning and after 24 sessions of the PECS Implementation Program. ABC is a list of 57 non-adaptive behaviors grouped in the areas of Sensorial, (9); Relational, (12); Use of Body and Object, (12); Language, (13) and Social Self Help, (11). Based on the weighed scores of specific behaviors checked, a behavioral profile is plotted. This profile permits the clinicians to analyze the severity of the pathology and the follow-up the patients. The higher an individual's cumulative score, the more likely it is that he or she has in effect been a non-learner. **Results:** There was a significant decrease in total values (p value = 0,025) and in all areas showing reduction of atypical behavior throughout the PECS Implementation Program. **Conclusion:** It was possible to verify the positive impact of PECS on the reduction of non-adaptative behaviors of children in this study.

Learning Outcome:

To analyze the impact of PECS in the non-adaptative behavior in children with Autism Spectrum Disorders.,

Keywords: Autism Spectrum Disorders; Language; Child; Communication; PECS



Abstract No: 9800

Adapting and Implementation of a Multilingual Computer Program and Wuggy Method for Generation of Pseudo-Words in Bulgarian

Katerina Shtereva¹ ; Boryana Hadzhiyska² ; Tsvetalin Totev³ ; Milena Mihaylova³

¹Faculty of Educational Studies and the Arts/ Sofia University "St. Kliment Ohridski"/ Bulgaria,

²Center for Astrophysics/ Harvard University / United States, ³Department of Sensory Neurobiology, Institute of Neurobiology/ Bulgarian Academy of Sciences/ Bulgaria

Abstract Content:

Background

The use of pseudowords in the study of reading, short-term work memory and areas subject to psycholinguistics, neuropsychology, speech therapy, etc. has been particularly important in recent years. The use of pseudowords is central in the diagnosis and therapy of individuals with developmental disorders such as Autistic Spectrum Disorders (ASD) and Developmental Dyslexia (DD), as well as those with acquired disorders such as aphasia. Although all the researchers involved in these areas are responsible for the selection and quality of the research material, there is no fully developed universal method for creating pseudowords.

Methods

Our team, in the process of working on a research project under the Bulgarian National Science Fund, related to Autistic Spectrum Disorders (ASD), has adapted the Wuggy computer program for the Bulgarian language. The method Wuggy requires all existing words separated into syllables in the specific language to be given as input to the program. The program processes each word, dividing it into the subsyllable elements: onset, nucleus and coda. The generated pseudowords are built entirely on the basis of the existing syllable elements in the given language, taking into account their position and structure as well as the allowed consonant clusters.

Results and Discussion

The concrete results of our research team are related to:

- enriching the program with the lexical bank in the Bulgarian language;
- adapting the program code to the Bulgarian language;
- development of an algorithm for the separating of the Bulgarian words into syllables, because in the Bulgarian research circles there is no available dictionary with syllable-separated Bulgarian words;
- selection of the linguistic material of the study (words and pseudo-words) in relation to the peculiarities of the Bulgarian language according to the following characteristics:
 - number of syllables - 1 syllable; 2 syllables; 3 syllables; 4 syllables;
 - syllables structure - clusters (without clustering, two consonants, three consonants, four consonants);
 - speech parts - nouns; verb; others (adjective, adverb, pronoun, etc.);

The method itself gives researchers the ability to generate pseudowords through the knowledge of subsyllable structure, phonotactics, and the frequency of their possible combinations in the given language, using vast lexical data bases. The procedure calculates the available subsyllable elements,



their frequency and position, and the length of the word. The program is available in Dutch, English, German, French, Spanish, Serbian, Basque, Vietnamese and now in Bulgarian.

This work was supported by grant DN15/6/2017 from the Bulgarian National Science Fund.

Learning Outcome:

This study is to extend the possibilities for crosslingual research through the introduction and adaptation of the multilingual computer program Wuggy for the Bulgarian language.

Keywords: Pseudowords; Syllable and Subsyllable structure; Phonotactic; Onset/Nucleus/Coda; Consonant Cluster;



Abstract No: 10033

Cases' study in the Autistic Spectrum for the analysis of a new syndrome' s existence and special intervention methods for them

Evangelos Bochatziar¹

¹GREECE/ SPECIAL EDUCATION CLINIC FOR AUTISM AND COMMUNICATION DISORDERS/

Greece

Abstract Content:

Cases in the High Functioning Autistic Disorders' Spectrum to be studied with a group of symptoms which consistently occur together. This group are kids – teenagers at the age of 9 to 15 years old and they are part of a 9-person group who had attended therapy in my national clinic for Autistics. All of these cases have been diagnosed with the Autistic Spectrum Disorders especially at the high functioning section and have received therapy at my clinic for a 9-month duration each. At the presentation will be presented the difference before and after the therapy in social skills, expressions and tasks especially for this team of sufferers as well. Some of them will be presented via photos and video clips which show the extremely noticeable difference between the beginning of the therapy and at the end of it. It is important to mention that all of them had the same condition characterized by a set of associated symptoms which were the reason they referred to me, they had needed almost the same duration of intervention to gain results and the results were the same. All of these cases appeared at the time period of the years 2012 till now, 2018.

In addition to that, new methods of intervention especially for this group will be analyzed at the presentation. Finally, at the presentation will be presented a random sample of cases at the “normal high functional” autistics to be compared with the other group of cases where we examine a new syndrome's existence at the Autistic Spectrum Disorders.

The need for detailed observation and the cases' exciting resemblance are very interesting and deserve the preference of oral presentation.

Learning Outcome:

New intervention methods for autism and a special analysis between diagnosis in autism



Oral Presentation: Session TU16- Voice (II), Aug. 20th (Tue.) 17:10-17:40

Abstract No: 9132

Experience and evidence: 50 years of development of voice therapy: aspects of the Integrative Voice Therapy by Evemarie Haupt

Beatrice Rathy-Poetzke^{*1} ; Eva Koesters^{*2}

¹*School of Logopedics/ IBAF & UKSH Kiel / Germany,* ²*Private practice/ Kompetenzzentrum Logopaedie/ Germany*

Abstract Content:

Objective: We present a resource focussed voice therapy method developed over many decades (and still being in process) by Evemarie Haupt, Germany. Being a concert singer turned speech and language therapist in Germany Haupt has taught singers, treated patients with voice disorders and gave lectures internationally. She founded the "International Association of Integrative Voice Therapy and Voice Pedagogy, ISTEP". We are focusing on one of Haupt's practical therapy tools, the physiological stretch reflex, based on the mechanism of myofascial chains. The physiological stretch reflex effectively supports patients with voice disorders in their communication participation.

Background: Haupt created the Voice function circle that points out the areas in which speech and language therapists work when they treat patients with voice disorders and the interconnection of these (Haupt 2010). The concept has a holistic approach and a salutogenic attitude. It refers to existing methods and, in addition, includes the combination of voice and complementary methods, especially Qigong, the activation of all senses and a mindset of voice as a balance concept. Resourcefulness, referring to the ICF, is a fundamental part of Haupt's approach (ICF 2017). One of her developed practical supports for patients is the physiological stretch reflex: active distal impulses of the heels lead to spinal alignment. Combining the physiological stretch reflex with primal sounds, shouting, singing or speaking, it activates myofascial chains (Richter, Hebgen 2015) and stabilizes the power of the voice.

Method: In the oral presentation the main characteristics of Haupt's method will be presented. The application in the work with patients will be shown, also by referring to case examples. Practically the stretch reflex and its effects will be demonstrated. The auditorium will be invited to participate.

Results: This resource based mindset in voice therapy is effectively supporting people with voice disorders in their communication. The positive, individually matched therapeutic procedure is helping patients in their everyday life. Therapists achieve a lasting therapy success by strengthening voice, person and overall health. The effectivity is proved by a patient-reported outcome study (Haupt 2015). The physiological stretch reflex is a practical example. It empowers patients to intentionally modify their communication mode by actively stabilizing their voice quality.

Discussion: The presentation of the Integrative Voice Therapy by Evemarie Haupt will give an insight in a part of a therapeutic approach that has been developed over a long time and is based on a complex value system. The procedure has not yet been extensively studied scientifically, but has shown very good effects in practical work. One of the practical supporting tools, the physiological stretch reflex is being explored from different points of views.

Literature

Haupt, E. (2010) *Stimmt's? - Stimmtherapie in Theorie und Praxis*. Idstein: Schulz-Kirchner

Haupt, E. (2015) *Integrative Stimmtherapie (I.S.T.) mit Stimmfunktionskreis*. Forum Logopädie 4(29) July 2015

Richter, P.; Hebgen, E. (2015) *Triggerpunkte und Muskelfunktionsketten in der Osteopathie und Manuellen Therapie*. Stuttgart: Haug Verlag



<http://apps.who.int/classifications/icfbrowser/> retrieved from the internet on 11-09-2018

Learning Outcome:

Insight in a resource focused voice therapy method.

Instructions for implementation of the physiological stretch reflex with relation to voice.

Keywords: resource focussed voice therapy; spinal alignment; practical therapy tool



Abstract No: 9813

Innovative service delivery models for voice therapy: the patient's opinion

Iris Meerschman^{*1} ; Kristiane Van Lierde¹ ; Sofie Claeys² ; Evelien D'haeseleer¹

¹Department of Rehabilitation Sciences - Unit: Speech, Language and Hearing Sciences/ Ghent University/ Belgium, ²Department of Otorhinolaryngology/ Ghent University/ Belgium

Abstract Content:

Purpose. The purpose of this study was to investigate and compare the voice patient's opinion regarding three different service delivery models for voice therapy: a short-term intensive voice therapy with individual sessions (IVT-I), a short-term intensive voice therapy with group sessions (IVT-G), or a long-term traditional voice therapy with individual sessions (TVT).

Method. Forty-six voice patients (44 females, 2 males, mean age 23.2 years) who followed one of the three therapy programs (IVT-I, IVT-G or TVT) at Ghent University Hospital between October 2014 and January 2017 were asked to participate in this study. They were contacted by email with the request to fill in an online questionnaire that reviews their opinion about the received therapy. The following items were scored by means of a visual-analogue scale from 0 to 100 using a slider: degree of general satisfaction with the therapy, degree of vocal quality improvement after therapy, degree to which the voice disorder was solved after therapy, opinion on the duration of one session, opinion on the total therapy duration, opinion on the frequency of therapy, degree of transfer, and the need for further therapy. At last, participants were asked if they actually continued voice therapy elsewhere after the treatment at Ghent University Hospital.

Results. The response rate of the survey was 87% (40/46). There were no significant differences between the three groups regarding the patients' perception of vocal quality improvement, degree to which the voice disorder was solved, duration of one session, total therapy duration, degree of transfer, and actual continuation of voice therapy. The IVT-G group was significantly less satisfied with the treatment compared with the IVT-I and TVT groups. The IVT-I group rated the therapy as significantly more intensive than the TVT group who rated the frequency as optimal. The TVT group felt a significantly higher need for further therapy than the IVT-G group.

Conclusion. Results of this study suggest that patients are equally satisfied and perceive a similar progress after short-term intensive voice therapy and long-term traditional voice therapy. This finding creates flexibility in selecting particular time-related variables depending on the specific case and situation. Patients seem to prefer individual voice therapy sessions over group sessions. Future larger-scale investigation is needed to confirm these results.

Learning Outcome:

Patients are equally satisfied and perceive a similar progress after short-term intensive voice therapy and long-term traditional voice therapy, which creates flexibility in selecting particular time-related variables depending on the specific case and situation. Whenever possible, a shorter and more intensive treatment should be the target as time efficiency and cost effectiveness will be considerably higher.

Individual voice therapy sessions seem to be preferred over group sessions, although further research is needed to confirm these results.

Keywords: voice therapy, service delivery, intensive therapy, group therapy, patient's opinion



Oral Presentation: Session TU18- Dysphagia (II), Aug. 20th (Tue.) 17:10-17:40

Abstract No: 10029

Survey on Speech Therapy in Palliative Care: Current practice and the way ahead

Raymond Fong^{*1} ; Chun Fung Kelvin Tsai² ; Hing Sang Wilfred Wong³ ; Oi Yan Yoyo Yiu⁴

¹Department of Otorhinolaryngology/ The Chinese University of Hong Kong/ Hong Kong, ²Speech Therapy/ Queen Elizabeth Hospital/ Hong Kong, ³Department of Paediatrics & Adolescent Medicine/ University of Hong Kong/ Hong Kong, ⁴Department of Allied Health/ Hong Kong Children's Hospital/ Hong Kong

Abstract Content:

Introduction

The role of speech therapists (STs) is getting more crucial in palliative care (PC), not only in patients with advanced age, but also those with chronic diseases with concomitant communication and swallowing disorders. As an initial step to foster a standard of practice in this area, it was empirical to understand the current practice and views of STs in Hong Kong about PC in their clinical management.

Methods

A online survey was conducted in February 2018. The survey, comprised of 33 questions , was distributed among STs working in hospitals in Hong Kong with a probability sample of 70.

Results

A total of 38 responses (54%) were received, their mean years of experience in PC were 5.4. All respondents provided feeding and swallowing management while 39% also provided communication management. The majority of STs (74%) had no PC multi-disciplinary team in their workplace, or were not part of the team. The common practice of swallowing management in PC was reviewed, with a diverse pattern noted in making clinical decisions. The clinical practice and operational issues in comfort feeding were also reviewed. Over 60% of respondents felt that they were uncomfortable or just adequate in managing adult PC patients. Over 92% of respondents agreed to a need of developing guidelines in this area.

Conclusion

Palliative care in speech therapy is inevitably part of STs' clinical practice. Involvement of STs in the multi-disciplinary PC team should be advocated. A local guideline on both swallowing and communication in PC is warranted, in view of diverse patterns of clinical practice, and such would equip STs more comprehensively in working with PC patients.

Learning Outcome:

1. Participants should be able to recognise the clinical and operational conundrum in dysphagia management for patients receiving palliative care.
2. Participants should be able to recognise the diverse clinical practice in comfort feeding for patients receiving palliative care.
3. Participants should be able to discuss about service delivery in communication and dysphagia management in the area of palliative care.

Keywords: palliative care; dysphagia; service delivery; comfort feeding



Abstract No: 9663

Clinical practices, knowledge and inter-professional relationships of speech pathologists and radiation therapists managing dysphagia in head and neck cancer patients

Alana Hutchison^{1 2}; Bena Cartmill^{1 2 3}; Laurelie Wall^{1 2}; Elizabeth Ward^{1 2}; Catriona Hargrave^{3 4};
Elizabeth Brown^{3 4}

¹Centre for Functioning and Health Research/ Queensland Health/ Australia, ²School of Health and Rehabilitation Sciences/ University of Queensland/ Australia, ³Princess Alexandra Hospital, Radiation Oncology Department/ Queensland Health/ Australia, ⁴School of Clinical Sciences/ Queensland University of Technology/ Australia

Abstract Content:

Background:

Recent evidence demonstrates that the severity of dysphagia during- and post- treatment for head and neck cancer (HNC) is linked to the total radiotherapy dose received by key structures involved in swallowing. A number of dose constraints for key structures have been proposed within the literature. However to date, few studies have employed these constraints in longitudinal prospective studies, limiting translation into clinical practice. Additionally, service shortfalls such as limited staffing and time pressures, further exacerbate challenges in translating these dose-constraining practices into clinics. To optimise potential for implementation of these constraints at radiotherapy planning, future research into the potential for dose constraining practices to improve dysphagia outcomes along with strong synergistic management between key professional groups, is required. Speech pathologists (SPs) and radiation therapists (RTs) are actively involved in the delivery of radiotherapy and management of dysphagia in patients undergoing treatment for HNC. Though, limited information surrounding the clinical practices, knowledge and inter-professional relationships possessed by these professionals, is available. Through exploring current clinical practices, knowledge and inter-professional relationships of SPs and RTs, opportunities for enhanced awareness, knowledge and collaboration may be revealed. Such information could assist in translating dose-constraining information into practice.

Objective(s):

This study aimed to examine the knowledge and practices of SPs and RTs surrounding radiation dose and dose optimisation in HNC treatment, and potential dysphagia impacts. The secondary aim was to investigate the level of interaction occurring between these professional groups within cancer centres.

Method(s):

Two electronic surveys were developed from current literature and expert consensus. A small group (n=9) of clinician's pilot tested the survey. The survey link was disseminated through specialist professional member networks and additional snowball sampling was used to recruit eligible SPs and RTs. Analysis involved descriptive statistics and plain content analysis.

Result(s):

Respondents included 32 SPs and 41 RTs. Most were experienced (>6yrs) and worked in large metropolitan centres. All SPs and 50% of RTs were aware of dose-dysphagia relationships, though few SPs used dosimetric information to inform their management of patient dysphagia, and only a third (33%) of RTs indicated that their centres actively constrain dose to swallowing structures during treatment. RTs revealed that *staffing skill mixtures* and *lack of prescription by the treating radiation oncologist (RO)* were restrictive factors. Both groups felt they could assist their colleagues in devising patient management plans, though current collaboration/interaction was minimal.



Discussion:

Few SPs and RTs reported regular use of dosimetric information to inform patient management, despite being aware of and having access to this information. Limited interaction between SPs and RTs is a likely barrier to increased use of dosimetric-guided dysphagia management of patients undergoing treatment for HNC. Opportunities for enhanced collaboration between disciplines should be considered within centres.

Learning Outcome:

1. To understand the level of knowledge and current clinical practices of SPs and RTs surrounding radiotherapy dose and dysphagia.
2. To gather insight into the current level of interaction occurring between SPs and RTs within cancer centres.
3. To identify opportunities for knowledge and practice enhancement within clinical practice to optimise dysphagia management.

Keywords: head and neck cancer, dysphagia, radiotherapy, speech pathologist, radiation therapist



Oral Presentation: Session TU19- Child Language (II), Aug. 20th (Tue.) 15:30-17:40

Abstract No: 9713

Reading and spelling in elementary school: from assessment to support and remediation

Christel Van Vreckem^{*1} ; Annemie Desoete¹

¹Health - Speech Therapy/ University of Applied Sciences Arteveldehogeschool/ Belgium

Abstract Content:

(1) Background: Research shows a lot of individual variation in early literacy skills in kindergartners and in school-taught reading and spelling abilities from the first year of primary school onwards. To detect children 'at risk' and to give the support they need, well-validated instruments are needed. Several instruments for reading are available. Surprisingly less instruments and studies are available on reading comprehension and on spelling.

(2) Objective: Since tailor-made instructions and feedback (Hattie & Timperley, 2007) are necessary for an effective approach, this study addresses the need for support and for instruments to assess reading comprehension and spelling, within this perspective.

(3) Method: The development and value of a free website for early literacy skills and three instruments to assess and remediate comprehensive reading and spelling will be illustrated. The value of a qualitative analysis of mistakes in order to set out the remediation goals will be described.

(4) Results: We present a free website focusing on early literacy skills. The annotated photographs help to make the website accessible to many, not Dutch-speaking people. In addition the validation of two tests, with implications for speech therapists is illustrated. The reading comprehension test, 'Vlaamse Test Begrijpend Lezen' (Flemish Test on Reading Comprehension; Van Vreckem, Desoete, De Paepe, & Van Hove, 2016) was developed and validated on 3304 children. Cronbach's alpha's varied from .66 to .89. Percentile scores as well as a detailed report about the most important mastered reading comprehension strategies are available. It becomes clear how children score on verbal comprehension (=understanding the language in the context of the text), on inferencing on meso- and macrolevel and how they perform on extrapolation tasks (predicting and applying after the whole text is read), to set out a tailor-made approach. In addition the 'Spelling Test for children from the first until the sixth grade (Van Vreckem & Desoete, 2016) was developed and validated on 3656 children. Cronbach's alpha's varied from .73-.91. Spelling skills at word level for existing words, presented in an oral sentence, and pseudo words can be assessed with this instrument. Percentile scores as well as an overview of the mastered spelling strategies are available after the test. It becomes clear how children perform on tasks depending on phonological, orthographic and morphological strategies. At last, a reading comprehension remediation program, focusing on the most important reading comprehension strategies (like activating prior knowledge, verbal comprehension, inferencing on paragraph and text level, and extrapolation) will be presented.

(5) Discussion: It was possible to create validated instruments for comprehensive reading and spelling. Tailor-made instructions and feedback were possible with both instruments. Implications for speech therapists will be given.

Learning Outcome:

1) a free website on early literacy skills focussing on phonological awareness, invented spelling, letter knowledge and early reading skills

2) a spelling test for assessing spelling existing and pseudo words, representing phonological, morphological, orthographic and etymological skills

3) a reading comprehension test, focussing on verbal comprehension, inferencing on paragraph and text level and extrapolation



4) a reading comprehension remediation program, focussing on activating prior knowledge, verbal comprehension, inferencing on paragraph and text level, extrapolation, metacognition

Keywords: reading comprehension, spelling, test, remediation program, early literacy skills



Abstract No: 10059

Introducing Tech-Assisted Online Home-based Intervention Support Program for Adaptive Caregiver-enabled Communication Development Intervention

Hsin-Yi Kwok^{1 2} ; Chao-Min Chen^{1 3} ; Man-Chun Chen⁴ ; MangMang Zhang^{1 5}

¹Clinical Research/ PenguinSmart/ United States, ²Global Health / Harvard Chan School of Public Health/ United States, ³Health Management and Leadership/ Johns Hopkins Bloomberg School of Public Health / United States, ⁴Language Center/ University of Taipei/ Taiwan, ⁵Department of Linguistics and Modern Languages/ Chinese University of Hong Kong/ Hong Kong

Abstract Content:

OBJECTIVE: To bridge the gap of theory and application for caregivers in their participating in effective communication development intervention for children with language delay, we developed a tech-assisted online home-based intervention support program. It allows for speech and language pathologist (SLP) to be able to provide customized home intervention plan with efficiency and caregivers to implement with ease.

BACKGROUND: It is well-established that caregiver involvement is crucial in language therapy for children, but often it is viewed as supplementary in practice as it works alongside clinic-based therapy. We picked China as first country to test how far caregiver-led intervention can go. Currently still without a national speech and language pathologist (SLP) training and licensing, to meet the population need in mainland China there is an estimated professional gap of around five hundred thousand SLPs. Traditional clinic-based solution, contemporary therapist-driven teletherapy and caregiver training programs that are designed mainly for the west with systematic access to SLP, all have limited use. The PenguinSmart Home-based intervention (HBI) Guidance service, currently a newly launched service, was developed through cross-disciplinary methods to creatively address the extreme case of multifactor problems: 1) huge need across large geography 2) strong self-help mentality but limited understanding of topic.

METHOD: Based on first hand interviews, iteration and expert feedback, the service is providing customized one-on-one support to caregivers, guided by therapists and enabled by data-science. It mainly consists of regular online consultation, customized offline intervention plans and ongoing tracking. The backbone of the service is its database of communication skills and expandable reader-friendly activity database that includes comprehension, expression, oral muscle skills, social-emotional, pre-linguistics, preliteracy and caregiver implementation skills. Therapist can easily generate the needed goals and customized activity and tactics list for each family. At capacity, each SLP can oversee over 120 cases every month while still have the confidence that the families are well supported. The system was field-tested with thirty Mandarin-speaking families of children under 6 years old with language delays, supporting time ranged from between 2 weeks to 9 months, providing online consultation once every 2-4 weeks. For all thirty families, the HBI Guidance service was their only access to a trained SLP during the time, for twenty-eight, it was their first access. Mandarin-speaking SLPs from Taiwan and US served as the experts that provided the half-month consultations needed.

RESULT: Based on self-report, 100% participating caregivers acknowledged increase in engagement and intentionality in parent-child interaction, 80% notice themselves showing improvement in understanding their child and introducing activities more effectively, 50% expressed improvement and involvement of other adult caregivers and the child, while 13% expressed it cause more tension between family members. Compared to prior, the caregivers are also spending 80%-500% more time implementing purposeful intervention and stimulations at home. On average, caregivers implement intervention tactics and games using 5 different scenarios and props a week. The service model can serve as a platform to allow for implementation of different framework and theories



Learning Outcome:

Tech-Assisted Home-based Intervention Support System can help caregivers overcome practical application barrier and begin motivated implementation.

Keywords: home-based intervention support, communication development, caregiver-centered, early intervention



Abstract No: 10064

Case study: The Effectiveness of Speech and Language Pathologist using Tech-Assisted Home-based Intervention Support System for Communication Development Rehabilitation

Man-Chun Chen^{*1 4} ; Hsin-Yi Kwok^{*1 2}

¹Clinical Research/ PenguinSmart/ United States ⁴Language Center/ University of Taipei/ Taiwan

²Global Health / Harvard Chan School of Public Health/ United States

Abstract Content:

Objective: PenguinSmart HBI (Home-based Intervention) Guidance Service is a tech-assisted online communication development intervention system, guided by speech therapist, provides online counseling and designing individualized home intervention plans for each client family. We are improving the child's condition by increasing the intentionality and implementation abilities of each caregiver. This study will explore the use of the PenguinSmart model by language therapists, the use of regular online counseling and its customized home-based intervention plans, whether it can effectively improve parental effectiveness and improve children's language development delays, we will be using two severe and complex case to explore the system's capabilities.

Background: Globally, there is a growing focus to transfer the responsibility of intervention back to the parents, rather than the traditional model of being clinician-centered. However, an effective home-based intervention strategy varies greatly by case, as not only do the children have various conditions and needs, caregivers have varying level of implementation competency and availability as well. To implement home-based training program, PenguinSmart's HBI Guide system was created to allow for a model flip from clinician-implemented to caregiver-implemented. In doing so, expanding the reach and oversight of therapists to more and enabling caregivers to take a more proactive role. Unlike contemporary teletherapy, where it is the therapist directly interacting with the child online, the online consultation in PenguinSmart's system is mainly between the therapist and the caregiver.

Methodology: This study was conducted on a case-by-case basis with two cases. After the preliminary evaluation, the cases began a 3-6 months home intervention support plan. Online consultations of 30 minutes each are scheduled twice a month. Each case will also have their individual website to keep track of their plans, homework and Q&A. Caregivers also use the site to proactively ask questions, and respond to the therapist's comments at any time. Therapist is well-informed of the client's status before each consultation. The two cases are briefly described as follows: Case 1: Four and a half years old ASD boy with mild hearing loss. Overall behind in comprehension, expression, speech intelligibility and social ability, roughly equals to between three to four years of age. Parents guidance skills lacking. Case 2: Three years and ten-months old girl with congenital condition, non-verbal. Overall severely delayed, language ability estimated to be at around six months to one year old in developmental age. Parental guidance skills also need to be improved.

Findings: Case 1 received a total of three months of online support. The language ability of the case was reevaluated after six months, by that point, his language development was on par with children of the same age. Case two: A total of six months of online support was received. After the six months, the language ability of the child was re-evaluated, and was found to be equivalent to that of a one and a half years old. The results of the study showed that the two cases had progress after receiving three to six months of online counseling and home treatment programs.

Keywords: *home-based intervention support, communication development, caregiver-centered, early intervention, severe delay*



Abstract No: 9783

Nonword repetition skills in monolingual and sequentially bilingual children with developmental language disorder

Sari Kunnari¹ ; Sini Smolander^{1 2} ; Pekka Lahti-Nuutila^{2 3} ; Eva Arkkila² ; Marja Laasonen^{2 4 3}

¹Faculty of Humanities, Research Unit of Logopedics/ University of Oulu/ Finland, ²Department of Otorhinolaryngology and Phoniatrics, Head and Neck Surgery/ Helsinki University Hospital and University of Helsinki/ Finland, ³Department of Psychology and Logopedics/ University of Helsinki/ Finland, ⁴Department of Psychology and Speech-Language Pathology/ University of Turku/ Finland

Abstract Content:

Nonword repetition (NWR) task involves the ability to perceive, store, recall and reproduce phonological sequences. Research conducted in typologically different languages have revealed that children with developmental language disorder (DLD) show deficits in NWR (e.g., Conti-Ramsden et al., 2001; Dispaldro et al., 2013; Girbau & Schwartz, 2007). These findings have led to the proposal that NWR may serve as a potential clinical marker of DLD.

Thus, the aim of this study was to investigate the group differences in the accuracy of NWR and how age, gender, language exposure and vocabulary skills are associated with NWR. Four groups of children of Helsinki Longitudinal SLI study (HelSLI) aged 3–6 years participated in the study: monolingual and sequentially bilingual children with DLD (MoDLD and BiDLD) and monolingual and sequentially bilingual children with typical development (MoTD and BiTD). The Finnish NWR task and a receptive test of vocabulary were administered. Nonword items were presented individually through a computer with headphones. Responses were audiorecorded for later transcription.

The analyses revealed significant main effects for group, age, language exposure and receptive vocabulary. The TD-group performed better than the DLD-group, and NWR improved with increasing age, vocabulary skills and exposure to Finnish. However, there was a significant interaction between the group and language exposure; increasing exposure to Finnish improved the NWR performance of BiTD-children but not that of BiDLD-children. The results imply that NWR may be a potential clinical marker for DLD in Finnish, and that a relatively small amount of exposure to Finnish is sufficient for a good level of phonological abilities in TD-children.

References:

Conti-Ramsden, G., Botting, N. & Faragher, B. (2001). Psycholinguistic markers for specific language impairment (SLI). *Journal of Child Psychology and Psychiatry*, 42, 741-748.

Dispaldro, M., Leonard, L. B. & Deevy, P. (2013). Real-word and nonword repetition in Italian-speaking children with specific language impairment: A study of diagnostic accuracy. *Journal of Speech, Language, and Hearing Research*, 56, 323-336.

Girbau, D. & Schwartz, R. G. (2007). Non-word repetition in Spanish-speaking children with specific language impairment (SLI). *International Journal of Language and Communication Disorders*, 42, 59-75.

Learning Outcome:

On the basis of this presentation, participants will find out that (1) Finnish nonword repetition task is effective in identifying children with DLD and that (2) small amount of exposure to a second language may lead to a good level of phonological abilities in typically developing children.

Keywords: Nonword repetition; Developmental language disorder



Abstract No: 9830

Helsinki longitudinal SLI study (HeISLI)

Marja Laasonen^{*1 2 3} ; Sini Smolander^{1 4} ; Pekka Lahti-Nuutila^{1 2} ; Miika Leminen^{1 2} ; Ahmed Geneid¹ ;
Elisabet Service⁵ ; Eva Arkkila¹

¹Department of Phoniatics/ Helsinki University Hospital/ Finland, ²Department of psychology and logopedics/ University of Helsinki/ Finland, ³Department of Psychology and speech-language pathology/ University of Turku/ Finland, ⁴Research Unit of Logopedics/ University of Oulu/ Finland, ⁵Department of Linguistics and Languages/ McMaster University/ Canada

Abstract Content:

Objective and background:

Developmental language disorder (DLD, also called specific language impairment or SLI) affects up to 7% of the population and is the largest disability group in pre-school-aged children. However, at the moment, we do not fully understand the risk and protective factors that lead to DLD or the shared and differentiating characteristics of DLD across languages or domains of cognition.

Helsinki Longitudinal SLI study (HeISLI) was launched in January 2013 at the Department of phoniatics, Helsinki University Hospital, Finland (<http://tiny.cc/helsli>). The first phase of the study investigates developmental language disorder (DLD) at multiple levels of analysis (etiological, neural, cognitive, behavioral, and psychosocial levels) and in a longitudinal setting in pre-school children. The aim of the study is to enable more reliable prediction and early identification of DLD across languages.

The open access study protocol can be found at: <https://doi.org/10.1186/s40359-018-0222-7>

Method:

The five subprojects of HeISLI investigate DLD at etiological, neural, cognitive, behavioural, and psychosocial levels of analysis in 227 children aged 3–6 years with suspected DLD and their 160 typically developing peers:

- **HeISLI genetic** investigates the role of the known genetic risk factors.
- **HeISLI EEG** searches for electrophysiological markers for DLD.
- **HeISLI cognitive** assesses nonlinguistic cognitive correlates of DLD, such as, aspects of short term/working memory and procedural learning.
- **HeISLI psychosocial** investigates how psychological characteristics and environment influence DLD as well as how the child's well-being is affected by DLD.
- **HeISLI bilingual** concentrates on the characteristics of DLD in bilingual children at all the levels of the other projects.

Results and discussion:

The main aim of the project is to improve our understanding of DLD in mono- and bilingual children, including detection of risk and protective factors and early identification. The presentation will describe the study as well as current results of the cross-sectional phase concentrating on HeISLI cognitive, the results of which suggest that non-linguistic factors affect both typical and impaired linguistic development. More specifically, nonverbal serial short-term memory capacity develops cross-sectionally more rapidly in typically developing compared to DLD children. However, nonverbal serial short-term memory capacity moderates the cross-sectional growth of language competence only in DLD children.

Learning Outcome:

How to conduct longitudinal research on developmental disorders.



Current cross-sectional results of the HeISLI study.

Keywords: HeISLI; DLD; SLI; monolingual, bilingual, genetic; EEG; cognitive; psychosocial



Abstract No: 9963

Production of Relative Clauses in Cantonese-Speaking Children with Developmental Language Disorder

Jane Lai¹ ; Angel Chan² ; Anita Wong³ ; Franklin Chang⁴ ; Evan Kidd⁵

¹Department of Chinese & Bilingual Studies/ The Hong Kong Polytechnic University/ Hong Kong,

²Speech Therapy Unit/ The Hong Kong Polytechnic University/ Hong Kong, ³Division of Speech and Hearing Sciences/ The University of Hong Kong/ Hong Kong, ⁴English Department/ Kobe City University

for Foreign Studies/ Japan, ⁵Language Development Department/ Max Planck Institute for Psycholinguistics/ Netherlands

Abstract Content:

Objectives:

1. To ascertain whether relative clauses are particularly vulnerable in Cantonese-speaking children with Developmental Language Disorders (DLD) relative to their typically developing age peers
2. To examine the nature of problems posed for Cantonese-speaking children with DLD when producing RCs

Background:

Relative clauses (RCs) are among the complex sentences that challenge children with DLD (formerly called Specific Language Impairment (SLI)). Difficulty with RCs is robustly documented in children with DLD/SLI cross-linguistically: there are at least 23 studies published in major international journals since 2000, involving English and 5 other European languages. Cantonese RCs have word order properties that are distinctly rare across languages of the world. Given its special word order properties, Cantonese is an important language in debates regarding acquisition/processing of RCs. Despite its importance, to date there has been no published research on the syntactic competence of RCs in Cantonese children with DLD.

Specifically, Cantonese is unusual among SVO languages in placing the RC before the head noun, resulting in processing demands competing in opposite directions: Cantonese subject RCs are arguably less costly to process in light of structurally-oriented constraints like shorter *structural* filler-gap distance, but more costly in terms of longer *linear* filler-gap distance and its non-canonical VOS order. As such, structural and linear based processing demands work in opposite directions to both favor and disfavor subject RC processing. For children with DLD having limitations in working memory, resolving such competing processing demands becomes particularly challenging.

Method:

We used a sentence repetition task (Diessel & Tomasello, 2005) to assess production of a wide range of relativized positions in 40 children (22 DLD; 18 Typically Developing (TD); age-matched; aged 6;6-9;7): Subject(S), Agent(A), Patient(P), Indirect Object(IO), Oblique(OBL) and Genitive(GEN). Additionally, we compared two relativisation strategies: classifier RCs *versus* RCs with the relative marker *ge*3.

Results:

Our preliminary results confirmed that relative clauses are indeed vulnerable in Cantonese-speaking children with DLD. The DLD group was significantly worse than their TD age peers in producing all structure types, except P- RCs. S-RCs were the easiest and GEN- RCs the most challenging to produce for both DLD and TD groups. Unlike English, German and Mandarin, there was lack of a robust Agent



over Patient advantage. Ongoing analyses will compare the relativisation strategies and the error patterns in DLD *versus* TD groups.

