NUS MSc(SLP) Student Research Seminar 2022 - Schedule and Abstracts
24th August 2022, 2pm-6pm
Please click on the titles below to link to the presentation Abstracts

Topic: Literacy Intervention for Children		Topic: Intervention for Acquired Speech and Voice Disorders	
Eugenia Ang	Parent-Mediated Literacy Intervention for Children at Risk of Reading Difficulties: A Systematic Review	Cheryl Ying	The More the Merrier: A Systematic Review on the Effectiveness of Group Voice Therapy
Vrenda Dorairaj	"Literacy Skills Beyond Their (Y)ears" A Systematic Review on the Effectiveness of Literacy Interventions for Children with Hearing Loss	Carissa Liong	Dysphonia in the Online Era: A Systematic Review of Voice Therapy Telepractice for Adults
Gabriella Lim	Down to Read: A Systematic Review of Phonological Awareness Interventions for Children with Down Syndrome	Jaslyne Loh	How to Save Your Voice: A Systematic Review of Voice Care Programmes for Teachers
Alicia Lee	Cross-linguistic Transfer Effects of Phonological Awareness Intervention in Bilingual Children: A Systematic Review	Chen Siang Ling	Systematic Review of Treatment Intensity in the Rehabilitation of Acquired Apraxia of Speech
Topic: Intervention for Language Disorders and Late Talkers		**Topic: Language Assessments**	
Poo Shue Jun	"What We Are Learn?" A Systematic Review on the Effectiveness of Morphosyntax Intervention for Children with Developmental Language Disorder	Hannah Huang	Uncommon Understanding: A Systematic Review on the Reliability and Validity of Mandarin Receptive Language Assessments for Children with Language Disorders
Cami Thew	Effectiveness of Vocabulary Intervention for Children with Developmental Language Disorder: A Systematic Review	Yvonne Fung	A Systematic Review on the Reliability and Validity of Mandarin Expressive Language Assessments for Children with Language Disorders
Farheen Akram binte Mohamed A	Effectiveness of Language Intervention for Children and Adolescents with Traumatic Brain Injury: A Systematic Review	Reiko Ang	Evaluating the Reliability and/or Validity of Mandarin Language Assessments for Post-Stroke Aphasia: A Systematic Review
Rachel Ng	"Learning at Your Mother's Knees" A Systematic Review on the Effectiveness of Parent-implemented Language Intervention for Late Talkers	Ang Seow Li	Comparing the Performance of Bilingual Children with Developmental Language Disorder and Typical Development on Sentence Repetition: A Systematic Review

Topic: Intervention for Children with Speech Sound Disorders		Topic: Models of Stuttering	
Kaylee Zhang	Effectiveness of Phonological Awareness for Children with Speech Sound Disorders: A Systematic Review	Ho Pei Yi	The Covert Repair Hypothesis: A Systematic Review of the Differences in Phonological Encoding of People who Stutter and do not Stutter
Samantha Tan	The Effectiveness of Literacy Intervention for Children with Childhood Apraxia of Speech: A Systematic Review	Yu LiHui	The EXPLAN Model: A Systematic Review of the Relationship Between Stuttering on Content and Function Words Across Ages and Languages
Rayshell Wong	ZOOM-in on the Efficacy of Telepractice Intervention for Speech Sound Disorders: A Systematic Review		
Topic: Intervention for Autism Spectrum Disorder		Topic: Language Disorders in Adults	
Louise Tan	"They Lived Happily Ever After?" A Systematic Review on the Effectiveness of Social Stories Intervention for Social Communication Skills in Children with Autism Spectrum Disorder	Nurul Afiqah binte Ibrahim	A Systematic Review of Cross-Language Generalization in Bilingual Anomia Therapy
Rebekah Ang	A Systematic Review of Conversational Skills Intervention in Youths and Adults with Autism Spectrum Disorder	Natasha Lowe	Aren't you CUErious: A Systematic Review on the Features of Cueing Associated with Significant Improvement in Naming
Audrey Tan	Effectiveness of Interventions with Sibling or Peer Involvement on the Social Communication Skills of Children with Autism Spectrum Disorder: A Systematic Review	Safra Zarina Tasneem Binti Vazeer Alam	Between a "Shock" and a Hard Place: A Systematic Review on the Effects of Electroconvulsive Therapy on Speech and Communication
Anna Belle Tang	A Virtual Perspective: A Systematic Review of Social Communication Interventions Using Immersive Technology for Children with Autism Spectrum Disorder	Amanda Choo	Words and More: A Systematic Review of the Effectiveness of Sentence and Discourse-Level Treatments for People with Aphasia Due to Dementia
		Charis Tan	Effects of Compensatory Intervention on Functional Communication in Persons with Primary Progressive Aphasia (PPA): A Systematic Review

Abstracts

Topic: Literacy Intervention for Children

Parent-Mediated Literacy Intervention for Children at Risk of Reading Difficulties: A Systematic Review

Eugenia Ang Li Fen

Background: To date, no systematic review has examined the effect of parent-mediated literacy intervention (PMLI) on at-risk children. This review should help to inform resource allocation for early intervention.

Aims: To determine the types and efficacy of PMLI to improve the literacy skills of children aged 3-7 years who are at risk of reading difficulties, including those with a diagnosed disability (e.g., language disorder), and those at-risk due to family history, a disadvantaged background, or low reading test scores.

Method: A systematic search of five electronic databases (Embase, ERIC, LLBA, Medline, and PsycINFO) was conducted on 17 February 2022. Studies involving children aged 3-7 years at risk of reading difficulties, a PMLI, and a control group were included. Eligible reports were appraised using the CASP checklist.

Results: Out of 4,267 retrieved records, 21 studies met the eligibility criteria ($N = 1444$ participants). Of the 10 studies involving children without a diagnosed disability, five adopted an embedded approach (e.g., shared reading), three adopted an explicit approach (e.g., parents tutor specific skills), and two adopted a mixed approach. Four out of 11 studies involving children with a diagnosed disability adopted an embedded approach while seven adopted a mixed approach. PMLI appears effective to improve oral and written language for both groups, albeit with a larger effect for children with a diagnosed disability.

Conclusions: While inconsistent reporting of effect sizes and participant characteristics compromised the quality of some studies, this review contributes knowledge for decision-making related to service delivery.

Topic: Literacy Intervention for Children

"Literacy Skills Beyond Their (Y)ears" A Systematic Review on the Effectiveness of Literacy Interventions for Children with Hearing Loss

Vrenda Dorairaj

Background: Children with hearing loss (CwHL) face difficulties with development of their literacy skills. The efficacy of literacy intervention for CwHL has been studied for pre-schoolers (Davenport et al., 2019) but not for young school-age pupils.

Aims: To determine the types of literacy interventions employed for children with hearing loss aged 5 to 12 years and to evaluate their effectiveness.

