



Annual Report

April 2022 – March 2023



Introduction

Our aim at Bristol Speech and Language Therapy Research Unit (BSLTRU) is to carry out research which makes a difference to people living with communication or swallowing disorders and their families and friends. This difference – or impact – needs to be built on robust research which keeps the needs of the individual living with communication or swallowing difficulties at the heart and centre of everything we do. This year, we are pleased to report the completion of five projects and the initiation of six more, all of which can be used to drive this impact.

It is now a year since we started our Partnership with Cardiff Metropolitan University. The opportunities which have arisen as a result include a collaboration with experts across the UK to develop a novel tool to carry out surveillance of early speech, language and communication skills of children growing up in Wales. The unique language environment in Wales means that tools used in other parts of the UK are not suitable and a bilingual tool which reflects the needs of children acquiring Welsh as well as English, and often other languages as well, is required.

Working with the speech and language therapy (SLT) team at Cardiff Met, we have been successful in acquiring state of the art instrumentation which can be used in assessment and analysis of speech in children and adults. We were able to extend the training in use of Ultrasound Visual BioFeedback to speech and language therapists working locally (see pictures later in report) and in time, hope to establish a secondary referral specialist speech clinic to support and supplement the work being carried out by local services. The clinic will enable us to collect research data to monitor novel approaches to intervention while also providing training for students and treatment for patients.

In other areas, our work in the field of cleft palate has continued and Dr Lucy Southby will be focusing on the impact of Covid on these children in newly funded work. Dr Lydia Morgan has continued her work as a collaborator on the NIHR funded Chin Tuck Against Resistance study for adults with acquired swallowing problems while Dr Sam Burr successfully defended her PhD thesis which reported on the differences in speech acquisition for children depending on infant feeding patterns. Well done Dr Burr!

This past year also saw the publication of the book, 'Seldom Heard Voices: The how and why of meaningful collaboration', co-edited by BSLTRU team member Kath Broomfield. Patient and public involvement in research is now widely accepted as vital to all clinical research – but involving people when they have difficulties communicating creates very specific challenges. This book, edited by Kath and co-editor Dr Anna Volkmer, provides ways to address these challenges – for researchers, clinicians and indeed anyone who wants to involve and be informed by individuals living with communication disorder.

Supporting this activity – and so much more, as reported below – is Dr Sam Harding, Research Fellow, and Dominika Kruszynska, BSLTRU Administrator. Without them, and our research associates Sharon Baker and Jenny Short we could not achieve the grant success, published papers, conference presentations and, crucially, impact from the work we do.

We hope you enjoy browsing through our Annual Report for 2022-2023.

*Best wishes, **Yvonne**, Dr Yvonne Wren Director, BSLTRU*



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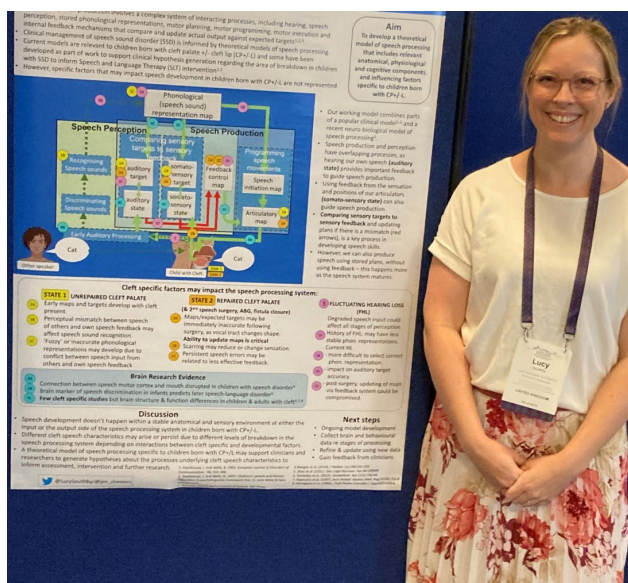
BSLTRU activities – April 2022 to March 2023



European Speech and Language Therapy Association Congress, Salzburg, May 2022



Partnership launch event with Cardiff Metropolitan University, June 2022



14th International Cleft Congress, Edinburgh, July 2022



BSLTRU visitors on sabbatical or placement 2022 - Dr Johanna Einarsdottir, University of Iceland & Rosa Urwin, University of Bristol



BBQ August 2022



Christmas meal December 2022



Ultrasound training March 2023



Lucy Southby' Graduation

1. BSLTRU People

BSLTRU consists of a core workforce of research and support staff who work in partnership with our honorary staff, students, clinical interns and volunteers.