Discussion:

We discuss our findings by considering how factors like general syntactic and semantic complexity and similarity between constructions could affect the production difficulty/ease of RCs in Cantonese-speaking children with DLD. Comparing the two relativisation strategies also allows testing certain structurally-oriented versus processing-based accounts of DLD/SLI, e.g. the Computational Grammatical Complexity account (Van der Lely, 2005) *versus* the limited processing capacity account (Montgomery & Evans, 2009).

Learning Outcome:

1. To identify relative clause production as a vulnerable linguistic feature of Developmental Language Disorders (DLD) in Cantonese
2. To discuss the nature of difficulties posed for Cantonese-speaking children with DLD when producing relative clauses
3. To evaluate how language specific properties affect acquisition outcomes in Cantonese-speaking children with and without Developmental Language Disorders

Keywords: Child Language; Developmental Language Disorder; Cantonese; Relative Clauses



Abstract No: 9687

A longitudinal study: Parent-child book reading experience, emerging reading and reading ability at school aged in children with and without hearing loss

Hsiu Tan Liu¹ ; Chun Jung Liu²

¹Special Education/ National Taiwan Normal University/ Associate Prof./ Taiwan, ²Speech pathology and audiology/ Chun Shan Medical university/ Associate Prof/ Taiwan

Abstract Content:

The purpose of this study is to longitudinally examine, follow up and compare reading development between children with and without hearing loss from kindergarten to 2nd grade elementary school for three years. This study will discuss on correlation and prediction of preschool parent-child reading experience between emergent literacy skills and reading abilities at elementary school. Furthermore, this study will also discuss the differences between development of parent-child reading experience, emergent literacy skills and reading ability at elementary school of children with and without hearing loss.

The subjects included 40 hearing children and 40 hearing impaired children whose hearing loss are more than 70 dB HL. Those hearing children will be selected from hearing impaired children's classmates, who is at the same age with equal IQ and their socioeconomic status are fairly similar.

For the first year, we collected parent-child storybooks reading experience from both children with and without hearing loss, which included starting-time and frequency of

parent-child storybook reading, and reading interaction type. Furthermore, we collected the emergent literacy skills, which included phonological processing ability, rapid automatized naming, oral ability, print awareness and early word recognition. For second year, we followed the progress of emergent literacy skills of the subjects as well as started to observe their improvement on word recognition and storybooks reading ability. The purpose of the study in the third year is to follow word recognition and reading ability of the subjects.

The main results of this study are as follows:

1. The earlier parent-child reading, the better phonological ability and sight-word reading and fluency for children with hearing loss, but the earlier parent-child reading, the better phonological ability, character size and ability of picture-book reading comprehension for children without hearing loss.
2. The better the skills of emergent literacy, the better their character recognition and reading comprehension for children with and without hearing loss.
3. The starting-time of parent-child reading of children with hearing loss was different from child without hearing loss.
4. The performance in emergent literacy skills of children with hearing loss was lower than that of children without hearing loss, such as phonological ability, spoken vocabulary expression, and print awareness, but there was no difference in the naming speed.
5. The reading comprehension of children with hearing loss was lower than that of children without hearing loss, but there is no significant difference in Chinese characters recognition.
6. The most predictive variables for reading comprehension was phonological awareness for children with and without hearing loss.



This study suggests that regardless of the hearing loss or not, it is recommended to start parent-child reading as soon as possible and the skills of emergent literacy need to be promoted.

Learning Outcome:

More understanding the relationship among parent-child book reading experience, emergent reading skills and reading comprehension of children with and without hearing loss.

Keywords: parent-child book reading; children with hearing loss; emergent reading; reading comprehension



Abstract No: 10073

How well does the public know Developmental Language Disorder? A European multi-country survey

Elin Thordardottir^{*1}; Seyhun Topbas

¹Communication Sciences and Disorders/ McGill University/ Canada

Abstract Content:

Recent literature conducted across English-speaking countries has highlighted a relative lack of awareness about language impairment in children, compared to awareness of other developmental disorders. Even though Developmental Language Disorder (DLD) is far more prevalent than autism, it is the subject of fewer scientific publications and is less known by the public (Bishop et al. 2016). The present study involves a multi-country survey of public awareness and knowledge of DLD. It was conducted within a European Union project, Cost Action IS 1406, which addresses language impairment in children across countries of Europe, and in neighboring countries. Much of the research literature and web-based information on DLD is published in English; this literature is biased in that it underrepresents non-English speaking countries as it is most likely to focus on DLD in English-speaking language areas, and is differentially accessible to professionals and the public of different language backgrounds. Public awareness can significantly influence therapy practices and outcomes as well as policy; greater understanding of public awareness of DLD across countries is, therefore, of great importance.

Purpose: The purpose of this study was to examine public awareness of Developmental Language Disorder (DLD), including whether people have heard of the term, what they think the main characteristics of DLD are, what they think causes it, whether they think it can be prevented, what they think parents' role is in detecting and treating it and what they think would be good ways to raise awareness.

Method: A Public Awareness questionnaire was constructed with Working Group 3 of Cost Action IS1406, involving a collaboration of group members from various countries and linguistic areas. In each country, the questionnaire was translated using the term for DLD used most within each country and deemed to be most likely to be known to the public. Within each participating country, the questionnaire was filled out by members of the public (non-specialists in SLP) in 3 age groups: 18 to 39 years, 40 to 59 years, and 60 to 70+ years, targeting 30 people in each group. To date, 632 responses have been collected from Austria, Bulgaria, Croatia, Cyprus, Iceland, Lithuania, Malta, Poland, Romania, Spain, and Sweden, with additional data collection in progress.

Results: As expected, results confirm that, across countries, the public has significantly greater awareness of autism, dyslexia and attention deficit (each with close to 90% awareness) than of DLD (at around 60%). The public's idea of the characteristics of DLD also reflect a lack of understanding of the far-reaching consequences of DLD on a child's ability to communicate and socialize. Further analyses of similarities and differences across language areas will be presented as well as respondents' ideas on how awareness of DLD could be increased.

Learning Outcome:

Participants will increase their understanding of how the definition and perception of language impairment are influenced by cultural factors.

Participants will gain knowledge of public awareness of language impairment and possible ways to increase it.



Oral Presentation: Session W1- Aphasia (II), Aug. 21st (Wed.) 08:30-09:30

Abstract No: 9802

Neuropsychological characteristics and loci of lesions in right and left hemisphere-damaged patients with indifference reaction

Naoya Obama^{*1 2}; Jun Tanemura³

¹Doctoral Program in Sensory Science/ Kawasaki University of Medical Welfare/ Japan, ²Department of Rehabilitation/ Kurashiki Kinen Hospital/ Japan, ³Department of Sensory Science/ Kawasaki University of Medical Welfare/ Japan

Abstract Content:

【Objective】

We investigated the neuropsychological symptoms and loci of lesions in right and left hemisphere-damaged patients with indifference reaction.

【Background】

Gainotti (1972) revealed an association between indifference reaction and unilateral spatial neglect in right hemisphere-damaged patients and between catastrophic reaction and aphasia in left hemisphere-damaged patients. However, the loci of lesions in the right hemisphere in right hemisphere-damaged patients were not investigated. Since the study by Gainotti (1972), no detailed investigation of indifference reaction has been performed.

【Method】

We investigated the medical history, loci of lesions, and neuropsychological symptoms of 72 right and 78 left hemisphere-damaged patients. The following neuropsychological and neuropsychiatric symptoms were assessed: (1) intellectual deterioration, (2) anosognosia, (3) disorientation, (4) attention disorder, (5) unilateral spatial neglect, (6) amnesia, (7) disexecutive syndrome, (8) aphasia, (9) apraxia, and (10) agnosia. The severity of indifference reaction was evaluated using the neuropsychiatric inventory, and activities of daily living were evaluated using the Functional Independence Measure (FIM). The severity of intellectual deterioration was evaluated according to Hasegawa's dementia rating scale-revised (HDS-R). Catastrophic, depressive, and indifference reactions were investigated in the right and left hemisphere-damaged patients. The loci of the lesions in the right and left hemispheres were classified into the following six categories: (1) extensive cortex, (2) anterior cortex, (3) posterior cortex, (4) extensive basal ganglia, (5) limited basal ganglia, and (6) thalamus.

【Results】

Catastrophic and depressive reactions were significantly more common in left hemisphere-damaged patients than in right hemisphere-damaged patients. Conversely, indifference reaction was significantly more common in right hemisphere-damaged patients than in left hemisphere-damaged patients. Severe indifference reaction was observed in patients with extensive cortex lesions, extensive basal ganglia lesions, and thalamus lesions in the right hemisphere. Indifference reaction appeared transiently early after brain damage. Reduced indifference reaction was noted in patients with anterior cortical lesions. Intellectual deterioration, anosognosia, disorientation, attentional disorder, unilateral spatial neglect, and amnesia were significantly more common in patients with indifference reaction. The full FIM score and the HDS-R score were significantly low in patients with indifference reaction.

【Discussion】



The association between indifference reaction and the right hemisphere was confirmed. Patients with large lesions in the right hemisphere exhibited indifference reaction. Attention disorder and unilateral spatial neglect may affect the appearance of indifference reaction.

Learning Outcome:

Patients with large lesions in the right hemisphere exhibited indifference reaction.

Keywords: indifference reaction; right hemisphere; left hemisphere; emotion; emotional disorder



Abstract No: 9701

Using Participatory Research Approaches to Promote Effective Communication in Long-Term Care

Ellen Hickey¹ ; Natalie Douglas²

¹*School of Communication Sciences and Disorders/ Dalhousie University/ Canada*, ²*Speech-Language Pathology/ Central Michigan University/ United States*

Abstract Content:

Objective: To describe the use of participatory research approaches to develop caregiver-informed and evidence-based communication training for caregivers in long-term care settings

Background: Persons living in long-term care often experience reduced functional abilities, communication, and quality of life related to dementia, aphasia, motor speech disorders, or hearing loss. Evidence has been accumulating that use of external aids/cues (e.g., signs, memory books/cards) can promote better communication and participation in persons with dementia (Hickey & Bourgeois, 2018). However, implementation science shows poor uptake of interventions (e.g., Douglas et al., 2015), and may be impacted by the organizational culture and climate of long-term care facilities (Douglas & Hickey, 2015).

Method: Two studies used participatory research approaches with caregivers in long-term care to investigate their understanding of communication strategies and to build on their communication skills. In Michigan, USA a facilitative coaching model was used to empower certified nursing assistants (CNAs) to implement tailored communication strategies for persons with dementia. Outcomes included input from CNAs and behavioral targets from trained observers according to the Positive Communication Approach (Bourgeois, 2014).

In Nova Scotia, Canada, Appreciative Inquiry (Cockell & McArthur-Blair, 2012), was used to collect data from focus groups in two phases to understand caregivers' attitudes and experiences, and to develop action plans that empower implementation of best practices with memory and communication aids. Data were transcribed and coded for key high-level themes using an iterative process of narrative analysis.

Results: In Michigan, collaborative problem solving over 6 brief, 5-7 minute in the moment coaching sessions with the speech-language pathologist resulted in positive behavior changes in the CNAs to support communication. Over half of the CNAs in the study reported that they felt empowered to implement communication strategies with other older adults in the environment. In Nova Scotia, caregivers discussed many useful communication strategies that employ nonverbal and paralinguistic communication, relationships and familiarity, and humor and music, but they were not using external aids. Action plans will be developed with caregivers for implementation of best practices in supporting memory and communication in January-February 2019. Full results will be provided in the presentation.

Discussion: Participatory approaches that empower caregivers can be used to improve communication for elders in long-term care environments. The inherent vulnerability of living in a long-term care environment coupled with the high prevalence of co-morbid disorders necessitates approaches that accelerate the research to practice pipeline. Participatory approaches serve as a mechanism to both implement existing evidence and provide an infrastructure for a process to tailor communication strategies to the local needs of healthcare providers and facilities. Information on participatory approaches and implementation science will be shared, along with specific tips for improving the communication environment in long-term care facilities.

Learning Outcome:

1. Identify how participatory approaches can be used to empower caregivers to best support memory and communication in elders.



2. Identify five specific tips that caregivers can use to support memory and communication in elders in long-term care.
3. Identify three factors that impact implementation of best practices.

Keywords: long-term care, participatory action approaches, dementia, aphasia, caregiver intervention



Abstract No: 9127

Starting and Sustaining an Aphasia Rehabilitation Program at a University Clinic: Outcomes, Rewards, and Realities

Nidhi Mahendra^{*1}; Ashlyn Tadokoro^{*1}; Ms Jessica Brym^{*}; Ms Tiffany Park^{*}

¹*Department of Communicative Disorders and Sciences/ San Jose State University/ United States*

Abstract Content:

Stroke is the fifth leading cause of death, and one of the leading causes of long-term disability in the United States (American Stroke Association, 2016). A report issued by the American Heart Association (Go et al., 2013) estimated that 7 million Americans live with the long-term effects of a stroke. Aphasia is one of the most disabling consequences of a stroke, and is a language disorder that severely impairs communication while sparing the person's intellectual functioning. Aphasia affects over 2 million Americans (Aphasia Access, 2017). Despite the significant disabling physical and communicative effects of a stroke, much research has revealed that stroke survivors and persons with aphasia receive an insufficient dosage (amount/duration/intensity) of rehabilitation. This lack of adequate rehabilitation contributes to decreased communicative function, wellbeing, and quality of life for stroke survivors and greatly increased burden of care for family members.

This paper examines the unique role of university-based aphasia clinics, in providing more access to skilled speech and language therapy for persons with aphasia. Information will be presented by the authors about their experience with designing, developing, implementing and sustaining a new aphasia rehabilitation program-the Spartan Aphasia Research Clinic (SPARC), nested within a university clinic. Using examples from SPARC, the authors illustrate how stroke and brain injury survivors receive a higher dosing of rehabilitation services while expanding the clinical focus on improving life participation and optimizing wellbeing and quality of life of clients and their families.

This aphasia rehabilitation program presents a unique win-win-win opportunity by jointly serving persons with aphasia and students-in-training, while catalyzing the research of an interdisciplinary faculty team. SPARC was designed to provide patients: 1) individual speech and language therapy and functional cognitive training; 2) group conversational coaching and a social community of other stroke survivors, and 3) return to the creative arts via participation in a therapy choir. The risks, rewards, and realities of implementing such a program in a university-based training clinic will be presented as well as student and client outcomes of participation in this program.

Acknowledgments: The authors are affiliated with the Spartan Aphasia Research Clinic and thank the SJSU Kay Armstead Center for Communicative Disorders, the Lurie College of Education, and El Camino Hospital for their funding.

Learning Outcome:

After attending this presentation, learners will be able to:

1. Articulate specific reasons why speech therapy services for aphasia need expansion within university clinics
2. Identify 7 key ingredients that make a successful university-based aphasia rehabilitation program
3. List leading concerns in structuring and sustaining a university-based aphasia rehabilitation program
4. Identify resources and strategies for successfully sustaining a university-based aphasia rehabilitation program

Keywords: Aphasia, rehabilitation, university settings, sustainability



Abstract No: 9091

Examining the Quality of Speech and Language Therapy Services. What does a good service for persons with aphasia look like?

Pamela Enderby^{*1}; Kathryn Moyses²

¹SCHARR/ University of Sheffield/ United Kingdom, ²-/ Royal College of Speech and Language Therapists/ United Kingdom

Abstract Content:

Abstract: Research underpinning evidence-based practice for Speech and Language Therapists (SLT) is increasing the focus on the impact of therapy. However, SLT research trials tend to include small numbers of subjects with specific criteria which makes it difficult to generalize results to the heterogeneous patient/client groups with communication and/or swallowing disorders seeking these services. The ultimate objective of the work presented here is to capture basic information relating to the impact of Speech and Language Therapy on all clients receiving their services in the UK and thus to learn more regarding the variation in impact, the causes of this variation and thus improve the quality of our services.

Method: The Therapy Outcome Measure (TOM) based on the WHO ICF was selected from 67 other measures reviewed by the Royal College of Speech and Language Therapists as being psychometrically robust, appropriate for all client groups and easy-to-use. The TOM based on the International Classification of Functioning (World Health Organisation) allows clinical reflection prior to and on completion of an episode of care of the 4 overarching domains (impairment, activity restriction, social participation and well-being).

Results: this presentation will provide results from 15 services across the UK. Information on 605 clients with aphasia who have been treated by SLT will be presented indicating a difference in response between those who have aphasia associated with a stroke to those who have aphasia associated with other conditions.

Discussion: Additionally, consideration should be given to the variation in response to therapy and its association with the types of service provided

Learning Outcome:

Increased understanding related to the need for improving the quality of services.

Knowledge related to Therapy Outcome Measure- a generic measure of outcome

Learning regarding variability in service provision and outcome.

Keywords: Outcome measurement; Aphasia; Speech and Language Therapy



Oral Presentation: Session W2- Audiology (IV), Aug. 21st (Wed.) 08:30-09:30

Abstract No: 9672

A Preliminary Investigation of the Spoken Language Development in Children with Auditory Neuropathy Spectrum Disorder

Hsiu-Wen Chang¹ ; Tang-Zhi Lim² ; Pei-Hua Chen*

¹Department of Audiology and Speech Pathology/ Mackay Medical College/ Taiwan, ²Speech and Hearing Science Institute/ Children's Hearing Foundation/ Taiwan

Abstract Content:

Objective: The purposes of this study were to explore the language performance of Mandarin-speaking children with ANSD, and to examine the factors or treatments which would benefit this group of children during their early childhood.

Background: Auditory neuropathy spectrum disorder (ANSD) has been known as a clinically and generically heterogeneous type of hearing loss. Studies regarding the language performance of ANSD children with different types of audiological treatments were inconsistent; which is also especially scant for Mandarin-speaking children with ANSD.

Method: A total of 10 ANSD children (2 CI and 8 HA users) aged from 21 months to 36 months ($M = 13.60$, $SD = 6.44$) were recruited from an early-intervention agency specialized in auditory-verbal (AV) therapy. The average duration of device use was 18.30 months (mean of CI = 9.00; mean of HA = 20.625), and their degree of hearing loss was from mild to severe. The MCDI-T (Toddler form) was administered to examine the children's ability of vocabulary and syntactic complexity in expressive languages, including vocabulary production, usage of language, complexity of language, and utterances. Correlation was conducted to explore the relationship among paternal education level (PEL), maternal education level (MEL), unaided PTA, AV starting age, AV duration, duration of device use and type of hearing device to the performance of expressive language in children with ANSD.

Results: Outcomes of correlation showed that vocabulary production ($r = 0.593$, $p < .05$) and complexity of language ($r = 0.549$, $p < .05$) are positively correlated with the duration of hearing device use. The longer the children used the device, the better outcomes they had. The length of utterance was positively correlated with the type of hearing devices ($r = 0.628$, $p < .05$), and the HA users tended to produce longer utterances than CI users. However, the domain of usage of language did not show a significant correlation with the demographic variables.

Discussion: The study results indicated that children with ANSD who had longer duration of hearing device use tended to show better ability in vocabulary production and complexity of language. Although the HA users produced longer utterances than CI users, only 2 children (1 CI and 1 HA) achieved age-appropriate expressive language performance in the present study. This results may occur due to the small sample size of cochlear implants users and the various degree of hearing loss.

Learning Outcome:

- (1) Identify variables that may benefit Mandarin-speaking ANSD children in their expressive language performance.
- (2) Demonstrate the preliminary language performance of Mandarin-speaking preschoolers with ANSD in Taiwan.

Keywords: ANSD, Language Development, Early Intervention



Abstract No: 9706

A structural equation modeling (SEM) approach to examine factors influencing outcomes of auditory performance for children with hearing loss

Tang Zhi Lim^{*1} ; Pei-Hua Chen¹ ; Yi-Ping Chang^{1 2} ; Hsuan-Mei Hong¹

¹Speech and Hearing Science Research Institute/ Children's Hearing Foundation/ Taiwan

²Department of Audiology and Speech Language Pathology/ Mackay Medical College/ Taiwan

Abstract Content:

Objective: The purpose of this study is to explore the relationships among the parental effectiveness, parental education level, and the auditory skills of children with hearing loss.

Background: In family-centered aural (re)habilitation, parental effectiveness (teaching skills and implementation of audiological management) is an influential factor in hearing-impaired children's auditory skills. However, it remained unclear how parental effectiveness affects hearing-impaired children's auditory skills.

Method: Two hundred and thirteen children (97 females; mean age 37.13 mo. with a standard deviation of 18.87 mo.) with hearing loss were recruited. Their degrees of hearing loss ranged from mild to profound. All children have been enrolling in auditory-verbal (AV) programs at the Children's Hearing Foundation in Taiwan for no more than two years. To assess parental effectiveness, two scales were administered: (1) Parental Teaching Skill Scale (PTS) and (2) Audiological Management Checklist (AMC). Children's auditory skills were assessed by administering Auditory Skills Checklist-Short Form (ASC-SF). In addition, children's demographic characteristics, including duration of AV intervention, paternal education level (PEL) and maternal education level (MEL), were collected. Structural equation modeling (SEM) was conducted to explore how parent effectiveness and children's demographic characteristics affect the children's auditory skills.

Results: Acceptable fit indexes were found for our theoretical model ($\chi^2(15) = 60.21, p < .05, CFI = 0.91, GFI = 0.96, RMSEA = 0.08, SRMR = 0.07$). The results of the theoretical model showed that the performance of ASC-SF was significantly influenced by PTS and duration of AV, while AMC was not a significant factor. Moreover, MEL has a significant indirect effect on the ASC-SF via PTS, which implied that PTS was a significant mediator between them. However, we found that duration of AV and MEL significantly influence the PTS, indicating that higher MEL and longer duration of AV are associated with higher PTS. Meanwhile, PEL has a significant indirect effect on the PTS via MEL, implying that MEL fully mediated the effect between PEL and PTS. Finally, the theoretical model accounted for 28% of the variance in the performance of ASC-SF.

Discussion: This study reported that children's auditory skills are influenced by PTS and the duration of AV. Better teaching skills of the parents and longer duration of AV intervention are associated with better auditory skills. Meanwhile, PEL is positively correlated with MEL, and MEL positively influenced PTS. Moreover, AMC does not show a significant effect on the performance of ASC-SF, though AMC is supposed to be an essential skill for parents during AV intervention. In summary, this study demonstrated the crucial roles of parental effectiveness and intervention involvement in the family-centered aural rehabilitation.

Learning Outcome:

1. Discuss factors influencing outcomes of hearing-impaired children's auditory skills.
2. Describe the relationships among the auditory skills, parental effectiveness, and parental education levels of children with hearing loss.

Keywords: *Structural Equation Modeling ; Auditory Skills Checklist ; Auditory-Verbal Intervention ; Parental Effectiveness*



Abstract No: 9733

Development of Two Clinical Tools for Cross-Checking Aided Performance in Children with Hearing Impairment

Chun-Yi Lin¹; Yu-Chen Hung²; Hsiu-Wen Chang³

¹Audiology Department/ Children's Hearing Foundation/ Taiwan, ²Speech and Hearing Research Institute/ Children's Hearing Foundation/ Taiwan, ³Department of Audiology and Speech Language pathology/ Mackay Medical College/ Taiwan

Abstract Content:

Purpose: The present study was aimed to develop two clinical screening tools, *Mandarin Phoneme Detection Score Sheet* and *Reference of Typical Aided Narrowband Noise Performance*, to determine the adequacy of hearing aid fitting in children.

Background: The evaluation of hearing aid performance typically consists of unaided threshold audiometry, real ear measurement, and speech audiometry. Although electroacoustic measures are often used for hearing aid evaluation, it is not a standard procedure in many countries where the field of audiology is still in its infancy due to the unavailability of appropriate equipments, such as RM 500 or Audioscan Verifit. As an alternative, the sound field test using narrowband noise and/or speech sounds is much more widely used for examining hearing aid's benefit. As such, this study aims to develop two clinical tools to facilitate clinicians to cross-check children's aided performance measured with these stimuli.

Method: To collect aided hearing thresholds of Mandarin phonemes (as speech sound) and narrowband noise, a total number of 30 adults with typical hearing and 30 children with hearing loss aged between 3 to 12 years were recruited. The group of children with hearing loss was further divided into three subgroups according to their degree of hearing losses in order to obtain the corresponding hearing performance. The aided threshold ranges of detecting Mandarin phonemes and narrowband noise were measured by 95 % confidence interval. Stepwise Regression was conducted to identify which Mandarin phonemes were better predictors of narrowband noise detection performance.

Results: The present regression results revealed that the phoneme /ə/ predicts the aided thresholds of 250 and 500 Hz, /a/ predicts those of 1000 Hz, 2000 Hz and 4000 Hz, and /tɕ^h/ predicts that of 6000 Hz, based on which the *Mandarin Phoneme Detection Score Sheet* was developed. On the other hand, the *Reference of Typical Aided Narrowband Noise Performance* was established according to the results of aided narrowband noise thresholds in each hearing level. The typical aided hearing thresholds for mild hearing loss ranged between 15-25 dB HL, those for moderately-severe and severe hearing loss ranged between 25-30 dB HL and 25-40 dB HL, respectively. Finally, clinical applications of these two tools will be discussed.

Learning Outcome:

Learning Outcomes:

1. Able to use *Mandarin Phoneme Detection Score Sheet* to predict the frequency-specific aided performance of children with hearing impairment
2. Able to use *Reference of Typical Aided Narrowband Noise Performance* to confirm whether hearing aid benefit is within typical range
3. Able to use these two screening tools to cross-check and confirm the aided performance using different stimuli

Keywords: aided hearing performance; hearing aid verification; children with hearing loss; Mandarin phoneme detection score sheet; Reference of typical narrowband noise performance



Abstract No: 9792

ABI, CI and Brazilian Sign Language – a case study

Maria Cecilia de Moura¹ ; Cilmara Cristina Alves da Costa Levy²

¹Language Therapy/ PUC-SP/ Brazil ²Language Therapy/ Santa Casa de Sao Paulo/ Brazil

Abstract Content:

Introduction: The search for a hearing “cure” is a constant in parents with Deaf children. The Cochlear Implant (CI) is a reality that is around the world, including Brazil. The Auditory Brain Implant (ABI) is rare yet, but it is being performed in some countries. The development of language of deaf children with CI and ABI are not well documented in the literature.

Method and Objective: This work presents a case of a girl, 3,8 years old now, that was born with the absence of the auditory nerve in one ear e part of it on the other. The family looked for CI in Brazilian Health Care and it was told that it was nothing that could be done for her, but they indicated a medical center in Turkey that was being successful with Auditory Brain Implant (ABI).

Results: The family got financial funds through social actions and the child was able to have the ABI implanted in one ear and a CI in the other. Meanwhile she was attending a Deaf school once a week with Brazilian Sign Language (Libras) exposition. The parents began to learn Libras and the language therapist also used Libras with her in language therapies. One group of audiologists where in charge to administrate the regulation of the CI and the ABI. After 16 months of the bilateral implantation, 20 months of language therapy and 22 months of SL stimulation she can communicate in Libras naming things, telling what happened to her and about things she had experienced. Oral language is very limited yet. She vocalizes a lot, she can say the name of some animals or their sounds, the colors, “dá” (give) normally by imitation. Auditorily she can recognize almost all Ling sounds and she is able to reproduce them without lip reading. She can recognize some animal sounds too. The family is oriented to stimulate oral language and SL.

Discussion: all efforts are done to assure that she will have a good and health development, to be able to be in both worlds: hearing and Deaf. We hope that this will be enough to assure a good development and a good identity construction.

Learning Outcome:

1. To understand the possibilities of the combination of CI and ABI in a prelingual deaf child.
2. To be able to follow the language development of this child in a period of 20 months

Keywords: Cochlear Implant; ABI; language; Sign Language



Oral Presentation: Session W3- Phoniatics, Aug. 21st (Wed.) 08:30-09:30

Abstract No: 10080

Perception of speech disorders: How trained listeners consider the degree of intelligibility and the degree of severity.

Virginie Woisard^{*1} ; Mathieu Balaguer¹ ; Anais Galtier¹ ; Michèle Puech¹

¹*Voice and Deglutition Unit ENT department/ Toulouse University Hospital/ France*

Abstract Content:

In clinical practice of speech disorders, trained listeners are often used as judges for scaling procedures in perceptual assessment of speech signal. The aim of this paper is to study how a group of judges as an expert jury performs a task of severity judgment compared with a task of intelligibility judgment

Material and methods: During an off line experiment, 43 stimuli of speakers (31 patients treated for a oral or pharyngeal cancer and 12 control) were presented to 6 trained listeners (5 logopedists and 1 phoniatician). Each sound file was associated with a table allowing scoring each stimuli heard by a simple click on it in terms of voice, resonance, prosody and phonemic qualities (Range 0 to 3, 0 for normal, 3 for the most deviant). With an analogical scale (range on 0 to 10) the judges were asked to score the severity and the deterioration of intelligibility (0 for the most severe" or "the least intelligible", 0 for normal). Statistical analysis describes the scores of intelligibility and severity and the behavior of each judge using factor analysis.

Results: The mean scores of severity and deterioration of intelligibility are 6.76 (+/- 2.57) and 8 (+/- 2.41) respectively with a high correlation ($r=0.86$). The same tendency is observed for the whole judges: the degree of intelligibility is always judged as better than severity and weak correlations are localized in the middle of the range. The contribution of each speech parameters is respectively for the degree of severity and deterioration of intelligibility: 0.49/0.49 for voice, 0.69/0.66 for resonance, 0.64/0.68 for prosody and 0.84/0.82 for phonemic quality. A difference in the distribution of the scores is demonstrated for 4 judges and a similarity for 2 judges. These 2 judges keep the same specific way to analyse the stimuli, based on resonance and phonemic qualities.

Conclusion: In contrast to earlier reports including any kind of speech disorders, there is a clear overestimation of intelligibility compared to the degree of severity in this population treated for oral and pharyngeal cancers. Several perceptual behaviors are identified between the 6 trained judges despite a sufficient agreement.

Learning Outcome:

- 1/ understanding the measurement difference between intelligibility alteration and severity of speech
- 2/ knowing the metric value of each measurement
- 3/ discussion about the limit and the interest of each measurement

Keywords: speech, intelligibility, measurement, severity index



Abstract No: 10082

Physician's needs in the practice of logopedist or speech language pathologist

Virginie Woisard¹ ; Mercedes Velasco¹ ; Daniele Farneti¹

¹*Voice and Deglutition Unit ENT department/ Toulouse University Hospital/ France*

Abstract Content:

Introduction: Phoniaticians are present in few countries in the world despite an increasing need of physicians involve in the fields shared with logopedists or speech language pathologists. The aim of this presentation is to analyse the present situation of phoniaticics and logopedists or speech language pathologists in the world regarding the evolution of the needs of population.

Methods: During 2 years of teaching about "multidisciplinary team of dysphagia " in the post graduate diploma of dysphagia, we worked with the students on professional definitions and the role of each kind of professional in dysphagia. That's lead us to discuss the place of logopedists or speech language therapist regarding the physician activity in general. This discussion was ended by a written report by the students included in the validation process of the diploma. The analysis of these reports are with some health status informations of several countries from the WHO are the background of our study.

Main results: 47 reports from students coming from 15 different countries were analyzed. There was no participant from north America. All the others continents were represented. Cooperations with physicians are mainly dependant of 1/ the health system of the country, 2/ the kind of disorders. Independantly of the development level of countries, the physician are less involved in the field of children learning skills. The needs of physicians seem more important for 1/ upper aerodigestive tract dysfunctions, 2/ neurologic disorders. But, the kind of physicians is extremely variable, included inside the ENT speciality. Several situations are described for improving a multidisiplinarity approach of patients.

Conclusion: The relationships between logopedists or speech therapists and physicians are in progression with the ageing of the world population. Phoniaticians stays the only medical speciality covering the same fields.

Learning Outcome:

- 1/ Understanding the impact of health systems of the professional cooperation's needs
- 2/ Understanding the impact of world population ageing of the professional cooperation's needs
- 3/ Meaning how to increase the mutidisciplinary approach for patients

Keywords: Multidsiciplinarity, speech langage pathologist, logopedist, phoniaticics, physicians



Abstract No: 9737

Exploring Digital Literacy and Competence for Phoniaticians and SLPs: What is Needed for Practice, Teaching, and Research?

Yuchen Lin^{*1} ; Christiane Neuschaefer-Rube¹

¹*Clinic for Phoniatics, Pedaudiology, and Communication Disorders/ School of Medicine, RWTH Aachen University/ Germany*

Abstract Content:

The digital age is transforming traditional methods of practice, education, and research in SLP and phoniatics. The buzzwords "digital literacy" and more recently, "digital competence," are thus becoming increasingly important. Traditionally, "digital literacy" has been used to describe skilled-based, "know-how" understanding and use of information in multiple technological formats from various sources, while "digital competence" additionally implied a level of proficiency and confidence; yet literature in recent years has used both terms interchangeably and shifted away from a solely operational/technical focus towards a focus on cognitively-oriented, reflective, and responsible technology use. Furthermore, differences in regional term-use (US, UK, Asia use "literacy," Europe, South America use "competence") and referencing strategies ("literacy" more common in research, "competence" more common in policy) deem it important to consider both terms in international SLP and phoniatics.

Our presentation will suggest a preliminary framework for digital literacy/competence in SLP and phoniatics. A search across national and international SLP/phoniatics foundations in English-or German-speaking regions (e.g., UEP, CPLOL, ASHA, SAC) using keywords "digital literacy" or "digital competence" revealed few to no results, indicating a current lack of guidelines surrounding these terms in our field. An additional search of Google/Scholar, EBSCOHost (including Pubmed/Medline), and Scopus using the same keywords with either "speech-language pathology/therapy" or "phoniatics" similarly revealed limited results. While there is some research regarding patient health literacy or use of digital devices and methods as therapy tools (e.g., tablets, digital storytelling), there is currently scarce discussion regarding specific digital skills needed by clinicians themselves in everyday practice, teaching, and research.

Two important sources serve as a foundation for our preliminary framework: 1) the European Commission's Digital Competence Framework (DigComp), 2) a compilation of documents containing occupational standards/responsibilities across the above-mentioned SLP/phoniatics foundations. DigComp highlights five competence areas for citizens: information/data literacy, communication/collaboration, digital content creation, safety, and problem-solving. In reviewing occupational standards/responsibilities documents, five overarching SLP/phoniatician roles were summarized: expert, professional, collaborator, educator/learner, and researcher. Taken together, we have created a visual aid that maps SLP/phoniatician roles and responsibilities to respective digital knowledge and performances skills. Importantly, given the complexity and dynamic nature of digitalization, we have specifically suggested a *capability* framework, which extends beyond static assessment of skills/competences and aims to support continuous development and adaptability, as emphasized by Brunner and colleagues in their 2018 eHealth Capabilities Framework. Our framework therefore serves only as a starting point for necessary ongoing discussion regarding common standards of care, learning, and evidence-based practice in our digitalizing profession. Our presentation will also give a brief overview of structures, concepts, categories, and formats of current e-learning tools for SLP/phoniatics.

This is part of an interdisciplinary project between German and American phoniaticians/SLPs supported by a Alexander von Humboldt Foundation Chancellor Fellowship.

Learning Outcome:

Participants should be able to identify at least three digital literacy/competence areas in our profession.



Participants should be able to explain how digital literacy/competence areas align with the five main SLP/phoniatrician roles and responsibilities.

Participants should be able to describe at least two knowledge- and performance-based skills per SLP/phoniatrician role.

Keywords: digital literacy, digital competence, phoniatrics, speech-language pathology, e-learning



Abstract No: 8882

The Carcinologic Handicap Index – completed version : validation and ability to enlight head and neck cancer patients' needs

Mathieu Balaquer-Navarro^{*1} ; Maëlle Champenois¹ ; Virginie Woisard¹

¹Unité de la Voix et de la Déglutition/ Hôpitaux de Toulouse/ France

Abstract Content:

Background: The first version of the Carcinologic Handicap Index (CHI) assessed the symptoms presented by ENT patients and the impact on their quality of life (Balaguer, 2017). But this version got two issues : missing domains, and lack of emerging priorities for the patients in terms of care. The objective of this study is to validate the complete version of the CHI, and to evaluate the link between the scores of the CHI and the patients' needs.