Method: A systematic search of five electronic databases (PubMed, PsycINFO, EMBASE, ERIC and LLBA) was conducted on 9th March 2022. Single case design studies with children aged 5 to 12 years with a primary diagnosis of hearing loss, and intervention involving phonological awareness (PA), phonological decoding (PD) or literacy skills were included. Studies were critically appraised using the RoBINT scale.

Results: Sixteen studies met the inclusion criteria (N = 52 participants). A range of phonological, reading, and writing interventions, were identified. In terms of effectiveness, phonological interventions appear to lead to improvements in both PA and PD skills, while reading and writing interventions revealed mixed findings on literacy skills.

Conclusions: The outcome for intervention is promising but the moderate-to-high risk of bias in most studies, and the heterogeneity of the population with hearing loss, suggest further research is needed.

Topic: Literacy Intervention for Children

Down to Read: A Systematic Review of Phonological Awareness Interventions for Children with Down Syndrome

Gabriella Lim

Background: Children with Down Syndrome (DS) often have difficulties that hinder literacy acquisition, and the role of phonological awareness (PA) for this population has been debated. A systematic review by Lemons and Fuchs (2010) showed that phonics-based reading instruction may be beneficial for at least some children with DS.

Aims: To consolidate findings from single-case studies of PA interventions for children with DS aged 4 years and above by examining the efficacy of treatment programmes at different levels of PA and with different tasks requirements.

Method: A search of six electronic databases (PubMed, PsycInfo, ERIC, LLBA, Embase, and SCOPUS) based on predefined inclusion criteria (PA interventions measuring literacy outcomes for children with DS aged 4 years and above) yielded 2,607 records. After screening, 14 studies (N= 88 children) were included for the analysis and reports were assessed using the RoBiNT checklist.

Results: Despite individual variability, the findings of this review suggest that children with DS can show improvements in the following literacy outcomes following PA interventions: phonological awareness, reading, and spelling. Phoneme awareness was targeted in all studies, and five programmes also included onset-rime or syllable level tasks. Thirteen studies (N=85 children) involved PA interventions integrating other aspects (e.g., print, vocabulary, speech, shared book reading), rather than focusing solely on PA tasks.

Conclusions: PA interventions with modifications tailored to the DS phenotype can lead to positive literacy outcomes.

Topic: Literacy Intervention for Children

Cross-linguistic Transfer Effects of Phonological Awareness Intervention in Bilingual Children: A Systematic Review

Alicia Lee Yue Hwa

Background: Bilingual children's phonological awareness (PA) performance in their two languages is known to correlate but no systematic review has evaluated how PA intervention in one language improves PA skills in the other language.

Aim: To assess how first language (L1) and second language (L2) programmes and different intervention approaches contribute to cross-linguistic transfer of PA skills in bilingual children.

Method: Seven databases – PubMed, Embase, CINAHL, Scopus, PsycINFO, ERIC, and LLBA – were searched systematically on 3 March 2022. Studies were included if PA intervention was conducted in one language, L1 and L2 pre- and post- PA scores were reported, and the design was experimental. Studies were excluded if participants within a group had different L1s. The quality of each study was assessed using Critical Appraisal Skills Programme (CASP) checklist.

Results: Of the 3440 records retrieved, 14 met the eligibility criteria. Two treatment approaches were identified: PA-Only and PA plus literacy instructions. Nine studies involved PA plus literacy instructions. Treatment in the child's L1 showed moderate-to-large effects for PA gains in L2, while treatment in the child's L2 showed mostly small effects for PA gains in L1. Five studies involved PA-Only intervention. Both L1 and L2 interventions yielded substantial cross-linguistic transfer effects to the untreated language.

Conclusions: This review was limited by inconsistent reporting of participants' characteristics (e.g., language proficiency), but the results suggest promising cross-linguistic benefits of L1 PA intervention for both treatment approaches, and L2 PA intervention for PA-Only approach.

Topic: Intervention for Language Disorders and Late Talkers

"What We Are Learn?" A Systematic Review on the Effectiveness of Morphosyntax Intervention for Children with Developmental Language Disorder

Poo Shue Jun

Background: Children with Developmental Language Disorder (DLD) have persistent difficulties with morphosyntax. There is growing body of research supporting implicit and/or explicit approaches in treating morphosyntax deficits but no systematic review of their efficacy has been conducted to date.

Aim: To evaluate and synthesise evidence on the effectiveness of morphosyntax interventions for DLD.

Method: A systematic search was conducted across seven electronic databases (PubMed, EMBASE, CINAHL, PsycInfo, LLBA, ERIC and Scopus) for peer-reviewed articles published between 2012 to 2022 on February 3, 2022. Inclusion criteria were children with DLD aged 3;0 to 16;0 and intervention on morphology and/or syntax. Single case designs, randomised controlled trials and quasi-experimental designs were included. RoBiNT scale was used to evaluate risk of bias in single case designs, while CASP was used to appraise randomised controlled trials and quasi-experimental designs. Age, language profile, and treatment stimuli were analysed to explore factors that influence efficacy.

Results: After screening 4539 records, 33 studies met the inclusion criteria. Implicit approaches were employed in 10 studies, 15 studies employed explicit approaches, and 11 studies used a combination of implicit-explicit approaches. Outcomes were largely positive for all three approaches for improving expressive morphosyntax, with evidence of generalisation to treated targets and improvement on standardised tests. However, there was limited generalisation to untreated targets and performance on receptive morphosyntax measures.

Conclusions: Current evidence indicates that implicit and explicit treatment approaches are effective in improving expressive but not receptive morphosyntax. More research comparing approaches, selection of treatment stimuli, and receptive morphosyntax intervention is needed.

Topic: Intervention for Language Disorders and Late Talkers

Effectiveness of Vocabulary Intervention for Children with Developmental Language Disorder: A Systematic Review

Thew Wei Ling, Cami

Background: Vocabulary deficits are common in children with Developmental Language Disorder (DLD). Previous systematic reviews evaluating speech and language interventions for children with DLD reported insufficient evidence from randomized controlled trials (RCTs) to establish the efficacy of vocabulary intervention (Law et al., 2003, Rinaldi et al., 2021).

Aim: To identify the types of vocabulary intervention and systematically analyse their effectiveness for children with DLD.

Method: A search of five databases (CINAHL, EMBASE, PubMed, PsycInfo and LLBA) for peer-reviewed articles published between 2002 and 2022 was conducted on 15 February 2022. The inclusion criteria were: children with DLD aged 3;0 to 12;11, intervention on vocabulary knowledge or word learning, comparison with a control group, control condition, or pretest-posttest results, and experimental group designs. Eligible studies were critically appraised using the Critical Appraisal Skills Programme (CASP) RCT checklist.

Results: Of 4730 records retrieved, 22 studies met the inclusion criteria. Vocabulary intervention included semantic, phonological, combined phonological-semantic, and combined morphological-semantic approaches, and the activities and techniques employed varied across these approaches. The semantic and combined phonological-semantic approaches appear the most effective.