1.1 BSLTRU Team

Dr Yvonne Wren is Director of BSLTRU and Reader in Speech and Language Therapy at Cardiff Metropolitan University. She also continues in her post as Associate Professor of Speech and Communication at the University of Bristol Dental School. Our core research team consists of Dr Sam Harding (Research Fellow), Dr Lydia Morgan (Research Associate), Dr Lucy Southby and Dr Sam Burr (Senior Research Associates). Both Sam H and Lydia have been with the unit for many years and also have complementary roles with the Research and Development team and the clinical SLT team at North Bristol NHS Trust respectively. Lucy joined us in November 2020 to work on the Cleft Collective study and Sam B joined us in February 2022 to work on the NIHR funded MISLToe-SSD study. We were sad to say goodbye to Dr Jen Chesters last year following her work with us on the NIHR funded Language Explorer project and the Underwood Trust funded Covid and stammering study. We wish Jen well in her new role.

We are fortunate to have bank staff who have joined us to work on short term projects over this past year including Jenny Short, Sharon Baker, Elaine Davidson and Julie Davies. Two of our PhD students, Caitlin Holme and Kath Broomfield, have also worked with us on a bank capacity alongside their doctoral studies.

We were pleased to welcome Dominika Kruszynska as the new administrator of the unit last year and has proved indispensable to the smooth running of the unit.

Staff	Job Title	Funding
Yvonne Wren	Director	University of Bristol/Cardiff Met University/Welsh Government/NIHR
Dominika Kruszynska	Research Administrator	The Underwood Trust/ NIHR
Sam Harding	Research Fellow	Welsh Government/NIHR
Kath Broomfield	Senior Research Associate	EPSRC/NIHR/Stroke Association
Sam Burr	Senior Research Associate	NIHR/ University of Bristol
Lucy Southby	Senior Research Associate	UHBW/Bristol Health Research Charity
Lydia Morgan	Research Associate	NIHR
Caitlin Holme	PhD student	Heather van der Lely Foundation
Sharon Baker	Research Associate (Bank)	Welsh Government
Jenny Short	Research Associate (Bank)	Welsh Government
Julie Davies	Research Associate (Bank)	UHBW
Elaine Davidson	Research Associate (Bank)	UHBW

Table 1. Staffing at the BSLTRU 2022/23

1.2 Honorary Staff

We continue to benefit from the input of experienced colleagues who have previously worked at the unit and are now involved on an honorary basis. In particular, our work in the fields of stammering (Dr Rosemarie Hayhow), aphasia and technology (Dr Brian Petheram) and developmental speech and language disorders (Professor Sue Roulstone) is growing as a result of this teamwork.

We are also extremely grateful for the advice and guidance from Professor Pam Enderby OBE and for her ongoing connection with The Underwood Trust.

Staff	Job Title	Funding
Dr Rosemarie Hayhow	Associate BSLTRU member	Grants and consultancy work
Dr Brian Petheram	Associate BSLTRU member	Grants and consultancy work
Prof Sue Roulstone	Emeritus Professor UWE	Grants and consultancy work
Prof Pam Enderby	Emeritus Professor University of Sheffield	The Underwood Trust (travel expenses)

Table 2. Honorary Associate staff at the BSLTRU 2022/2023

1.3 Postgraduate students, placements and internships

BSLTRU continues to support clinical speech and language therapists who are keen to embark on a clinical academic career through the NIHR Integrated Clinical Academic (ICA) pathway. Until very recently, we supported Sam Burr and hosted Kath Broomfield, and currently support Caitlin Holme who will soon be beginning her third year of her funded PhD. We are also working with clinical SLTs who are preparing submissions for clinical academic fellowships in the next year.