Methods: We added two new dimensions to the 9 of the first version of the CHI : neck and shoulders limitation, and psychosocial impact due to physical modifications. We included 71 patients with head and neck cancer consulting for a follow-up consultation in ENT between november 2017 and march 2018, with no restriction about location, tumor size or treatment received. Our controls were 36 healthy subjects.

The cases and controls had to fill the completed version to assess the convergent validity, and also a Visual Analog Scale for each dimension (criterion validity). The comparison between cases and controls allowed us to assess the structural validity. They had to fill once again the CHI after 7 days to evaluate the temporal validity.

Finally, to study the link between the scores of the different dimension of the CHI and the patients's needs, the subjects had to rank the 11 dimensions of the CHI from the most troublesome to the least.

Results: our new dimensions shows good convergent validity (Spearman's coefficient of correlation between 0.35 and 0.73) and discriminant validity ($r < 0.30$). A factorial analyzis confirms the structure in 11 domains. The structural validity shows a difference between cases and control ($p < 0.001$). Strong correlations between CHI score and VAS are found with a coefficient $r = 0.74$ for « physical modification » and $r = 0.68$ for « neck and shoulders limitations ». The reliability is high, with a Cronbach's alpha higher than 0.72 for the new dimensions. Finally, the temporal validity is correct with correlations higher than 0.67 between the 2 completions of the CHI.

The ranking of dimensions differs the scores for 54 % of the subjects (confidence intervals of intraclass correlations). But, if we only consider the 5 top-scored domains in the CHI, a match exists with 3 or 4 top-ranked domains for 77% of the subjects.

Discussion: the two new dimensions presents good psychometric qualities and assess dimensions frequently impacted by the pathology in this population.

By considering the 5 top-scored dimensions of the CHI, care-team members can enlight which domains are the more important for the patients in terms of care strategy, to reduce the impact in their everyday life. This completed versions needs to be translated, and compared to a Patients Concerns Inventory.

Learning Outcome:

Participants should be able to assess head and neck cancer patients' quality of life.

Participants should be able to determine which dimensions are the most important for the patients in terms of care orientations.



Keywords: head and neck cancer ; assessment ; care ; phoniatrics



Oral Presentation: Session W4- Fluency (I), Aug. 21st (Wed.) 08:30-09:30

Abstract No: 9875

Stuttering Treatment: A Global Perspective

Kurt Eggers^{1 2} ; Michael Blomgren^{*3} ; Anneleen Logie¹

¹Speech Language Therapy and Audiology/ Thomas More U College/ Belgium, ²Psychology and Speech Language Pathology/ Turku University / Finland, ³Dept. of Communication Sciences & Disorders/ University of Utah/ United States

Abstract Content:

Objective: The goal of this study was to gain insight in the structure and content of stuttering treatments utilized worldwide.

Background: In 2010 the IALP Fluency Committee conducted a questionnaire-based study on how fluency specialists worldwide complete the diagnostic phase in clients who stutter. This session highlights the results of a recent questionnaire-based study focused on the content of stuttering treatment worldwide.

Method: A 55-item online survey was developed in English in collaboration with the IALP Fluency Committee and was consequently translated into French and Dutch. The survey consisted of a demographic section, including questions regarding respondent education, employment, and stuttering caseload. The main section of the questionnaire focused on the content of treatment and was divided in 4 sections: (1) working on the cognitive-emotional impact of stuttering, (2) working on speech behaviors, (3) working on communicative skills, and (4) working on other specific therapy techniques.

The survey was sent to 1675 speech language pathologists residing in Australia, Belgium, Canada, Croatia, Cyprus, France, Germany, Greece, Ireland, Kuwait, Lebanon, Netherlands, Poland, Portugal, United Kingdom, and United States. The speech-language pathologists were identified as working with people who stutter. Over 300 SLPs from 16 different countries worldwide completed the questionnaire.

Results & Discussion: All data have been collected and analysis is ongoing. Analysis will be completed early spring 2019. Presentation of results will provide an overview of the most commonly used components in stuttering intervention globally and factors influencing possible differences.

Learning Outcome:

- Participants will gain insight in the structure and content of stuttering treatments worldwide.
- Participants will gain insight in which procedures/techniques are most commonly used.
- Participants will gain insight in possible factors influencing the content of fluency treatments.

Keywords: stuttering; treatment; therapy; questionnaire; global



Abstract No: 10072

The Utility of Cinematherapy in Stuttering Intervention

Michael Azios^{*1} ; Jamie Azios¹ ; Monica Harn¹ ; Farzan Irani

¹Speech and Hearing Sciences/ Lamar University/ United States

Abstract Content:

Anxiety has been recognized as a significant concomitant of stuttering and impacting life participation (Chu, 2017; Iverach & Rapee, 2014). The consequences of social anxiety can result in shame, low self-esteem, and a reduced quality of life. Increased levels of anxiety have been observed and demonstrated in numerous studies (Alm, 2014, Messenger et al., 2004, Kraaimaat, Vanryckeghem). Further, stuttering has a profound impact on self-esteem and emotional stability (Klompas & Ross, 2004; Daniels & Gabel, 2004). In light of this research, clinicians who treat stuttering are encouraged to incorporate methods of measuring and treating anxiety in AWS and to minimize negative cognitive and affective reactions (Packman, 2015). One such approach that may hold promise is cinematherapy.

Cinematherapy refers to the use of movies as a support for the individual's personal and interpersonal development (Dumtrache, 2014). Cinematherapy has been reported to help children and adults cope with bereavement and grief (Christie & McGrath, 1987), depression (Adams & McGuire, 1986), increase self-esteem (Powell, Newgen, Lee, 2006), and decrease anxiety (Dumtrach, 2014). A further detailed description of cinematherapy will be explored in the presentation. Therefore, the primary purpose of this preliminary study was to investigate the impact of cinematherapy on AWS.

A mixed methods multiple case study design was used to answer the research question along with semi-structured interviews. Seven AWS in the Southeast Texas region between the ages of 19 and 29 participated. Quantitative and qualitative data were collected pre-intervention and post-intervention.

Quantitative data collected:

UTBAS: Measures the Unhelpful Thoughts and Beliefs about Stuttering (Iverach et al, 2010)

OASES: Quality of life scale (Yaruss & Quesal, 2006)

4S: Self-Stigma of stuttering scale (Boyle, 2013)

Qualitative data collected:

Semi-structured interviews: Gain insight into a phenomenon from the participant's perspective (Spradley, 1980)

Results:

Quantitative results revealed significant improvements in anxiety related to stuttering as noted by the UTBAS (Iverach et al, 2010), in quality of life as noted by the OASES (Yaruss, 2006), and in self-stigma as noted by the 4S (Boyle, 2013) for participants. Overall, negative affective and cognitive reactions reduced as evidenced in the qualitative data. Specific discussion of the quantitative results and breakdown of the subsections of the above normed tests will be addressed in the presentation.

The major qualitative themes identified by the adults who stutter, relating to the role of cinematherapy include: 1) promotes vulnerability/openness 2) nurtures empowerment 3) reduce self-stigma 4) stimulate self-reflection and 5) incite feelings of belonging

Data analysis using qualitative and quantitative measures suggests that a four-week cinematherapy treatment reduced anxiety related to stuttering, improved quality of life, and altered the affective and cognitive reactions to stuttering. Watching prescribed movies guided by reflective tasks promoted



opportunities to discuss identification with characters, explore and reflect on the character and themselves, increase self-awareness, thus reducing feelings of uniqueness or isolation.

Learning Outcome:

Participants will gain a better understanding of cinematherapy and the application towards AWS.

Participants will understand the basic framework, guided discussion and reflective tasks required of AWS with regards to cinematherapy.



Abstract No: 9683

The *Talk-About-Stuttering Aid*: An International Proof-of-Concept Study

Ann Packman^{*1} ; Grant Meredith²

¹Graduate School of Health/ University of Technology Sydney/ Australia, ²School of Science, Engineering & Information Technology/ Federation University/ Australia

Abstract Content:

Objective

The aim of this internet-based study was to establish the viability of a tool designed to facilitate conversation between an adult who stutters and a speech-language pathologist, about what the person is wanting to achieve for his/her stuttering.

Background

Stuttering is a complex disorder, and adults who stutter have increased risk of having developed social anxiety because of their stuttering. Social anxiety disorder (also known as social phobia) is fear of being evaluated negatively and can lead to avoidance of social situations or other communicative contexts.

The two main types of intervention for adults who stutter, then, are those that aim to reduce the frequency and/or severity of stuttering and those that aim to reduce anxiety and fear about speaking. The now widespread Stuttering Pride movement, however, regards such interventions as “pathologizing” stuttering and promotes acceptance of stuttering in place of the medical model of treatment. The Talk About Stuttering Aid (TASA) has been developed to assist the adult who stutters and the speech-language pathologist to consider and discuss these three options.

The TASA was first presented as a concept at the IALP World Congress in Dublin, 2016. The TASA is a Three Circle Venn diagram, with three intersecting circles representing, (A) “I want to have an effective fluency technique to use when I want to”, (B) “I want to reduce my fear of speaking”, and (C) “I want to accept my stuttering as part of who I am.” There are four circle overlaps.

Method

The TASA was placed on the internet, along with a short questionnaire, and was publicised internationally. Participants were 56 adults who reported they stuttered, from 14 countries; 75% being from UK, US, Australia, and Canada. Participants were instructed to check either the circle of choice (A,B, or C) or one of the four overlaps if they wanted to choose more than one. They were invited to post comments.

Results

Overall, participants checked all three circles and all four overlaps, and a number of participants left comments, all of which were positive. The results will be presented in detail.

Discussion

The results indicate that the TASA captures the complexity of stuttering and is a usable and potentially useful tool for speech-language pathologists to facilitate discussion with clients about what they are really wanting for their stuttering. The authors suggest that speech-language pathologists should have knowledge about the Stuttering Pride movement to inform this discussion. Future research will investigate the use of the TASA in real-life clinical settings, with speech-language pathologists and adults who are seeking help for their stuttering.

Learning Outcome:

1. New knowledge about the Stuttering Pride movement.
2. Understanding of what some adults who stutter think about treatments

Keywords: stuttering; adults; treatment



Abstract No: 9726

'Complexity' in early childhood stuttering treatment: Clinicians' perspectives

Rachael Unicomb^{*1} ; Sally Hewat¹ ; Elisabeth Harrison²

¹Speech Pathology/ University of Newcastle/ Australia, ²Linguistics/ Macquarie University/ Australia

Abstract Content:

Background:

If not treated close to its onset, stuttering can lead to a lifetime of communication difficulties. Although stuttering can occur in isolation, it often co-occurs with other communication disorders including those affecting speech sounds, language, and voice. Stuttering can also co-occur with intellectual impairment, Autism Spectrum Disorder, Down Syndrome, attention deficit and auditory processing disorders, and literacy and learning disabilities.

Clinical trials of early interventions select participants whose only distinctive difficulty is stuttering so that treatment effects can be determined without interference from extraneous variables and results can be interpreted accurately. Results from such trials have firmly established the efficacy of early interventions for stuttering (e.g., Jones et al., 2008) in children whose only communication disorder is stuttering. A challenge for clinicians in general practice is how to interpret the results of such trials for clients who have additional diagnoses i.e., the clients who make up the majority of their caseloads.

While clinicians commonly refer to children with than one clinical diagnosis as 'complex,' nothing is known about what constitutes complex presentations of stuttering, much less how the presence of other conditions changes that understanding. Clarifying what clinicians mean by 'complexity' in young children who stutter would illuminate clinical practices and inform future clinical trials that include the full range of children who stutter, that is, those for whom stuttering is not their sole diagnosis.

Aim:

The aim of this project was to investigate the perceptions of Australian community clinicians on what constitutes complex presentations of early childhood stuttering.

Method:

Semi-structured interviews were conducted with generalist speech pathology clinicians who provide assessment and treatment services for young children who stutter. Clinicians were asked to identify factors that make their management of this caseload more complex. Clinicians were asked about their experiences with this population, characteristics of their typical caseloads, and factors which they perceived will contribute to complexity. Participants provided anonymised example cases to clarify their responses.

Qualitative thematic analysis was used to analyse transcripts of the interviews, and to categorise participant information into minor or major categories. Categories were then compared and contrasted to create major and minor themes.

Results and Conclusions:

The major themes arising from the interviews will be presented. The themes identify features that are regarded by clinicians as contributing to complexity in their clients. The significance of these features will be discussed. Illustrative (de-identified) case examples of young children who stutter will highlight features of complex presentations of stuttering and how complexity impacts clinicians' delivery of early intervention.



The implications of results for future treatment research and development of professional education curricula will be discussed.

Learning Outcome:

1. Attendees will compare and contrast the participants selected for clinical trials for early stuttering treatments with their own caseloads.
2. Attendees will learn new information about factors that contribute to making early stuttering cases more and less 'complex'.

Keywords: stuttering; paediatric; complex; treatment; qualitative



Oral Presentation: Session W5- Child Language (III), Aug. 21st (Wed.) 08:30-09:30

Abstract No: 9956

A Preliminary Study of Tier 2 Vocabulary in Math Word Problems for Young Elementary School Children

Chia-Ning Hsu¹ ; Pao-Chuan Torng² ; Wen-Chong Chaou; Chieh-Yu Liu

¹*Audiology and Speech-Language Pathology/ Mennonite Christian Hospital/ Taiwan,* ²*Department of Speech Language Pathology and Audiology/ National Taipei University of Nursing and Health Sciences/ Taiwan*

Abstract Content:

The purpose of this research is to address the correlations among tier 2 vocabulary comprehension skill, reading comprehension of math word problem ability and math word problem solving ability for second grade children in primary school. Reading comprehension skill is an essential ability for young children in their elementary school years. However, some children might encounter difficulties in solving the math word problem due to failure of reading comprehension so called "problem decoding" step. That is, some children could not thoroughly understand the meaning of the vocabularies used in the math word problem. More specifically, failure in math word problem might derived from the tier 2 vocabularies used in math word problem.

One hundred and twenty eight typically developed children from the second grade were recruited in the study. Participants were divided into high score group and low score group on their performances in their informal tier 2 vocabulary comprehension test. An informal reading comprehension & problem solving ability in math word problem test was conducted. The scores for 1. Tier 2 vocabulary comprehension, 2. Comprehension of math word problem and 3. Math word problem solving ability were rated and analyzed.

Results show that tier 2 vocabulary comprehension skill, comprehension of math word problem ability and math word problem solve ability are all positively correlated. Better tier 2 vocabulary comprehension skill indicated better performances in math word problem, both in comprehension ability and solving ability, and better tier 2 vocabulary comprehension also demonstrated better basic calculation ability. In addition, children who attend math tuition after classes only show better performance in their basic calculation abilities, but not other abilities.

As a whole, Tier 2 vocabulary comprehension is an important ability for math word problem solving. However, the math word problem is a complicated cognitive process that further study is required.

Learning Outcome:

To discuss the correlations among tier 2 vocabulary, reading comprehension and mathematical-word-problem solving ability in children.

Keywords: tier 2 vocabulary; reading comprehension; math word problem solving ability



Abstract No: 9718

Do not forget to assess spelling in children with dyslexia. Evidence from a semi-transparent language.

Christel Vreckem^{*1}; Annemie Desoete¹

¹Health - speech therapy/ University college Arteveldehogeschool/ Belgium

Abstract Content:

Background

Dutch is a semi-transparent language, with spelling depending on several interrelated skills, such as phonological skills (for sound-spelling correspondences and applying spelling rules), orthographic skills, morphological skills and etymological skills (since the spelling of some words has to be memorized).

Objective

The current study investigated if children with dyslexia in Flanders differed from peers without dyslexia on the spelling of existing words and pseudo words.

Method

Spelling problems were explored in elementary school children with ($n=55$) and without a clinical diagnosis of dyslexia ($n=163$). All children spelled items from the *Spelling Test, ST 1-6* ('*Spelling Test for children from the first until the sixth grade*; Van Vreckem & Desoete, 2016). Mean age of the participants was 10 years, 3 months.

Spelling skills were analyzed at word level for existing words and pseudo words. The psychometric value of the ST 1-6 has been demonstrated on 3664 children. Cronbach's alpha's varied from .73-.91. Percentile scores as well as an overview of the mastered spelling strategies were available after the testing.

Results

The Mann-Whitney analyses revealed significant differences between children with and without dyslexia on phonological skills at monosyllabic word level ($U=2394.00$, $Z=-5.51$, $p<.001$, $r=-0.37$), at multisyllabic word level ($U=3292.00$, $Z=-3.24$, $p=.002$, $r=-0.22$) and at the syllable level, applying a spelling rule ($U=3232.50$, $Z=-3.12$, $p=.002$, $r=-0.21$).

There were also significant differences between children with and without dyslexia spelling words based on the orthographic ($U=3727.50$, $Z=-2.17$, $p=.030$, $r=-0.15$), morphological ($U=1875.50$, $Z=-6.49$, $p<.001$, $r=-0.41$) and etymological ($U=2573.50$, $Z=-4.73$, $p<.001$, $r=-0.32$) skills.

Pseudoword spelling ($U=3178.00$, $Z=-3.23$, $p=.001$, $r=-0.22$) was less informative than the spelling of existing words ($U=2051.00$, $Z=-5.98$, $p<.001$, $r=-0.41$) to differentiate Dutch speaking children with and without dyslexia for phonological skills.

Discussion

The study revealed a medium effect size for differences on morphological, phonological (at monosyllabic word level) and etymological spelling skills and a small effect size for orthographic skills. Children without dyslexia succeeded to master most of these skills in grade 4, whereas peers with dyslexia succeeded only two years later and still had problems with phonology and pseudo words, even in grade 6. Clinicians should be aware of the importance of the choice of spelling items in a spelling test to set up a tailor-made



approach. A test battery for spelling should include items representing the different spelling categories of the specific language.

Learning Outcome:

Paper on assessing spelling skills, analyzing phonological, orthographic, morphological, etymological skills within children with dyslexia and a control group

Keywords: spelling test; spelling skills; dyslexia



Abstract No: 9773

Oral language comprehension difficulties in school-age children and adolescents: evidence-based interventions

Sirpa Tarvainen^{*1} ; Suvi Stolt¹ ; Kaisa Launonen¹

¹Faculty of Medicine, Department of Psychology and Logopedics/ University of Helsinki/ Finland

Abstract Content:

Objective

To identify and classify interventions aiming to improve oral language comprehension in school-age children and adolescents with linguistic difficulties.

Background

Difficulties in oral language comprehension are relatively persistent and expose individuals to several risk factors considering, for example, their social relations, academic skills and future employment. Research on oral language comprehension interventions in school-age children and adolescents is however scarce.

Method

A systematic scoping review of eight databases was carried out. Ten of 2265 articles met the inclusion criteria. Another five articles were identified through reference lists of sourced articles. Total number of articles included in the present review is 15, including 1229 participants aged 5–16 years. 16 studies were reported in these 15 articles. The data from included articles were extracted and analysed. The interventions were classified by intervention focus, efficacy, and level of evidence.

Results

The following three different intervention foci were found: modifying the communicative environment of the child, targeting child's language, and targeting child's language processing skills. Of the included studies 25% reported efficacy from small to very large indicating positive results on oral language comprehension. 37,50% of the studies had no effect on oral language comprehension and 18,75% had mixed effects indicating that only some of the participants benefited from the intervention. In 18,75% of the studies the effect size was not calculated, but the authors reported benefits on oral language comprehension of the participants. The studies were categorised by the level of evidence as defined by the National Health and Medical Research Council. There were no studies found that were on level I, indicating that there were no systematic reviews found containing only randomised controlled trials. 25% of the studies were on the level II, that is, randomised controlled trials. 37,5% of the studies were on the levels III-1, III-2 and III-3. At the lowest level (IV) there were 37,5% of the studies. They used pre-test/post-test design.

Discussion

Oral language comprehension difficulties of school-age children and adolescents can be ameliorated. However, not all interventions aiming to improve oral language comprehension are effective. Most of the interventions indicating efficacy focused on modifying the communicative environment of the child or targeted child's language. The interventions focusing on child's language processing indicated effectiveness only when they aimed at compensating current processing skills, not trying to improve them. The level of evidence in the intervention studies varied greatly, and more research is needed to get more certainty on the efficacy of different oral language comprehension interventions.

Learning Outcome:

1. The participants will have an overview of the possible interventions targeting oral language comprehension in school-age children and adolescents.



2. The participants will understand the relation between intervention focus and the reported efficacy in the present review.

Keywords: Oral language comprehension, therapy, intervention, children, adolescents, DLD



Abstract No: 9665

Correlations between the Results of a Vocabulary Competence Test with that of a Short-term Memory Capacity Test and a Non-verbal Reasoning Test: Data from Children with Hearing Loss

Ming Lo¹ ; Yi-Xiu Lin¹ ; Chih-Wei Hue² ; Pei-Hua Chen¹ ; Cho-Yuan Lin¹

¹Speech and Hearing Research Institute/ Children's Hearing Foundation/ Taiwan, ²Psychology/ National Taiwan University/ Taiwan

Abstract Content:

Objective

This study aims to test the assumption that short-term memory (STM) capacity and non-verbal reasoning ability relate to vocabulary competence in children who have pre-lingual hearing impairment and aim to develop spoken language.

Background

How STM capacity and reasoning ability affect children with hearing loss to develop vocabulary competence is unclear, although previous research has shown that for a common child, language proficiency is relating to cognitive ability. Receptive and Expressive Vocabulary Test (REVT), a popular vocabulary competence test in Taiwan, consists of four sub-tests: object naming, object categorization, object feature identification and object feature reasoning. It is assumed by the REVT developers that to perform well on the test, a child should have the ability to manipulate test information in terms of retrieving, retaining, making same-/difference judgment and integrating. That is, a child's vocabulary competence is assumed to relate to his/her STM capacity and reasoning ability. This assumption is examined by comparing the results of three tests (REVT, STM capacity test and non-verbal reasoning test) collected from a group of children with hearing loss

Method

The REVT was administered to 51 children (mean age=5:6, $SD=0.58$) with pre-lingual and bilateral hearing loss (HL). All the children were paired with hearing devices (hearing aid: 33; cochlear implant: 18) and received auditory-verbal practice for at least 15 months (mean=47 months, $SD=11$). They were asked to perform a listen-and-point word span task in order to measure their STM capacity, and to take the Matrix Reasoning sub-test of the WISC-IV to examine their non-verbal reasoning ability.

In addition, performance of 21 hearing children (HC; mean age=5.5, $SD=0.21$) on the word span task and the Matrix Reasoning test were collected as reference for the performance of the HL children.

Results

For both groups of children, the results of word span task did not correlate with that of the Matrix Reasoning test (HC: $p=.28$; HL: $p=.11$). The two groups of children were also comparable in their STM span ($p=.15$) and Matrix Reasoning scores ($p=.26$). For the HL children, four multiple-linear regression models were constructed. The results showed that STM span predicted object naming ($b=3.05$, $p<.001$), object categorization ($b=4.31$, $p<.05$), feature identification ($b=6.45$, $p<.001$) and feature reasoning ($b=2.54$, $p<.01$). The Matrix Reasoning test scores also predicted the four vocabulary skills (object naming: $b=0.63$ ($p<.001$), object categorization: $b=1.28$ ($p<.01$), feature identification: $b=1.39$ ($p<.001$), feature reasoning: $b=0.70$ ($p<.01$)). Furthermore, the beta weight of the STM span was significantly larger than that of the non-verbal reasoning in the models for predicting object naming ($p<.01$), feature identification ($p<.01$) and feature reasoning ($p<.05$).

Discussion



The results support the assumption under test. That is, both the STM capacity and reasoning ability relate to the vocabulary competence of children with hearing loss revealed by his/her REVT results.

Learning Outcome:

1. Vocabulary competence of a child with hearing loss relates to the child's STM capacity and reasoning ability.
2. For children with hearing loss, STM capacity seems to relate more closely to vocabulary competence than reasoning ability does.

Keywords: vocabulary competence; memory; reasoning; pre-schoolers; pre-lingual hearing loss



Oral Presentation: Session W6- Voice (III), Aug. 21st (Wed.) 08:30-09:30

Abstract No: 9824

Acoustic and perceptual effects of articulation exercises in transwomen

Evelien D'haeseleer¹ ; Marjan Cosyns¹ ; Paul Corthals¹ ; Kristiane Van Lierde¹ ; Kim Bettens¹

¹Rehabilitation Sciences/ Ghent University/ Belgium

Abstract Content:

Differences in formant frequencies contribute to gender perception and are therefore targeted in speech therapy for transgender persons. The vowel chart area (/a/, /i/, /u/) in Dutch is larger in female speakers. Articulation exercises using a cork between the front teeth enlarges articulation movements and hypothetically results in a larger vowel chart area. Articulation exercises for lip spreading hypothetically result in changes in the vowel formants.

The purpose of this study is to measure the impact of articulation exercises using a cork and articulation exercises for lip spreading on the formant frequencies of vowels and listeners perceptions of femininity in transwomen. Samples of continuous speech during reading are recorded before and after the cork articulation exercises and before and after exercises for lip spreading. Speech samples are analyzed using PRAAT. In the study, transwomen (n=20) will be included. Data collection of the study will continue until January 2019 and results will be analyzed in February-March 2019. For each speech sample, the vowel formant frequencies (F1, F2, F3) and the vowel chart area will be determined. Secondly, a listeners experiment will be organized using naive female and male listeners rating the audio samples of continuous speech. For the listening experiment a combination of masculinity/femininity ratings (using a VAS) and gender identification (male voice versus female voice) will be used.

The preliminary results of 4 included transwomen show an increase of F2 (in Hz) of /a/ and /i/ and an increased F2 contrast /i-u/ in all participants indicating more frontal-dorsal tongue placement after the cork exercise. The results of the total group and the results of the listeners experiment will be analyzed and presented in April 2019.

Learning Outcome:

- The listener will be able to measure the impact of articulation exercises on the formant frequencies and the vowel chart area of transwomen.
- The listener will know if lipspreading and cork exercises have an impact on listeners perceptions regarding femininity and gender identification.

Keywords: transgender voice, transwomen, effectiveness, articulation, therapy



Abstract No: 9997

Integrating transgender voice and communication training into the university speech-language pathology clinical education program: The California State University Fullerton model

Kenneth Tom^{*1} ; Michelle Gordon¹

¹*Department of Communication Sciences and Disorders/ California State University Fullerton/ United States*

Abstract Content:

Objective

To describe our model for integrating a specialty clinic in transgender voice and communication training into a university-based speech and hearing clinical training program.

Background

The reality of the presence and needs of transgender individuals is evident across the globe ("The Gender Revolution," National Geographic, January 2017). Mental health and medical perspectives have changed: being transgender, *per se*, is no longer considered a psychological or psychiatric disorder, and has been removed from the current diagnostic manual for mental health conditions (DSM-V). Increasing numbers of clinicians specializing in primary care, endocrinology, otolaryngology, plastic surgery, mental health and rehabilitation are providing care appropriate to the needs of transgender individuals, persons who are underserved, and suffer discrimination, prejudice and violence on a daily basis.

Methods/Results/Discussion

Transgender Voice and Communication training at the California State University Fullerton (CSUF) Speech and Hearing Clinic has expanded our outreach to the Transgender community, providing (1) vital services to persons in the transition process: bringing congruence to their verbal and non-verbal communication, and (2) specialized training in this area to speech-language pathologists. The core of the dual mission of the CSUF Speech and Hearing Clinic is to serve the community with donation-based, high-quality, needed services in speech, language, and voice and to train skilled clinicians who can serve *all* individuals.

Our model is a one-semester long elective clinic for advanced graduate students. Over the 16-week semester, graduate student clinicians were provided with 12 hours of specialized training before clinical sessions. Each student clinician then provided ten 60-minute individual clinical sessions to two clients. Supervision and clinician support were provided on a regular basis per ASHA requirements. Clients were referred by the LGBT Center OC, a community-based organization supporting the health and wellness needs of LGBT residents in Orange County, California. Student clinicians were selected among applicants who had successfully completed pre-requisites: two courses voice-related courses (Voice and Craniofacial Disorders, Seminar in Voice Disorders) and two semester-long clinical experiences with adult and child clients, and their applications describing reasons for their interest in participating in the clinic, relevant personal qualities and experiences, and what they hoped to learn from this experience.

Assessment and lesson plans were developed adhering to WPATH, v.7 guidelines, and included training in pitch, intonation, resonance, semantics, and non-verbal aspects of face-to-face communication. Pre- and post- data, both quantitative and qualitative will be presented with respect to client and clinician changes. Our presentation will also offer our evaluation of these pilot data and our plans to improve the efficacy of the clinic in its future iterations.



Learning Outcome:

The learner will be able to:

1. describe a model for integrating transgender voice and communication training into clinical education in an SLP program.
2. describe the preparation of student clinicians for the delivery of individualized voice and communication training to transgender persons.
3. describe the assessment and voice, speech and language modification approaches used by student clinicians with their individual clients.
4. describe quantitative and qualitative changes in student clinicians and clients as a result of their clinical learning experience.

Keywords: transgender; voice; communication; clinical education;



Oral Presentation: Session W8- Audiology (V), Aug. 21st (Wed.) 12:15-12:45

Abstract No: 10084

A non-implantable, pressure-free, adhesive bone conduction hearing system effectively treats conductive hearing loss in infants

Katrin Neumann¹; Stefan Dazert²; Jan-Peter Thomas²; Christiane Voelter³

¹*Department of Phoniatics & Pediatric Audiology, Clinic of Otorhinolaryngology, Head & Neck Surgery/ Ruhr University Bochum/ Germany,* ²*Clinic of Otorhinolaryngology, Head and Neck Surgery/ Ruhr University Bochum/ Germany,* ³*Cochlaer Implant Center, Clinic of Otorhinolaryngology, Head and Neck Surgery/ Ruhr University Bochum/ Germany*

Abstract Content:

Objectives: Bone conduction hearing devices as integrated in softbands (BCD-S) are frequently not well accepted by children with conductive hearing loss due to pressure on the head, sweating, or cosmetic stigma. The non-surgical hearing system ADHEAR uses a new bone conduction concept. It consists of an audio processor connected to an adhesive adapter fixed behind the ear. This study evaluated the short- and long-term clinical efficacy of the ADHEAR in children compared with conventional BCD-S.

Methods: For 10 children with conductive hearing loss (age: 8 months to 9.7 years) the ADHEAR was compared with a BCD-S. Aided and unaided pure tone/behavioral observational audiometry and—if applicable—speech audiometry in quiet and noise were performed initially and after 8 weeks of ADHEAR use. The subjective hearing gain, usage of the ADHEAR, and patients' as well as parents' satisfaction were assessed by questionnaires. First long-term results and data of four additional children are available.

Results: The functional gain with the ADHEAR (t-test, $p = .012$, $n = 11$), averaged over 0.5, 1, 2, and 4 kHz, exceeded that one achieved with BCD-S (34.7 dB HL \pm 14.1 SD vs. 27.7 dB HL \pm 14.7 SD). Speech perception in quiet and noise improved in the aided situation similarly for both hearing devices. All parents except two evaluated the ADHEAR as useful for their child. After an average use of 13 months ($n=4$) the functional gain with the ADHEAR remained stable or even improved, as did the adhesion time of the adhesive adapter and the wear acceptance. Eight weeks after first fitting six children used the ADHEAR permanently, one year later eight children and the additional four children.

Discussion: Meanwhile, 11 of 13 children use the ADHEAR permanently, among them three with multiple disabilities. Initial problems regarding wear comfort, fixation of the adhesive, skin irritations, and feedback noise have been largely overcome by technical and handling optimization. One child received an active middle ear implant and one continued in using a softband-integrated BCD.

Conclusion: The ADHEAR system is a favorable technical solution for children with conductive hearing loss or chonical draining ears.

References:

Neumann K, Thomas JP, Dazert S. Efficacy of a non-implantable, pressure-free, adhesive bone conduction hearing system for children with conductive hearing loss. J Pediatr Otorhinolaryngol, manuscript submitted.

Westerkull, P. (2018). "An Adhesive Bone Conduction System, Adhear, a new treatment option for conductive hearing losses." J Hear Sci 8(2): 9.

Learning Outcome:

Learning Outcomes: The listener will be able to



1. discuss the advantages and disadvantages of conventional bone conduction hearing systems for children,
2. compare the outcome of conventional bone conduction hearing systems with that one of a band-aid-fixed system,
3. explain shortcomings of the new system and potential technical solutions.

Keywords: conductive hearing loss; aural atresia, hearing aid; children; adhesive



Abstract No: 10085

Globally raising prevalence of disabling hearing loss calls for high-quality newborn and infant hearing screening programs

Katrin Neumann^{*1} ; Shelly Chadha¹ ; George Tavartkiladze² ; Xingkuan Bu³ ; Karl R. White⁴

¹Department of Phoniatrics & Pediatric Audiology, Clinic of Otorhinolaryngology, Head & Neck Surgery/ Ruhr University Bochum/ Germany, ¹Blindness, Deafness Prevention, Disability and Rehabilitation Unit, Department for Management of Non/ World Health Organization/ Switzerland, ²Department of Physiology and Pathology of Hearing/ National Research Centre for Audiology and Hearing Rehabilitation/ Russian Federation, ³WHO Collaborating Center for the Prevention of Deafness and Hearing Impairment, Jiangsu Province Hos/ Nanjing Medical University/ China ⁴National Center for Hearing Assessment and Management/ Utah State University/ United States

Abstract Content:

Recent prevalence estimates indicate that in 2015 almost half a billion people—about 6.8% of the world's population—had disabling hearing loss and that prevalence numbers will further increase. The World Health Organization (WHO) currently estimates that at least 34 million children under the age of 15 have disabling hearing loss. Based on a 2012 WHO report, approximately 7.5 million of these children were under the age of 5 years. This review article focusses on the importance of high-quality newborn and infant hearing screening (NIHS) programs as one strategy to ameliorate disabling hearing loss as a global health problem. Two WHO resolutions regarding the prevention of deafness and hearing loss have been adopted urging Member States to implement screening programs for early identification of ear diseases and hearing loss in babies and young children. The effectiveness of these programs depends on factors such as governmental mandates and guidance, presence of a national committee with involvement of professionals, industries, and stakeholders, central oversight of hearing screening, clear definition of target parameters, presence of tracking systems with bi-directional data transfer from screening devices to screening centers, accessibility of pedaudiological services and rehabilitation programs, using telemedicine where connectivity is available and the opportunity for case discussions with boards of experts. There is a lack of such programs in middle- and low-income countries, but even in high-income countries there is potential for improvement. Facing the still growing burden of disabling hearing loss around the world, there is a need to invest in national, high-quality NIHS programs.

Learning Outcome:

The listener will be able to

- (1) discuss recently rised prevalence numbers of disabling hearing loss,
- (2) evaluate high-quality hearing screening programs as important for timely identification and treatment of infant hearing loss.

Keywords: hearing loss; children; newborn hearing screening; neonatal hearing screening; infant hearing screening



Oral Presentation: Session W9- Child Language (IV), Aug. 21st (Wed.) 11:10-12:40

Abstract No: 10066

Morphosyntactic profile of Egyptian children after 5 years of using unilateral cochlear implants

Reham Fahiem^{*1} ; Ahmed Abdelmonem¹ ; Asmaa Abdelhamid

¹*Phoniatrics/ Reham Ahmed Fahiem/ Egypt, Arab Rep.*

Abstract Content:

Objectives: This study aimed to study the properties of morphological aspects in Cochlear implanted children using unilateral unilateral cochlear implantation after 5 years old in order to help in designing suitable rehabilitation program plan for the areas of defects in language.

Subjects and Materials & Method: A cross sectional, outcome, experimental longitudinal intervention retrospective study was done. This study was conducted on 36 coclear implanted children in correlation to scaled score of (REEL test), Age (above 5 years).