Conclusions: Implementation of a semantic or combined phonological-semantic intervention appears to facilitate vocabulary learning in children with DLD. Future research should replicate existing findings and further investigate the effectiveness of bilingual vocabulary intervention and phonological approaches.

Topic: Intervention for Language Disorders and Late Talkers

Effectiveness of Language Intervention for Children and Adolescents with Traumatic Brain Injury: A Systematic Review

Farheen Akram Binte Mohamed A

Background: Childhood traumatic brain injury (TBI) is the most common cause of death and disability in children, affecting five language domains: auditory receptive, spoken expressive, written receptive, written expressive and pragmatics.

Aims: To investigate (1) effectiveness of language therapy for childhood TBI, (2) potential variables, e.g., treatment intensity, that affect the treatment efficacy of childhood TBI.

Method: A search of eight electronic databases (PubMed, Embase, PsycInfo, Web of Science, Social Science Database, LLBA, CINHAL and Scopus) was conducted on 12 February 2022. Search terms were based on two concepts: "children and adolescent with TBI" and "language intervention." Studies were evaluated for methodological quality using RoBiNT, ROBINS-I and RoB2. Studies were included if (1) TBI occurred from 0-18 years old, (2) language impairment was observed post-TBI and (3) language outcomes pre- and post-intervention were provided.

Results: The search yielded 16,909 records, 18 of which met the inclusion criteria after screening. Many studies lack methodological rigor. Direct and indirect therapy approaches for all five language domains appear to improve language outcomes at one-week post-treatment, but findings were mixed when outcomes were assessed later. Factors such as age and intensity of treatment appear to explain the mixed results in part.

Conclusions: Language therapy for childhood TBI appears effective in each of the five domains: auditory receptive, spoken expressive, written receptive, written expressive and pragmatics. Age at injury and treatment intensity are important clinical considerations. The field will benefit from more rigorously designed treatment studies.

Topic: Intervention for Language Disorders and Late Talkers

"Learning at Your Mother's Knees" A Systematic Review on the Effectiveness of Parent-implemented Language Intervention for Late Talkers

Ng Mui Noi (Rachel)

Background: To date, no systematic review has focused on Parent-Implemented Language Intervention (PILI) for Late Talkers aged 2 to 3 years.

Aims: To review the effectiveness of PILI on language outcomes for late talkers aged 2 to 3 years and compare PILI to direct clinician-led intervention by an SLP.

Method: Five electronic databases (PubMed, PsycInfo, CINAHL, LLBA and Embase) were searched on 12th February 2022. Key words included "late talkers", "parent-implemented" and "intervention'. Randomized controlled trials (RCT) and non-RCT published in English in peer-reviewed journals were included. The Critical Appraisal Skills Programme Checklist (CASP) was used to appraise the quality of the studies.

Results: Of 5,738 records retrieved, ten studies (N=202 participants) met the inclusion criteria. Three out of six studies reporting receptive language outcomes showed that PILI is significantly better than no/delayed intervention; two showed that PILI is as effective as direct intervention. Three out of six studies reported increased expressive vocabulary size and indicated PILI is significantly better than delayed intervention; in one study, PILI was as effective as direct intervention. Two out of five studies reporting MLU showed that PILI is significantly better than delayed/minimum intervention, and two studies showed PILI is as effective as, or better than, direct intervention.

Conclusions: PILI can be effective in improving receptive and expressive language in late talkers. Results should be interpreted with caution, as bias is present in most of the studies due to the lack of blinding and/or randomization.

Topic: Intervention for Children with Speech Sound Disorders

Effectiveness of Phonological Awareness for Children with Speech Sound Disorders: A Systematic Review

Zhang Yacong (Kaylee)

Background: Children with Speech Sound Disorder (SSD) often have delayed phonological awareness (PA) development and associated literacy problems. Enhancing PA is a commonly used intervention approach by Speech Language Pathologists.

Aim: To evaluate the effectiveness of PA intervention for PA skills, speech outcomes, reading and spelling skills in children with SSD.

Method: A search of six electronic databases (OVID Medline, Embase, CINAHL, PsycINFO, LLBA and ERIC) was conducted on 8 February 2022 and yielded 9,048 reports. Studies were included if the PA intervention was administered to children with SSD without any other diagnosis, and if both pre and post PA measures were reported. The quality of the research was assessed using the Critical Appraisal Skills Program (CASP) Checklist or Risk of Bias in N-of-1 Trials (RoBiNT) Scale. Relevant intervention data and reported outcomes on PA, speech intelligibility, and literacy skills were extracted.

Results: Twelve studies involving children between 3;0-7;0 years old met the inclusion criteria. Nine of these studies reported significant improvement in PA, nine reported positive outcomes for speech, and two for literacy skills.

Conclusions: Current evidence indicates that PA intervention may be an effective complement to intervention for SSD children. However more high-quality and large-scale longitudinal research exploring PA intervention programmes is needed.

Topic: Intervention for Children with Speech Sound Disorders

The Effectiveness of Literacy Intervention for Children with Childhood Apraxia of Speech: A Systematic Review

Samantha Tan Yi Ning

Background: Children with Childhood Apraxia of Speech (CAS) have multiple deficits in their speech processing chain that impact on motoric and linguistic skills. Although these children are at risk of literacy difficulties, traditional intervention for CAS emphasises motor learning. The effectiveness of different types of literacy intervention in improving literacy skills for CAS has not been examined systematically.

Aim: To examine 1) the types of literacy intervention for CAS; 2) the effectiveness of literacy intervention for improving the literacy skills of children with CAS.

Method: A systematic search across five databases (CINAHL, Embase, ERIC, LLBA, Pubmed) was conducted on 13 February 2022 and yielded 6,023 reports. Studies met the inclusion criteria if participants had a CAS diagnosis, literacy intervention was investigated, and literacy skills were measured before and after treatment. The risk of bias of the studies was evaluated using the RoBiNT scale.

Results: Individual data for 23 participants from five studies was analysed: 22 participants underwent phonological awareness intervention, and one participant underwent phonological awareness and phoneme-grapheme correspondence intervention. Overall, the children showed improvements in literacy skills (phonological awareness and reading accuracy) following literacy intervention.

Conclusions: The results supported the effectiveness of literacy intervention in improving literacy outcomes of children with CAS. However, the number of studies is limited, and many lack methodological rigor. Further research is required.

Topic: Intervention for Children with Speech Sound Disorders

ZOOM-in on the Efficacy of Telepractice Intervention for Speech Sound Disorders: A Systematic Review

Rayshell Wong Rui En

Background: Telepractice has been used increasingly in recent years to facilitate wider access to speech language pathology services. The demand for functional speech sound disorder (SSD) interventions has also increased, but no systematic review has focused solely on the efficacy of telepractice for SSDs to date.