We have also hosted theatre studies student, Rosa Urwin on placement at BSLTRU. Rosa's work focused on how the meanings of particular words have changed over time and included a linguistic analysis of prominent politicians' reactions to the toppling of the Colston statue.

Student	Award Scheme	Academic Institution	Supervised by
Sam Burr	HEE/NIHR Clinical Doctoral Research Fellowship (finished May 2022)	University of the West of England	Yvonne Wren & Toity Deave (University of the West of England)
Caitlin Holme	PhD - funded by the Heather van der Lely Foundation	University of Bristol	Yvonne Wren, Sam Harding & Patricia Lucas (University of Bristol)

Table 3. Supervision at BSLTRU in 2022/2023.

Student	Award Scheme	Academic Institution	Supervised by
Katherine Broomfield	HEE/NIHR Clinical Doctoral Research Fellowship	Manchester Metropolitan University	Karen Sage (Manchester Metropolitan University) Georgina Jones (Leeds Beckett University), Prof. Deborah James (MMU), Simon Judge (clinical supervisor)
Rosa Urwin	English and Theatre studies BA (Hons)	University of Bristol	Jen Chesters

Table 4. Hosted students at BSLTRU in 2022/2023.

1.4 Steering Group

BSLTRU continues to be well supported by the BSLTRU Steering Group who maintain oversight and governance of the BSLTRU for the achievement of the unit objectives. We are sad to say goodbye to Professor Goldbart following her retirement and very grateful to her for supporting our work for many years.

Name	Title
Prof Sue Roulstone (Chair)	Emeritus Professor University of the West of England
Prof Pam Enderby	Emeritus Professor University of Sheffield
Prof David Wynick	Director of Research, UHBristol and North Bristol NHS Trust
Prof Tim Peters	Research Director, Faculty of Health Sciences, University of Bristol
Dr Toity Deave	Associate Professor, UWE
Alison Williams	Pennaeth therapi Llederydd ac Iaith, Head of Speech and Language therapy Bwrdd Iechyd Prifysgol Aneurin Bevan/Aneurin Bevan University Health Board
Andy Clark	Divisional Operational Director for Neurological and Musculoskeletal Sciences, North Bristol NHS Trust
Prof Phil James	Associate Dean for Research, Cardiff School of Sport and Health Sciences, Cardiff Metropolitan University
Prof Juliet Goldbart	Professor of Developmental Disabilities, Manchester Metropolitan University

Table 6. BSLTRU Steering Group members 2022/2023.