Results: There was an inversed correlation between chronological age and scaled score of REEL test. Although, there was direct relation between hearing age and the scaled score.

Conclusion: Egyptian children after 5 years with cochlear implants still have a large defect in their morphosyntax specially in past tense & irregular pleural formation.

Learning Outcome:

Egyptian children after 5 years with cochlear implants still have a large defect in their morphosyntax specially in past tense & irregular pleural formation

Keywords: unilateral- cochlear implants - REAL scale- morphosyntax



Abstract No: 9126

Form and function: Hebrew prepositions in early acquisition represented in network analyses

Elisheva Salmon^{*1} ; Elitzur Dattner¹ ; Dorit Ravid¹

¹Education/ Tel Aviv university/ Israel (ישראל)

Abstract Content:

Prepositions express relations between nominals and their syntactic environments, preceding a noun and governing its case (Talmy, 2007). For example, John sent his book on birds to Mary in 2016. They are thus major participants in the construction of argument structure and in reference tracking in discourse. Prepositions convey salient semantic information (Littlefield, 2004), mostly regarding spatial and temporal relationships (Saint-Dizier, 2006). They moreover tend to be polysemic, with several different functions for a single prepositional form (Tobin, 2008), often specified for particular lexical contexts, as in English work at or work for. Despite their extreme frequency in discourse (Fang, 2000), prepositions pose lexical, semantic, syntactic and discursive challenges for young learners (Morgenstern & Sekali, 2009).

Aim: The study tracks the AoA of prepositions in child Hebrew, including their changing distributions, the semantic functions (meanings) they serve, and the constructions they occur in. To track these developments, we used Network Analyseis (e.g., Vitevitch & Goldstein, 2014).

Method: The study analyzes a corpus video-recorded peer talk by 75 typically developing, monolingual Hebrew-speaking children from mid-high SES (69,912 words in 24,605 utterances). Participants were children aged 2;6–3;0, 3;0–3;6, 3;6–4;0, 4;0–5;0, and 5;0-6;0 engaged in 45-minute triadic conversations at their preschool (five triads per age group). All 7,718 preposition tokens in the corpus were identified and coded for their lexical semantics, morphological, and syntactic properties.

Results: Of the 163 prepositions identified in the Hebrew dictionary, only 34 occurred in the corpus (e.g., to, with, on, and accusative et), 16 of which already occurring in the youngest group of 2;6-3 year olds. Token frequency of most prepositions increased with age, especially between 3 and 3;6. These prepositions expressed 22 different meanings – grammatical (e.g., accusative, dative and oblique), spatial (e.g., place and goal), temporal (time, duration), and a variety of other meanings. Several prepositions had only one meaning (e.g., kmo expressing comparison), while others had multiple meanings (e.g., al 'on' with 11 different meanings in the corpus). While most meanings were already present for the youngest age group, their frequency increased with participants' age, related to cognitive development – e.g., the temporal meaning increased from 2 in the 2;6 year olds to 35 times in the 3;6 group. Also, the frequency of the more abstract prepositions increased with age (e.g., purpose). Moreover, with age, meanings acquired more prepositions to represent them (e.g., location). Based on network analyses for each age group, we showed that the system had more nodes, that is, more prepositions and more semantic functions with participants' age, and that the links among nodes became denser with age – indicating that the category is more concentrated and some prepositions and meanings moved from isolation to becoming part of a system.

Learning Outcome:

- The developmental trajectory of prepositions in Hebrew
- How prepositions are learned as a category by young children
- How discourse development is reflected by the changing meanings of prepositions



Abstract No: 9734

The influence of early respiratory infections and socioeconomic factors on vocabulary growth in infants and toddlers

Annette Nylund^{1 2} ; Laura Toivonen^{2 3} ; Pirjo Korpilahti⁴ ; Anne Kaljonen⁵ ; Ville Peltola^{2 3} ; Pirkko Rautakoski¹

¹Faculty of Arts, Psychology and Theology /Speech and Language Pathology/ Abo Akademi University/ Finland, ²Turku Institute for Child and Youth Research/ University of Turku/ Finland, ³Department of Paediatrics and Adolescent Medicine/ Turku University Hospital/ Finland, ⁴Department of Speech and Language Pathology, / University of Turku / Finland, ⁵Biostatistics, Department of Clinical Medicine/ University of Turku/ Finland

Abstract Content:

Objective: & Background:

Children's first years of life are critical for later development. It is therefore important to find environmental and other risk factors, which can interfere with early language development. During the first years, the children are exposed to infections, with respiratory tract infections (RTI) as a dominating threat, as well in developed as in underdeveloped countries. The burden of sickness is influencing the quality of life in children and could therefore also impede vocabulary development. Boy gender has been considered a risk factor both in delays in language development and in getting RTIs.

The purpose of the present study was to follow up the vocabulary growth of children from 13 to 24 months of age looking at possible influences of RTIs, acute otitis media (AOM) and environmental factors, and to investigate if infections and other environmental risk factors influence the vocabulary growth differently in boys and girls.

Method:

The study is a part of a cohort study Steps to the healthy development and well-being of children (the STEPS study) consisting of 9811 families of which 1797 mothers with their 1827 children chose to participate. Infection data from the first two years in a child's life was collected together with language data at 13 and 24 months of age, where the MacArthur Communicative Developmental Inventories (CDI) was used. In the present study, we have both detailed infection data and expressive vocabulary data of 462 children from their first two years of life. We used 10th percentile in the number of days per year with symptoms of RTI as a cut off when comparing children with recurrent RTIs with all other children.

Result:

On a group level our preliminary results give no statistically significant difference in vocabulary growth for children with recurrent RTIs or AOM during their first or second year of life compared to children less sick. However, when the results were analyzed separately for boys and girls, the results revealed that boys with recurrent RTIs and girls with recurrent AOM during their second year of life had a larger vocabulary growth between 13 and 24 months of age compared to less sick children. Influence of parents' socioeconomic background and fathers' educational level could be seen in the vocabulary growth of boys. The vocabulary growth of boys with a small vocabulary size at 13 months of age was larger up to 24 months of age, if the father was high educated.

Discussion:



Recurrent infections do not seem to be a threat to early language development. On the contrary, the vocabulary growth can be larger. The reason for this can be that sick children get more attention of the caregiver.

Learning Outcome:

The listeners will learn how recurrent RTIs in the first years affect early vocabulary development differently in boys and girls.

Keywords: RTI; AOM; Vocabulary Development; Gender



Abstract No: 9843

Summer learning loss in Flanders? Implications for speech therapists treating reading and spelling learning problems.

Veerle Van Vooren¹ ; Sofie Carnewal¹ ; Marc De Spiegelaere¹ ; Annemie Desoete¹

¹Health - speech therapy / Artevelde university college / Belgium

Abstract Content:

(1) Background: Summer holidays create what sometimes is called 'summer learning loss'. Shin and Defeyter (2017) revealed a spelling loss but not a loss of word reading scores in the UK. Up till now no data are present for more transparent languages.

(2) Objective: In this study we sought to examine whether summer learning loss occurs in spelling and reading in 654 primary school aged children from 12 schools in the Dutch-speaking part of Belgium. Dutch is a moderate transparent language. Participants in three grades were tested on two occasions: immediately before and immediately after the 9-week summer break during two consecutive years.

(3) Method: Word reading was tested using the One-Minute Reading Test (Brus & Voeten, 1999). Pseudoword reading was assessed using the Klepel Test (Van den Bos, Spelberg, Scheepstra, & de Vries, 1994). Spelling was tested with the Spelling Test, ST 1-6 (Van Vreckem & Desoete, 2016).

(4) Results: The results showed a significant summer loss for word reading in Grade 1 ($F(1, 224) = 9.29$, $p = .003$, $\eta^2 = .04$), Grade 2 ($F(1, 428) = 40.17$, $p < .001$, $\eta^2 = .09$) and Grade 3 ($F(1, 183) = 9.38$, $p = .003$, $\eta^2 = .05$).

The same summer loss was true for pseudo word reading in Grade 1 ($F(1, 234) = 20.70$, $p < .001$, $\eta^2 = .08$), Grade 2 ($F(1, 428) = 205.18$, $p < .001$, $\eta^2 = .32$) and Grade 3 ($F(1, 183) = 15.02$, $p < .001$, $\eta^2 = .08$).

In addition, there was a summer loss for spelling in Grade 1 ($F(1, 233) = 118.69$, $p < .001$, $\eta^2 = .34$), Grade 2 ($F(1, 428) = 26.19$, $p < .001$, $\eta^2 = .06$) and Grade 3 ($F(1, 182) = 10.76$, $p = .001$, $\eta^2 = .06$).

Performance scores were significantly higher before the summer term than at the start of the new school year. This was the case for boys and girls. The three children with dyslexia in the sample did not show the summer learning loss for reading, but they lost a lot of spelling proficiency during summer break. Additional information will be presented during the conference.

(5) Discussion. Summer learning loss takes place even in moderate transparent languages. Speech therapists are encouraged to be aware of this when assessing children. In addition, they are invited to help the children to catch up and exceed the level achieved prior to the summer break.

Learning Outcome:

Gain insight into summer learning loss with implications for speech therapists treating children at risk.

Keywords: summer learning loss, word reading, spelling, elementary school



Abstract No: 9885

The effects of noise and ear infections on central auditory processing in children

Elina Niemitalo-Haapola^{*1} ; Sini Haapala¹

¹*Logopedics; Child Language Research Center/ University of Oulu/ Finland*

Abstract Content:

Central auditory processing is one of the basic requisites for the language development. However, the alterations of auditory input might have an impact on it. Those alterations can be caused by background noise competing with the target auditory signal or by recurrent acute otitis media (RAOM) potentially causing fluctuating hearing levels. The central auditory processing can be studied by using event-related potentials (ERPs), small changes in brain's electrical activity evoked by alterations in auditory signal. The aim of the presentation is to review recent studies addressing effects of noise in 2- and 4-year old typically developing children and the consequences of RAOM in typically developing children at the age of 2-years. In addition, preliminary results of effects of noise on ERPs elicited by phonetic changes in children with RAOM will be presented.

The volunteer participants were Finnish speaking 2- and 4-year old typically developing children with maximum of two episodes of otitis media (n=22) or with RAOM (n=24). For ERP elicitation, syllable stimuli were used. Standard syllables /ke:/ and /pi:/ alternated with deviants including changes in consonant, frequency, intensity, vowel, and vowel duration of the syllables. Additional cafeteria noise was presented with the half of the stimulus sequences.

In children with RAOM the basic sound encoding and representation forming were similar as in controls. However, the preattentive change detection was atypical. In children with a maximum of two episodes of otitis media the ERPs altered in noisy situation indexing degraded sound encoding and representation forming as well as impaired preattentive auditory change detection during noise. The effects were mostly similar at both ages. In addition to previous results, preliminary results of effects of noise to sound encoding and preattentive phonemic change detection in children with RAOM in will be presented.

To conclude, noise degrades the central auditory processing by impairing sound encoding, memory representation forming as well as preattentive change detection. The central auditory processing is also atypical in children with RAOM. In addition, based on preliminary results, noise might also have negative effects on central auditory processing in children with RAOM. Therefore, the noise in daily auditory environments of children and RAOMs must be recognized as a risk factors for language development.

Learning Outcome:

1. The listener understands the effects of noise on central auditory processing in young children
2. The listener understands the effects of recurrent otitis media on central auditory processing in young children

Keywords: ear infections; central auditory processing; children; noise



Abstract No: 10021

Evaluating the spoken language discourse of critical reasoning in typically developing adolescents

Adele Wallis¹ ; Marleen Westerveld²

¹Queensland Health/ Child & Youth Mental Health/ Australia, ²School of Allied Health Sciences/ Griffith University/ Australia

Abstract Content:

Introduction / Rationale

This research study investigates the critical thinking skills of adolescents through a monologic task, reflecting on two stories that contain a moral dilemma.

The central feature of adolescence is that of transition and transformation, marked by physiological, neurological, psychological and social developmental changes. Formal operational thought supports the emergence of autonomy, as adolescents demonstrate their growing ability to consider and make independent decisions, analysing, evaluating and reflecting on their beliefs, to establish their own personally-held values and morals.

Educators encourage adolescents to develop their skills in critical thinking and reasoning to empower them in taking greater control over their lives, as they move towards this autonomy. This is reflected in the prominence of critical thinking in all aspects of the secondary curriculum.

Method

Forty typically developing adolescents from two age groups – early (12-13 years) and late (16-17 years) were asked to provide a monologic response to two stories. Each story was based around a situation where one of the characters was faced with a moral dilemma. After listening to the story, participants were prompted with the open question “What does this story make you think about?”, and invited to speak for up to two minutes.

Responses were analyzed for microstructure e.g. mean length of utterance, total number of utterances, and semantic variance. Further, a coding system based on the revised Bloom’s Taxonomy of Thinking (Anderson & Krathwohl 2001) was developed to analyze the discourse samples at the level of macrostructure. Each discourse was coded and analyzed in relation to three categories of reasoning: L1 - knowing and comprehending, L2 - applying and analyzing, L3 - evaluating and creating.

Results

Early review of the data indicates that late adolescents produce only slightly longer sentences and total number of utterances, while semantic variance appears to be much higher in the older group. Preliminary analysis also indicates a tendency towards a higher percentage of L3 statements in the monologues of late adolescents, with a diminishing trend in L1 statements.

Practice implications

Given the importance of critical thinking and reasoning in the curriculum and in life, a measure that clarifies the development of these skills will clearly assist speech pathologists working with adolescents in schools. An explicit understanding of the different categories of critical thinking would well support students with developmental language disorders across various school subjects in their language to express such reasoning.



Conclusions

The moral dilemma discourse task appears to be useful in eliciting the language of adolescents for critical thinking. Further, the coding system described here provides a quantifiable measure of macrostructure in critical thinking.

Learning Outcome:

- 1) Participants will be able to use the monologic, moral dilemma discourse task to sample spoken language for critical reasoning skills.
- 2) Participants will be able to use the coding system to evaluate the level of critical thinking in adolescents.

Keywords: Adolescents, spoken language, elicitation, critical thinking



Oral Presentation: Session W10- Voice (IV), Aug. 21st (Wed.) 11:10-12:40

Abstract No: 9946

Effect of voice therapy and psychosocial component on primary muscle tension dysphonia

Ran Zhang^{*1} ; Wen Xu² ; Yaping Chen¹

¹Rehabilitation/ Beijing Tongren Hospital/ China, ²Department of Otorhinolaryngology Head and Neck Surgery/ Beijing Tongren Hospital/ China

Abstract Content:

Objective The purpose of this study was to determine the effect of vocal facilitating techniques and psychosocial component on the phonation of primary muscle tension dysphonia (pMTD).

Background Facilitating techniques has showed effective in pMTD. But there are some severe pMTD showed no improvement under facilitating techniques. As psychosocial factors play a causal role in pMTD, it could be used with patients whose voice disorders have not improved with other methods.

Method 20 patients with pMTD did not improve under usual vocal therapy, received facilitating techniques and psychosocial component. Facilitating technique included gargling and falsetto voice, psychosocial component included understanding of the pMTD patient's life situation, mind-body awareness and history and using verbal and non-verbal reaction to get patients relaxed. All voice therapy sessions were conducted by the same speech-language pathologist. To compare vocal measures before and after treatment, GRBAS scale, voice handicap index (VHI), patient satisfactory scores and doctor satisfactory scores were calculated.

Results Vocal facilitating techniques and psychological component resulted in a significant decrease of GRBAS scores and VHI scores, increase of patient satisfactory scores and doctor satisfactory scores. Participants described the helpfulness of the techniques.

Discussion A positive effect on pMTD patients was hypothesized because vocal facilitating techniques and psychological component may help patients relax and produce easier vibrating voice. A possible explanation for patients with pMTD did not improve under usual vocal therapy, but have reaction under vocal facilitating techniques and psychological component, is psychosocial factors and physiological factors have interconnection in pMTD.

Learning Outcome:

Voice of patients with pMTD improved after treatment with vocal facilitating techniques and psychological component.

Keywords: primary muscle tension dysphonia; vocal facilitating; psychosocial component



Abstract No: 9937

Effectiveness of intensive Lax Vox voice therapy for people with presbyphonia

Ming-Jhen Tsai¹ ; Sherry Fu^{2 3} ; F.-C. Lin⁴ ; Chi-Te Wang⁴

¹Master's Program of Speech and Language Pathology/ University of Taipei/ Taiwan, ²Lower School/ Taipei American School/ Taiwan, ³Department of Audiology and Speech Language Pathology/ Mackay Medical College/ Taiwan, ⁴Otolaryngology / Far Eastern Memorial Hospital/ Taiwan

Abstract Content:

The needs of the elderly population, such as in health care and long-term care, have become important issues, socially and economically. Aging affects all organs of the body, and the vocal fold is no exception. It is known that voice is produced from the combined activity of respiration, vocal fold vibration, and resonance. Due to aging, functions of all components related to voice production decline, and changes in the physiology and structure of the larynx may cause a person's voice to deteriorate gradually. The prevalence of dysphonia in the elderly has been reported to be as high as 47%, indicating a large number of the elderly people suffer from voice problems. Recent researches have shown voice therapy can improve the aged voice, but the level of evidence provided by these studies are often weak, and duration and intensity of the voice therapy are mostly unspecified. Therefore, the aim of this study is to explore the effectiveness of an intensive 3-week training program with the "Lax Vox" voice therapy for presbyphonia.

Participants included 13 people diagnosed with presbyphonia who received intensive Lax Vox voice therapy. All participants completed eight sessions of therapy over 3 weeks. Auditory perceptual, aerodynamic and acoustic analyses were performed before and immediately after treatment. Analyses were performed by speech-language pathologists independent to and blinded to the study. Participants also completed the voice related-quality of life questionnaire, before and after the treatment.

Based on the statistical analyses, after 3 weeks of intensive voice therapy, significant improvements were found in auditory perceptual, aerodynamic and acoustic parameters, and patient-perceptions of voice-related quality of life. This pilot investigation provides initial evidence that people with presbyphonia are able to recover their vocal health and voice-related quality of life through intensive Lax Vox voice therapy. Also, this study provides clinicians with crucial information on effective intervention when treating senile voice and in turn improve the voice-related quality of life of the elderly people.

Learning Outcome:

1. Participants will gain an understanding of the potential benefits of intensive voice therapy for presbyphonia
2. Participants will gain an understanding of how to deliver intensive Lax Vox voice therapy
3. Participants will gain an understanding of the benefits of Lax Vox voice therapy for people with presbyphonia

Keywords: Intensive, Lax Vox voice therapy, presbyphonia



Abstract No: 9925

Incorporating Syllable Tones in Voice Therapy: The Melotone Technique

TZU-PEI TSAI¹ ; CHANG-JUNG LU¹ ; SHUYE-YIH CHANG¹

¹*Division of Otorhinolaryngology/ Cheng Hsin General Hospital/ Taiwan*

Abstract Content:

OBJECTIVE. A voice therapy technique, the Melotone technique, is proposed to provide a stepwise transition of voice training from monotonous chanting to spontaneous speech with tones.

BACKGROUND. Many voice therapies employ progressive training steps from chanting to spontaneous speech which often focus on segmental factors. However, Mandarin has an important suprasegmental factor, the syllable tones, to deal with. In order to take tones into account in voice therapy, the authors sought from music therapy and Mandarin phonology and developed the Melotone technique.

METHOD. Melotone for voice therapy targeted Mandarin words and phrases. Mandarin syllables were realized in bimoraic structure with specific tone heights. Each mora was chanted in one beat with designated pitch. Melotone was composed of 5 steps with optional gestural cues: (1) Chanting in monotone with model; (2) Chanting in moraic pitches with model (3) An optional step of pitch gliding with model; (4) Uttering target words or phrase with model; (5) Uttering target words or phrases without model. The first step of Melotone was habituation of target voice quality in monotonous chanting. It was achieved dynamically through whatever possible prompts that suited the client during the session. Steps (2) to (5) focused on transition with incorporation of syllable tones and were regarded core of this study. Five consecutive trials in target voice quality were considered the stable phase which determined the client ready for the next step. Data were retrieved from treatment sessions records of 10 clients with various kinds of dysphonia. The records included Melotone steps and performance documentation of trials. All records were taken during therapy sessions by the researchers separately.

RESULTS. Trials of the stable phases were excluded and only unstable trials prior to the stable phases were included for descriptive statistics. Melotone steps (2) to (4), the transition part, took the clients 0 to 11 trials with an average of 5 trials to meet stable criteria. Step (5), the final part, took the clients 0 to 3 trials with an average of 0.7 trials to meet stable phase.

DISCUSSION. Melotone was learnable to Mandarin speaking clients within a workable number of trials. It had the feasibility to be applied in a short-timed session. The fact that the number of trials in the final part of Melotone was less than the transition part may indicate a transfer effect that the transitioning facilitated the performance in the final part. Preliminary evidence suggested it is a plausible means of hierarchical progression from monotonous chanting to naturalistic tonal speech in voice therapy. Comparative research will be needed to identify the efficacy of this technique and its steps per se. Although Melotone was developed for voice therapy in Mandarin, it has the potential to be adapted in treatments of other speech language disorders related to speech production with syllable tones in another tonal language.

Learning Outcome:

You will be able to:

1. Deconstruct Mandarin syllable tones for voice therapy.
2. Describe the steps in Melotone transitioning from monotonous chanting to naturalistic tonal speech in voice therapy.

Keywords: Voice therapy, chanting, syllable tone, phonology, music therapy



Abstract No: 9678

Muscle Strength Training As Treatment of Chronic Refractory Cough

Thomas Murry^{*1} ; Jin Yang¹

¹Otolaryngology Head and Neck Surgery/ Loma Linda Health University/ United States

Abstract Content:

Chronic cough is the third most common complaint of patients seeking treatment from an otolaryngologist. Patients with chronic cough often have associated symptoms such as dyspnea, dysphonia and stridor. The use of inhaled steroids and other medications including antihistamines and tricyclic medications are common medical therapies for chronic cough; however, in many cases cough remains refractory to treatment. Cough suppression therapy is a promising non-pharmacologic, behavioral option for patients with long term chronic cough who do not have pulmonary diseases and who have not benefited from medical therapies. The efficacy of behavioral therapies to treat chronic cough has gained traction over the past 15 years. Several investigators have shown that voice therapy directed at breathing modifications provides an adjunctive treatment to reduce cough frequency and dyspnea. However, the physiological basis of improvement remains to be understood. The purposes of this study was to identify changes in various aerodynamic parameters and voice characteristics in patients with chronic cough who previously failed medical therapies. Six months following a behavioral treatment approach for chronic cough, data indicated that patients reported a reduction in cough using a self-assessment measure. Measures of maximum phonation time and laryngeal airway resistance showed a significant improvement in the majority of patients treated. Cough suppression therapy based on breathing modification offers an alternative treatment for patients refractory to medical treatment of chronic cough.

Learning Outcome:

Participants will learn of the common conditions that are related to chronic cough.

Participants will understand the significance of using a behavioral treatment to treat chronic refractory cough.

Participants will learn the techniques to treat chronic cough in patients who also report dyspnea.



Abstract No: 9654

Anti-inflammatory effect of acupuncture in treating voice problems

Edwin Yiu¹ ; Nicole Li¹ ; Karen Chan^{*1}

¹*Speech & Hearing Sciences/ The University of Hong Kong/ Hong Kong* ¹*School of Communication Sciences and Disorders/ McGill University/ Canada*

Abstract Content:

Background

Acupuncture has been shown to be effective in treating benign vocal lesions and vocal function. The underlying biological mechanism of acupuncture in the treatment of benign vocal pathologies is not fully understood yet. The improvement is, however, not a result of stress reduction that is often attributed to acupuncture as shown in a salivary cortisol study.

Objective

This study set out to investigate whether acupuncture would influence the anti-inflammatory process in vocal fold lesion healing.

Methodology

Secretions from the vocal fold surfaces of 17 subjects with phonotraumatic lesions were collected before and after a 30-minute session of genuine (N=9) or sham (N= 8) acupuncture procedures, and again 24 hours after the baseline. Genuine acupuncture involved needling at voice-related acupoints Renyin (St9), Lianquan (Ren23), Lieque (Lu7), Hegu (Li4) and Zhaohai (Ki6), while the sham acupuncture used a procedure in which subjects were made to believe that they received needles at these acupoints but in reality, the needles did not penetrate the skin. Protein levels of pro-inflammatory cytokine interleukin (IL)-1 β and anti-inflammatory cytokine IL-10 were measured in these secretion samples using enzyme-linked immunosorbent assay (ELISA).

Results:

Pro-inflammatory IL-1 β concentrations increased significantly over time in the sham acupuncture group (Friedman's 2-way ANOVA=7.6, df=2, p=0.02) while anti-inflammatory cytokine IL-10 concentrations increased significantly after treatment in the genuine acupuncture group (Friedman's 2-way ANOVA=6, df=2, p=0.05). The anti-inflammatory effect following one session of acupuncture was, however, only short-lived; IL10 concentrations returned to at the 24-hour follow-up time point.

Conclusion

Results suggested that genuine acupuncture, when compared with sham acupuncture, enhanced anti-inflammatory responses in subjects with phonotraumatic vocal fold lesions.

Learning Outcome:

Understand alternative medicine in voice therapy



Abstract No: 9653

Localized and whole-body vibrational therapies for voice problems

Edwin Yiu¹ ; Dr Karen Chan*

¹Speech & Hearing Sciences/ The University of Hong Kong/ Hong Kong

Abstract Content:

Background

Vocal fatigue is a commonly found in individuals with voice problems. Direct vibration of the neck using electronic massager and vertical oscillation of the body delivered by a vibrating platform have been shown to facilitate phonatory function and reduces muscle tightness and fatigue in performers.

Aim

This study investigated the effect of whole-body vibration (WBV) and localised vibration (LV) of the neck on the phonatory functions of individuals with vocal fatigue.

Methods

Forty-four subjects with a mean age of 21.67 years were given either WBV (TurboSonic, Korea), the LV (Novofan, Germany), or placebo (resting) for 10 minutes after singing karaoke continuously for at least 100 minutes. A glissando task in eliciting maximum pitch production, and self-reported vocal fatigue index were taken before and after the singing.

Results

All three groups showed significant reduction of phonatory function (maximum pitch production, and vocal fatigue rating) after prolonged singing. Following vibrational intervention, the LV group showed significantly improvement ($p < 0.05$) (increase of 1.93 semitone in pitch production; a reduction of 5.17 in vocal fatigue) than the placebo group (increase of 0.64 semitone in pitch production; reduction of 1.92 in vocal fatigue). The WBV group showed a significantly reduction in vocal fatigue (8.87) ($p < 0.05$) and also in the pitch production (increase of 1.4 semitones) ($p = 0.05$) when compared to the LV or placebo group.

Conclusion

Localized vibration and whole body vibration are effective in bringing improvement in phonatory function following vocal fatigue.

Learning Outcome:

Learning new innovative voice therapy

Keywords: vibrational voice therapy,



Oral Presentation: Session W11- Multilingual Affairs (III), Aug. 21st (Wed.) 11:10-12:40

Abstract No: 10031

Rehabilitation for people with communication disabilities in sub-Saharan Africa: Positioning the profession of speech-language pathology.

Karen Wylie^{1 2 3} ; Lindy McAllister² ; Bronwyn Davidson⁴ ; Julie Marshall⁵

¹*Department of Occupational Therapy, Social Work and Speech Pathology/ Curtin University/ Australia,*

²*Faculty of Health Sciences/ University of Sydney/ Australia, ³Department of Audiology, Speech and Language Therapy/ University of Ghana/ Ghana, ⁴Department of Audiology and Speech Pathology/*

University of Melbourne/ Australia, ⁵Health Professions Department/ Manchester Metropolitan University/ United Kingdom

Abstract Content:

Background

Speech-language pathology (SLP) is an emerging profession in sub-Saharan Africa (SSA). Developments in SLP training in SSA will gradually increase the availability of speech-language pathology services to support rehabilitation options for people with communication disabilities (PWCD). However, for this small workforce to have a meaningful impact in improving rehabilitation services, consideration needs to be given to how the profession can most effectively contribute in ways relevant to African culture and contexts. An important first step in understanding how a Western profession of SLP may effectively contribute to rehabilitation for PWCD in SSA is to build knowledge of the existing service landscape, including the nature of existing services offered within the community, and how the community interacts with these services.

Aim

This three-stage research programme aimed to explore existing rehabilitation services for PWCD from the perspectives of speech-language pathologists (SLPs), community members and other service providers. This research aimed to describe the nature of:

- a. The workforce of SLP, and services provided by SLPs.
- b. Help-seeking and self-help for concerns about communication.
- c. Existing services provided in the community for PWCD.

Methods

Stage 1: A mixed-methods survey explored the workforce characteristics and services provided by 33 SLPs in SSA in nine Anglophone countries. Data analysis included descriptive statistics and qualitative content analysis.

Stage 2: Qualitative descriptive surveys explored the likely self-help and help-seeking actions of 136 community members in response to communication disability in Accra, Ghana. Data were analysed using qualitative content analysis.

Stage 3: Semi-structured interviews of a sample of service providers, comprising doctors (3), herbalists (3) and pastors (3) explored the nature of community services offered to PWCD in Accra, Ghana. Thematic network analysis was used to analyse the data.

Results



Stage 1: A range of potential challenges to the sustainability and equity of SLP services were identified.

Stage 2: Community members identified that they would seek help for concerns about communication disability across the western healthcare, religious, traditional belief, education and community sectors. Community members also indicated that they would use a range of self-help strategies.

Stage 3: Community service providers described offering services and support to PWCD in three key ways: providing direct interventions, offering explanations and promoting strategies to support communication. Participants emphasised the importance of a spiritual dimension in rehabilitation.

Implications

In this presentation, research findings will be drawn together to consider how the profession may complement and support existing rehabilitation services for PWCD in SSA and, in particular, Ghana. Findings highlight the need for the profession to create Afrocentric approaches to rehabilitation that address the needs of both communities and individuals. Understanding the broader service landscape, engaging with communities and working across sectors may assist the profession to contribute to equitable and appropriate rehabilitation services for people with communication disabilities.

Learning Outcome:

1. Participants will describe the importance of understanding the service landscape when planning and implementing SLP services in sub-Saharan Africa.
2. Participants will understand the impetus for SLP services that address community needs and preferences in sub-Saharan Africa.

Keywords: multicultural contexts, service delivery, Majority World, culture



Abstract No: 9828

Engaging in collaborative cross-cultural research to support development of the speech therapy profession in Vietnam.

Marie Atherton^{*}; Bronwyn Davidson; Lindy McAllister

Abstract Content:

Objective

This paper reports the findings from a longitudinal, cross-cultural research programme exploring the emerging professional practice of speech therapy (ST) in Vietnam through the experiences of Vietnam's first ST graduates.

Background

Between 2013-2016 a group of Vietnamese ST graduates (the participants) and the primary author, an Australian researcher, participated as co-researchers to explore and document the work of the participants, challenges they encountered, and opportunities to progress their practice. It was anticipated that research findings would support progression of the ST profession in Vietnam and offer insights to current and future service development of the ST profession in other underserved contexts.

Methodology

A series of qualitative studies underpinned by a participatory ethos and supported by an experienced Vietnamese interpreter were conducted between 2013-2016. Individual and small group interviews in 2013/2014 explored the participants' early professional practice. An advisory group comprising the participants was established in 2014 to guide the research over its duration. Workshops conducted in 2015/2016 introduced visual research methods to identify factors shaping the participants work at that time. In the final research phase, the participants reflected upon their professional journeys since graduating and upon their participation in the research. Verbatim orthographic transcription of the English translation provided by the interpreter during the research meetings was completed by the researcher and thematic analysis was utilised to identify themes in the data.

Results

Four themes characterised the participants' work in 2013/14—scope of practice, developing identity, confidence to practice, and progressing the profession. In 2015, these themes were expanded to reflect the evolving work of the participants. In 2016, the professional journeys of the participants were characterised by five themes—a shared journey, a journey through mountains, a vocation not just a job, lifelong learning, and the future looks bright. The participants framed their research experiences in various ways, speaking of the benefits to themselves, the broader Vietnamese ST community and to the researcher. Uncertainty as to the collaborative ethos of the research design informed their recommendations regarding engagement in cross-cultural research.

Discussion

Several research findings confirmed those of previous studies exploring the emergence of ST in underserved contexts, such as challenges posed by balancing dual professional roles; however unique insights also emerged—evolution of the ST profession at multiple levels and the significance of others to the participants' experiences. Challenges to successful cross-cultural research collaboration arose due to technology and difficulties establishing a shared understanding of research aims and methodology; therefore, when working cross-culturally, researchers must consider issues of informed consent and how translation may impact research knowledge. This research has highlighted that culture and context are shaping the practice of ST in Vietnam and that future initiatives seeking to support the profession must be guided by local practitioners.



Learning Outcome:

To develop understanding of:

1. factors shaping the emerging practice of speech therapy in Vietnam;
2. strategies to facilitate cross-cultural research collaboration and outcomes that are relevant to local context.

Keywords: Vietnam; speech therapy; cross-cultural research; participatory research; collaboration.



Abstract No: 9122

Collaborative Projects: The Importance of Shared Knowledge

Li-Rong Lilly Cheng^{*1} ; Sandra Levey^{*2}

¹*Speech, Language, and Hearing Sciences/ San Diego State University, CA, USA/ United States,*

²*Speech, Language, and Hearing Sciences/ City University New York/ United States*

Abstract Content:

Objective

Collaborative projects allow the sharing of knowledge, strategies, methods, and technologies for assisting populations who require services. Collaborative projects can be national, international, and/or interdisciplinary. The objective of collaboration is to allow individuals to share knowledge and to work together to achieve a goal. Collaboration is essential for addressing health needs that require prevention, assessment, and/or intervention.

Background

This presentation will describe two collaborative projects. The first project addressed populations that required support. The second project addressed populations that required information to prevent disability.

Methods

The first collaborative project involved developing training workshops in Guangzhou, China. Speech-language pathologists (SLPs) from Hong Kong, Taiwan, Ireland, and the United States collaborated to develop training workshops for teachers and families to educate them regarding the needs of children with autism spectrum disorders (ASD). This filled a crucial need, as teachers and families lacked this knowledge. The second collaborative project involved a SLP and an audiologist who addressed the prevention of noise-induced hearing loss (NIHL). The World Health Organization estimates that at least 1.1 billion teenagers and young adults are at risk of hearing loss due to exposure to loud sounds over a sustained period of time. Participants' noise levels were measured while listening to personal listening devices, with all being given information on safe listening levels.

Results

The ASD collaboration resulted in two thousand teachers and parents attending workshops that resulted in a better understanding of the typical behaviors associated with ASD, methods to support children's behaviors, and an understanding of the environmental factors that act to prevent behavioral challenges. The Bureau of Education of the city of Guangzhou

supported continuation of the education of teachers to address individuals with disabilities. In the NIHL collaboration, over 400 participants were given information to prevent hearing loss and the New York City Board of Health established a campaign on the subways to educate travelers on safe listening levels. Preventative efforts were presented in the media to a global audience in two televised appearances.

Discussion

These projects show the need for collaboration. The members of the collaborative project brought together a range of functional expertise for the project goal. Collaborative projects brought experts together who could share their expertise. Collaboration provided insight and the generation of new knowledge that led to assistance for individuals with needs and for those who required the information to prevent disabilities.

Learning Outcome:



Learner Outcomes

- Participants will be able to understand collaborative projects.
- Participants will be able to explain the importance of collaborative approaches to address the needs of individuals who require support.

Keywords: Collaboration; sharing knowledge; autism; hearing loss prevention; intervention



Abstract No: 9979

Developing culturally responsive practice through professional development: Insights and opportunities for sustainable impact

Sarah Verdon^{*1}

¹Faculty of Science/ Charles Sturt University/ Australia

Abstract Content:

Background

In an increasingly globalised world there is need for professionals to engage in culturally responsive practice when providing services to children and families.