Aims: To explore the efficacy of telepractice interventions for SSDs and compare their efficacy to in-person interventions.

Method: A systematic search of nine electronic databases (PubMed, Embase, CINAHL, ERIC, PsycINFO, Social Science Database, LLBA, Scopus, and Web of Science) on the 3rd of February 2022 yielded 8,765 articles. Inclusion criteria were: a) school-age participants and under, b) reported diagnosis of functional speech sound disorder, c) telepractice speech intervention, d) pre- and post-intervention outcomes, e) study designs including randomised controlled trials (RCT), controlled study designs, cohort studies, case studies, and small-*n* studies. Critical appraisal of eligible studies was conducted using the Critical Appraisal Skills Programme (CASP) RCT Checklist, CASP Cohort Study Checklist, and Risk of Bias in *N*-of 1 Trials (RoBiNT).

Results: Nine studies (N = 2125 participants) met the eligibility criteria, eight of which reported improvement from baseline to post-telepractice intervention. Of the five studies that compared outcomes between telepractice and in-person interventions, three demonstrated similar efficacy and one revealed significantly greater gains for the telepractice group. However, many studies had moderate to high risk of bias due to lack of methodological rigour and comprehensive reporting of results.

Conclusion: There is some evidence to support the efficacy of telepractice intervention for SSDs. Recommendations for telepractice and their clinical implications are discussed.

Topic: Intervention for Autism Spectrum Disorder

"They Lived Happily Ever After?" A Systematic Review on the Effectiveness of Social Stories Intervention for Social Communication Skills in Children with Autism Spectrum Disorder

Tan Su Hwei Louise

Background: Gray and Garand (1993) developed Social Stories (SS) to improve responses of children with Autism Spectrum Disorder (ASD) through provision of social cues and social information. SS is a widely recommended intervention for social communication skills, but little is known about its efficacy.

Aims: To investigate the effectiveness of SS intervention on social communication skills for children with ASD.

Method: A systematic search was conducted on 9 March 2022 across six electronic databases (CINHAL, EMBASE, ERIC, LLBA, PsycINFO, and PubMed) and 3,171 records were then screened using the following inclusion criteria: Children up to 18 years old with formal diagnosis of ASD, SS intervention based on criteria set by Gray, measured outcome on social communications skills. Risk of bias was then assessed with the RoBiNT Scale.

Results: Twenty-three studies met the inclusion criteria with a total of 62 participants. Interventions with SS only targeted pragmatics skills (e.g., greetings, verbal initiations, on-topic response, eye contact) related to social communication. Eighteen studies reported that SS intervention was effective.

Conclusions: SS intervention related to pragmatics skills for children with ASD appears to be effective. Research investigating the efficacy of SS intervention on other aspects of social communications skills is needed.

Topic: Intervention for Autism Spectrum Disorder

A Systematic Review of Conversational Skills Intervention in Youths and Adults with Autism Spectrum Disorder

Rebekah Ang Su Ern

Background: Individuals with Autism Spectrum Disorder (ASD) have social communication deficits that cause them to struggle with conversational skills (Sng et al., 2018).

Aims: To evaluate and compare the efficacy of different conversation interventions for improving the conversational skills of youths and adults with ASD.

Method: A systematic search was conducted across nine databases (PubMed, Embase, CINAHL, PsycInfo, Social Science, LLBA, ERIC, Scopus, and Web of Science) on 02/02/22 and the 15,774 records obtained were then screened according to pre-determined inclusion criteria: interventions targeting verbal/nonverbal conversational skills. Risk of bias was assessed using the RoBiNT Scale for small-*N* studies and studies were analysed in terms of (a) targeted conversational skills, (b) intervention approaches and components, and (c) underlying theoretical framework.

Results: Thirty-one studies, comprising 86 participants, were included in the review. Many studies are at risk of detection bias due to lack of assessor blinding (28/31 studies) and did not conduct systematic analysis of participants' baseline conversational skills deficits (28/31 studies). Paralinguistic/nonverbal ability is the most frequently targeted conversational skill category. Intervention approaches included video modelling/feedback, behavioural skills training, and peer-mediated intervention, and all programmes led to improvements in targeted skills except the sole use of online instructional modules for teaching. Most interventions involved practice using unstructured conversations (24/31 studies) and included verbal (12/31 studies) or visual (8/31 studies) cues. Instead of referencing theoretical frameworks of ASD social communication, the majority (26/31 studies) of researchers appear to adopt a symptomatic approach to deficits.

Conclusions: This review provides a summary of evidence-based practice for conversation interventions for youths and adults with ASD. Comparisons across interventions were limited by the different outcome variables, effect size measures, and interpretations.

Topic: Intervention for Autism Spectrum Disorder

Effectiveness of Interventions with Sibling or Peer Involvement on the Social Communication Skills of Children with Autism Spectrum Disorder: A Systematic Review

Audrey Tan Shi Ying

Background: Social communication impairments are a core deficit in children with Autism Spectrum Disorder (ASD). Involvement of typically developing (TD) children in intervention programmes creates a naturalistic environment for therapy, which could aid maintenance and generalization, and reduce the need for adult support.

Aims: To examine the effectiveness of interventions with TD peer or sibling involvement on social communication skills of children with ASD. Differences in outcome between trained and untrained TD children was also investigated.

Method: A comprehensive search was conducted on 26th January 2022 across eight electronic databases (CINAHL, Embase, ERIC, LLBA, PsycInfo, PubMed, Scopus and Web of Science) and yielded 13,310 records. Inclusion criteria were as follows: target population of children with ASD with no concomitant disorders; measured verbal pragmatic behaviours; intervention involved TD peers or siblings. Study quality was assessed using the RoBiNT and CASP RCT Checklist.

Results: Twenty-three studies met the inclusion criteria and most showed high risk of bias. Both peer (n = 18) and sibling (n = 7) interventions improved verbal pragmatic skills of children with ASD. Involvement of TD children, both trained and untrained, improved social initiations, responses, and engagements of the child with ASD.

Conclusions: Therapists targeting social communication skills in children with ASD can consider involving peers or siblings. Involving TD children in interventions can be effective, even without structured training. However, results should be interpreted cautiously as the assessed risk of bias in most papers is high.

Topic: Intervention for Autism Spectrum Disorder

A Virtual Perspective: A Systematic Review of Social Communication Interventions Using Immersive Technology for Children with Autism Spectrum Disorder

Anna Belle Tang

Background: Immersive technologies such as Virtual Reality (VR) and Augmented Reality (AR), appear to be useful tools in intervention for children with ASD because they provide realistic experiences in a safe and controlled environment. However, the effectiveness of these interventions for improving social communication skills is still unclear.