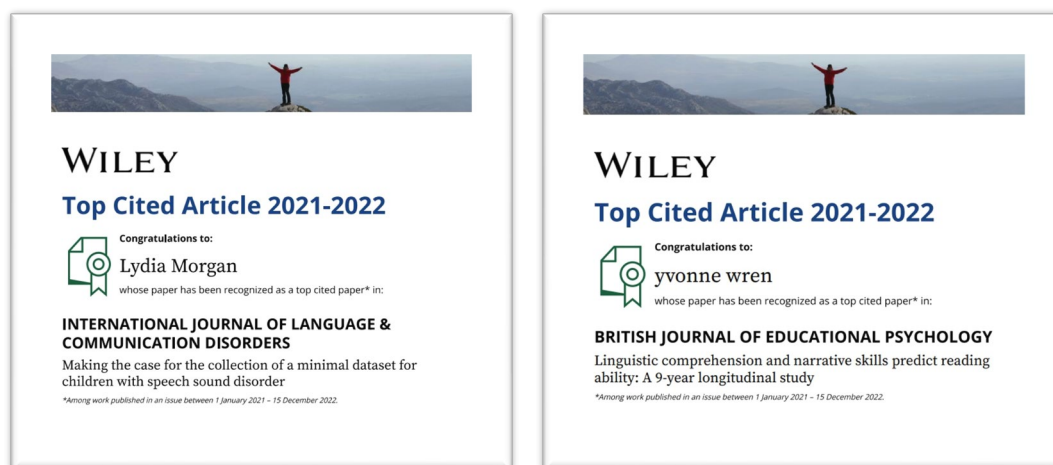
1.5 Indicators of esteem

Members of the BSLTRU team have been invited to participate in a variety of activities in recognition of the work we carry out to understand the nature of speech, language and communication impairments and what we can do to help. This is important as this is how we can communicate the findings from our research to audiences who can use those findings to make changes to how we intervene and work with people with communication impairments.

Members of BSLTRU have been invited to give talks on topics related to the research we carry out:

1. Kelić, M., **Roulstone, S.**, McKean C. & Pavičić Dokoza K. (April 2022) To discharge or not to discharge? – Exploring Therapists’ decision making on discharge of children with developmental language disorder. *6th Croatian SLP Congress, Split, Croatia.*
2. Kelić M., & **Roulstone S.** (April 2022) Speech and language therapists’ attitudes and rules governing the work with parents of children with DLD. *6th Croatian SLP Congress, Split, Croatia.*
3. **Roulstone, S.**, (April 2022) It depends! The challenges of evidence-based decision making in speech and language therapy. Keynote presentation. *6th Croatian SLP Congress, Split, Croatia.*
4. **Wren, Y.**, Davies, E., Humphries, A., **Southby, L.**, Seifert, M., van Eeden, S., **Baker, S.**, and Williams, C. (May 2022) The Cleft Collective Cohort Studies – a novel approach to using big data to advance practice, research and education. *European Speech and Language Association, Salzburg, Austria.*
5. Sandy, J. and **Wren, Y.** (May 2022) Research Methodology Workshop. *Indocleftcon, Kochi, India.*
6. **Southby L.** (May 2022) Invited Keynote speaker at *CAHPR East Anglia Conference* - Developing a clinical academic career: reflections as an individual and line manager.
7. **Wren, Y.** (July 2022) What can cohort studies do for us? Keynote speaker. *International Cleft and Craniofacial Congress, Edinburgh, UK.*
8. **Southby, L.**, **Harding, S.**, Davies, A., Lane, H., Chandler, H. and **Wren, Y.** (October 2022) Invited to present at an American Speech and Hearing Association (ASHA), Cleft and Craniofacial Special Interest Group virtual meeting: Parent/Caregiver Views of the Effectiveness of Speech-Language Pathology for Children Born With Cleft Palate Delivered via Telemedicine During COVID19.
9. **Wren, Y.** (August 2023) Invitation to be keynote speaker at *FORL (Otorhinolaryngology Foundation) Congress, Sao Paulo, Brazil.*
10. **Wren, Y.** (December 2022) Invitation to speak at 8th World Chinese Otorhinolaryngology, *Head and Neck Surgery Conference, Hong Kong.*
11. **Roulstone, S.**, (November 2022) The challenges of evidence-based decision making - an invited seminar at Newcastle University.
12. **Wren, Y.**, **Harding, S.**, Cleland, J., Stringer, H. & **Burr, S.** (January 2023). Maximising the Impact of Speech and Language Therapy for children with Speech Sound Disorder (MISLToe_SSD). HEE AHP Research Strategy Launch Event [online].

Congratulations to our team members, Lydia and Yvonne. Their papers published in the *British Journal of Educational Psychology* and the *International Journal of Language and Communication Disorders* were among the top cited papers for 2021-2022.