Objective

This presentation explores the impact of attending a multidisciplinary professional development workshop upon professionals perception of their cultural responsiveness.

Method

There were 52 participants who completed pre-workshop questionnaires and post-workshop evaluations. Of these, two participated in in-depth follow-up interviews one year later to discuss the ongoing impact of the professional development workshop upon their practice.

Results

The pre-workshop questionnaire indicated that the major challenges for working with CALD families were cultural and language barriers, and working with interpreters. After completing the workshop, participants reported gaining knowledge about engaging in holistic practice, their personal cultural competence and the culture of families they worked with. Interviews conducted one year later revealed the workshop had an ongoing impact upon practice in four key areas: (1) knowing the family (2) organisational structures (3) collaborative practice and (4) the ongoing nature of cultural competence.

Discussion

This presentation discusses the complexities of teaching cultural competence, problematic issues in its conceptualisation and the efficacy of professional development workshops in developing a critical consciousness among professionals to engage in culturally responsive practice with culturally and linguistically diverse families.

Learning Outcome:

1. Attendees will gain an understanding of culturally responsive practice and the complexities of educating professionals in this area
2. Attendees will learn about the ways in which professional development can facilitate long term changes towards culturally responsive practice

Keywords: cultural competence; practice; professional development; cultural and linguistic diversity



Abstract No: 9137

Promoting Cultural Humility and Cultural Competence through High Impact Practices

Ying-Chiao Tsao¹

¹*Communication Sciences and Disorders/ California State University-Fullerton/ United States*

Abstract Content:

The scope of practice for speech and language pathologist is ever growing and continues to expand. Furthermore, due to the technology advances in medicine, the age range of our client population has stretched from infants to centenarians. As 3.3% of the world's population are identified as international migrants (2018), serving clients from diverse cultural/linguistic backgrounds is now a common practice in this globalized world. Among many other factors, language and cultural barriers are two big challenges that speech-language and hearing professionals are facing these days (Tsao, 2015). This is in particular true for a Caucasian-predominated profession of speech-language pathology and audiology. According to American Speech-Language-Hearing Association (ASHA) (2017), only 11.5% of the members self-identified as bilingual and/or bicultural; these include 3% African American, 5.2% Hispanics/Latino, 2.3% Asian-Pacific Islanders, and 1% other ethnic groups. Given the lack of diversity in the profession, the language barrier and cultural barrier are the two inevitable challenges in providing equity and quality of services to a client population, about fifty percent of whom speak a language other than English at home (Harris, 2006).

To address both language and cultural barriers, Tsao (2015) believed that cultivating one's cultural humility is a key to promoting his or her cultural competence and functional communication. According to Tervalon and Murray-Garcia (1998), cultural humility refers to an individual who admits his or her limitations and strives to learn about others through self-reflection and critique. Through the process of maintaining an open-minded interpersonal stance in relation to aspects of cultural identity, it is possible to achieve cultural competence (Hook, Davis, Owen, Worthington, & Utsey, 2013; Waters & Asbill, 2013). The 2012 ASHA position paper endorses cultural humility as a way to achieve cultural competence in serving diverse client population.

To cultivate cultural humility in students, Tsao (2015) integrated high impact practices (HIPs, including service-learning, community-based participatory research, study abroad, and study abroad simulation) into several courses. The HIPs refers to student-oriented hands-on activities that have been widely proven influential to students' cumulative learning over the last two decades (Brownell & Swaner, 2009; Finley, 2011; Finley & McNair, 2013; Kuh, 2008). The preliminary results of pre-and post-surveys and reflections showed significantly increased cultural humility, level of comfort and confidence in students' ability to interact with the clients from a cultural background different from theirs. In addition, the qualitative analysis of exit interviews revealed an increased appreciation of functional communication and their interest in learning about the language and culture of the clients. The implications of HIPs on one's personal growth in cultural humility and professional development in cultural competence will be discussed.

Learning Outcome:

1. The participants will be able to describe what cultural humility is and how it relates to cultural competence.
2. The participants will be able to describe high impact practices and their contribution to one's personal and professional growth.
3. The participants will be able to describe ways to gain functional communication in overcoming one's language and cultural barriers.

Keywords: Cultural Humility, Cultural Competence, High Impact Practices, Cultral and language Barriers



Abstract No: 9125

Including LGBTQ topics in multicultural instruction in speech pathology: Instructional strategies and learner perceptions

Nidhi Mahendra¹

¹*Department of Communicative Disorders and Sciences/ San Jose State University/ United States*

Abstract Content:

The purpose of this presentation is to share with participants a thick description of rationale, background, and pedagogical methods for integrating content about lesbian, gay, bisexual, transgender and queer (LGBTQ) culture and history into multicultural instruction for speech-language pathology and audiology students. Current practice on teaching courses on diversity issues in speech-language pathology and audiology does not typically or consistently involve instruction about LGBTQ culture. Yet LGBTQ issues clearly merit inclusion in the curricula for future healthcare providers given the rising global numbers of LGBTQ-identified adults, the backdrop of historic and continuing discrimination, barriers to equal rights, and persistent health disparities among LGBTQ-identified persons. This presentation provides one detailed example of instructional design of an LGBTQ content module, comprising different experiential learning activities designed to improve the preparedness of future clinicians to work with LGBTQ clients. The presentation concludes with a preliminary investigation of learner perceptions of this module, embedded in a semester-long course on cultural and linguistic diversity for speech-language pathology and audiology students.

Learning Outcome:

After attending this presentation, learners will be able to:

1. List 3 reasons for including content about LGBTQ culture into multicultural instruction for speech-language pathologists (SLPs) and audiologists (AUDs)
2. Identify four critical concepts that are important for understanding health disparities in LGBTQ populations
3. Match three types of experiential learning activities to specific learning outcomes designed to improve preparedness for working with LGBTQ clients

Keywords: Multicultural affairs, speech-language pathology, audiology, sexual orientation, gender identity, gender expression



Oral Presentation: Session W12- Motor Speech Disorders, Aug. 21st (Wed.) 11:10-

12:55

Abstract No: 9767

Tone Sequencing in Childhood Apraxia of Speech: A Pilot Study

Eddy CH WONG¹ ; Kathy YS LEE¹ ; Michael CF TONG¹

¹*Department of Otorhinolaryngology, Head and Neck Surgery/ The Chinese University of Hong Kong/
Hong Kong*

Abstract Content:

Title

Tone Sequencing in Childhood Apraxia of Speech: A Pilot Study

Objective

To explore the tone sequencing ability of children with childhood apraxia of speech (CAS).

Background

CAS is a motor speech disorder with inappropriate prosody and a difficulty in sequencing movements for speech. Current studies investigated the impairments separately. The former was objectively described in the speech sample, while the later was determined from the segmental accuracy and consistency in the tasks of imitating polysyllabic words and/or the diadochokinetic tasks. It is well known that complex speech involves variations of the segmental and suprasegmental features. We hypothesized that children with CAS have a deficit in sequencing tone, one of the suprasegmental features in tone languages.

Methods

Two females (aged 4;1 and 4;11) with phonological impairment, two males (aged 3;9 and 3;10) with phonological and language impairment, and two males (aged 3;7 and 6;6) with CAS performed a set of tone sequencing tasks: 1) repeat the CV syllable, /mɔ/, with one of the early Cantonese tones (i.e., high level, high rising and low falling) five times, 2) repeat two /mɔ/ with two different early Cantonese tones five times, and 3) repeat three /mɔ/ with three different early Cantonese tones five times. The accuracy and consistency of the performances were recorded.

Results

The results showed that children with and without CAS performed differently in the tone sequencing tasks. The two children with phonological impairment scored full marks for both the accuracy and consistency. The two children with phonological and language impairment scored 36/60 and 60/60 in accuracy and 27/28 and 28/28 in consistency. The children with CAS scored 24/60 and 14/60 in accuracy and 24/28 and 22/28 in consistency. Children with CAS scored the lowest in both the accuracy and consistency. One of the children with phonological and language impairment performed poorer than children with phonological impairment only.

Discussion

Results showed that children with CAS were having difficulties in sequencing tones. This provides preliminary support to our hypothesis and contributes to the understanding of the inappropriate prosody in children with CAS, especially in the tone languages. Further investigations of the tone sequencing ability in CAS with a larger sample size are demanded.



Learning Outcome:

- 1) To learn how to identify the difficulty of sequencing tone in children with CAS
- 2) To learn that children with CAS are having difficulty in sequencing tones
- 3) To learn the prosodic characteristics of Cantonese-speaking children with CAS.

Keywords: Childhood apraxia of speech; Tone sequencing; Cantonese tone; Suprasegmental features



Abstract No: 9739

An electromagnetic and ultrasound investigation of feedback mechanisms in Childhood Apraxia of Speech.

Stefanie Keulen^{1 2 3} ; Martijn Wieling^{4 5} ; Jidde Jacobi³ ; Teja Rebernik³ ; Mark Tiede⁵ ; An Jansen⁶ ;

Philippe Paquier^{2 7 8} ; Ms Kat Dobson

¹Research Foundation Flanders (F.W.O)/ Research Foundation Flanders (F.W.O)/ Belgium, ²Centre for Linguistics (CLIN) – Clinical and Experimental Neurolinguistics (CLIEN)/ Vrije Universiteit Brussel/

Belgium, ³Center for Language and Cognition/ University of Groningen/ Netherlands, ⁴Department of

Information Science/ University of Groningen/ Netherlands, ⁵Haskins Laboratories/ Yale University/

United States, ⁶Department of Child Neurology/ Vrije Universiteit Brussel /UZ Brussels/ Belgium,

⁷Service de Neuropsychologie/ ULB-Hôpital Erasme/ Belgium, ⁸Unit of Translational Neurosciences/

Universiteit Antwerpen (UA)/ Belgium

Abstract Content:

Childhood Apraxia of Speech (CAS) is a motor speech disorder that causes severe articulatory distortions in childrens' speech, in the absence of neuromuscular deficits. In the current project we aimed to investigate feedback mechanisms in CAS. The model on which we based our study is the Directions into Velocities of Articulators or "DIVA"- model (Guenther, 2006; Guenter & Tourville, 2011). According to this model, speech production relies on a feedforward and feedback loop, which can be further subdivided into an auditory and somatosensory feedback system.

In our study we investigated three children with CAS. This is an ongoing study and more participants will be included in the future. The experiment took place on two occasions: during the first occasion, CAS patients and controls were presented with a set of subtests of the CELF-IV-NL (tasks: following directions, phonological awareness). Oral-motor capacities were checked via a dyspraxia programme, which equally included a series of checklists for the pronunciation of vowels and consonants as well as consonant clusters. Non-verbal IQ was tested via the Raven SPM. During the second occasion, the childrens' articulation was measured. Monosyllables, embedded in the phrase "ik heb de [XXX] gezegd", were pronounced and the participants performed a diadochokinesis task. Their articulatory trajectories were registered via electromagnetic articulography (NDI Wave, Northern Digital Inc.) combined with ultrasound (Articulate Instruments Inc.), for the registration of tongue movement. The experiment was programmed in MATLAB and was run in Marta (Tiede, 2018; latest version). The participants repeated a randomized selection of monosyllables two times, without any interference being present. In a second block, they pronounced the same randomized stimuli, but did this while they were biting on a bite block, hence diminishing kinesthetic feedback. In the third and last block, they articulated the same randomized stimuli, but while they were hearing a sound during their speech, which interfered with their auditory feedback.

The hypothesis is that children with CAS perform worse on compensation to both disruptions than controls, but also compensate better to auditory than to kinesthetic feedback as a group, because of the more direct impact on motor planning in the latter case.

Learning Outcome:

Current study is to experimentally test the validity of the clinical application of the DIVA model (*in vivo*) and to highlight the importance of basing therapeutic decisions on empirically assessed theoretical models.

Keywords: childhood apraxia of speech; motor speech disorders; electromagnetic articulography; ultrasound



Abstract No: 9953

Vocal emotion and attitude of Mandarin speakers with Parkinson's disease

Cristiane Hsu ^{*1}

¹*Audiology and Speech-Language Pathology/ Asia University/ Taiwan*

Abstract Content:

PD is a progressive neurodegenerative condition caused by the dopamine reduction in the basal ganglia circuit, resulting in a movement disorder with three canonical symptoms – bradykinesia, resting tremor, and muscular rigidity (Edwards et al., 2016), which also affect the respiration, phonation, resonance and articulation during speech (Duffy, 2012).

Generally, PD patients speak with less pitch and loudness variations, and experience difficulties to express emotion through prosody (Midi et al., 2008; Rigaldie, Nespoulous, & Vigouroux, 2006; Stewart et al., 1995; Cheang & Pell, 2007). Further empirical findings suggested that their problems in affective prosody might have causes beyond motor symptoms (Möbes et al., 2008). However, systematic interpretation of the outcomes is compromised as these studies were not intended to test any hypothesis (Scherer, 2003).

The use of body-size projection theory (Morton, 1977; Ohala, 1983) as the theoretical framework is the major innovation of the present study, and its validity as a theory of emotion was demonstrated in a series of studies. Perceptual studies found that synthetic utterances with longer vocal tract length (VTL) (i.e. narrower formant dispersion), lower pitch and pressed voice were perceived as angry-sounding, while those with shorter VTL (or wider formant dispersion), higher pitch and breathy voice were perceived as happy-sounding (Chuenwattanapranithi, Xu, Thipakorn, & Maneewongvatana, 2008; Noble & Xu, 2011; Xu, Kelly, & Smillie, 2013). Production study revealed that adolescents with autism, typically-developing adolescents and young adults produced angry- and serious-sounding utterances with lower pitch and more pressed voice, while conveying happy- and friendly-sounding ones with higher-pitched and breathier voice (Hsu & Xu, 2014).

In the present study, speech samples from Mandarin-speaking PD patients (PD group), healthy elderly (HE group) and young adults (YA group) were collected for acoustic analysis. Overall, all three groups showed emotionally and attitudinally variant acoustic features, and there was no significant effect of group for any acoustic features. Mean pitch and voice quality (centre of gravity and H1-A3) had significant effects on emotions and attitudes for all three groups (all $p \leq 0.001$). In emotional prosody, all three groups conveyed angry-sounding utterances with lower-pitched and more pressed voice and the opposite for happy-sounding ones. Yet in attitudinal prosody, only HE and YA groups expressed serious-sounding utterances with lower-pitched and pressed voice and friendly-sounding ones with higher-pitched and breathier voice, while PD group could not perform these attitudes distinctly.

Current findings suggested that although PD speakers could convey emotions through prosody at comparable level to the average elderly and young adults, but they still had poorer performance in attitudinal prosody. This discrepancy suggests that not all affective prosodic skills are equally affected in PD, and thus the emotional and attitudinal prosodic skills may be controlled differently in the brain.

Learning Outcome:

1. Introducing a novel experimental phonetic technique for studying speech disorders
2. Interpreting systematically relevant acoustic features to understand dynamics of affective prosody
3. Applying new theoretical concepts in understanding vocal emotion and attitude

Keywords: emotional prosody, attitudinal prosody, body-size projection, Parkinson's disease, Mandarin



Abstract No: 9786

Speech disorders in children with spina bifida

Alice Lee¹ ; Jennifer Harte¹ ; Damhnait Ní Mhurchú² ; Fiona Gibbon¹ ; Sue Peppé³ ; Deirdre O'Leary¹ ;
Olivia O'Mahony⁴

¹Speech and Hearing Sciences/ University College Cork/ Ireland, ²Speech and Language Therapy/
Central Remedial Clinic, Waterford, Ireland/ Ireland, ³N/A/ N/A/ United Kingdom, ⁴Department of
Paediatrics/ Cork University Hospital, Mercy University Hospital/ Ireland

Abstract Content:

Spina bifida (SB) is a congenital condition that results from incomplete closure of the neural tube during embryonic development due to genetic and/or environmental factors. Structural anomalies of the base of the brain and accompanying hydrocephalus are highly likely to associate with SB; hence, children with SB often have lifelong problems in sensory and motor functions as well as difficulties in the cognitive domain and communication. Most previous research on communication skills in children with SB focused on their language abilities and related cognitive skills, with very little attention on their speech deficits. Nonetheless, the few previous studies on speech production in children with SB showed that they did have apparent problems in prosody, phonation and articulation but how well or poorly these children perform in other aspects of speech production is unknown. Therefore, this study applied the Mayo clinic system of perceptual judgements of dysarthrias to establish a speech production profile for children with SB.

The participants were 18 children with SB (eight males and 10 females; aged 7-12 years with a mean of 9;02). All participants were monolingual Irish-English speakers except one child who was bilingual but spoke English as the primary language. A connected speech sample was elicited from each child using a wordless picture book and recorded using a digital recorder. Perceptual judgements of speech were carried out by two speech and language therapists who were experienced in motor speech disorders in children using the general procedure of the Mayo clinic system of perceptual judgements of dysarthrias. Each speech sample was judged using a visual analogue scale (VAS) on the 38 speech dimensions for each of the area of pitch (four dimensions), loudness (five), voice quality (nine), respiration (three), prosody (10), articulation (five) and overall impression (two: intelligibility and bizarreness). The VAS is a 100 mm straight line, where the left end represented "Normal" and right end represented "Deviation from normal". Hence, the higher the rating, the more severe it deviated from normal for the speech dimension rated.

The results of the study showed that there were two-thirds of the children (12/18) who were judged as somehow unintelligible and bizarre. The 10 speech dimensions that showed the highest mean rating were 'loudness level (overall)', 'short rushes of speech', 'phrases short', 'variable rate', 'phonemes prolonged', 'rate', 'audible inspiration', 'excess and equal stress', 'imprecise consonants' and 'pitch level'. Five of these dimensions were related to prosody, two to articulation, two to phonation and one to respiration. Four of these top 10 dimensions were also found to be prevalent in adults with ataxic dysarthria reported in a previous study and five of the 10 dimensions were also observed in the children and adults with SB reported in another study.

Learning Outcome:

1. Be able to discuss the strengths and weaknesses in terms of the speech subsystems for children with spina bifida.
2. Be able to describe the procedure of perceptual judgements of speech and the content of a computerised prosody test.

Keywords: children; spina bifida; motor speech disorders; perceptual judgements; prosody



Abstract No: 9755

Oral-diadochokinetic rates for healthy Malaysian-Mandarin speakers

Shin Ying Chu¹ ; Steven Barlow² ; Kai Xing Lim¹ ; Jia Hao Foong¹ ; Jaehoon Lee³

¹Faculty of Health Sciences, Centre for Rehabilitation & Special Needs/ National University of Malaysia/ Malaysia ²Department of Special Education and Communication Disorders, Center for Brain, Biology and Behavior/ University of Nebraska/ United States ³Faculty of Health Sciences/ National University of Malaysia/ Malaysia ³Educational Psychology and Leadership, Institute for Measurement, Methodology, Analysis and Policy / Texas Tech University/ United States

Abstract Content:

Background: Oral - diadochokinesis (oral - DDK) tasks are commonly used by speech-language pathologists in evaluating motor speech disorders. At present, age and language are known to affect oral-DDK rates. Yet, such data are missing in Malaysian-Mandarin speakers. The effect of task stimuli (non-word versus real-word repetition) is unclear among Malaysian-Mandarin speakers.

Objective: This study examined the effects of stimuli (non-word versus real word) on oral-DDK rates for healthy Malaysian-Mandarin speakers. The second goal was to investigate the possible effect of age and sex on the oral-DDK performance rate.

Method: A total of 117 healthy Malaysian-Mandarin speakers (18-83 years, 63 females and 54 males) were audio-recorded while performing a non-word (repetition of /pataka/) and real-word oral-DDK tasks ("buttercake" and "怕他看 ([p^ha4t^ha1k^han4])"). The number of syllables produced in 8 seconds was counted from the audio recording to derive the oral-DDK rates. A multivariate Analysis of Variance (MANOVA) was conducted to compare the /pataka/, English, and Mandarin tasks according to age groups [Young (18-40 years, n=56), Middle (41-60 years, n=39), Older (61-83 years, n=22)] and sex.

Results: No sex effect was found, indicating no difference in the stimuli tasks between male and female. Age, however, was significantly difference across /pataka/, English, and Mandarin tasks, with large effect size. As age increased, oral-DDK rates decreased (Bonferroni, p<0.05). Repetition of real words was faster than that of non-word, with the following trends: English words (Mean = 5.55, SD = 1.19 syllables/s) > non-words (Mean = 5.29, SD = 1.23 syllables/s) >Mandarin words (Mean = 4.91, SD = 1.13 syllables/s).

Conclusions: Our results suggest that aging has a large impact on oromotor functions, indicating that speech-language pathologists should consider using separate norms for clients at difference age levels. Application of oral-DDK task should be done carefully, with a set norm within the specific language and population. Assessing both non-word and real-word repetition could assist to improve differential diagnosis of normal and pathological in this task.

Learning Outcome:

Learning outcomes: The reader will be able to: (a) understand the importance of utilizing oral-DDK in assessing motor speech disorders, (b) describe the process of obtaining oral-DDK; and (c) understand the aging effect on oral DDK performance.

Keywords: oral DDK; adults; syllables/sec; Mandarin speakers; non-word



Abstract No: 9751

Assessment of articulatory ability for dysarthric speakers - An acoustic analysis with sentence production and syllable repetitions

Makoto Kariyasu¹ ; Keiichi Toyama² ; Hirokazu Kawano³ ; Yukie Yakata⁴

¹Speech-Language-Hearing: Sciences and Disorders/ Kyoto University of Advanced Sciences/ Japan,

²Rehabilitation/ Junwakai Memorial Hospital/ Japan, ³Rehabilitation Medicine/ Junwakai Memorial Hospital/ Japan, ⁴Speech Therapy/ Uzumasa Hospital/ Japan

Abstract Content:

Background and Purpose: Articulatory deficits, such as inaccurate consonants, slurred speech, slowness, are common in dysarthric speakers. For the assessment of articulatory ability, speech clinicians usually describe speech features by auditory-perceptual analysis and make the measurement of maximum repetition rate (MRR) for oral diadochokinesis (DDK). Speech clinicians may perceive inaccurate consonant productions in read passage or sentences, but only describe distorted or omitted. It is possible to quantify such inaccurate productions with an acoustic index. By examining sound pressure (SP) contour, the magnitude of SP difference (dSP) at consonant and adjacent vowel segments can be measured (Ackermann and Zielger 1981). Reduced dSP for DDK may show inaccurate articulatory movements. The purpose of present study is to examine the relationship between the accuracy of consonant articulation rate of sentence production and syllable repetitions for dysarthric speakers. Method: Speech assessment was conducted at a hospital with neuro-rehabilitation unit for the dysarthria research project. Fifty patients with dysarthria who completed speech tasks were included in the study. The dysarthric speakers were varied in the severity, and they were composed of 27 men and 23 women, with the mean age of 69.5 and age range of 23 – 90 years old. A test sentence was made of 16 morae in length and several intervocalic stop consonants /k//b//d/: /taNkeNkawa boukeNga daisukida/. DDK was performed with six CV (/pa//ta//ka//sa//ra//da/) at speaker's maximum speed. The speech samples were recorded using a microphone connected to an audio interface to PC with a software (Multi-speech 3700, Kay-Pentax) at the sampling rate of 25kHz. Produced sentence and syllable- train (ten CV) was extracted, and SP for consonant-vowel segment and duration were measured based on the SP and Pitch contour with spectrographic display using Praat, then dSP and rate were computed. Results: Greater magnitude of dSP and faster rate were found in mild dysarthria while smaller magnitude and greater variability of dSP and lower rate were found in moderate and severe dysarthria. The mean dSP was 20dB for /kV/ and 13db for /bo/ with great variability among dysarthric speakers. The mean speech rate was 7.0 morae per second with a range of 2.35-10.06 for sentence production. The mean of maximum repetition rate was 4.4 – 5.5 with great range for each CV. The dSP between sentence production and DDK was moderately correlated ($r=0.51-0.58$). The speech rate and MRR was highly correlated ($r=0.70-0.76$). The dSP and rate was not significantly correlated. Discussion: Reduced speech rate and inaccurate articulation were characteristics in dysarthria, but the quantifications for both accuracy and speed have not made by speech clinicians. With the rate measurements and dSP that can be considered as an index of articulatory under-shoot or over-shoot, articulatory ability of dysarthric speakers is fully assessed.

Learning Outcome:

- 1) To understand the profits of assessment with an acoustic analysis for dysarthric speakers
- 2) To relate acoustic measurements in sentence production and syllable repetitions with abnormal speech movement

Keywords: dysarthria, assessment, articulatory ability, acoustic analysis



Abstract No: 9649

Construction of an automatic Carcinologic Speech Severity Index (C2SI) score

Mathieu Balaguer^{*1}

¹*Unité de la Voix et de la Déglutition/ Hôpitaux de Toulouse/ France*

Abstract Content:

Introduction : The quality of life of patients treated for oral cavity or oropharynx cancer can be impaired because this pathology modifies the communication abilities of the patients due to its location. The assessment of speech disorders is currently based on perceptual assessments, subject to significant variability. The development of automatic speech treatments can optimize this approach.

Objective : to assess the validity of the different measurement scores of speech disorders, resulting from an automatic signal analysis, in patients treated for upper aerodigestive tract cancer, to build a global automatic score.

Material and methods : our study is based on data from the C2SI projet (Carcinologic Speech Severity Index). 87 patients treated for oral cavity or oropharynx cancer, and 42 controls performed various speech production tasks, targeting vocal production, prosody, comprehensibility, acoustico-phonetic decoding, and intelligibility. The audio recordings of these productions were the object of a human perceptive evaluation, but also of an automatic treatment. Self-questionnaires of quality of life and perception of speech disability were proposed to the participants to study the links between speech disorder and perceived impact. Metadata about individual, clinical and treatment information were also collected. Construct validity, criterion validity and reliability were analysed. An automatic index was finally built by modelization.

Results : Among all the parameters that can be extracted from an automatic processing of the speech signal, 6 were selected because they are consistent with the data of the literature, they respect the construct validity by discriminating extreme groups, and are correlated with the perceptual score, acting as a gold standard, and with the speech disability scores (criterion validity). A factor analysis confirms their structure in two domains: 2 parameters are part of the "voice" domain (interquartile difference of the fundamental frequency, and amplitude instability), and 4 are part of the "speech" domain (likelihood scores in acoustic-phonetic reading and decoding, row accumulation and anomalous acoustic-phonetic decoding rates). They present a good internal consistency (Cronbach's alphas greater than or equal to 0.90 in the "speech" domain). This led to the construction of an automatic score by modeling these parameters. It has good metric qualities.

Conclusion : Automatic speech processing allows to define valid, reliable and reproducible parameters. It remains to test this score automatically on a new patient sample in the external validation framework. A simplification by reduction of tasks may be considered in routine clinical use.

Learning Outcome:

Participants should be able to understand the relevance of automatic measurements for speech disorders

Participants should be able to assess all speech dimensions in motor speech disorders

Keywords: speech disorders ; automatic treatment ; assessment



Oral Presentation: Session W14- Craniofacial Dysmorphias and Related and Syndromes (I), Aug. 21st (Wed.) 11:10-12:55

Abstract No: 9943

Percent consonant correct as an outcome measure for cleft speech in an intervention study.

Debbie Sell¹ ; Triona Sweeney²

¹Centre for Outcomes and Experience Research in Children/ Great Ormond Street Hospital NHS Foundation Trust/ United Kingdom, ²Speech and Language Therapy/ Speech at Home/ Ireland

Abstract Content:

Background: It is well-recognized that cleft speech is complex consisting of several interacting parameters assessed simultaneously, together with errors sounds not in the listener's own language. In speech outcome studies narrow phonetic transcription and the reporting of intra and inter rater reliability are acknowledged as the gold standard. However, cleft speech brings special challenges to this task, as complex speech disorders are known to be associated with low transcriber agreement. Recent studies informed using Percent Consonant Correct (PCC) as the primary outcome measure in a cleft speech intervention study.

Objective: The aim was to evaluate the intra and inter rater reliability of PCC in a cleft speech intervention study.

Methods: Two independent experienced listeners analysed 119 recordings randomly selected from five data points before, during and following intervention. They attended a one-day training course following which they analysed 69 speech samples. A modified PCC score was calculated for words and phrases/sentences. Analysis of the data indicated differences in transcribing cleft speech characteristics and hence a further training course was completed. Following training, the listeners analysed another 70 video clips, 20 of which were duplications.

Results: The initial (Phase 1) results showed poor reliability for the number of targets elicited for words (ICC = 0.007) and sentences/phrases (ICC = 0.42). Differences in classification of errors as glottal stops and consonant deletion accounted for this. Despite this, reliability for the modified PCC was good (ICC word = 0.80; ICC for phrases/sentences = 0.79). Other differences regarding transcription of active nasal fricatives and nasal emission/turbulence accompanying sounds were also noted. Results of a second reliability study (Phase 2) showed improvement in the number of targets elicited in words and phrases/sentences, with very good inter rater reliability for the modified PCC score on the word dataset (ICC= 0.9; 95% CI = 0.84-0.94) and the sentence dataset (ICC = 0.88; 95% CI = 0.8-0.93). Intraclass correlations indicated very good intra-rater reliability (ICC = 1.0; 95% CI = 0.98-1.00) for the modified PCC score in both words and phrases/sentences for each listener. One listener consistently gave higher modified Percent Consonant Correct scores.

Conclusions: Although the modified PCC was reliable in both studies, in cleft speech intervention studies, reliability of the number of targets elicited should be reported. Listeners need to distinguish between glottal articulation and consonant deletion, in order that the PCC score is meaningful. Attention should be paid to where listeners are reliable, but where one listener rates consistently higher than another, as this can potentially distort the results of an intervention study. More research is needed on measuring the changes in articulation in cleft intervention studies.

Learning Outcome:

1. Participants will gain knowledge about use of PCC as an outcome in cleft speech disorders
2. Participants will gain an understanding of issues in use of PCC as outcome measure in an intervention study



Abstract No: 9081

Phonological profile of patients with velopharyngeal dysfunction and palatal anomalies

Ariela Nachmany^{*1}

¹Faculty of Communication Disorders/ Hadassah Academic College/ Israel

Abstract Content:

Background & objective: Individuals with velopharyngeal dysfunction (VPD) form a strikingly heterogeneous population from the perspective of palatal anomalies and their likely sequelae in terms of speech and communication. It is debated whether cleft palate speech should be regarded as an articulatory disorder alone or as an articulatory disorder with phonological consequences. The purpose of the current study was to assess the prevalence and types of phonological errors in patients with VPD and various palatal anomalies, and to determine the relationship between the frequency and type of phonological errors, compensatory articulation and the type of palatal anomaly.

Methods: In this retrospective case analysis, conducted at a university-affiliated hospital, 1171 patients with VPD were classified as having cleft lip and palate (10.3%), cleft palate (18.7%), submucous cleft palate (14.9%), occult submucous cleft palate (27.8%), non-CP group (19.1%), neurogenic VPD (6.7%), or mislearning VPD (2.1%). Perceptual VPD tests including Hebrew articulation and phonological assessment following endoscopy were conducted. Inclusion criteria were hypernasality with or without air escape.

Results: Of the 1171 VPD patients, 622 (53.1%) were male and 549 (46.9%) were female. Ages ranged from 3.09 to 24.02 years (mean 8.54 ± 4.76 years). Among them, 429 (36.6%) had phonological disorders, of which devoicing and cluster reduction were the most frequent. 469 (40.05. %) had compensatory articulation. Compensatory articulation was more prevalent among patients with phonological errors (59.3%) than among patients without phonological errors (35.0%). Most patients 849 (71.8%) were 10-years-old or younger (range 3.09 to 10.0 years; mean 6.06 ± 1.7 years); 368 (45.1%) of whom had phonological disorders. Among them, the cleft palate group had the highest prevalence of phonological errors in comparison to the other groups. While the CLP patients had the lowest prevalence of phonological errors.

Among the 322 patients older than 10 years (range 10.0 to 24.02 years; mean 15.01 ± 3.09 years), 61 (20.2%) had phonological errors. Patients with neurogenic dysfunction or cleft palate had higher prevalence of phonological errors compared to the other groups. The prevalence of phonological errors among patients with left cleft lip and palate was lower.

Discussion: The current study provides additional data about the phonological skills of children with various palatal anomalies. This information can help clarify the etiology of the speech disorder as an articulatory structural constraint, an underlying phonological/organizational disorder or persistent linguistic immaturity.

Learning Outcome:

Learning Outcomes: Participants will be able to explore the ways in which phonology and phonetics interact, and discuss the relationship between compensatory errors and phonological errors while analyzing speech characteristics of patients with VPD according to the specific palatal anomaly.

Keywords: Velopharyngeal dysfunction, Palatal anomalies, Phonological disorders, Compensatory articulation disorders



Abstract No: 9659

Short, intensive speech therapy in patients with cleft (lip and) palate: a pilot-study assessing long-term effectiveness.

Cassandra Alighieri¹ ; Kim Bettens¹ ; Laura Bruneel¹ ; Duncan Musasizi² ; Isaac Ojok² ; Kristiane Van Lierde^{1 3}

¹Department of rehabilitation sciences/ Ghent University/ Belgium, ²Rehabilitation/ CoRSU hospital/ Uganda, ³Faculty of Humanities, Department of Speech-Language Pathology and Audiology, / University of Pretoria/ South Africa

Abstract Content:

Objective: Purpose of the current study was to assess long-term effectiveness (compared to short-term results) of short and intensive speech therapy provided to patients born with cleft (lip and) palate (CL/P) in terms of articulation and resonance.

Methods: Patients (n=5) who received individualized intensive speech therapy (i.e. 6 hours of speech therapy) were contacted in order to obtain long-term data. Finally, three patients agreed to participate in this study. Perceptual and instrumental speech evaluations were performed.

Results: Short-term results for patient 1 showed a moderately impaired speech intelligibility with resonance disorders (i.e. severe hypernasality) and airflow direction errors. On the long-term, patient 1's speech intelligibility was rated as moderately impaired. Furthermore, she presented with mild hypernasality and frequently occurring nasal turbulences. For patient 2, short-term findings showed no resonance disorders nor airflow direction errors resulting in normal speech intelligibility. Long-term findings were comparable to these short-term results. Short-term results for patient 3 showed mildly impaired speech intelligibility with compensatory articulation errors (i.e. glottal stops and active nasal fricatives). On the long-term, patient 3 still presented with the same compensatory articulation errors. Moreover, % correct consonants, % correct plosives, % correct fricatives, % /t,d/ correct and % /s,z/ correct was decreased.

Conclusion: These preliminary results indicate that short-term and long-term outcomes after short, intensive speech therapy are comparable. Furthermore, findings suggest that some patients might benefit from intensive follow-up speech therapy sessions. Further research investigating long-term outcomes of intensive speech therapy is necessary.

Learning Outcome:

The reader will be able to (1) describe long-term effectiveness of short, intensive speech therapy in Ugandan patients with CL/P, (2) describe (possible) factors influencing these long-term outcomes and (3) list possibilities for follow-up speech therapy sessions in resource-poor countries.

Keywords: Cleft (lip and) palate, speech therapy, intensive, long-term



Abstract No: 9991

Interprofessional Education and Practice: Making the case for collaborative practice among Speech Language Pathologists and Orthodontists

Martine Elie^{*1} ; Sana Augustus^{*2}

¹*Department of Communication Sciences and Disorders/ Howard University/ United States,*

²*Department of Orthodontics/ Howard University/ United States*

Abstract Content:

Speech-language pathologists and Orthodontists are among the specialists that may be involved in assessing and treating clients who present with structural and functional anomalies of the oral musculature. Structural anomalies of the oral musculature can also result in concomitant speech disorders, requiring the collaborative services of Speech Pathologists and Orthodontists. A review of seminal research (Erksine, 2015; Palmer, 1948; Subtelny, 1962) chronicled early disclosures of the need for professionals within the field of speech language pathology and dentistry to work alongside one another to provide interdisciplinary patient care. Although, previous research cites a need for increased collaboration between both specialties, recent practice and research still suggest that the need persists. In order to effectively treat clients with structural and/or functional speech sound disorders, Speech-language pathologists who are trained to assess and treat individuals to increase their ability to communicate and swallow effectively, thereby improving their quality of life (ASHA, 2007), and Orthodontists who are trained to diagnose, prevent and treat dental and facial irregularities to correctly align teeth and jaws (AAO) must work collaboratively.