Aim(s): To examine the effectiveness of social communication interventions that used immersive technologies, and to identify the social communication skills and modalities that yielded the most effective outcomes

Method: A systematic search across eight electronic databases (PubMed, PsycINFO, CINAHL, LLBA, ERIC, Proquest, Scopus, and Web of Science) was conducted on 2 March 2022 and yielded 8,358 records. Only studies that provided pre and post intervention data on social communication outcomes were included. After screening, the quality of the studies was evaluated using the RoBiNT for single case studies and Critical Appraisal Skills Programme (CASP) checklist for group studies.

Results: Sixteen articles met the inclusion criteria. All participants in the individual studies (n = 43) except one showed improvement in at least one outcome measure (e.g., interpersonal negotiation, emotional understanding, greeting behaviours). For the group studies (n = 6 covering 154 participants), improvement was reported in 55 out of 56 measures (e.g., emotional recognition, social reciprocity). The pattern of results suggests that using AR with explicit instructions yielded the most improvement for social cognition and pragmatic skills.

Conclusions: Clinicians can consider leveraging on the use of AR rather than VR to support social communication interventions targeting social cognition and pragmatic skills but these results should be interpreted with caution given the high risk of bias.

Topic: Intervention for Acquired Speech and Voice Disorders

The More the Merrier: A Systematic Review of the Effectiveness of Group Voice Therapy

Ying Hui Qi Cheryl

Background: For several disorders, group intervention has been shown to be effective in managing a speech and language pathologist's caseload with positive outcomes comparable to those for individual therapy. This systematic review is an update of Almeida et al's (2015) review of group intervention for people with dysphonia.

Aims: To assess the effectiveness of group intervention in dysphonia subgroups (Parkinson's Disease (PD), and other aetiologies), and the treatment techniques using a voice therapy framework.

Method: A search of five databases (PubMed, Embase, PsycINFO, CINAHL and ProQuest Dissertations and Theses Global) for studies published from 2015 to 2022 yielded 6,838 records. Inclusion criteria were as follows: experimental and quasi-experimental studies of group behavioural intervention in adults with dysphonia. The quality of the studies was assessed using the RoB 2.0, Robins-I and the RoBiNT scales.

Results: Twenty-two studies were found eligible (N = 607), six of which were of moderate risk of bias. For PD participants (n = 375), statistically significant improvements to maximum phonation time, vocal intensity and fundamental frequency were reported for singing and non-singing treatment approaches. Self-reported measures of voice quality and Quality of Life also showed significant improvement in PD and other aetiology groups.

Conclusions: There is preliminary evidence suggesting effectiveness of group voice intervention on dysphonia across outcome measures, with more conclusive support from research on the PD group.

Topic: Intervention for Acquired Speech and Voice Disorders

Dysphonia in the Online Era: A Systematic Review of Voice Therapy Telepractice for Adults

Carissa Liong Yuan Ting

Background: Voice clinicians report that clients' attendance is often unreliable, with dropout rates as high as 65%, owing to factors such as distance, transportation time, and time between referral and evaluation (Portone et al., 2008). Telepractice treatment has the potential to overcome these access barriers and maximise positive outcomes (Starmer et al., 2014).

Aims: To use Van Stan's (2015) taxonomy which outlines five direct intervention categories (auditory, vocal function, respiratory, somatosensory & musculoskeletal) and two indirect intervention categories (pedagogy & counselling), to identify the categories of telehealth voice therapies in the literature, and investigate which ones lead to positive outcomes.

Method: A systematic search was conducted on 29th January 2022 across six databases (CINAHL, Embase, LLBA, PsychINFO, PubMed, and ProQuest Dissertations & Theses Global) based on two search concepts: Adults with voice disorders and Telepractice Intervention. Inclusion/exclusion criteria were based on participant demographics, diagnosis, primary data, and outcome measures. Study quality was assessed using the RoB 2, ROBINS-I and RoBiNT tools.

Results: From 7,481 records retrieved, 17 (involving 334 participants) met the inclusion criteria. Risk of bias was assessed as low for one article, and high for the remainder. All reports included direct intervention categories, and five included indirect categories. Respiratory (16/17) and auditory (15/17) components were most common. Of four studies including a combination of direct and indirect categories, three reported improvements in maximum phonation time. All three of these studies included a combination of vocal function and musculoskeletal intervention categories and reported significant improvements in patient perception. Studies ($n = 4$) including auditory categories reported significant improvements in vocal intensity.

Conclusions: Voice telepractice programmes that combine direct and indirect intervention categories and involve auditory categories, or a combination of vocal function and musculoskeletal categories, lead to positive outcomes.

Topic: Intervention for Acquired Speech and Voice Disorders

How to Save Your Voice: A Systematic Review of Voice Care Programmes for Teachers

Jaslyne Loh Jia Ling

Background: Voice problems are prevalent among teachers, due to vocal misuse and abuse, and they affect job performance. To date, there are no systematic reviews evaluating the efficacy of voice care programmes for teachers.

Aims: Using the Transtheoretical Model of Behaviour Change (TTM), the aim of this review was to identify the stages of behavioural change targeted by voice care programmes for teachers and to determine their short- and long-term effectiveness.

Method: Five electronic databases (PubMed, CINAHL, PsycINFO, Embase and ProQuest Dissertations & Theses Global) were searched systematically on 24 February 2022. Studies were included if teachers were aged 18-59 years, behavioural voice therapy was conducted and vocal outcomes were measured, and excluded if participants had a diagnosis of voice problems and/or habilitation approaches were employed. Quality of studies was assessed using the RoB 2 and ROBINS-I tools.

Results: The search yielded 3,852 articles, 16 studies (comprising 731 participants) met the predetermined eligibility criteria and were assessed moderate-to-high risk of bias. In line with the TTM, voice care programmes included the self-evaluation of voice (stage 2), indirect (stage 3) and/or direct (stage 4) interventions and maintenance of vocal behaviour (stage 5). With all studies incorporating stages 2 and 5, interventions involving stages 3 and 4 resulted in positive effects in acoustic, aerodynamic and self-report outcomes. Post-intervention improvements were also observed among those involving stage 4 across most outcomes, while those involving stage 3 showed little or no improvements.

Conclusion: Overall, the results aligned with the TTM as combined interventions involving stages 2, 3, 4 and 5 showed greater improvements. However, improvements from direct interventions involving stages 2, 4 and 5 were comparable to those of combined interventions suggesting not all stages of the TTM are required to instigate lasting behavioural change among teachers.

Topic: Intervention for Acquired Speech and Voice Disorders

Systematic Review of Treatment Intensity in the Rehabilitation of Acquired Apraxia of Speech

Chen Siang Ling

Background: Researchers have advocated the incorporation of principles of motor learning (PML) for people with Apraxia of Speech (AoS) but the optimal level of treatment intensity remains unclear.

Aims: To investigate the treatment approach most commonly advocated for AoS and optimal treatment intensity for effectiveness in the maintenance phase.