Other measures of esteem

1. **Yvonne Wren** invited to join the College of Expert Reviewers for the European Science Foundation
2. The prize for the oral presentation with the highest scoring abstract awarded to Zajdó, K., Kelić, M., Ulfssdottir, T.S., Baena, S., Feilberg, J., Klatte, I., Lyons, R., Jensen de Lopez, K.M., Novogrodsky, R., Rodriguez-Ortiz, I.R. & **Harding, S.** BSLTRU, Bristol, United Kingdom for *Rearing a child with DLD: Parents' experiences with SLT services in 10 countries*. This presentation was selected by members of the 2022 ESLA Congress Scientific Committee.
3. Top cited paper for IJLCD in 2020 -2021: Klatte, I.S., Lyons, R., Davies, K., **Harding, S.**, Marshall, J., McKean, C. & **Roulstone, S.** (2020) Collaboration between parents and SLTs produces optimal outcomes for children attending speech and language therapy: Gathering the evidence. *Int J Lang Commun Disord.* 55(4):618-628. doi: 10.1111/1460-6984.12538. Epub 2020 May 8. PMID: 32383829; PMCID: PMC7383473.
4. Top downloaded article for IJLCD in 2020 -2021: Klatte, I.S., Lyons, R., Davies, K., **Harding, S.**, Marshall, J., McKean, C. & **Roulstone, S.** (2020) Collaboration between parents and SLTs produces optimal outcomes for children attending speech and language therapy: Gathering the evidence. *Int J Lang Commun*

Disord. 55(4):618-628. doi: 10.1111/1460-6984.12538. Epub 2020 May 8. PMID: 32383829; PMCID: PMC7383473.

5. Top downloaded article downloaded during its first 12 months of publication in IJLCD (awarded 2022). It depends: Characterizing speech and language therapy for preschool children with developmental speech and language disorders. **Morgan L.**, Marshall J., **Harding S**, Powell G, **Wren Y**, Coad J., **Roulstone S**.
6. Invitation to join American Speech and Hearing Association Special Interest Group 5 Journal Club during their discussion of our paper: Southby, L., **Harding, S.**, Davies, A., Lane, H., Chandler, H., & **Wren, Y.** (2022). Parent/caregiver views of the effectiveness of speech-language pathology for children born with cleft palate delivered via telemedicine during COVID-19. *Language, Speech, and Hearing Services in Schools*, 53(2), 307-316.
7. Top cited author. Babayiğit, S., Roulstone, S., & **Wren, Y.** (2021). Linguistic comprehension and narrative skills predict reading ability: A 9-year longitudinal study. *British Journal of Educational Psychology*, 91(1), 148-168.
8. Top Cited Article 2021-2022. **Wren, Y.**, Pagnamenta, E., Peters, T. J., Emond, A., Northstone, K., Miller, L. L., & **Roulstone, S.** (2021). Educational outcomes associated with persistent speech disorder. *International Journal of Language & Communication Disorders*, 56(2), 299-312
9. **Southby, L.**, Harding, S., Davies, A., Lane, H., Chandler, H. & Wren, Y. Best oral presentation in the 'Opportunities out of crisis' session (May 2022) Parent/carer views of SLT delivered via telemedicine during the COVID-19 pandemic for children born with cleft palate. *University of Cambridge & Cambridge University Hospitals Annual Nursing, Midwifery and Allied Health Professional Research Conference*, Cambridge, UK.

2. Funding and grant applications

BSLTRU is sustained by research funding and bidding is a core part of our activity. Over the past year, we have led 15 competitive grant applications to a variety of charity, UKRI and NIHR funding streams. We have had a successful outcome for eight of these to date, with a total value of £1,611,700.00 and are awaiting the outcome of a further four. Notable amongst these is the £1.5million grant from Welsh Government for the development of a new tool for surveillance of early speech, language and communication skills in children growing up in Wales.

We have also benefited from support from Cardiff Metropolitan University with small grants to assist with creating impact from research which has already been carried out and to accelerate the work funded by Welsh Government through a scoping review of technology with the potential to support surveillance of early speech, language and communication development.

We continue to be supported by The Underwood Trust and are grateful to their Legacy Funding, which is sustaining the activity of the Cleft Collective to ensure more children born with clefts can participate in the study and contribute to the resource. We are pleased to report that Dr Lucy Southby has been appointed to the Underwood Trust funded Senior Research Fellow post at Cardiff Metropolitan University and that we will be advertising for the Underwood Trust PhD studentship imminently.