The presentation will demonstrate the need for IPP and IPE among these professionals based a 1) a chart review of dental records 2) a survey completed of practicing professionals and students in the areas of speech-language pathologists' and orthodontists' ability to recognize and refer patients across their specialties. First, a randomized chart review was completed for 264 clients seen at the Howard University Orthodontics Clinic between the years of 2013-2016. Each chart was reviewed for the following information: Age, Gender, Ethnicity, Malocclusion (Class I, II, III/Mutilated), Habits, Normal/Abnormal Speech, Speech Therapy recommendation, Bite Pattern, as well as, the recommendation for an appliance. A subset of the data was analyzed to determine speech patterns and/or trends. The charts of the 66 of the 264 clients identified as having speech concerns were analyzed to determine the speech sound errors most typically noted, as well as, the type of malocclusions most commonly associated with speech concerns. Second, the results of a 20 question survey completed by practicing professionals, students, as well as residents in the fields of Speech-Language Pathology and Orthodontics focusing on practice, referral, and education of each specialty about their degree of preparation and ease of referral of clients across their specialties will be discussed. This presentation will not only demonstrate the need for IPP/IPE but also the demonstrate efficacy of IPE on client care when IPE is implemented across disciplines.

Learning Outcome:

Participants will be able to:

1. State the type of malocclusions that have the most common correlations with speech sounds disorders.
2. State the speech sounds most commonly affected as a result of malocclusion.
3. State the degree and ease of preparation of speech-language pathologists and orthodontists to refer clients across their specialties.
4. Provide methods to implement IPP/IPE across specialties.

Keywords: interprofessional practice and education, orthodontics, speech language pathology



Abstract No: 9660

Lipofilling in patients with cleft lip (and palate) – functional outcomes and patients' satisfaction with appearance

Cassandra Alighieri¹ ; Nathalie Roche¹ ; Kim Bettens¹ ; Laura Bruneel¹

¹Department of rehabilitation sciences/ Ghent University/ Belgium ¹Department of Plastic and Reconstructive Surgery/ Ghent University Hospital/ Belgium

Abstract Content:

Background/aims: Some authors propose the use of lipofilling to resolve low projection of the upper lip in patients with cleft lip (and palate) (CL±P). The aim of present study was to document differences in functional (i.e. logopaedic) and self-reported aesthetic outcome by comparing pre- and postoperative results after lipofilling of the upper lip in patients with CL±P.

Methods: Eight Dutch-speaking youngsters and young adults (three women, five men) with CL±P were included. The median age was 19 years (range: 14-24 years). Functional outcomes (i.e. assessment of orofacial myofunctional behavior, articulation and lip strength) and self-reported aesthetic outcome (i.e. patients' satisfaction using the Cleft Evaluation Profile) were determined.

Results: Neither for lip strength and orofacial myofunctional behavior nor for articulation statistically significant differences were found when comparing measurements before and after lipofilling. Regarding patients' satisfaction, a statistically significant increased self-evaluation of appearance in profile was found after lipofilling.

Conclusion: Regarding functionality, present study did not found any differences when comparing outcomes before and after lipofilling. However, patients were more satisfied with appearance in profile after performance of this technique. Therefore, further research and long-term follow-up studies are necessary.

Learning Outcome:

- (1) The reader will be able to explain functional outcomes of lipofilling in patients with cleft lip (and palate).
- (2) The reader will be able to document patients' satisfaction with the procedure "lipofilling".

Keywords: Cleft lip (and palate), lipofilling, functional outcome, patients' satisfaction



Abstract No: 9666

Health-related quality of life (HRQoL) in patients with cleft palate: validation of the Dutch translation of the VELO questionnaire

Laura Bruneel¹ ; Kim Bettens¹ ; Cassandra Alighieri¹ ; Marc De Bodt^{1 2} ; Kristiane Van Lierde¹

¹Department of rehabilitation sciences/ Ghent University/ Belgium, ²Rehabilitation Centre for Communication Disorders/ Antwerp University Hospital/ Belgium

Abstract Content:

Background and objectives: In health-care, current efforts focus on providing patient-centered care. Specifically for patients with velopharyngeal insufficiency, and by extent patients with cleft palate, the Velopharyngeal Insufficiency (VPI) Effects on Life Outcomes (VELO) questionnaire (Skirko et al., 2012; 2013) allows the clinician to map the impact of speech and swallowing difficulties and speech-related distress on the patient's functioning and well-being. The aim of this project was to translate the VELO questionnaire to Dutch and to evaluate the validity and reliability of this translation.

Method: The English questionnaire was translated to Dutch following a forward-backward translation procedure. In a first study, the content validity, internal consistency, concurrent validity and discriminant validity were evaluated in 39 parents of patients with cleft palate (parent report) and 14 children with cleft palate (child report). Thirty-five parents completed the VELO questionnaire after one year for the evaluation of the responsiveness. To evaluate the reproducibility, 50 parents and 14 children with cleft palate re-completed the questionnaire after two weeks. Lastly, the relationship between the responses on the VELO questionnaire, and perceptual and instrumental speech assessments in patients with cleft palate was explored.

Results: There were no significant differences between the responses of the parent and their child's. A significant positive correlation was found between the score on the parent report and the patients' age. Cronbach's α was 0.955 and 0.817 for the parent report and the child report respectively. Furthermore, a significant negative correlation was found between the parent report and the P-VHI, and analysis showed a significantly worse perception of HRQoL in the patient group compared to an age and gender matched control group. Good reproducibility of the questionnaire was found based on descriptive statistics, results of the Wilcoxon signed rank-test, and the absolute and relative consistency. VELO scores did not significantly differ after one year, neither when performing separate analyses for the intervention (speech therapy) and the non-intervention group. Moderate to strong correlations were found between the total score on the VELO parent report and five speech variables: the VPC-SUM score, speech understandability, passive CSC's, speech acceptability and the need for cleft-related speech therapy.

Discussion and conclusion: The VELO questionnaire showed good content validity, internal consistency, concurrent validity, discriminant validity, reproducibility and construct validity. Moreover, results confirmed the age effect on VELO scores. In summary, the Dutch VELO questionnaire is a valid, reliable and user-friendly tool. Future research should focus on the identification of factors influencing the patient's evolution in HRQoL. More specifically, speech features that can be targeted in therapy to achieve the greatest impact on HRQoL should be identified.

Learning Outcome:

1. The content and use of the VELO questionnaire
2. The results regarding the reliability and several types of validity of the Dutch version of this questionnaire.

Keywords: health-related quality of life; cleft palate; questionnaire



Abstract No: 9749

Holistic assessment of young children with cleft lip and palate using the ICF-CY

Anna Cronin^{*1} ; Sharynne McLeod¹ ; Sarah Verdon²

¹School of Teacher Education/ Charles Sturt University/ Australia, ²School of Community Health/ Charles Sturt University/ Australia

Abstract Content:

Objective

To holistically understand the lives of young children with cleft lip and palate using a range of assessment tools informed by the International Classification of Functioning, Disability and Health: Children and Youth (ICF-CY, World Health Organization, 2007).

Background

Children with a cleft palate (+/- cleft lip) can have difficulties communicating, eating, and participating in daily life. Surgery to repair the cleft generally occurs in the first year of life; however, the cleft can impact children's and families' psychological and social functioning for many years after. Although the early years of life are a time of significant growth and development, as well as a time of multiple treatments for children with cleft palate, little is known about the impact of cleft palate on the daily lives of young children with cleft palate. The ICF-CY provides a framework to consider children's lives holistically.

Method

Participants were seven children aged between 2 and 4 years of age, 13 parents, and 12 significant others (e.g., educators and grandparents). Data were collected during home visits and visits to the children's early childhood education centres. A range of assessment tools applicable to different domains of the ICF-CY were used to collect and analyse data.

Results

Child participants' Body Functions including speech, language and cognitive development were assessed using the Toddler Phonology Test, Preschool Language Scales (PLS-5) screener and the MacArthur-Bates Communicative Development Inventory (MB-CDI). Participants' Body Structures were assessed via oral motor examination. Participants' Activities and Participation were examined through interviews with family members and significant others using the Speech Participation and Activity Assessment of Children (SPAA-C), as well as observations and the completion of the Time Use Diary and Focus on the Outcomes of Children Under Six (FOCUS©). Environmental Factors including use of communication devices, services accessed and support and relationships in the participants' lives were measured through interview and observation. Participants' Personal Factors such as other health conditions, coping styles, overall behaviour and character style and education were investigated via the Strengths and Difficulties Questionnaire (SDQ) and case history.

Discussion

The current study supports the use of measures to evaluate the experiences of young children with cleft palate more holistically. At present, assessment of children with cleft palate focuses largely on Body Functions. Measures such as the SDQ and SPAA-C may be introduced by speech pathologists wanting to consider ways to enhance young children's participation in family, education and community life. The hope is that this research will contribute to supporting speech pathologists' and other professionals' practice to include all domains of the ICF-CY when working with young children with cleft palate by extending current assessment protocols.



Learning Outcome:

To apply the ICF-CY to holistic assessment of young children with cleft lip and palate

To introduce a range of assessment tools to broaden clinicians' and researchers' lens when working with young children with cleft palate.

Keywords: ICF-CY; cleft palate; young children; holistic



Oral Presentation: Session TH2- Multilingual Affairs (IV), Aug. 22nd (Thu.) 11:00-12:00

Abstract No: 10071

What language(s) do parents use when they talk to their bilingual children and why?

Elin Thordardottir^{*1} ; Alexandra Barbeau-Morrison¹ ; Nouhad Abou Melhem; Isabel Rodriguez Ortiz;

Silvia Nieva; Rena Lyons

¹*Communication Sciences and Disorders/ McGill University/ Canada*

Abstract Content:

Position statements on best practice in speech-language (SLP) services with bilingual children strongly recommend that parents be encouraged to use their own native language with their bilingual children. This recommendation recognizes the cultural and emotional value of the family's native language, the negative side effects of the elimination of the native language and the fact that parents provide the best model in a language that they master well. However, at least anecdotal information exists that not all parents choose to follow this recommendation. Discrepancies between what SLPs think and what parents think this respect are important to document and understand as they point to a need to either revise current recommendations or present them in more effective ways to parents.

Purpose: The purpose of this study was to examine what language(s) parents choose to use with their bilingual children and why.

Methods: The study is multinational, conducted within COST Action IS1406, and to date [\[MU1\]](#) involves data from Canada, Iceland, Spain and Lebanon (with 30 participants per country, including parents of children age 5 to 8 years – data collection that is completed focused on children with typical language development; data collection on children with language impairment is underway). Qualitative phone interviews were used with targeted questions addressing what language(s) the parent uses with their child, what advice they have received or sought, what motivates the choices they make and what advice they would give other parents. The interviews were transcribed and coded using a code book developed by the multinational research group. The main resulting themes included: 1) what parents do (in terms of language choice), 2) the parents' beliefs about what they should do, and 3) the parents' beliefs about the nature of bilingual development, 4) emotions associated with the experience (such as satisfaction, stress, regret), and 5) values underlying parents' choices (such as a sense of responsibility to transmit their cultural heritage, a desire to provide their children with the most useful tools to succeed).

Results: The results of this study were analyzed quantitatively (how many parents chose native language, how many had received advice...) and qualitatively, providing specific examples of what parents expressed. Results reveal a range of responses. While parents overall valued the use of the native language for its cultural importance, many also saw the language of the community and/or school as no less or more important for their children. Many parents associated use of the native language with positive feelings and outcomes, however, some also described a sense of responsibility associated with stress or a sense of inadequacy at not being able to fulfil their duty in this respect.

Learning Outcome:

A greater understanding of parents' beliefs about language development and their role in it.

A greater understanding of the language learning goals that parents have for their children.

Keywords: bilingualism, language exposure, language choice, parents



Abstract No: 9829

Verbal fluency in Mandarin-English bilinguals

Clare McCann^{*1} ; Meng-Hsin Yeh^{*1}

¹*School of Psychology (Speech Science)/ The University of Auckland/ New Zealand*

Abstract Content:

Objective

The primary purpose of this study was to compare the performance between Mandarin-English bilingual and Mandarin/English monolingual speakers on three verbal fluency tasks (semantic, phonemic and emotion). A second purpose was to compare bilingual's Mandarin and English performances on these tasks to language proficiency ratings and confidence ratings.

Background

Verbal fluency tests are widely used in neurological (Henry & Crawford, 2004; Zarino, Crespi, & Launi, 2014), psychiatric (Henry & Crawford, 2005), and mental health (Simpson, Dumitrache, & Calet, 2018) settings to explore impairments in language ability and executive functioning. They measure the ability to retrieve lexical items within a fixed time (Wauters & Marquardt, 2017). Previous studies have discussed the effect of task type and participant type on performance in semantic and phonemic tasks. There have been no studies exploring emotion tasks on Mandarin-English bilinguals. It is important for clinicians to consider linguistic difference when interpreting assessment results.

Method

Thirty Mandarin-English bilinguals completed six verbal fluency tasks in Mandarin and six verbal fluency tasks in English. Thirty Mandarin monolinguals and thirty English monolinguals completed six verbal fluency tasks in their languages. Results were analysed for difference between fluency type (category, letter, and emotional) and participant type (monolinguals and bilinguals).

Results

Bilinguals generated fewer items in the semantic tasks in both English and Mandarin; however, they produced more items than monolinguals in both languages. In the phonemic tasks, bilinguals generated fewer items than English monolinguals, however they outperformed monolingual Mandarin speakers. Regarding emotion tasks, bilinguals outperformed monolinguals in both Mandarin and English. The effects of tasks were observed in which participants produced the greatest number of items in the semantic task and the fewest in the emotion task. A correlation was found between self-reported proficiency and bilinguals' English performance. No correlation was found between self-reported confidence and performance.

Discussion

The performance of bilinguals in the current study is quite different to previous studies. Linguistic factors such as different typing systems might explain such results. In Mandarin, individuals can use either phonetic-based or shape-based methods when typing. Having participants in the current study who are used to shape-based methods might explain the poor performance for monolingual Mandarin speakers in the phonemic task. Bilinguals' outperformance in emotion tasks cannot account for their advantage in executive functioning since they did not outperform either English or Mandarin monolinguals in semantic tasks. Factors other than executive functioning might play a role in emotion processing.

Learning Outcome:

This study provides preliminary data on the performance of verbal fluency tasks between Mandarin-English bilinguals and Mandarin/English monolinguals.



This findings of this study can be used to compare with bilingual clinical populations, as a comparison of their verbal fluency ability.

Keywords: bilingual; verbal fluency;



Abstract No: 9933

Listening to and learning from clients and their communication partners: use qualitative research methods to understand communicative disorders from stakeholders' perspectives

Chen-chen Cheng¹

¹*Special Education/ National Kaohsiung Normal University/ Taiwan*

Abstract Content:

Qualitative studies in the communicative disorders field are rare. One reason might be most researchers view communicative disorders as personal, biological, and language skills-related ailments that could be identified and remedied through speech and language assessment and intervention. This focus on finding causes of and evaluating assessment and intervention efficacy for communicative disorders has framed researchers' research questions in a quantitative orientation. Quantitative methods are used to examine causal or correlational relationships among discrete linguistic or behavioral variables. However, communicators' linguistic competence alone cannot ensure successful communication. For example, rapport building is important in service delivery but it is a context-dependent concept that might be difficult for us to measure numerically. How do we study rapport building between clinicians and clients? Is rapport building understood differently by different clinicians across cultures and nations? These questions can be better answered via qualitative research that is aimed at investigating social phenomena and providing contextual information to deepen readers' understanding of this particular social phenomenon.

Objectives

The presenter will introduce sample qualitative research projects to heighten practitioners' and researchers' awareness of how qualitative research methods can support their inquiry into the interactive, social, and cultural domains of human communication. Extending from these sample projects, we will discuss research topics and questions better suited for qualitative studies to expand the range of inquiries in the field of communicative disorders.

Method

The presenter will introduce the research methods and findings of several of her and her graduate students' recent qualitative studies and discuss how professionals can benefit from learning from the experiences of communication partners, student clinician-daughter of client, and people with hearing impairments.

Results

Three sample qualitative research studies introduced here include an interview study on communication partner's interaction strategies with their family members with aphasia; a student clinician's action research project on communication training for her mother who had multiple system atrophy and her father, her mother's main caregiver; and a narrative inquiry into a protracted and often frustrating quest for "effective hearing aids" of a young adult with a sensorineural hearing loss. The presenter will also highlight the importance of reflexivity, the most essential concept and practice in the qualitative research process, and how it might contribute to clinicians' professional development.

Discussion

What researchers are studying has serious ramifications as to how and in what direction our field is heading. Given today's multicultural world, these research directions must be multiple as different worldviews are coexisting at the same time and in the same place. It is necessary to give equal attention to diverse research methods so our students, future practitioners and researchers in this field, will have opportunities to receive training in different approaches to understanding our and our clients' worlds.



Learning Outcome:

The learners will:

1. Give a general definition of what qualitative research is
2. Expand the ways they approach research topics and questions

Keywords: qualitative research, reflexivity, communication partner, research methodology



Abstract No: 9872

Narratives as an Assessment Measure of Bilingual Learners' Oral and Written language abilities.

Sharon Moonsamy^{*1} ; Kerchia Naidoo^{*1}

¹*Speech Pathology & Audiology/ University of the Witwatersrand/ South Africa*

Abstract Content:

Learners require various cognitive and linguistic processes to succeed scholastically; thus learners who are unable to process effectively, experience academic difficulties. Assessment of these processes is a challenge, as there is limited access to contextually appropriate assessment tools for all learners in the South African context. Standardised language assessment measures normed on the multilingual and multicultural South African population are absent, hence narratives as an assessment tool has the potential for comprehensive analysis of multilingual learner's cognitive and linguistic processing abilities. The purpose of this research study was to determine whether oral and written narratives are a comprehensive informal language assessment tool for bilingual participants within the South African context. The study objectives included comparison of the learners' English and isiZulu oral and written narratives and their academic performance. Also, comparison of the learners' oral narrative with their performance on the standardised CELF 5.

A quantitative research method, with a comparative design was employed. Topic initiated oral and written narratives from 10 learners, in both English, (the language of learning and teaching- LOLT) and isiZulu (a home language) were obtained. Narrative marking grids were formulated for the analyses; and descriptive statistics was used for quantitative data analysis. The results indicated that learners performed better in their L2 narratives using the LOLT, as compared to their L1 (home language). The data indicated that the learners produced higher scores on oral narratives when compared to the written narratives. Although there was a strong positive correlation between the CELF-5 and all narratives, a weak linear relationship was noted when comparing narratives and CELF-5 performances to learner's academic performances. This research study contributes to knowledge on the use of narratives as an informal assessment measure in determining cognitive and language difficulties in multilingual learners, globally. Additionally, it piloted a narrative structure for the isiZulu language (one of the 12 official languages in South Africa). Further studies on narrative assessments in multilingual populations are required.

Learning Outcome:

1. **To describe the relevance of narratives as a tool for linguistic and cognitive assessment of multilingual children.**
2. **The participants will compare the performance of learners' oral and written narratives in the L1 and LoLT.**

Keywords: Narratives, language, cognition, school-aged learners, culturally relevant assessment tools.



Oral Presentation: Session TH3- Fluency (II), Aug. 22nd (Thu.) 11:00-12:15

Abstract No: 9947

Recovery from stuttering in a school-age boy with borderline intellectual functioning

Shoko Miyamoto¹ ; Shinako Yamazaki² ; Seitaro Kato³ ; Natsumi Morita² ; Takuya Oe² ; Natsuki Fukazawa²

¹*Disability Sciences, Faculty of Human Sciences/ University of Tsukuba/ Japan,* ²*Graduate School of Comprehensive Human Sciences/ University of Tsukuba/ Japan,* ³*Disability Support Office/ Gunma University/ Japan*

Abstract Content:

It is reported that approximately 74–80% of children who start stuttering recover “naturally” or “spontaneously,” that is, unassisted by treatment (Yairi & Ambrose, 1999, 2005). On the other hand, for children who stutter (CWS) with an intellectual disability, it is said that their stuttering can easily become chronic (e.g. Van Riper’s Track 2, Van Riper, 1982). Then, we were exposed to the case of a nine-year-old boy with mild to borderline intellectual functioning, whose stuttering almost disappeared while he was engaged in our therapy. He began to talk when he was three years old and began stuttering simultaneously. There was no family-related triggering factors. His stuttering was frequent and tense; he realized that he found it difficult to talk and conveyed it to his mother. His characteristic symptom was repeating not only the initial parts of the word, but its middle and last phonemes. Though his receptive language ability was at an average level, his expressive ability was very poor and he forgot what he wanted to say even the words that he was highly familiar with and used frequently. His mother and he had continued the “Lidcombe Program” since he was six to seven years old, and though he could talk smoothly during the therapy, he could never reach the maintenance and generalization level. Then we conducted guidance on word naming and syntax. As he did not like learning while being seated, we attempted to give him picture-naming task using music by playing the piano and singing songs. His stuttering improved when he was around eight years old and his intelligence quotient was increasing slightly more than when he was an infant, from an IQ of 67 to 71 on WISC-IV. When he was aged nine years eight months, he was able to speak slightly longer sentences without stuttering. His recovery from stuttering was also reported by his mother. In this presentation, we will show the data of his assessment and change in his frequency of disfluency. Finally, the factors leading to recovery from stuttering will be discussed. One of them is estimated to be that the timing of natural recovery was delayed compared to people with intellectual abilities. Another factor was the development of speech-language ability. These factors may be related to each other, because usual natural recovery from stuttering might be caused by the development of speech-language ability. Finally, he had an amiable temperament and almost always optimistic except during bad mood. People with intellectual deficits who stutter show few emotional reactions to their stuttering in the form of fear, anxiety, or worry; even if many seem aware of their stuttering (Preus, 1973), his temperament may be linked to his recovery.

Learning Outcome:

The reader will be able to: (a) discuss why natural recovery from stuttering is caused, (b) describe the features of stuttering with intellectual disability, and (c) summarize the appropriate way to support people who stutter with mild intellectual disability.

Keywords: stuttering, recovery, intellectual disability, school-age, speech-language ability,



Abstract No: 9887

Speech disfluencies in Yiddish-Dutch children

Kurt Eggers^{*1 2} ; Sabine Van Eerdenbrugh^{*1}

¹Speech Language Therapy and Audiology/ Thomas More U College/ Belgium ²Psychology and Speech Language Pathology/ Turku University / Finland

Abstract Content:

Objective: to determine the distribution of speech disfluencies in typically developing fluent Yiddish-Dutch children

Background: The diagnosis of stuttering is often based on the number and type of disfluencies produced in a speech sample. The normative reference that is most frequently used is based on monolingual, English-speaking children (Ambrose & Yairi, 1999). It is unclear to what extent this reference is also applicable for the speech of bilingual speakers. This is an important question since this population is growing rapidly.

Method: Speech samples were collected from 30 fluent bilingual Yiddish-Dutch children aged between 6;01 and 7;07 years and 30 fluent bilingual Yiddish-Dutch children aged between 9;00 and 10;04 years. Two raters independently evaluated the speech in the samples as typically developing fluent speech. Speech samples were transcribed. Type and frequency of disfluencies were analyzed based on Ambrose & Yairi's classification system of stuttering-like disfluencies (SLD; i.e., part- and single-syllable word repetition and dysrhythmic phonation) and other disfluencies (OD; i.e., interjection, revision, and multisyllable/phrase repetition). In addition, revisions were categorized into phonological, lexical or grammatical revisions. Language dominance was determined by a detailed parental questionnaire.

Results: In both age groups, Yiddish was the dominant language and children produced significantly more disfluencies in the nondominant language, i.e. Dutch. The average %SLD was 3.51% for Yiddish and 4.45% for Dutch in the youngest group and 2,92% for Yiddish and 5,09% for Dutch in the oldest group. Monosyllabic word repetitions were the type of SLD produced most often in both groups. Interjections and (lexical) revisions were the most often used type of OD.

Discussion: The findings of bilingual children will be contrasted with earlier findings in monolingual children. We will argue that one needs to be careful using monolingual reference data for bilinguals. Since this will result in too many (bilingual) children being falsely positively diagnosed with stuttering.

Learning Outcome:

- Attendants will gain insight in the distribution of speech disfluencies in typically developing bilingual (Yiddish-Dutch) children.
- Attendants will learn that the speech of bilingual needs to be evaluated differently.

Keywords: stuttering; disfluencies; bilingualism; stuttering-like disfluencies; other disfluencies



Abstract No: 9107

The Performances on Nonword Repetition in Inner and Overt Speech of Stuttering and Nonstuttering Adults Who Speak Mandarin

Ya-Han Lin^{*1} ; Shu-Lan Yang²

¹*Division of Rehabilitation Medicine/ Tainan Hospital, Ministry of Health and Welfare, xinhua Branch/ Taiwan,* ²*Department of Special Education/ National Pingtung University, Taiwan/ Taiwan*

Abstract Content:

Abstract

Objective: This study aims to make a comparison of the nonword repetition (NWR) performances between inner and overt speech of stuttering adults, and between stuttering and nonstuttering adults (SA and NSA).

Background: The messages of a person have to be converted into linguistic forms, including phonological, syntactic, morphological, and semantic representations while speaking. According to the perceptual loop theory of self-monitoring proposed by Levelt (1989), the inner and outer loops are employed to monitor people's inner and overt speech. Although stuttering events are verbal blockages in overt speech, linguistic errors may first occur in the inner speech. Brocklehurst and Corley (2011) found that the phonological-encoding errors in both inner and overt speech of SA were significantly higher than those of NSA. They suggested that these errors of SA may occur internally in the speech planning phase. NWR tasks are usually used for measuring a person's phonological working memory and phonological-encoding ability. Therefore, the accuracy ratio, disfluency ratio and response time of NWR were employed in this study to determine the differences between the inner and overt speech of the SA, and whether they also differ from those of NSA.

Method: 29 pairs of SA and NSA were recruited by matching their ages, gender and education levels, and were all assessed by the Revised SSI-4 for Mandarin Speaking Adults. Then, they repeated the nonwords in two speech conditions, inner and overt, separately. The 3 measures above were recorded and calculated. Two-way mixed ANOVA and *t*-tests were employed to analyze the data.

Results: For both inner and overt speech, the performances on the 3 measures of NWR of the SA were significantly poorer than those of NSA. In addition, for both groups, the disfluency ratio of NWR in the inner speech was significantly lower than that in the overt speech, but no significant difference existed in the accuracy ratio of NWR between the inner and overt speech.

Discussion: In the performances on the accuracy ratio and response time for both the inner and overt speech, SA performed more poorly on NWR than NSA did. SA may have phonological processing difficulties that they took more time and made more mistakes than NSA did while repeating nonwords. In addition, for both inner and overt speech, the performances on the disfluency ratio of NWR of the SA were significantly poorer than those of the NSA. This may also mean that the disfluency of SA occurs in inner speech before they speak out discontinuously. These results partially support the Covert Repair Hypothesis proposed by Postman & Kolk (1993), that people who stutter have more difficulties in phonological encoding and make more errors.

Learning Outcome:

Learning outcomes: Readers will learn about the Covert Repair Hypothesis of stuttering (Postman & Kolk, 1993), the perceptual loop theory of self-monitoring (Levelt, 1989), and consider (a) whether people who stutter are more prone to making phonological errors and taking time to repeat nonwords;



(b) whether differences exist in nonword repetition between inner and overt speech for people who stutter.

Keywords: stuttering ; inner speech ; overt speech ; nonword repetition



Abstract No: 9779

Reasonable Accommodations in Regular Classrooms for Middle-School Students Who Stutter in Japan

Norimune Kawai¹ ; Hiroaki Kobayashi² ; Yuki Hara³ ; Shoko Miyamoto⁴

¹Department of Special Needs Education, Graduate School of Education/ Hiroshima University/ Japan,

²Kanazawa University/ Faculty of Education, Institute of Human and Social Sciences/ Japan, ³School of

Allied Health Sciences/ Kitasato University/ Japan, ⁴School of Human Sciences/ Tsukuba University/

Japan

Abstract Content:

1. Introduction

Although stuttering can affect psychological aspects of people in various ways from early childhood to adulthood, it is difficult for people who do not stutter to understand how seriously people who stutter (PWS) might suffer from their symptoms because they never realize how difficult for PWS to communicate orally. Kobayashi (2004) stated the necessity for classroom teachers to have basic knowledge of stuttering and to provide consultation opportunities for students who stutter (SWS). For SWS, it is clear how important classroom teachers' "understanding of stuttering" is in their school lives. Therefore, the current study investigated the needs of middle-school SWS and suggested the ways of guidance and supports that should be provided by classroom teachers.

2. Method

a. Participants

The participants of the current study were middle-school SWS who live in Chugoku or Kanto region. There were 12 students in Chugoku region and 43 students in Kanto region. Out of 55, 38 SWS (69.1%) replied to the survey that asked teachers' degrees of understanding on stuttering, supports expecting from teachers regarding stuttering, etc.

b. Procedures

The questionnaire consisted of the face sheet asking about the grade and gender of the participants, severities of stuttering, experiences receiving therapies on stuttering, etc. The authors also asked them whether they experienced asking for consultations and supports of stuttering to classroom teachers since they became middle-school students, items that asked the degrees of their understanding of stuttering, and items on asking classroom teachers' knowledge on stuttering.

c. Data Analysis

Descriptive statistics were computed to examine the identification information given by the participants. A frequency analysis was used to determine the percentage of the participants to each of the questionnaire item.

Results and Discussion:

Although the participants experienced the following difficulties in their classrooms: words stuck into their mouths (81.6%), difficulties in giving oral presentations (63.2%), difficulties in reading sentences orally (52.6%), etc., 60.5% of the participants have not had any experiences to consult their classroom teachers regarding stuttering. In order to promote classroom teachers' understanding towards stuttering, 15.8% of the participants requested their teachers to reduce the number of presentations and nominations during class, 13.2% of the participants plead for understanding how hard it was for SWS to have successful social communication in school, 21.1% of the students expected their classroom teachers to learn about stuttering but did not take any actions; however, 44.7% of the students did not expect teachers understand their difficulties. Most participants who have no experiences to consult their classroom teachers about stuttering replied that they were willing to consult their classroom teachers if they have at least basic knowledge on stuttering/counseling and take any notice of their students.



Learning Outcome:

1. Understand what kinds of supports classroom teachers are supposed to apply for middle school SWS.
2. Understand what kinds of difficulties middle school SWS experience in regular classroom environments.
3. Understand what kinds of needs middle school SWS have.

Keywords: stuttering, middle school students who stutter, reasonable accommodations



Abstract No: 9719

Life Partner's Perceptions on the Emotional, Speech Disruptive, and Attitudinal Correlates of Stuttering

Athanasia Svenning¹ ; Randy Panzarino¹ ; Martine Vanryckeghem¹ ; Jacqueline Towson¹ ; Melissa Hamilton¹

¹Communication Sciences and Disorders/ University of Central Florida/ United States

Abstract Content:

Objective:

Little is known about how people who stutter's (PWS) life partner (LP) perceives stuttering and how PWS' LPs understand the debilitating nature of the disorder specific to their partner. Research has shown that familial inclusion in speech therapy for children who stutter facilitates treatment success through consultation, counseling, and specific interventions incorporating parent-child interaction. With age, what would be considered "familial support" shifts from having the support of a parent, to the support of a LP. While there are data to warrant family-centered involvement in treatment in childhood stuttering, there is limited information corroborating this conclusion as it relates to adults. This leads to the present study's aims to investigate how LPs perceive their loved one's speech-associated negative emotional reaction, speech disruptive behavior, and speech-associated attitude. This information will hopefully aid in the facilitation and outcome of fluency treatment through family inclusion.

Method:

The sample included 33 PWS and their LP. Participants were at least 25 years old, had been in a committed relationship for minimally one year, and be literate in English. PWS were diagnosed by a Fluency Specialist or Speech-Language Pathologist, and had no other comorbidities. LPs could not have a history of a speech/language disorder.

The PWS were provided the Speech Situation Checklist-Emotional Reaction (SSC-ER), Speech Situation Checklist-Speech Disruption (SSC-SD), and the Communication Attitude Test for Adults who Stutter (BigCAT). These tests are subtests of the Behavior Assessment Battery (Vanryckeghem & Brutten, 2018).

Partners were given a modified version of the tests as it relates to their LP who stutters. Both groups were asked to complete the tests via Qualtrics, an online survey software program. Age, gender, and perceptions of stuttering severity were investigated. PWS were asked how they rate their stuttering severity and partners were asked to rate how their partner who stutters perceives his/her stuttering severity via a five-point scale ranging from "very mild" to "very severe".

Results:

- PWS scored descriptively, but not statistically significantly, higher than LPs on SSC-ER ($t=1.620$, $p=.110$). The difference was statistically significant for SSC-SD ($t=4.437$, $p=.000$). BigCAT scores for LPs and PWS were similar ($t=.034$, $p=.973$).
- Age and gender did not affect the total score for either group for all tests.
- For the sample of PWS, stuttering severity perception did not differentially affect the test scores, except for SSC-SD ($t=2.355$, $p=.025$). For the LPs, stuttering severity only influenced BigCAT scores ($t=4.838$, $p=.000$).
- High internal reliability for all original tests and their modified versions ($>.88$).
- Between-group item analysis: For SSC-ER, scores on 7 items, and for SSC-SD, scores on 11 items differed significantly between the two groups. For all but two BigCAT items (13 and 28), PWS and LP scores were in agreement.



Learning Outcome:

1. Gain understanding of self-report tests that can be used to determine speech-associated negative emotional reaction, speech disruption, and communication-related attitude.
2. Describe the extent to which significant others perceive the effect of stuttering on their loved one who stutters.
3. Describe the similarities and differences between PWS and their life partner's self-report on the measures described.

Keywords: stuttering; life partners; Behavior Assessment Battery; Speech Situation Checklist; BigCAT



Oral Presentation: Session TH6- Voice (V), Aug. 22nd (Thu.) 11:00-12:00

Abstract No: 9715

The Utility and Accuracy of Cepstral-based Measurement in Diagnosing Dysphonic Voices of Female Adults in Taiwan

Hsin-Yi Lin^{1,2}; Sheng Hwa Chen³; Chi-Te Wang⁴; Feng-Chuan Lin⁴; Chieh-Yu Liu²

¹Rehabilitation/ Taipei Tzu Chi Hospital/ Taiwan, ²Department of Speech Language Pathology and Audiology/ National Taipei University of Nursing and Health Sciences/ Taiwan, ³Department of Audiology and Speech-Language Pathology/ Asia University/ Taiwan, ⁴Otolaryngology/ Far Eastern Memorial Hospital/ Taiwan

Abstract Content:

Cepstral peak prominence (CPP) has been shown to be a promising acoustic measure for dysphonic voice, which demonstrates good ability in distinguishing dysphonic voice versus normal voice. However, since most of the relevant studies are based on speech samples of non-tonal languages, whether it can be used for speech samples in Taiwan Mandarin, which is a tonal language, is still in need of more investigation. Therefore, the purpose of the present study is to test the utility and accuracy of smoothed CPP (CPPs) in diagnosing dysphonic voice of female adults in Taiwan. Forty normal and 120 dysphonic voice samples were selected from a large database recorded by Department of Otolaryngology, Far Eastern Memorial Hospital, Taiwan, in which both the sustained vowel and short discourse of the participants were recorded. Auditory perceptual test was conducted by three master speech pathologist students using GRBAS scale (Hirano, 1981) to evaluate the voice quality and dysphonic severity of the voice samples, and the results of auditory perceptual test were also used for screening appropriate voice samples for analyses. There were 31 normal and 104 dysphonic voice samples passing the screening and retained for further analyses. Acoustic measure of CPPs was performed with software program *Praat* (Boersma, & Weenink, 2001). ROC analyses showed high diagnostic accuracy for CPPs to distinguish dysphonic from normal voice, with sensitivity of 0.88 and specificity of 0.84. The best cut-off point is 12.50 dB in sustained vowel /a/, and 11.66 dB in the selected sentence. Results of the present study indicated that CPPs still perform well when applied to tonal languages, and can serve as a basis for future application of CPP/CPPs in evaluating and diagnosing dysphonic voice in Taiwan.