Method: A systematic search across six databases (CINAHL, Embase, LLBA, PsycINFO, PubMed and Web of Science) was conducted on 25th January 2022. Studies after December 2012 that reported treatment intensity and an outcome measure of speech production accuracy in maintenance phase were included to avoid replication of Ballard et al.'s (2012) work.

Results: The search identified 7995 records, 10 of which met the inclusion criteria and were appraised using the RoBiNT. All studies reported articulatory-kinematic approach to the treatment of AoS. Six studies based on sound production treatment (SPT; n=90 participants) and three studies based on components of SPT and additional visual feedback (SPT+VF; n=18 participants) were included for further analysis in treated and untreated maintenance phase. For SPT-treated targets, three 60-minute sessions per week for up to 10 weeks yielded a medium-large treatment effect. For SPT-untreated targets, multiple daily sessions up to 10 weeks may yield similar medium-large treatment effects. There was a lack of relationship between SPT+VF and treatment intensity.

Conclusion: High risk of bias of studies in the studies makes the results less reliable but the findings provide guidelines for optimal SPT treatment intensity for adults with AOS.

Topic: Language Assessments

Uncommon Understanding: A Systematic Review on the Reliability and Validity of Mandarin Receptive Language Assessments for Children with Language Disorders

Hannah Huang Xuan

Background: Despite an increase in Mandarin language assessments over the last 40 years, no systematic review has been conducted to evaluate their ability to identify children with language disorder.

Aims: To identify Mandarin receptive language assessments for children below 12 years and to evaluate their psychometric properties.

Method: A total of 9265 records were identified on 21st June 2022 from seven databases – LLBA, Medline, Embase, PsycINFO, ProQuest Dissertations & Theses Global, 中国知网 (CNKI) and 华艺线上图书馆 (Airiti Library) plus hand searches. Records without Mandarin receptive test or those that included children with hearing loss were excluded. Eligible studies were evaluated using the adapted COSMIN Checklist and table 3 of Denman et al., (2017). Psychometric properties were extracted, and subtests were categorized using the Clinical Evaluation of Language Fundamentals (CELF-5 and CELF-P2) as a gold standard framework for comparison (Denman et al., 2017).

Results: Of the 23 assessments selected for review, two tools reported on all main domains of psychometric properties (internal, external and rater reliability, content, construct and criterion validity), while six assessments lack psychometric property evaluation across all domains (except content validity). Content validity was the most reported psychometric property, however, only six articles described considerations for all aspects of content validity (relevance and comprehensiveness at task and item level). Sixteen assessments did not use gold standard psychometric evaluation tool to assess psychometric quality - only two assessments used intraclass correlation (ICC) for reliability assessments, three assessments checked for uni-dimensionality in internal consistency and two assessments reported percentage of variance accounted for by a factor in structural validity.

Conclusion: This evaluation of Mandarin assessment tools was limited by paucity of available manuals. Preliminary results suggest that the Mandarin Clinical Evaluation of Language for Preschooler's Core Scale (MCELP-CS) can be recommended as a diagnostic tool while Language Screening Test of Preschool Children (LSTPC) can be recommended for screening of risk of language disorder. Singapore clinicians should consider cultural differences when using these assessments and interpreting the results. Future research on assessment tools should account for the unique linguistic properties in Mandarin (e.g., tonal structures and homophones) that may present in Mandarin-speaking children with language disorders.

Topic: Language Assessments

A Systematic Review on the Reliability and Validity of Mandarin Expressive Language Assessments for Children with Language Disorders

Fung Wing Fai (Yvonne)

Background: Mandarin language assessments have been developed in recent years in China, Taiwan, and Singapore to identify Mandarin-speaking children at risk of language disorders. Thus far, no systematic review has been conducted to examine the psychometric properties of these assessments.

Aims: To identify Mandarin expressive language assessments for children aged below 12 years, and to examine their psychometric properties.

Method: A systematic search was conducted on 19 January 2022 using six databases: Airiti, CNKI, ProQuest Dissertation, ProQuest LLBA, PsycInfo and Pubmed, and the last hand search was completed on 1 July 2022. The search yielded 6,410 records and 18 Mandarin expressive language assessments met the inclusion criteria (Mandarin expressive language assessments for language disorder and Mandarin-speaking children aged below 12 years old), and exclusion criteria (expressive language assessments for typically developing children's proficiency and hearing loss population). Psychometric properties were evaluated using an adapted COSMIN taxonomy of measurement properties and risk-of-bias checklist.

Results: Of the 18 assessments reviewed, 15 provided information on internal consistency, and four provided positive evidence of content validity. There was limited information on the structural validity of most (2/18) assessments.

Conclusions: Psychometric properties of assessments are crucial for speech pathologists who need to make evidence-based decisions about suitable assessments. Ideally, this information must be considered in addition to the language area(s) the assessment is testing. Singapore clinicians should consider the cultural relevance of the assessments identified.

Topic: Language Assessments

Reliability and Validity of Mandarin Language Assessments for Post-Stroke Aphasia: A Systematic Review

Reiko Ang Wei Ting

Background: Approximately one-third of individuals acquire aphasia post-stroke. Although ethnic Chinese constitute a significant proportion of the world's population, there is a paucity of language assessments reported for Mandarin speakers with aphasia and no systematic review examining their psychometric properties.

Aims: To identify Mandarin language assessments published to date for post-stroke aphasia and to evaluate their psychometric quality.

Method: A systematic search across six electronic databases (CNKI, Airiti, PubMed, LLBA, PQDT and CINAHL) on 23rd February 2022 and handsearching up to 1st July 2022 was conducted to identify Mandarin language assessments for post-stroke aphasia. Methodological quality and psychometric properties of identified assessments were evaluated using the adapted COSMIN Risk of Bias Checklist and criteria adapted from Denman et al. (2017) respectively.

Results: Twenty-seven assessments met the inclusion criteria and were reviewed. Several subtests took the linguistic properties of Mandarin into account, e.g., radicals and tones were assessed. Approximately half of the assessments reported internal consistency (14/27), reliability (13/27) and construct validity (15/27), but few reported evidence for structural and content validity.

Conclusions: This evaluation of psychometric properties of available Mandarin language assessments was complicated by limited access to manuals. The Chinese Language Screening Test (China) and the Chinese Rehabilitation Research Center Standard Aphasia Examination (China) appear to be the most reliable but clinicians in Singapore should also consider cultural differences.

Topic: Language Assessments

Comparing the Performance of Bilingual Children with Developmental Language Disorder and Typical Development on Sentence Repetition: A Systematic Review

Ang Seow Li

Background: Over the past decade, researchers have compared the performance of bilingual children with developmental language disorder (DLD) to those with typical development (TD) using the Sentence Repetition Task (SRT) in order to assess language abilities. Thus far, no systematic review has examined how these two populations differ on the SRT.

Aims: To compare the performance of bilingual children with DLD and those with TD on their first (L1) and second (L2) language SRT results, and to investigate the impact of participant characteristics on the results.

Method: A systematic search of seven electronic databases (PubMed, Scopus, PsycINFO, CINAHL, LLBA, ERIC and Dissertations and Theses) on 31 January 2022 yielded 2,573 records. After screening, 15 studies met the eligibility criteria. Risk of bias was assessed using the modified Cochrane Risk Of Bias Assessment Tool for Non-Randomized Studies of Interventions.

Results: Nine studies reported on L1 performance and 13 studies reported on L2 performance. All nine L1 studies and 12 of the L2 studies showed that the performance of bilingual children with DLD was significantly weaker than that of TD children on the SRT tasks. Data suggested that working memory and receptive vocabulary might influence participants' performance.

Conclusions: This review suggests that the performance of children with DLD is significantly weaker than that of children with TD on both L1 and L2 SRT tasks. This review is limited by the small number of studies examining participant characteristics but results suggest that deficits in working memory and receptive vocabulary underlie weaker SRT performance in bilingual children with DLD.

Topic: Models of Stuttering

The Covert Repair Hypothesis: A Systematic Review of the Differences in Phonological Encoding of People who Stutter and do not Stutter

Ho Pei Yi

Background: The Covert Repair Hypothesis (CRH, Postma & Kolk, 1993) suggests that people who stutter (PWS) have slow phonological encoding and that leads to large numbers of phonological errors in their speech plans. Moreover, attempts by PWS to covertly repair these errors result in stuttering.

Aims: To investigate if there is a difference in the phonological encoding of PWS and people who do not stutter (PWNS), and to assess whether PWS have more difficulties with words that are longer, i.e., more phonologically complex.

Method: An electronic search of five electronic databases (PubMed, Embase, PsycINFO, CINAHL and LLBA) was completed on 03 February 2022 using search terms derived from two concepts: "stuttering" and "phonological encoding". Studies that focused on developmental stuttering, measured phonological encoding (reaction time and accuracy when completing phonological processing tasks), and had case-control study designs were included. Eligible studies were assessed for their quality using the Methodological index for Non-Randomized Studies (MINORS).

Results: A systematic search generated 11,874 records and 26 studies (*N*= 736 participants) met the inclusion criteria and were included in the review. There was limited evidence to suggest that the phonological encoding of PWS and PWNS was significantly different (4 /26), and that PWS had more difficulties when completing tasks with longer words (1/26).

Conclusions: This systematic review found limited support for the CRH. Future research could consider investigating other approaches to measure phonological encoding (e.g., eye tracking) and shed further light on the phonological encoding process of PWS and PWNS.

Topic: Models of Stuttering

The EXPLAN Model: A Systematic Review of the Relationship Between Stuttering on Content and Function Words Across Ages and Languages

Yu Lihui

Background: Execution and Planning (EXPLAN) model (Howell & Au-Yeung, 2002) addresses the differences in stuttering on content and function words across age groups: English-speaking children who stutter (CWS) do so more on function words while adults who stutter (AWS) tend to stutter more on content words. Studies of German and Spanish speakers who stutter report a similar dissociation (e.g., Gkalitsiou et al., 2017; Natke et al., 2004; Schäfer & Robb, 2012), whereas research on speakers of languages that are linguistically different from English, such as Korean, show the opposite pattern (Choi et al., 2020).

Aims: To review whether age and language type influence stuttering frequency on content and function words.

Method: A systematic search of four electronic databases (LLBA, CINAHL, PsycInfo and Embase) on 4th Feb 2022, yielded 1,600 records, 24 of which met the following inclusion criteria of CWS/AWS and stuttering percentage on word type. Studies were assessed using the Methodological index for Non-Randomized Studies (MINORS).

Results: For languages linguistically similar to English, CWS stutter more on function words (10/14 studies, n= 296 participants) while AWS stutter more on content words (7/10 studies, n= 179 participants). However, for languages linguistically different from English, both CWS (4/5 studies, n= 148 participants) and AWS (2/3 studies, n= 47 participants) stutter more on content than function words. Most studies (21/24 studies) showed adequate methodological quality.

Conclusions: How content/function word class affects stuttering is likely specific to age and language type, but future research could explore other variables such as word complexity (Howell & Au-Yeung, 2007) and position (Choi et al., 2020).

Topic: Language Disorders in Adults

A Systematic Review of Cross-Language Generalization in Bilingual Anomia Therapy

Nurul Afiqah Binte Ibrahim

Background: Various factors, including structural similarities between a bilingual's two languages (Kohnert, 2009) and language dominance (Faroqi-Shah, 2010), affect cross-language generalization during treatment of anomia. Thus far, the impact of phonological similarity between the two languages has not been examined systematically.

Aims: To investigate the extent to which phonological similarity affects cross-language generalization in trained and untrained items at different stages after treatment: within one week, two to three weeks, and more than four weeks post-therapy.

Method: A systematic search of seven electronic databases (CINAHL, Embase, Pubmed, Scopus, LLBA, ProQuest Dissertations & Theses Global and PsychInfo) was conducted up to 30 January 2022, and yielded 97 records. Studies on bilingual adults diagnosed with aphasia following stroke, word finding therapy, and measured naming accuracy were reviewed using the RoBiNT scale and CASP checklist.

Results: Fifteen studies (*N*=77 participants) met the inclusion and exclusion criteria but showed moderate to high risk of bias. Evidence was found for cross-language generalization across different language pairs (57/77 participants). More phonologically similar language pairs seem to better facilitate cross-language generalization of trained and untrained items within one week and more than four weeks post-therapy.

Conclusions: Risk of bias assessment makes the results inconclusive but there is some evidence to suggest that cross-language generalization is affected by phonological similarity.

Topic: Language Disorders in Adults

Aren't you CUErious: A Systematic Review on the Features of Cueing Associated with Significant Improvement in Naming

Natasha Anna Lowe

Background: The variation in cue hierarchies, and mixed evidence on their efficacy, makes it difficult for SLPs to select best treatment practices. Progression of cues, cue content, and the number of levels in the hierarchy appear to be key components of cueing (Linebaugh et al., 2005; Sze et al., 2021).

Aims: To review and determine the salient components in the design of a cue hierarchy. Specifically, which cueing features are associated with significant improvements in naming of treated items in the (a) immediate short-term (within one week), (b) intermediate short-term (one to three weeks) and (c) long-term (four weeks and more)?

Method: A systematic search of seven databases (CINAHL, EMBASE, LLBA, PsychINFO, PubMed, Scopus, Web of Science) on 28/1/22 yielded 1,587 records. Studies where cueing was administered as part of single-word naming therapy were included whereas those describing self-cueing, group therapy, and priming were excluded. Eighteen studies (published 2011-2021) met these criteria and were evaluated using ROBIN-T and CASP RCT. Data relevant to cueing technique, application, and outcome measures were then extracted.