Learning Outcome:

1. Participants will be able to describe the application of cepstral peak prominence (CPP) on voice of female adults.
2. Participants will be able to discuss the utility and accuracy of CPP application in Taiwan.
3. Participants will be able to explain the superiority of CPP over other acoustic measurements in diagnosing voice disorder.

Keywords: acoustic; cepstral peak prominence; dysphonia; female adults



Abstract No: 9928

Voice Disorders in a Medical Practice

Sandra Ettema^{*1}

¹Otolaryngology/ Southern Illinois University School of Medicine/ United States

Abstract Content:

This presentation will be multiple videos of various voice disorders experienced in the Voice, Airway, and Swallowing Clinic at Southern Illinois University School of Medicine in Springfield, Illinois - United States of America. Discussion and case presentations will be presented and the history, evaluation, assessment, and management plans for each of the patients will be presented. Follow-up pictures and videos will be presented when available to discuss the medical and surgical treatment of voice disorders and some of the surgical treatments will be discussed in detail so that the speech language pathologist may understand more of what may be required of them based on what occurs during the surgical management portion of the treatment of the patient. Therapy techniques will be reviewed for applicable patients and this will be mainly a presentation with ability to discuss treatment options and address questions.

Learning Outcome:

1. Review various voice disorders treated by this physician in the Voice, Airway, and Swallowing Clinic that is run with the main speech pathologist - voice specialist and laryngologist in this practice.
2. Learn and review surgical procedures performed with persons with various voice disorders and how it affects their management and recovery.
3. Review therapy techniques and management plans for these patients that are performed by the speech pathologist/voice specialist.

Keywords: hoarseness, vocal fold paralysis, airway stenosis, Reinke's edema, voice disorders



Abstract No: 10013

Evaluation and optimization of an online training tool for perceptual voice assessment using the GRBAS scale

Annelies Labaere^{*1}; Gwen Van Nuffelen^{2 3}; Marc De Bodt^{2 3}

¹Speech and Language Therapy and Audiology/ Thomas More University of Applied Science/ Belgium,

²Communication Disorders/ Antwerp University Hospital/ Belgium, ³ORL/ University of Antwerp/ Belgium

Abstract Content:

Introduction: Despite an increasing knowledge and implementation of objective voice quality measurements in the last decades, auditory-perceptual voice evaluation is still considered an essential part of voice analyses. The quality of perceptual ratings depends heavily on the training level and experience of the evaluator. The use of rater scales with predetermined parameters and scales (e.g. GRBAS, Hirano 1981; CAPE-V, ASHA 2006) reduces variability in evaluation. Greater intra- and interrater reliability can be obtained through training, but requires a representative sample set.

In a previous phase of this research project anchor voices for all parameters and grades of GRBAS have been selected by inter and intra rater agreement of a highly experienced panel. In addition an online training tool has been developed. The aim of the current study is to evaluate the training tool (part 1 of the study) and to optimize and expand the training sample set (part 2 of the study).

Materials and methods: Part 1: A group of 24 SLT's, all participants of a postgraduate qualification course on voice, was divided in an experimental group and a control group. Both groups received a theoretical explanation on the use of GRBAS, and completed a pretraining test that consists of giving GRBAS ratings for 2x 8 voice samples. Subsequently only the experimental group had access to the online training tool during 2 weeks, after which the test was repeated by the experimental and the control group. Then the control group also participated in the training, followed by the same test for both groups. All participants filled in a questionnaire about user friendliness and difficulty of the training tool. Cohen's Kappa and Spearman's correlation were used to determine improvement in intra rater reliability. The same experiment was repeated with 40 undergraduate SLT students.

Part 2: 50 Voice samples varying from normal to severely dysphonic, consisting of the vowel /a/ and a Dutch standard text, were recorded. Samples were duplicated in random order. A panel of 5 highly experienced judges evaluated all GRBAS parameters for each recording. Intra- and interrater correlations were determined using Cohen's Kappa and intraclass correlation coefficient (ICC). Subsequently the most representative samples for any parameter score, based on the intra and interjudge agreement, were included in the training sample set.

Results

Data analysis for part 1 of the study is currently ongoing and results will be presented at the conference. For part 2 of the study interrater reliability was good to excellent for all parameters (ICC .73-.87). Intrarater agreement demonstrated similar quality (ICC .50-.88). The training module could be expanded with the new sample set.

Conclusions

This study demonstrates the successful selection of representative voice samples to be included in a standardized training tool for perceptual voice evaluation. The use of a highly experienced panel resulted in good to excellent ICCs for the GRBAS ratings. Evaluation of the online training tool is currently ongoing, results will be presented at the conference.

Note: Eventually part 1 and part 2 of the study could be split up in two presentations.



Learning Outcome:

- Participants will understand how a training tool with representative anchor voice samples is developed.
- Participants will have insight in the effect of using a training module on the intra and interrater agreement of SLT's and SLT students.

Keywords: Voice assessment;perceptual evaluation;training



Abstract No: 9760

Interests of using Automatic Speech recognition for Speech-Language Therapists

Jérôme Farinas¹

¹Research/ Toulouse 3 University / IRIT/ France

Abstract Content:

Automatic Speech Recognition systems use signal processing and machine learning in order to achieve speech transcriptions. Some analogies can be done with human speech recognition, but ASR use models that are much less complex than human brain. After a brief history of evolution of systems, the state of the art of ASR systems will be presented. The performance on various type of speech will be analyzed over various speech processing engines (from industrial and academic). One of the advantages of such system consists of the rapid production of transcripts that can raise the perspectives of analyses. Examples on automatization of speech task of verbal fluency of EVOLEX project will be given: logopedists and researchers benefit from advances with this kind of automatic treatments. Other advantage consist of the objectivity that automatic processing can give. For example, in C2SI project, in assessments for measuring the intelligibility of patients treated for ENT cancer, ASR can provide such advantage of a pool of speech therapist evaluations. Therapists can have subjective judgments of general speech intelligibility as they are used to ear the modifications of patient voice. Many aspects of voice can be analyzed with automatic processing tools: acoustics, prosody, comprehensibility. The main inconvenient of using ASR systems concerns the reliability and usage limits. Severe pathological voices infer very bad performance of automatic systems. The enhanced of recognition on such voice is not easy as state of the art systems necessitate thousand of hours of labeled speech in order to complete the learning process. We do not dispose of such amount of atypical voiced in order to improve the performances of ASR systems. Analyses must rely on extraction of cues in a more specific way. Speech Processing becomes to a certain degree of maturity. The use of such systems can transform some methodologies in voice treatment. The impact of these techniques do not have to be discarded and therapists can benefit to these evolutions.

Learning Outcome:

- Anatomy of an Automatic Speech Recognition system
- Advantages and Inconvenients of ASR for Speech Analysis
- Can ASR be used for Pathological Voices?

Keywords: automatic speech recognition ; automatic speech analyses ; pathological speech



Oral Presentation: Session TH8- Dysphagia (III), Aug. 22nd (Thu.) 13:30-15:00

Abstract No: 10016

Predicting aspiration risk in older adults

Dai Pu^{*1} ; Edwin Yiu² ; Karen Chan²

¹Department of Surgery, Faculty of Medicine/ University of Hong Kong/ Hong Kong, ²Division of Speech and Hearing Sciences/ The University of Hong Kong/ Hong Kong

Abstract Content:

OBJECTIVE

To identify predictive factors for aspiration risk in older adults.

BACKGROUND

Dysphagia is a major medical issue in adults who experience age-related decline and diseases, and it is increasingly becoming a salient issue with the world-wide trend of ageing populations. Aspiration pneumonia is a detrimental complication that can result from dysphagia, due to aspiration of materials swallowed into the airway and the lungs. Aspiration pneumonia can be fatal for adults who are already ageing and frail, and treatment is costly. Predicting and preventing aspiration pneumonia will reduce costs associated with its treatment, and drastically improve the quality of life of older adults who are experiencing dysphagia and at risk for aspiration.

METHOD

This was a prospective cohort design study that followed a group of ageing adults for up to 12 months. Participants were recruited from the community and aged care facilities, including nursing homes and day care centres for the elderly. Inclusion criteria for participants were (1) aged 60 and above, (2) alert and responsive, and (3) able to follow basic one-step directions. Seventy participants were recruited, aged between 60 and 98 (mean age = 81.9 years, standard deviation = 8.5 years), of whom 49 were female. Participants were assessed for their oromotor functions and completed the Eating Assessment Tool and Montreal Cognitive Assessment. Swallowing function and aspiration risk was screened by the 3-ounce water swallow test. Additional information including demographics, functional status, and medical history were collected.

RESULTS

Multivariate logistic regression determined that polypharmacy of more than 5 medications ($p=.002$, $OD=1.451$), jaw asymmetry ($p=.045$, $OD=3.625$), and dysphonia ($p=.088$, $OD=1.791$) were predictive of dysphagia over time in this population. Receiver operating characteristic curve showed that this statistical model had good accuracy of diagnostic value (area under the curve=.846). Sensitivity and specificity of the final set of variables as criteria for predicting dysphagia was 75% and 69.67%.

DISCUSSION

The variables of this study found to be predictive of aspiration are not independent phenomena that occur idiopathically in older adults. They are suggestive of frailty and sarcopenia: underlying degenerative processes in ageing adults that are responsible for systemic decline and degeneration, which can manifest in some subsystems as clinical disorders, such as the swallowing dysfunction and high aspiration risk found in this study. Therefore, management of older adults with dysphagia and are at risk of aspiration should utilize the variables reported in this study for prediction and prevention, and consider overall rehabilitative measures to improve systemic function.

Learning Outcome:

1. Aspiration risk in older adults can be predicted by polypharmacy, jaw asymmetry, and dysphonia.



2. In the absence of specific diseases, predictors of aspiration in older adults are indicative of frailty and sarcopenia.
3. Frailty and sarcopenia may be the underlying processes that are predisposing ageing adults to experience disordered swallowing and aspiration.

Keywords: aspiration; dysphagia; ageing; risk



Abstract No: 9897

Physiological and Functional Outcomes of Swallowing with Olfactory Stimulation in Aged Rats– Preliminary Data

YEA-TZY CHEN^{*1 2} ; MENG-SHAN CHENG^{*1} ; JUI-CHU KAO^{*1} ; LI-YOU CHEN^{*3} ; TING-YI RENN^{*4} ;
HUNG-MING CHANG^{*5}

¹Department of Speech, Language Pathology and Audiology/ National Taipei University of Nursing and Health Sciences, College of Health Technology/ Taiwan, ²Department of Special Education/ University of Taipei, College of Education/ Taiwan, ³Department of Anatomy, School of Medicine/ Chung Shan Medical University, College of Medicine/ Taiwan, ⁴Graduate Institute of Medical Sciences/ Taipei Medical University, College of Medicine/ Taiwan, ⁵Department of Anatomy and Cell Biology/ Taipei Medical University, College of Medicine, School of Medicine/ Taiwan

Abstract Content:

Objective: Swallowing function deteriorates by aging, resulting in impaired swallowing along with being life threatening. There is a lack of effective strategy and/or treatment to prevent prebyphagia. This study aimed to examine the effects of olfactory stimulation in physiological performances corresponding to swallowing-related functional ability. Chen's intramuscular electromyography (EMG) data in 2017 had shown that the range of the frequency (times/sec.), amplitude (μ V) and duration of mylohyoid contraction (sec.) in aromatherapy (AT) group had permanent increases compared to those of non-aromatherapy (NAT) group. The changes of food intake (FI), water consumption (WC) and body weight (BW) were analyzed in order to shed light on the clinical practice of swallowing training.

Methods: Seventeen aged rats (young-old=9, old-old=8; 12 males, 5 females) were divided into two groups, an AT group and a NAT group. The AT rats underwent olfactory stimulation through a mixed type of essential oil vaporized from an electronic diffuser twice/day (one hour per time). Study physiological parameters, the amounts of FI (g), WC (ml) and BW (g), measured daily in all rats were compared with the previous EMG data. Descriptive statistics were employed to understand group differences of the study parameters.

Results: The results of this study were consistent with Chen's study that all EMG parameters (including the frequency, amplitude and duration of mylohyoid muscle contraction) increased in the AT group but not in NAT group. Current study revealed two progress patterns in the aged rats between the AT and NAT groups. The AT young-old and old-old rats both had a decline of WC and BW gain (-12ml vs. -4.5ml; -5g vs. -46.28g) as well as an increased FI (+0.82g vs. 0g), whereas the NAT young-old and old-old rats exhibited fluctuating changes in WC and FI (-2.5ml vs. +5.5ml; -2g vs. +5.2g). The NAT group showed similar but adverse BW gain pattern with the AT group (+1.89 vs. +15g).

Conclusions: The results have shown positive effects of aromatherapy in physiological and functional performances related to aging swallowing. By using aromatherapy, the physiological parameters might have changed as to compensate the body metabolism with improved swallowing functions. The study findings provide potential implications to presbyphagia for speech-language pathologists in consideration of training swallowing ability among the elder population.

Reference: Chen, Y.-T., Kao, J.-C., Chen, L.-Y., Renn, T.-Y., Lin, L.-C., & Chang, H.-M. (Sep 17-19, 2017). Effects of Aromatherapy on Swallowing Function: A Preliminary Data from Rats. Paper was presented at 10th Biennial Asia Pacific Conference on Speech, Language, and Hearing (APCSLH 2017), Tokyo, Japan.

Keywords: presbyphagia; olfactory stimulation; EMG; swallowing



Abstract No: 9803

The effects of sour cold tactile stimulation for saliva swallowing in the elderly requiring long-term care

Mana Yamori^{*1} ; Katsumasa Akieda² ; Yuka Kimura²

¹Department of Rehabilitation/ Onomichi municipal hospital/ Japan, ²Program in Health and Welfare, Graduate School of Comprehensive Scientific Research / Prefectural University of Hiroshima/ Japan

Abstract Content:

【Background】 Many of the elderly are suffering from dysphagia due to aging, disuse, side effects of medication and so on. Their healthy life expectancy might be reduced with recurrent aspiration pneumonia, as well as motor and cognitive impairment and malnutrition. Tanaka(2013) reported that healthy adults swallowed saliva 40.7±19.5 times an hour, though the elderly swallowed 9.0±5.0 or the bed-ridden elderly declined to 7.7±4.6. Some dentists thought it was caused by reducing saliva secretion however Speech-Language-Hearing therapists often experienced many drooling elder patients in our clinical work. Therefore, it is necessary for preventing saliva aspiration and aspiration pneumonia among the elderly to increase saliva secretion as well as saliva swallowing frequency.

【Objective】 The aim of this study was to clarify the effects of sour cold tactile stimulation for saliva swallowing among the elderly who require long-term care.

【Methods】 59 residents of a long-term care welfare facility for the elderly participated in this study. Their levels of ADL (degree of independence in everyday life for the elderly in Japan) were full independence (J) :1, independence indoors only (A):22, wheelchair life (B):22, and bed ridden (C):14. 42.4% of them were stroke survivors, and 37.3% were the patients of dementing illness. We measured their latency of the first saliva swallow, the frequency of saliva swallowing and the amount of saliva for a 10 minute-period under the following conditions: 1) without stimulation, 2) ith cold tactile stimulation and 3) sour cold tactile stimulation.

【Results】 The latency was shortened and the frequency increased with sour cold tactile stimulation significantly in both the stroke and dementia group.

【Discussion】 We consider that sour cold tactile stimulation could activate the swallowing nerves' system. Sour cold tactile stimulation can be easily, safely and widely applicable for indirect therapy technique because it does not need oral intake of real foods and liquids. It could be very effective for sour cold tactile stimulation to prevent saliva aspiration and aspiration pneumonia in the elderly requiring long-term care.

Learning Outcome:

You can learn the evidence for efficacy of sour cold tactile stimulation on saliva swallowing to prevent aspiration pneumonia.

Keywords: sour cold tactile stimulation, saliva swallowing, the elderly requiring long-term care, rehabilitation



Abstract No: 9691

The effects of tongue exercise on lingual strength of the elderly with dysphagia

Li-Mei Wang^{*1} ; Shyh-Kuan Tai^{1 2} ; Pao-chuan Torng³

¹Department of Otolaryngology-Head & Neck Surgery/ Taipei Veterans General Hospital/ Taiwan,

²Department of Otolaryngology/ National Yang-Ming University/ Taiwan, ³Department of Speech Language Pathology and audiology/ National Taipei University of Nursing Health Science/ Taiwan

Abstract Content:

Tongue plays a critical role in normal swallow. Gradual loss of tongue muscle strength is a common phenomenon of the elderly, causing swallowing dysfunction. In healthy adults, reported evidences indicate that lingual resistance exercise increases lingual strength. However, the effects of the exercise in the elderly with dysphagia remain to be explored.

This study evaluated the training effects of lingual resistance exercise in the elderly with dysphagia. The strength and endurance measures were obtained using the Iowa Oral Performance Instrument (IOPI). The baseline data were collected from 26 healthy elderly with dysphagia (dysphagia group, average age 82.5), compared with 30 healthy elderly without dysphagia (non-dysphagia group, average age 82.6). The dysphagia group then underwent a 4-week lingual resistance exercise program including effortful swallow, and the strength and endurance data were collected again at week 5.

At baseline, we found that the lingual strength of the dysphagia group was significantly lower than the non-dysphagia group ($p=0.002$). After the 4-week lingual resistance exercise in the dysphagia group, the lingual strength and endurance both increased significantly ($p<0.001$ and $p<0.001$). These results clearly indicate that lingual resistance exercise is promising to potentially improve swallow function and quality of life in healthy elderly with dysphagia.

Learning Outcome:

Aging tongue strength

Keywords: Keywords : lingual strength; lingual resistance exercise; effortful swallow



Abstract No: 9927

Pediatric Multidisciplinary Treatment of Dysphagia - Overview

Sandra Ettema^{*1}

¹Otolaryngology/ Southern Illinois University School of Medicine/ United States

Abstract Content:

An overview of the types of diagnoses we treat at our institution and how we handle the assessment and management of these patients will be presented for various swallowing and feeding disorders. We will review the duties of our specialists on our multidisciplinary team involved in pediatric dysphagia and feeding clinic including speech pathology, audiology, gastroenterology, pulmonology, radiology, nutrition, otolaryngology, genetics and nursing. The otolaryngologic examination will be reviewed and the procedure for performing a fiberoptic flexible laryngoscopy (FFL) of a child and how this can be transitioned to a flexible fiberoptic examination of swallowing (FEES). We will review our procedures and treatments and encourage discussion of how to modify and treat these patients when you do not have access to some of these instruments.

Learning Outcome:

1. Review and discuss examination and evaluation completed by an otolaryngologist for a pediatric patient with dysphagia.
2. Review and discuss the multidisciplinary approach to treatment of a pediatric patient with dysphagia.
3. Review and discuss the differential diagnoses for pediatric swallowing and feeding disorders seen in our clinic.

Keywords: dysphagia, pediatric, FEES, otolaryngology



Abstract No: 9929

Breastfeeding and Tongue Tie: To Clip or Not to Clip

Sandra Ettema^{*1}

¹Otolaryngology/ Southern Illinois University School of Medicine/ United States

Abstract Content:

This presentation will review the anatomy of tongue tie (ankyloglossia) and the "types" that are discussed by many practitioners. The latest studies regarding the types and the reasons for possibly considering a lingual frenulectomy (tongue clipping) will be discussed. A discussion of anterior and posterior tongue tie will be presented and the difference of these two entities. The symptoms required or that are displayed when an infant or child requires a lingual frenulectomy will be discussed and how this may affect breastfeeding and swallowing.

Learning Outcome:

1. Review and discussion of types of tongue tie (ankyloglossia).
2. Review of the current literature regarding the treatment of ankyloglossia.
3. Learn the recommendations and procedure for lingual frenulectomy.

Keywords: tongue tie, breastfeeding, ankyloglossia, pediatric, feeding problems



Oral Presentation: Session TH14- Child Speech, Aug. 22nd (Thu.) 17:10-17:55

Abstract No: 9996

Parent experiences of the 'Parent Led, therapist supervised, Articulation Therapy (PLAT) programme' for cleft articulation therapy intervention

Debbie Sell¹ ; Triona Sweeney² ; Claire O'Rourke³ ; Katie Powell⁴ ; Liane Deasey

¹Centre for Outcomes and Experience Research in Children/ Great Ormond Street Hospital NHS

Foundation Trust/ United Kingdom, ²-/ Speech at Home/ Ireland, ³-/ Amarach Research/ Ireland, ⁴-/

Haringey Children's Service/ United Kingdom

Abstract Content:

Background:

Although parent training/involvement has positive outcomes in early communication skills in cleft palate and non-cleft speech sound disorders, little is known about parents undertaking intervention for cleft speech disorders. Our RCT set out to compare parent led articulation therapy (PLAT) with standard intervention for children with a cleft-related speech disorder.

Objective:

This study aims to report parents' experiences of PLAT which included training followed by intervention with their child supported by a specialist therapist and connected health (FaceTime).

Methods:

Forty-six children, aged 2.9-7.5, were included in a two-phase, two-centre randomized controlled trial. In the parent training arm, parents attended an in depth 2-day training course, received a detailed speech programme and conducted home based SLT for fifteen minutes a day, five days/week, for 12 weeks, making decisions about what to do and how to do it. They were supported by a specialist therapist through two FaceTime sessions at weeks 3 and 9 and one face-to-face session at week 6. Post intervention, the parent training group completed a questionnaire which investigated their experiences of the 12 week programme. Nineteen parents (83%) participated in telephone interviews or focus groups conducted by independent Psychologists/Speech and Language Therapists. Analysis was carried out by an independent psychologist using thematic analysis.

Results:

Parents reported how they "learned a lot about speech problems and speech therapy strategies". Parents praised the content, flexibility and pace of the intervention programme devised by the therapist. They commended FaceTime, particularly when tasks were not working. Challenges included how they felt "somewhat daunted when taking on the course" but retrospectively "were very happy to have participated". They fed back that they were at times overwhelmed by the materials and that time was needed to plan and establish the therapy routine. They expressed concern as being seen by their child as a teacher. Making PLAT a routine was difficult especially for working parents. Parents provided excellent critical feedback on how to improve training and fine-tune the therapy programmes. Most parents reported an improvement in their child's speech and an increase in their child confidence, which reinforced their own sense of well-being.

Conclusions:

This study has shown insights into how parents deliver intervention at home. Parents reported a sense of empowerment, which grew as their children's speech improved.



Learning Outcome:

Learning Outcomes:

- i. Participants will gain insights into parents' experiences of undertaking therapy with their child.
- ii. Participants will gain knowledge regarding the acceptability of a parent led therapist supervised articulation therapy programme.

Keywords: Cleft speech, therapy, parent led, experience



Abstract No: 9748

Assessing Vietnamese children's intelligibility and speech sounds

Ben Pham^{1 2} ; Sharynne McLeod²

¹Special Education, Division of Speech, Language and Hearing Impairments/ Ha Noi National University of Education/ Vietnam, ²School of Teacher Education/ Charles Sturt University/ Australia

Abstract Content:

Objective: To outline new tools and data for assessing Vietnamese children's intelligibility and speech sounds

Background: Vietnamese is one of the 20 most commonly spoken languages throughout the world and is one of the most commonly spoken home languages in many countries. The speech therapy profession is emerging in Vietnam and newly validated assessment tools and normative data are needed to support professionals working with Vietnamese-speaking children.

Method: The Vietnamese translation of the Intelligibility in Context Scale (ICS-VN, McLeod, Harrison, & McCormack, 2012) was validated with 181 preschool children living in Ha Noi, Viet Nam. Similarly, the Vietnamese Speech Assessment (VSA, Pham, Le, & McLeod, 2016) was normed with 195 typically developing preschool children living in Ha Noi and Hai Phong, Viet Nam.

Results:

Intelligibility in Context Scale-VN: The overall mean ICS-VN score was 4.43 (out of a maximum of 5) indicating that the Vietnamese preschoolers were *usually* to *always* intelligible. Children were more intelligible to their parents and less intelligible to strangers. The ICS-VN had good psychometric properties, with high internal reliability ($\alpha = 0.94$), moderate to high correlations between items (range $r = .54$ to $r = .80$, $ps < .001$), and positive correlations ($r = .38$, $p < .01$) between the ICS-VN mean scores and participants' percentage of consonants correct on the VSA. The scores on ICS-VN differed between children who had parental concerns about speech and language versus no parental concerns. Three factors affected participants' mean ICS-VN scores: age (older children had a higher score), parents' occupation (parents who had a higher rank of occupation had a higher score), and mothers' education level (mothers who had a higher educational level had a higher score). There was no effect for sex and fathers' educational level.

Vietnamese Speech Assessment: Children's accuracy of accuracy of consonants, semivowels, vowels, and tones increased over time. When children were 2;0-2;5 their percentage of consonants correct (PCC) was 46.39; whereas, by 5;6-5;11, their PCC was 93.13 and the following consonants /p, s, z, x/ were the most difficult consonants. Percentage of semivowels correct (PSVC) increased from 70.74 at 2 years to 99.60 at 5 years. Percentage of vowels correct (PVC) increased from 91.93 at 2 years to 98.11 at 5 years. Finally, percentage of tones correct (PTC) increased from 91.05 at 2 years to 96.65 at 5 years. The youngest children had acquired tones 1, 2, 5, and 6; whereas, the oldest age group had not acquired tone 3 (creaky *thanh ngã*) and tone 4 (dipping-rising *thanh hỏi*) at the 90% criterion.

Discussion: This research of Northern Vietnamese children's speech acquisition presents the first step towards providing validated assessments with normative data to support the emerging speech therapy profession in Viet Nam.

Learning Outcome:

1. To understand that intelligibility and accuracy of consonants, semivowels, vowels, and tones increases over time during the preschool years.



2. To consider the process of validation and norming of assessments for Vietnamese-speaking children: Intelligibility in Context Scale (ICS-VN) and the Vietnamese Speech Assessment (VSA)

Keywords: Vietnamese, Speech, Assessment, Children, Intelligibility, Validation



Abstract No: 9642

Continuous positive airway pressure assisted speech therapy improves hypernasality in children with infantile-onset Pompe disease

Yin-Ting Zeng^{1 2} ; Yin-Hsiu Chien^{2 3} ; Wen-Yu Liu^{1 4}

¹Physical Therapy and Graduate Institute of Rehabilitation Science/ College of Medicine, Chang Gung University/ Taiwan, ²Medical Genetics/ National Taiwan University Hospital/ Taiwan, ³Pediatrics/ National Taiwan University Hospital/ Taiwan, ⁴Physical Medicine and Rehabilitation/ Linkou Chang Gung Memorial Hospital / Taiwan

Abstract Content:

Objective

In this study, we applied Continuous positive airway pressure (CPAP)-assisted speech therapy to children with infantile-onset Pompe disease (IOPD) to understand their progress of hypernasality and articulation disorders.

Background:

Pompe disease is a lysosomal disorder in which causes muscle weakness. Speech disorders in children with IOPD, are common and are featured with progressive hypernasality and consonant disorders. Behavior treatment has controversy effects. CPAP -assisted speech therapy is effective to strengthen the velopharyngeal muscles weakness and decrease the excessive nasal sounds, but the effect in progressive neuromuscular disorder is unknown.

Methods:

Three subjects, age 5y10m – 9y11m, were enrolled in the study. Before the CPAP-assisted speech therapy, they were followed for 2 months. The 8-weeks home CPAP-assisted speech therapy involved training sessions 6 days per weeks with a predefined titrated-up training duration and pressure. Especially 150 non-word and 10 sentences were used for drill speech during the air delivered directly to the nasal cavities from CPAP. After the intervention, they were followed again for 2 months. Outcomes were characters of speech samples on-the-spot (OTS) ratings by a senior speech and language pathologist (SLP), in the whiles speech samples were recorded by Handy Recorder H5 for the blinded rating of the other senior SLP. Speech characters were scored by perceptual rating scales covering three main dimensions: resonance, articulation, and overall intelligibility. Hypernasality was rated using a severity scale from 1 (no hypernasality) to 7 (the most severe hypernasality). Articulation was assessed by the Percentage of Consonants Correct (PCC). The overall scale of Speech intelligibility from 1 (20%) for complete unintelligibility to 5 (100%) for complete intelligibility. Individual data was presented in the single-subject design graphs in Microsoft Excel. The pre-post group comparison was conducted by Wilcoxon Signed Ranks Test.

Results:

The three children completed the 3 months study. Individual data showed that there was a little tendency decreasing in hypernasality, and a little tendency increasing in both of PCC and speech intelligibility of the graphs. In addition, the reduction of nasal sounds and improvement of PCC and speech intelligibility started at initial of followed 2 months. The statistical data showed that hypernasality scores were significantly lower after the intervention than before intervention ($P < 0.05$) and speech intelligibility scores were significantly higher after the intervention than before intervention ($P < .05$) in all the three cases whether by OTS or blind ratings. There was no significantly different in PCC between before and after intervention ($p = .208$).



Discussion:

The preliminary results of this study suggested CPAP-assisted speech therapy may be a promising and accessible way to improve nasal sounds and articulation for children with IOPD. However, the postponed improvement at initial of followed 2 months suggested that onset and duration of increasing muscle strength of myopathy need longer time.

Learning Outcome:

1. to understand the speech characters in children with infantile-onset Pompe disease.
2. to know how to use CPAP-assisted speech therapy to strength the velopharyngeal muscles weakness and to decrease excessive nasal sounds.
3. enable to use the evaluation of hypernasality, articulation disorders, and speech intelligibility in perception.

Keywords: Continuous positive airway pressure (CPAP); Pompe disease; hypernasality; articulation; speech intelligibility



Oral Presentation: Session TH15- Aphasia (III), Aug. 22nd (Thu.) 17:10-17:40

Abstract No: 9781

**Family members' communication strategies in interacting
with people with aphasia in Taiwan**

Tai-yin Kuo; Chen-chen Cheng^{*1}

¹*Special Education/ National Kaohsiung Normal University/ Taiwan*

Abstract Content:

Background

Aphasia is a language disorder in comprehending and/or expressing verbal and written language due to damage to specific areas in the brain. As recent trends in working with clients with aphasia emphasized functional language use, promoting effective communication between people with aphasia and their communication partners via communication partner training was a valid intervention goal. One approach to communication partner training was to expand or refine the communication strategies communication partners already applied to their daily interaction with people with aphasia. In addition, speech language pathologists (SLPs) needed to acknowledge that family members of people with aphasia had the ability and, often, insider's knowledge in developing communication strategies that were effective and meaningful from the perspectives of clients with aphasia and their family members.

Objective

This qualitative study aimed to recognize and describe the strategies used by communication partners with their family members with aphasia in their daily interactions.

Method

A phenomenological qualitative research design was appropriate to understand partners' perspectives as to how they communicated with their family members with aphasia. Four wives and a daughter of people with aphasia were interviewed. Each interview lasted for at least one hour. The first author conducted and transcribed the semi-structured in-depth interviews verbatim. Thematic analysis was used to analyze these interview data.

Results

To successfully achieve the goal of information exchange, participants applied a wide variety of communication media together with verbal language. These media included symbols, postures, facial expressions, body movements, gestures, written words, signs, and drawings. They were also willing to modify past communication behaviors or adopt new communication means. Most importantly, communication between the participants and their family members with aphasia was a dynamic process. It was constantly changing and its success relied on participants' learning to pay attention to and carefully observe their family members' emotional and physical states, make informed guesses about their communication needs, adjust their own communication methods and styles, empathize with their family members with aphasia, and offer emotional, physical, and communication support to sustain their interactions in different communication contexts.

Discussion

Past research pointed out the strategies between communication partners and people with aphasia was a process of constant guessing and prompting. Our findings indeed confirmed it was the case. We also found partners' familiarity with their physical settings, daily routines and activities as well as encouraging people with aphasia to guess contributed to the accuracy and efficiency of this prompting and guessing process. Moreover, we found when communication came to a stalemate, a timeout was used to cool both communication parties off and, in a way, contributed to later communication success and relationships.



Learning Outcome:

1. Learners will be given concrete examples of communication strategies used by family members with people with aphasia.
2. Learners will understand family members' perspectives in communication and interaction with people with aphasia.

Keywords: aphasia; communication partner training; family perspectives; qualitative research; communication strategy with people with aphasia



Abstract No: 9667

Environmental sound naming in patients with mild cognitive impairment and mild stage of Alzheimer's dementia.

Feng-Jui Chang¹ ; Lu Lu² ; Ming-Jang Chiu³ ; Ta-Fu Chen³ ; Yea-Tzy Chen¹

¹Department of Speech Language Pathology and Audiology/ National Taipei University of Nursing and Health Sciences/ Taiwan, ²Department of Physical Medicine and Rehabilitation/ National Taiwan University Hospital/ Taiwan, ³Department of Neurology/ National Taiwan University Hospital/ Taiwan

Abstract Content:

Background: Assessment and diagnosis of early stages of Alzheimer's disease (AD) have been increasingly noticed. However, current linguistic evaluation for early AD is not sensitive enough nor efficient for clinical use. Environmental sounds (i.e., dog barks, doorbell rings) have been known to activate semantic system, and have been considered as potential stimulant for naming test. Here, we compare the performance of environmental sound naming (SN) between patients of mild cognitive impairment (MCI), very mild / mild Alzheimer's dementia, and normal elderly. Our aim is to see if there is difference between normal elderly and early AD on designed SN test and to further develop for clinical use.

Method: In total, 69 subjects, with 22 cognitive normal elderly as normal control (NC) group, 20 amnesic MCI patients (aMCI), and 27 very mild/mild AD patients (AD), were included in our study. Patients with aMCI and AD were recruited from neurology clinics at National Taiwan University Hospital. All participants were conducted environmental sound naming (SN) test with 30 items and picture naming (PN) test for the identical 30 items. The order of SN and PN test was counterbalanced. The original answer and reaction time (RT) were recorded. Mean accuracy, RT, error types, and correlations with age, education, and MMSE scores were analysed.

Results: Accuracy of SN for NC group was significantly higher than MCI group ($p < .05$) and AD group ($p < .001$), and MCI group was also higher than AD group ($p < .01$). RT of SN for NC group was significantly shorter than AD group ($p < .001$), but not than MCI group ($p = .232$), and MCI group have shorter RT than AD group ($p < .01$). Correlation between SN accuracy and MMSE scores was significantly positively related ($r = .588$, $p < .01$), and was higher than correlation between PN and MMSE scores ($r = .526$, $p < .01$). Correlation between SN RT and MMSE scores was significantly negatively related ($r = -.493$, $p < .01$), and was lower than correlation between PN RT and MMSE scores ($r = -.270$, $p < .05$). Semantic errors yielded the highest ratio in SN error type analysis in all three groups, but MCI and AD groups had higher numbers of semantic errors than NC.

Conclusion: According to the current study, performance of environmental sound naming was significantly different between normal elderly, patients with MCI and very mild / mild AD. The designed environmental sound naming test was also significant correlated with global cognitive states of the subjects. Overall, environmental sound naming is a potential task for clinical linguistic evaluation in the early stages of AD. Further study with larger amount of subjects and optimization of the SN test would be recommended.

Learning Outcome:

Environmental sound naming is sensitive to patients with early stages of Alzheimer's disease.