Results: Studies were categorised into two groups and analysed: post-stroke word-finding difficulties (11/18 studies, n= 64 participants; 2/18 group studies, n= 169 participants) and dementia associated word-finding difficulties (5/18 studies, n=15 participants). 1a) In the immediate short-term, the following features were associated with significant improvement in naming for both the stroke and dementia group: semantic+phonological, and orthographic+phonological cues; both increasing and decreasing cues; hierarchies with 3 steps. 1b) There was insufficient data on significant treatment effects in the intermediate short-term for both groups. 1c) In the long-term, the following features were associated with significant improvement in naming for both the stroke and dementia group: semantic+phonological cues, orthographic+phonological cues, and decreasing cues.

Conclusions: In the short-term and long-term, combinations of cue types are associated with significantly positive gains for both stroke and dementia groups. However, more work on the effects of cueing in the dementia population is needed before conclusions can be drawn. Findings of this paper may be limited by individual study quality because most of the papers (14/18) had high risk of bias for internal validity, and because a substantial number of studies did not report statistical significance of the treatment gains.

Topic: Language Disorders in Adults

Between a "Shock" and a Hard Place: A Systematic Review on the Effects of Electroconvulsive Therapy on Speech and Communication

Safra Zarina Tasneem Binti Vazeer Alam

Background: Electroconvulsive Therapy (ECT) continues to be a prevalent treatment for some intractable mental disorders. Thus far, the impact of ECT on language processing remains unclear but individuals may be at risk of acquiring communication difficulties.

Aims: This systematic review has three research questions: 1. Does Electroconvulsive therapy positively or negatively affect specific cognitive/language domains in adults? 2. If there are effects, how long do they last post-treatment? 3. If there are effects, are there differences between participants diagnosed with mood disorders and those diagnosed with schizophrenia?

Method: A search of four electronic databases (Embase, LLBA, Pubmed and CINAHL) on 4th February 2022, yielded 5051 records. Inclusion criteria were adults exposed to cranial electroconvulsive therapy to treat mental illnesses, assessments measured communication skills relevant to SLPs, outcome variables describe cognition, communication and/or language. Methodological rigor was assessed using the CASP RCT checklist and NHLBI Study Quality Assessment Tools.

Results: After screening, 37 full-text articles were extracted, and their quality ranged from Poor to Good with 42.1% achieving a Fair. Outcomes, interpreted using the Psycholinguistic Assessment of Language Processing in Aphasia (PALPA) model and Baddeley's Model of Working Memory, suggest that there are differences in communication/language outcomes based on placement of electrodes (unilateral vs bilateral and temporal vs frontal).

Conclusions: Adults who undergo at ECT may be at risk of developing temporary cognitive-communication deficits, indicating a need for pre and post ECT assessment of language and information counseling.

Topic: Language Disorders in Adults

Words and More: A Systematic Review of the Effectiveness of Sentence and Discourse-Level Treatments for People with Aphasia Due to Dementia

Choo Shimin, Amanda

Background: Intervention programmes for Primary Progressive Aphasia (PPA) have focused on single-word lexical retrieval and picture-naming levels. Thus far the research findings on sentence and discourse levels, both important for functional communication, remain inconclusive.

Aims: To synthesise current sentence and discourse level interventions for people with PPA and evaluate their efficacy on trained and untrained targets at one week post-treatment and maintenance beyond one week post-treatment.

Method: A systematic search across six electronic databases (CINAHL, Embase, LLBA, PyschINFO, PubMed and ProQuest Dissertations & Theses Global) up to 16 February 2022 and a search of grey literature (Google Scholar and ScholarBank@NUS) identified 3,143 records. Twelve of these studies met predetermined eligibility criteria (single-case design and non-RCTs type of studies) investigating sentence or discourse level treatments and focusing on people with aphasia due to PPA). Study quality was assessed using the RoBiNT and ROBINS-I checklists.

Results: The 12 eligible studies comprised 11 single-case studies and one group study with 10 participants diagnosed with nfvPPA. Seven single-case designs were evaluated to have very high risk of bias and the remaining four were evaluated to have high risk of bias. The group study was evaluated to have moderate risk of bias. The 16 participants in the single-case studies were diagnosed with PPA (nfvPPA = 8, svPPA = 3, lvPPA = 3, others = 2). Sentence level treatments targeted morphology, sentence structures, and auto-biographical sentence generation. Discourse level treatments included discourse script training and multi-level intervention. All sentence level treatments led to improved trained word, trained and untrained sentence level outcomes immediately post treatment and gains were maintained more than one week post treatment. All discourse level treatments led to improve trained word and discourse level outcomes post treatment and gains were maintained more than one week post treatment. Findings for untrained word and discourse level outcomes of discourse level treatments were inconsistent.

Conclusions: Clinicians should consider sentence level treatments as part of therapy for people with PPA but should consider the type of PPA diagnosis and severity of comorbidities before implementing discourse level treatments. The impact of other clinical factors, such as treatment intensity and homework on outcomes, are also discussed.

Topic: Language Disorders in Adults

Effects of Compensatory Intervention on Functional Communication in Persons with Primary Progressive Aphasia (PPA): A Systematic Review

Charis Tan Wan Ting

Background: PPAs are a group of language-led dementias caused by neurodegeneration in the frontotemporal regions of the brain. SLPs frequently employ compensatory and mixed interventions, instead of rehabilitative ones, in their management of persons with PPA (PwPPA). However, to date, there has been limited research on the impact of compensatory and mixed interventions on functional communication in PwPPAs.

Aims:
1) What are the compensatory and mixed interventions taught to PwPPAs/communication partners?
2) To what extent do taught compensatory interventions build on the existing behaviour of PwPPAs?
3) What are the effects of taught compensatory and mixed interventions for achieving functional communication in PwPPAs?

Method: A systematic search was conducted for articles across six databases – PubMed, Embase, CINAHL, PsycInfo, LLBA, PQDT plus hand searches. A total of 1,022 articles was identified, fifteen of which met the inclusion criteria (PwPPA, compensatory interventions, looking at functional communication outcomes, had quantitative outcomes and collected original data) and were reviewed by two independent researchers using the RoBiNT, ROBINS-I and RoB2 checklists.

Results: Thirteen of the 15 papers were small-n and single case studies (n = 33 participants), one paper was a pilot randomised control trial (RCT) (n = 9 participants), and one paper was a non-randomised control study (n = 49 participants). Eleven papers were on compensatory-only interventions and four were on mixed. For Risk of Bias results, many of the small-n and single case studies were weak on study design, the non-randomised control study fell short due to confounds but the RCT showed a low risk of bias. Although the results suggest compensatory and mixed interventions are effective for improving functional communication for all PwPPAs, those within the RCT showed no change between treatment and control groups.

Conclusions: More research, with tighter designs, is needed on the types of compensatory interventions that are useful for PwPPAs; reports should include details of naturalistic compensatory strategies used by PwPPAs to build on them in SLP interventions.