Keywords: Environmental sound naming; Alzheimer's disease; Mild cognitive impairment



Oral Presentation: Session TH18- Child Language (V), Aug. 22nd (Thu.) 15:30-17:40

Abstract No: 9791

Kleefstra Syndrome – AAC with Key Words/Signs and language development

Maria Cecilia de Moura^{*1} ; Luciana Wolf²

¹Language Therapy/ PUC-SP/ Brazil, ²Language Therapy/ Santa Casa de Sao Paulo/ Brazil

Abstract Content:

Introduction – Language has a fundamental role on human being development. It is by the language that the individual can be constituted as a social part of a group (Vigotsky, 1991). Some individuals have complex communication needs that cannot rely on their natural speech to meet their daily communication needs (Beukelman & Mirenda, 2008). The development of augmentative and alternative communication (AAC) strategies, with unaided symbols as non verbal behavior may give them potential to enhance communication, (Almirall, Soro-Camats & Buyltó, 2003). There are some conditions that makes it being hard to a child develop oral language. Kleefstra Syndrome is one of these conditions. It is characterized by Intellectual disability, childhood hypotonia and distinctive facial features. Generally, there is an expressive speech delay with very limited speech development. The big majority of Kleefstra Syndrome is caused by a heterozugous microdeletion at chromosome 9q34.3 (Schmidt et al., 2016). In 2015 the Cerebra Centre for Neurodevelopmental Disorders and the Kleefstra Syndrome Support Group in the Kleefstra Syndrome Conference stated that early intervention by a speech and language therapist with the use of alternatives ways of communication (including Signs) could help these children to develop language.

Aim - This work will describe the speech language pathology work with Signs/Key words with a girl with Kleefstra Syndrome.

Method – The description of speech language pathology therapy with a girl, 3 years and 10 months old with the diagnostic of Kleefstra Syndrome for 15 months.

Results – The child, in the initial assessment, just used indicative gestures. Imitation was not present. Her symbolic play was very simple. She vocalized /a/ sometimes. When the Signs were introduced on the first day, she used one in a meaningful way. As the therapies continued, she began to use more Signs/Key words. Also, she began to imitate these vocal sounds after 2 months. The symbolic game developed to a more sophisticate form. After 10 months she was using Signs/Key words and oral language together.

Conclusion – the work with signs showed to be very helpful to develop language in the first steps in both ways: signed and oral. The development of the oral mode seems to show that the use of signs promotes the activation of the articulation in a way that must be better understood. Early stimulation in children with complex communication needs, especially with AAC may influence and develop language.

Learning Outcome:

1. To understand that the use of Signs/Key Words as AAC with oral language can help language development.
2. To understand how the work with Signs/Key Words can be done with children with complex communication needs.

Keywords: Alternative Communication; Language development; Signs/key words; Kleefstra Syndrome



Abstract No: 10038

The Effect of Using Visual Figure-Ground in Word-Recognition Board Game for Children with Developmental Language Delay

Hsuan-Mei Huang^{*1} ; Paochuan Torng² ; Wun-Tsong Chaou³ ; Chieh-Yu Liu²

¹Rehabilitation Department/ Taichung Veterans General Hospital/ Taiwan, ²Department of Speech Language Pathology and Audiology/ National Taipei University of Nursing and Health Sciences/ Taiwan,

³Department of Pediatric Neurology/ Puli Christian Hospital / Taiwan

Abstract Content:

The purpose of this study was to examine the effect of using visual figure-ground in word-recognition board game for four-to-six-year-old preschool children with developmental language delay. 27 preschoolers from Nantou county participated in this study. 15 preschoolers in experimental group were provided a twelve intervention program of word-recognition board game. Print icon recognition and indirect word recognition ability of the participants were investigated. Pretest and posttest were administrated to examine children's print icon recognition and ability of word recognition. The word recognition learning ability was also examined every class.

Results showed that: (a) A significant different was found between pre- and post-test in the print icon recognition and word recognition. (b) Word recognition learning ability for children showed improvement after the board game intervention program. Results might be helpful for clinicians to improve preschool children's word recognition, and also for future research.

Learning Outcome:

Results might be helpful for *using board game to improve preschool children's word recognition.*

Keywords: preschool children with language developmental delay; board game; figure-ground strategy; print awareness; development of word recognition.



Abstract No: 9707

Language performance for children with hearing loss: The role of parent effectiveness and auditory skills

Hsuan-Mei Hong¹; Tang-Zhi Lim¹; Yi-ping Chang^{1, 2}; Pei-Hua Chen¹

¹Speech and Hearing Science Research Institute/ Children's Hearing Foundation/ Taiwan, ²Department of Audiology and Speech Language Pathology/ Mackay Medical College/ Taiwan

Abstract Content:

Objective: This study aims to examine, for children with hearing loss, how parents' effectiveness and children's auditory skills influence the language performance outcome.

Method: The auditory-verbal (AV) specialists of 62 children (35 females; mean age 58.45 mo. with a standard deviation of 18.96 mo.) with hearing loss were recruited in the study. These children had been receiving auditory-verbal intervention from Children's Hearing Foundation in Taiwan for no more than two years. Compared to those who enrolled in AV program for longer period, these parents may not be effective in audiological management, teaching skills and parent-child interaction skills. Four scales were administered: (1) Parental Teaching Skill Scale (PTS), (2) Parenting Behavior Scale (PBS), (3) Audiological Management Checklist (AMC), and (4) Auditory Skills Checklist -Short Form (ASC-SF). The first three scales assessed parent's effectiveness. In addition, a standardized language assessment, Revised Preschool Language Assessment (RPLA), was applied to assess the language performance. RPLA consists of two subscales—Language comprehension (LC) and Oral expression (OE). Correlation analyses and multiple linear regressions were conducted to investigate the relationship among the scores of the four scales and RPLA.

Results: The results showed that the correlations between each of the four scales (and its subscales) and total score of RPLA were all positive and weak to moderate ($r = .22 \sim .79$, $p < .05$). In addition, regression analyses revealed that the ASC-SF score may predict all RPLA scores (LC: $\beta = .84$; OE: $\beta = .86$; total score: $\beta = .85$; all $p < .05$). However, the score of PTS may predict RPLA LC score ($\beta = -.35$, $p < .05$) and RPLA total score ($\beta = -.32$, $p < .05$).

Discussion: The results of correlation showed that, in general, both parents' better effectiveness and children's better auditory skills contributed to better language performance outcome. Furthermore, children's language performance can be predicted by their auditory skills and parents' teaching skills. Children with hearing loss who have better auditory skills tend to show better language performance. However, worse language comprehension of children was predicted by parents' high-level teaching skills. There are two possible explanations for the negative coefficient. First, one-third of children's RPLA score was zero, although the mean scores of PTS for children whose RPLA score was zero or non-zero were close (54 for zero RPLA vs. 61 for non-zero RPLA). Second, children's language development was still in the emerging stage and their language ability could not be evaluated with standardized assessment.

Learning Outcome:

1. Describe the relations among the parental effectiveness, language outcomes, and auditory skills of children with hearing loss.
2. Describe the predictors of language outcomes of children with hearing loss.

Keywords: language performance; hearing loss; parent effectiveness; auditory skills; auditory-verbal intervention



Abstract No: 9708

Language delay risks for children with hearing loss: A discriminant function approach

Hsuan-Mei Hong¹ ; Tang Zhi Lim^{*1} ; Pei-Hua Chen¹ ; Yi-Ping Chang^{1 2}

¹Speech and Hearing Science Research Institute/ Children's Hearing Foundation/ Taiwan, ²Department of Audiology and Speech Language Pathology/ Mackay Medical College/ Taiwan

Abstract Content:

Objective: The study aims to explore the predicting factors for language delay risks for children with hearing loss.

Background: In family-centered aural (re)habilitation, parent effectiveness (teaching skills, behavioral skills and implementation of audiological management) and auditory skills are considered to be the influencing factors of the language performance outcome. However, it is still not clear whether these factors can predict whether the child is at risks of language delay.

Method: The auditory-verbal (AV) specialists of 62 children (35 females; mean age 58.45 mo. with a standard deviation of 18.96 mo.) with hearing loss were recruited in the study. These children had been receiving auditory-verbal intervention from Children's Hearing Foundation in Taiwan for no more than two years. Four assessment scales were completed by the AV specialists: (1) Parental Teaching Skill Scale (PTS), (2) Parenting Behavior Scale (PBS), (3) Audiological Management Checklist (AMC), and (4) Auditory Skills Checklist-Short Form (ASC-SF). To discover the predicting factors for language delay risks for children with hearing loss, the discriminant function analysis was conducted. In addition, a standardized language assessment, Revised Preschool Language Assessment (RPLA) was applied to assess the language performances. RPLA consists of two subscales—Language comprehension (LC) and Oral expression (OE). According to the instruction manual of RPLA, the cutoff for language delay risks is 1.5 standard deviation below mean. By this definition, the children's total score of RPLA was classified into two categories — (1) Pass: above the designated cutoff, and (2) Fail: below the designated cutoff.

Results: One discriminant functions emerged, $Y = -.56 \text{ PTS} + .483 \text{ PBS} + .193 \text{ AMC} + 1.043 \text{ ASC-SF}$, with canonical $R^2 = 0.51$, and the function reached the statistically significant level with Wilk's $\lambda = 0.49$, $\chi^2(4) = 41.94$, $p < .001$. Correlation between the group membership and the discriminant function revealed that only two variables loaded onto this function. The two variables were total score of ASC-SF ($r = .94$) and the total score of PTS ($r = .31$). The function correctly classified 83.9%, and the more conservative cross-validated model correctly classified 83.9%. Moreover, for discovering which (sub)scales could differentiate potential language delay, we found that auditory comprehension in ASC-SF ($r = .82$) may strongly differentiate the language delay for children with hearing loss.

Discussion: Auditory skills and parental teaching skills may predict the language delay risks for children with hearing loss. Additionally, auditory comprehension in ASC-SF may be a potent factor to differentiate the language delay of children with hearing loss.

Learning Outcome:

1. Describe the factors relating to the risks of language delay for children with hearing loss.
2. Describe that auditory comprehension may differentiate the language performance for children with hearing loss.

Keywords: Auditory-Verbal Intervention ; Discriminant Function Analysis ; Auditory Skills Checklist ; Parental Effectiveness ; Language Delay Assessment



Abstract No: 9775

Links of perception of prosody, musical and parental activities to language skills of children with cochlear implants and normal hearing

Ritva Torppa^{*}; Andrew Faulkner; Marja Laasonen; Daniela Sammler

Abstract Content:

Objective: Children with cochlear implants (CIs) often show poorer language skills than children with normal hearing (NH). To improve rehabilitation, we investigated links between these skills and the perception of prosody, musical and parental activities in CI and NH children.

Method: Participants were 21 CIs and 31 NH children (age 5 to 13 years). We measured perception of word and sentence stress; children were classified as musically active or non-active by a questionnaire, which was used to assess the regularity of singing, reading and other activities with parents. We investigated how these were linked to word finding, verbal intelligence (WISC vocabulary) and phonological awareness (PA, production of rhymes).

Results: Perception of prosodic stress was positively linked to word finding and verbal IQ in CI children, and to verbal IQ in NH children. Musical activity was connected positively to performance in all language tasks in CI children, and to word finding and verbal IQ in NH children. Parental singing and reading was positively connected to word finding in CI children. Musically active CI children performed similarly to NH controls in all language tasks, while those who were not musically active performed more poorly.

Discussion: Even though these results cannot address causality, they suggest that good perception of prosodic stress, musical activities involving singing, and parental reading are all beneficial in improvement of language skills especially in CI children.

Learning Outcome:

1. Musical activities, singing by children and parental singing and reading can improve the benefits of language rehabilitation especially of CI children.
2. Rehabilitation targeted to better perception of prosodic stress can be an effective way to improve language skills of CI and NH children.

Keywords: Prosody; musical activities; parental reading and singing; language skills; rehabilitation; cochlear implants



Abstract No: 9115

Prosodic processing, phonological awareness and vocabulary knowledge in Mandarin-speaking children

Wei-Lun Chung¹

¹Department of Education/ National Taipei University of Education/ Taiwan

Abstract Content:

Purpose

Recently, several studies with school-age children revealed that prosodic processing is important to word reading in tone and non-tone languages (e.g., Mandarin and English). In Mandarin, individuals need to use prosodic patterns (i.e., pitch variations or lexical tone) to distinguish one homophonic syllable from others (e.g., *tang*¹ 'soup' and *tang*⁴ 'hot'), connect sounds to their corresponding characters, and then sound out characters. The study aims to investigate whether (1) Mandarin-speaking children's prosodic processing would improve with age and (2) the links between prosodic processing, phonological awareness and vocabulary knowledge in preschoolers.

Methods

Forty-nine preschoolers and sixty-one fourth graders received prosodic processing tasks. This study measured prosodic processing using non-speech and speech stimuli. On the non-speech stimuli tasks, children were required to determine whether or not pairs of tone sequences were the same or different. Those pairs of tone sequences included four pure tones signaling patterns of rises and falls in pitch. Pairs of tone sequences sounded different when their second/third tones did not share the same contour of rises and falls in pitch (pitch contour) or the same pitch values (pitch interval). On the speech stimuli task, children were asked to choose from two nonsense sequences (DEE3DEE1 or DEE4DEE2) the one that best matched the tone patterns in target words (*lao3shi1* 'teacher'). Additionally, preschoolers received three phonological awareness (PA) tasks and one vocabulary knowledge task. Three PA tasks were sound deletion in onset, sound oddity in onset and rhyme. The vocabulary knowledge task was the Peabody Picture Vocabulary Test-Mandarin version. The *t*-tests were computed to examine whether or not children's prosodic processing improved from preschool to fourth grade. Additionally, Pearson's correlations and hierarchical regression analyses were conducted to examine links between prosodic processing, phonological awareness and vocabulary knowledge in preschoolers.

Results

Fourth-graders outperformed preschoolers in prosodic processing tasks, including both non-speech and speech stimuli tasks. The ability to determine whether or not pairs of tone sequences have the same pitch values was significantly associated with vocabulary knowledge. Prosodic processing measured by the DEE4DEE2 sequences made more contributions to vocabulary knowledge than did phonological awareness.

Discussion

Children's prosodic processing improves with age as evidenced by the significant difference between preschoolers and fourth graders. The ability to process non-speech/speech stimuli signaling prosodic patterns had significant associations with vocabulary knowledge. Additionally, prosodic processing is more important to vocabulary knowledge than is phonological awareness. Together, children's ability to process pitch variations signaling Mandarin tone patterns develop with age and plays a role in early vocabulary development.

Learning Outcome:

Attendees will be able to understand the role of prosodic processing in early vocabulary development.

Keywords: auditory perception; prosody; suprasegmental phonology; lexical tone; vocabulary



Oral Presentation: Session TH19- Educational SLP (III), Aug. 22nd (Thu.) 15:30-17:40

Abstract No: 9831

Educating a rural speech-language pathology workforce: 20 years of addressing the urban-rural health disparity

Catherine Easton^{*1} ; Sarah Verdon^{*1}

¹*School of Community Health/ Charles Sturt University/ Australia*

Abstract Content:

Health disparities between urban and rural areas are well documented throughout the world. One of the greatest barriers that confounds these disparities is the lack of available health services to meet the needs of the population. The rural pipeline model has been developed from research suggesting that health professionals who are trained in rural areas they are more likely to practice in these areas. This model suggests that the recruitment and training of future speech pathologists outside of urban centres is a key step to addressing the urban-rural health inequities.

This paper presents data on the impact of a rural speech-language pathology course in Australia since it began in 1998. It draws on quantitative and qualitative data from a survey of 181 current students and graduates to investigate whether students who undertook their studies in a rural setting practice and/or intend to practice in rural areas. The study also investigates the geographical and educational background of the participants, along with their reasons for choosing to study at a rural university.

The study found that in the 20 year period between 1998 and 2018, 74% of the graduate participants went on the practice in a non-metropolitan setting, and 78% of current students intend to practice in non-urban settings. In addition, it was found that 62.7% of graduates and 42.5% of current students were the first in their family to study at university, many stating that they would not have attended an urban university.

The findings of this study support the rural pipeline model, with students who study regionally being more likely to practice in rural areas than urban areas. This finding supports the development of a rural workforce by creating tertiary education opportunities in rural areas and for rural students. This in turn supports the creation of a local sustainable speech-language pathology workforce in non-urban areas that is responsive to the well documented health disparities.

Learning Outcome:

By attending this presentation, participants will:

- develop understanding of the rural pipeline model and its application to access of SLP services in your national context
- explore the role of rural universities in increasing SLP workforce diversity through addressing educational disparity for rural students

Keywords: Tertiary Education, Rural workforce, recruitment and retention



Abstract No: 9845

Exploring the role of Tāngata Whaiora₁ in the education of healthcare professionals in Aotearoa (₁Tangata Whaiora is a te reo Māori term which translates to person seeking wellness.)

Philippa Friary^{*1} ; Nadia Mantell^{*1} ; Tony Spelman^{*}; Bianca Jackson^{*1} ; Alice Darragh

¹*School of Psychology/ The University of Auckland/ New Zealand*

Abstract Content:

Background: Patients have a long history of being involved in the delivery of healthcare education. However, there is limited information about their role in the development of the healthcare curriculum across Aotearoa. The international literature on this topic, describes the role undertaken by these patients as being primarily passive.

Aims: (1) Understand the current and potential roles of Tāngata Whaiora in the education of healthcare professionals in Aotearoa. (2) Explore the benefits of a clinical education program in which Tāngata Whaiora have an active teaching and curriculum development role.

Methodology: This is a co-design research project incorporating a survey of clinical education programs across Aotearoa in addition to focus group and interview data.

Results: A survey designed and distributed to over 60 healthcare education programs across Aotearoa. This data will be described together with the analysis of the reflective journals kept by the student and Tāngata Whaiora researchers throughout this process. This presentation will also include a summary of the findings from a healthcare education program in which the Tāngata Whaiora occupied an active teaching role. Key directions will be provided to ensure that the patient voice is heard and active throughout the learning process.

Conclusions: With a shift to empowering patients in healthcare, comes a shift in their role in the training of healthcare students. The findings from this collaborative study describe the breadth of the roles that Tāngata Whaiora are playing in the healthcare curriculum across Aotearoa, and opportunities to further develop these roles. The student education program outlined, is one example of how we can actively involve our Tāngata Whaiora in healthcare education.

₁Tangata Whaiora is a te reo Māori term which translates to person seeking wellness.

Learning Outcome:

- 1) To reflect on the potential role of the client (Tāngata Whaiora) within the education curriculum of speech-language therapy students
- 2) To learn about a co-design project within a university student education programme
- 3) To understand how to employ co-design research design into their practice

Keywords: healthcare education; Tāngata Whaiora; clients as teachers; co-design; patient voice



Abstract No: 10028

Perception of Acquired Swallowing and Communication Disorders in Taiwanese Older Adults: Implications for Speech Language Pathology Education.

Jou Ling Teoh^{*1} ; Jou Yin Teoh² ; Meng-Ju Tsai¹

¹Speech-Language Pathology and Audiology/ Chung Shan Medical University/ Taiwan, ²Medical Education/ Cardiff University/ United Kingdom

Abstract Content:

Objective: This study aims to understand how older adults in Taiwan perceive the acquisition of swallowing and communication disorders (SCDs) as a consequence of ageing, the factors influencing their preparedness for possible acquisition of SCDs, and the implications for speech language pathology (SLP) training in Taiwan.

Background: Taiwanese society is ageing at an alarming rate, with 14.05% of the population aged above 65 and expected to further increase to 21% in the next 8 years. Prevalence studies indicate that around 51% of institutionalized older adults are affected by swallowing disorders. Very little is known of how prepared Taiwan's older adult population are for the acquisition of SCDs.

Methods: Semi-structured interviews using the Kawa (River) Model were conducted on 13 typical older adults above the age of 65 in Taiwan; 10 from Central Taiwan and 3 from other parts of the country. Originally developed in Japan, the Kawa Model was selected for its ability to accommodate and capture collectivist worldviews typical in Taiwanese societies. Participants' perceptions of SCDs were obtained according to four main constructs: life flow and priorities (river flow); environments (river banks); obstacles and challenges (rocks); as well as influencing factors (driftwood). These interviews were recorded with permission, transcribed, and the data was subject to thematic analysis.

Results: The majority of participants interviewed are ill-equipped to face possible SCDs later in life, and do not regard their development as a possible part of ageing. Themes which have emerged include: i) Acknowledgement of the inconveniences of SCDs but still showed resilient attitudes; ii) The thought has not crossed their mind; and iii) Self isolation. Self-isolation is likely to lead to further contraindications as it is necessary to actively attempt speech as a form of oral motor exercise upon acquisition of SCDs. Findings also showed that self-esteem and the person's relationship with their social environment have an influence on their attitudes towards acquired SCDs; and that their life priorities change over time, with implications for how "rehabilitation" should be understood by health professionals.

Discussion: The results indicate that a more proactive approach towards addressing SCDs in the older adult population is much needed, and SLPs should play a significant role in its advancement. This study could be further enhanced by including participants distributed more evenly across the country for a more comprehensive overview. Further studies scrutinizing the SLP training curriculum in Taiwanese universities are also needed to determine whether graduates are able to adequately meet this need to focus more on prevention and education besides rehabilitation and recovery. More emphasis should be given to health education and promotion roles in SLP services, not only in entry-level training curriculum but also in post-qualification continuous professional development efforts.

Learning Outcome:

Participants will learn how to:

1. Describe Taiwanese older adults' perceptions of swallowing and communication disorders.
2. Identify factors influencing their preparedness for possible acquisition of swallowing and communication disorders.
3. Apply the Kawa Model to speech language pathology practice.



Keywords: kawa model; swallowing disorder; communication disorder; speech language pathology; older adult



Abstract No: 9954

The Effects of Mindfulness, Meditation and Holistic Treatment of Complementary and Alternative Medicine on CSD treatment and education

Li Hsieh^{*1} ; Barbara Ward^{*1} ; Tsui-Yu Tracy Hsieh^{*2}

¹*Department of Communication Sciences and Disorders/ Wayne State University/ United States,*

¹*Department of Communication Sciences and Disorders/ University of Hawaii at Manoa/ United States*

²*Department of Internal Medicine/ Yu-Kang Oriental Medicine Clinic/ Taiwan*

Abstract Content:

Objective: Our goals are to reduce stress/anxiety/negative feelings, experience relaxation of body and mind, improve self-monitoring skills/attention, better cope with present condition, facilitate positive feelings/thinking, and then develop alternative strategies to treat body and mind in a holistic way. These complementary & alternative medicine (CAM) treatments include (but not limited to) mindfulness training, awareness of breath, relaxation & restoration exercise, meditation practice, body exercise (e.g., Tai-Chi Chuan, Yoga, and stretching exercise) and alternative medicine (e.g., traditional oriental medicine, acupuncture, herbal medicine and food medicine).

Background: Mindfulness training, meditation and CAM medicine have been explored as possible intervention strategies to address the issues of stress, anxiety, depression, cognitive and negative emotional caused by these communication disorders, such as acquired brain injury, aphasia, stuttering, voice, memory loss, attention deficits and autism spectrum.

Previous studies showed that mindfulness training could impact cognition and mood by increasing awareness of attention and re-orientation at the present moment. Brain regions activated during sustained and switching attention suggest that mindfulness plays an important role in developing more effective mental processing (Bishop et al., 2004; Kabat-Zinn, 2003). Mindfulness has been defined as the practice of awareness through focused attention and non-judgment (Dan, 2017). Mindfulness-based programs typically are based on an 8-week Mindfulness-Based Stress Reduction program, but can be adapted into programs ranged from less than a week to twelve weeks long.

Brain regions of the brainstem, left temporal lobe, hippocampus, right orbital frontal cortex, and right thalamus had increases in gray matter density following mindfulness-based intervention for post TBI individuals (Reviewed by Link et al., 2016). In another words, areas responsible for executive functioning, memory, self-awareness, and mood may improve in functionality following direct training in mindfulness.

A recent study compared the effects of yoga and mindfulness training in healthy adults in a hospital-based mind body clinic (Mohapatra & Marshall, 2018). They found that both yoga and mindfulness significantly reduced depression and anxiety. Yoga group demonstrated significant reduction in anxiety and depression only, while mindfulness group demonstrated significant change on measures of anxiety, depression, mindfulness, negative thoughts, and behavioral limitations. Mindfulness may have more benefits than yoga in a hospital based setting, suggesting potential for mindfulness for prevention as well as treatment in communication disorders.

Method: Currently we conducted a systematic review in mindfulness, breathing awareness, body movement exercises and holistic treatment of CAM medicine.

Results: Results of this study can be used to integrate some or all of these alternative interventions into a clinical model or a wellness/rehabilitation center.

Discussion: In conclusion, these CAM programs are beneficial in reducing cost, stress, anxiety, hypertension, and depression; while improving attention, cognition, awareness, self-monitoring/self-regulation, coping skills and positive feelings/thinking. Additional CAM treatment resources will be provided.



Learning Outcome:

1. To describe the definition and benefits of mindfulness, medication and CAM therapy on CSD.
2. To discuss about how to integrate one or more of these methods to CSD clinical and educational programs.

Keywords: Mindfulness; Traditional Oriental Medicine; Complimentary & Alternative Medicine (CAM); Acupuncture; Relaxation & Restoration exercise



Abstract No: 9844

The Education and Registration of European Fluency Specialists

Kurt Eggers^{1 2} ; Joseph Agius¹ ; Margaret Leahy² ; Elaine Kelman³ ; Mark Pertijis⁴

¹Speech Language Therapy and Audiology/ Thomas More U College/ Belgium, ²Psychology and Speech Language Pathology/ Turku University / Finland, ¹Speech Language Department/ University of Malta/ Malta, ²Clinical Speech and Language studies/ Trinity College Dublin/ Ireland ³Michael Palin Center/ Michael Palin Center/ United Kingdom ⁴Dutch Federation for Stutter Therapists/ Dutch Federation for Stutter Therapists/ Netherlands

Abstract Content:

The European Clinical Specialization Fluency (ECSF) consortium has been running courses for qualified SLTs since 2008 with an annual intake of around 20 students. Currently more than 200 students from 27 EU and non-EU countries have graduated from the program. Members of this consortium are specialist therapists, researchers and lecturers working in the area of fluency disorders, drawn from 13 universities and colleges in 9 EU countries, along with two associate partners from Centers of Excellence for working the people with fluency disorders. The program is a well-designed combination of lectures, clinical practice and home assignments. Lectures are provided during two intensive weeks (September & February), scheduled during the academic year. These modules are combined with several lectures and follow up sessions in the home country of the participant. The local sessions take place outside the intensive weeks. Preparatory reading and home assignments form an integral part of the course. The specialized clinical training, under supervision of a fluency specialist, can begin after the first intensive week. Evaluation is based on permanent evaluation, portfolio, and specific evaluation moments. The curriculum consists of two components: theoretical knowledge and specific therapeutic skills along with specialized clinical training and portfolio.

The one-year intensive course leads to a qualification as an ECSF-recognized Fluency Therapist, a significant step towards becoming a European Fluency Specialist (EFS). During this presentation, we will (1) elaborate how the course has evolved over time in order to create an ideal learning curve and optimal learning environment for participants; and (2) report on the results of an online survey of our graduates re. the learning outcomes and perceived benefits.

This European group has now developed an additional stepwise procedure to become a European Fluency Specialist. This is open to ECSF graduates as well as eligible clinicians and academics with special interest in fluency disorders. The process involves documentation re. clinical and/or academic activities, continued professional development activities, and informal discussion groups, within a time frame of three years. The EFS Board reviews the documentation, approves applications in accordance with stated criteria and registers the applicant accordingly. Once approved, the certification process is complete and the person can use the title of European Fluency Specialist. To maintain certification, candidates must provide proof of accomplishments of the required activities annually; every three years the EFS Board will review the documented required activities for candidates to maintain certification.

This recently developed EU model, active from 2016, shows similarities to ASHA's (American Board of Fluency and Fluency Disorders) recognition procedure for becoming a 'Board certified specialist in fluency', and might be a useful model for other SLT domains.

Learning Outcome:

- Participants will gain insight in the structure and learning approaches of the ECSF course.
- Participants will gain insight in the results of the evaluation of the ECSF course after 10 course cycles.
- Participants will gain insight in the functioning of the European register for fluency specialists.



Keywords: fluency; specialist; recognition; training; certification



Abstract No: 9864

A Practice-Based Research Approach to Understanding Educational Speech-Language Pathology Impacts

Lisa Archibald¹ ; Taylor Bardell¹ ; Anila Punoose² ; MaryAnn Schouten³ ; Meghan Vollebregt¹ ;
Christine Davison¹ ; Jana Leggett; Sherry Raffalovitch; Nancy Sarlo; Sharon McConney Ellis; Alyssa
Kuiack; Kristen Smith

¹Communication Sciences and Disorders/ The University of Western Ontario/ Canada, ²Speech,
Language, and Hearing Services/ Durham District School Board/ Canada, ³Communication, Language,
and Speech Services/ Upper Grand District School Board/ Canada

Abstract Content:

Practice-based research refers to the use of research-inspired principles to systematically investigate questions within existing practice providing evidence relevant to stakeholders, practice, and the discipline. Practice-based research holds particular promise for understanding complex systems requiring unique, multi-input solutions such as education. The primary goal of education is to provide equal access to quality education so that all students succeed. There is a need to develop flexible learning environments that can accommodate individual learning differences. Meeting the multiple demands of a busy classroom is challenging. Increasingly, educators are working collaboratively with other professionals who have complementary expertise to better understand and meet the needs of all students. Speech-language pathologists (SLPs) have expertise in the area of language development and language for learning. As a result, SLPs often work within educational systems to support children with communication disorders that adversely affect educational success to develop language needed for curriculum access. SLPs collaborate with educators in a number of ways including jointly teaching classroom activities, determining instructional strategies for the educator to use in the classroom, or completing individual sessions with a child to better understand or address the child's learning needs. The aim of the Collaborative Knowledge Generation Research Program is to employ a practice-based research approach to develop an in-depth understanding of the complex factors that positively impact high quality instruction, sustainable team approaches, and effective student learning in SLP-educator collaborations targeting oral language and emergent literacy. One objective of our collaborative group is to understand effective practice-based research partnerships. This study employs a qualitative research design and focuses on the human experience. Through the use of participant observation, focus groups, surveys, and collection of relevant artifacts, our thematic analysis will identify factors that influence team functioning. Results that provide a better understanding of effective practice-based research will be immediately incorporated into our projects. The second objective is to investigate questions arising from practice that are related to educational SLP services supporting early intervention programs for oral language and emerging literacy. Three partnerships are currently underway: (1) In our kindergarten assessment project, we are evaluating the validity and sensitivity to growth of an assessment tool designed to describe the phonological awareness and narrative abilities of children across a 2-year kindergarten program. (2) In our language-based literacy intervention project, we are evaluating a narrative tool for capturing change in response to intervention as well as other oral language indicators of growth in children from kindergarten to grade 2. (3) In our grade 1 language and literacy project, we are examining a SLP-educator collaborative training model for implementing an effective classroom-based reading instructional program in 20 schools. Results of these projects will inform the development of innovative educational SLP services for supporting communication.

Learning Outcome (minimum of 2, maximum of 20 words each)

1. Participants will develop a better understanding of practice-based research and potential benefits for generating knowledge collaboratively.
2. Participants will understand the range of services provided by school-based educational speech-language pathologists (SLPs).
3. Participants will identify some of the factors that influence, constrain, or facilitate SLP service design and provision in schools.



Keywords: practice-based research, collaboration, phonemic awareness, narrative language, reading instruction



Abstract No: 9743

Challenges of educators of deafblind learners in a boarding school facility in Johannesburg South Africa

Tejal Manga^{*1} ; Khetsiwe Masuku^{*1}

¹*Speech Pathology & Audiology/ University of the Witwatersrand/ South Africa*

Abstract Content:

The lives of deafblind children often involve a multitude of additional needs across all areas of development, with communication being one of the most prevalent areas of development to be affected. Deafblind individuals depend on significant others to facilitate their communication effectively and clearly to the world.

Despite the policies and protocols set out by the United Nations White Paper on Health and Education, along with the advancing technologies in alternate augmentative communication (AAC) systems, educators in South Africa still face challenges with classroom teaching and communication strategies. These challenges include factors such as the lack of adequate and appropriate support for learners, teachers and schools and the lack of sufficient knowledge and scarce skill-set on specific disabilities for caring for deafblind individuals.

The study, utilising a qualitative exploratory research design, explored the challenges experienced by educators of deafblind learners in a boarding school facility. Semi-structured interviews were conducted with 10 purposively selected educators of deafblind learners. Data collected from these interviews were analysed using deductive-thematic analysis.

The following themes emerged from data collected in the interviews: under-preparedness of educators; inadequate communication strategies to facilitate effective communication between themselves and learners; incorporating cultural diversity among deafblind learners and the lack of support structures for educators and learners.

There is an urgent need to capacitate and support educators on deafblindness in order for them to provide quality education prospects for children with deafblindness within the special education system. The essential role of speech therapists and audiologists in support, training and the management of educators of children with disabilities, specifically deafblindness, in special schools should be considered. This in turn would allow for healthy and effective communication for deafblind learners and thus further enhance the goal of inclusive education.

Learning Outcome:

1. Multiple challenges faced by educators of deafblind learners.
2. Lack of support and training of educators of deafblind learners.
3. Essential need of speech therapists and audiologists in training and provision of support to educators of deafblind learners.

Keywords: Key words: deafblind learners; educators; challenges; inclusive education; communication



Abstract No: 10045

Educating Speech Language Pathologists in the 21st Century Classroom: Lessons from a blended online Master of Speech Pathology

Catherine Easton^{*1} ; Sarah Verdon^{*1}

¹*School of Community Health/ Charles Sturt University/ Australia*

Abstract Content:

Developments in information and communications technologies have not only created new pedagogies and strategies for learning and teaching, but have also led to significant changes in student engagement and expectations of learning. Models of adult learning are often used to explain these changes in engagement and expectations, looking at theories of motivation, communities of learning, and practice-based education to explore the key drivers in this educational technology revolution. As the provision of online speech-language pathology education is a newly emerging context, there is little existing research that seeks to understand the 'online speech-language pathology student'.

This presentation draws on data from a larger study that seeks to understand the online students studying the Master of Speech Pathology at Charles Sturt University in Australia. The data presented is drawn from a survey of current students (n=46), and a followup focus group to explore:

- Who are the students studying online?
- What are their motivations? and
- What do they perceive to be the benefits and challenges of online study.
-

Analysis of the quantitative data provided a picture of the typical student as a 30-49 year old female who chose the course due to its online delivery. Family, work, lifestyle and rural location were identified as key reasons for seeking out an online course. Approximately half of the students came from major metropolitan centres where speech-language pathology courses are offered by other universities. However, notably over 40% were studying while living in rural and remote areas where there were no opportunities to study speech-language pathology face-to-face.

Among survey participants, key reasons for choosing to study speech-language pathology included: career change, personal/family experience, knowledge of gaps in rural service availability, work or study in a related field, and recognition of the importance of communication and swallowing to overall wellbeing. 25% of survey participants reported that they would have applied to study speech pathology at another university if they had not been accepted into their current course, and a further 28% reported that they would wait until another financially and/or geographically accessible option arose. 44% reported that they would have not studied or studied a different degree.

Benefits of the course identified through the survey included the flexible online and part-time delivery, small personal university and the rural focus of the course. Meanwhile, challenges were the requirements for travel to residential schools and placements, isolation of online learning and lack of clear communication required for an online learning environment. These issues were further explored through a follow-up focus group.

This study highlights the role of online speech pathology education in reducing barriers to studying speech pathology and to providing a diverse workforce that will help address the service delivery needs of speech pathology across the underserved areas of our own countries and the world.

Learning Outcome:

Consider current understandings of the increasing online tertiary education landscape and its relevance to speech and language pathology education



Identify benefits and challenges of online Speech and Language Pathology study in meeting the needs of our current and future workforce

Keywords: Tertiary Education, Online Education, Rural Speech-Language Pathology