3. Project updates

Over the past year, 5 projects have been completed and 6 new studies have begun. Our ongoing work includes grant funded research, doctoral and masters fellowship studies and collaborative work with other institutions. A summary of each study is provided below.

3.1 Wales speech language and communication identification, intervention and evaluation package

Investigators: Yvonne Wren, Jenna Charlton, Caroline Floccia, Louisa Reeves, Cristina McKean, Carol Payne, Vicky Gilroy, Robert Mayr, Toity Deave, Nayeli Gonzalez-Gomez, Sam Harding, Robert Rush, Martin Ball and Sheena Reilly.

Timescale: June 2023 to May 2026

Funder: Welsh Government

The project comprises seven work packages each designed to contribute to the core outputs of:

1. A co-produced bilingual speech, language and communication surveillance tool which identifies children in need of intervention at a universal, population, targeted or specialist level.
2. A programme of evidence-based interventions which complement the surveillance tool.
3. A training programme to support implementation of the surveillance tool and intervention programme.

The outputs will be designed to fit with the existing planned contacts in the Healthy Child Wales Programme, to meet all 14 recommendations from the BSLTRU led Review of Early Language Screening report and to reflect the preferences of the workforce and families. The impact of this work will be an evidence-based surveillance tool which can be used throughout tool to monitor and support children's speech, language and communication development from birth to age 5.

3.2 Understanding the impact of the COVID-19 pandemic on the early speech and language development of children born with cleft lip and/or palate.

Investigators: Lucy Southby, Yvonne Wren, Amy Davies, Sharon Baker, Helen Extence, Neil Brierley

Timescale: January 2023 - December 2023

Funder: CLEFT Bridging the Gap Charity

Children born with cleft palate are at risk of speech problems and delayed early language development. During the COVID-19 pandemic, treatments for children born

with a cleft were often delayed and the environment that young children were exposed to was different because of lockdowns, social distancing and facemasks. This research aims to understand whether these differences from the pandemic have had an impact on the early speech and language development of children born with a cleft. Using data from The Cleft Collective Cohort Study, this work will describe the early speech and language skills of children born with a cleft who were born just before or during the pandemic and compare them to children who reached age two years before the pandemic started. It will identify whether some children need extra support for their speech and language development and inform planning of services.

3.3 Scoping review of technology used in the surveillance of children's early speech, language and communication development.

Investigators: Lydia Morgan, Sam Harding and Yvonne Wren

Timescale: January 2023 – July 2023

Funder: Cardiff Metropolitan University Research and Innovation Accelerator.

This scoping review builds on the previous work undertaken by the BSLTRU team for the Welsh Government (WIRE project and WELS-R https://www.gov.wales/review-early-language-screening-suitable-children-wales-birth-5-years-summary-html?_ga=2.20469371.299278512.1675274973-634618958.1675274973).

Specifically, the aim of the work is to determine whether there is existing technology which could be adapted for use in surveillance of speech, language and communication development in children in Wales. If suitable technology is identified, the potential for an adaptation for use in Wales, to accommodate the increasing number of children growing up in families where Welsh is the language of choice, will be explored. Moreover, it will bring technology into a process that has to date been largely carried out using paper-based tools. There are potential benefits for the environment as well as for increased efficiency in the process of carrying out surveillance, vital when resources are limited, and need is universal.

3.4 Exploring access to Speech and Language Therapy for Welsh speaking survivors of stroke.

Investigators: Carys Williams, Yvonne Wren, Robert Mayr, Abdul Seckam, Katherine Broomfield.

Timescale: November 2022 – August 2023

Funder: The Stroke Association



Kath Broomfield has been working with Carys Williams at Cardiff Metropolitan University on a project exploring the experiences of people who have had a stroke and their access to speech and language therapy in Welsh. Researchers will interview

patients with aphasia who use Welsh as their language of choice. This project is already resulting in some interesting learning from and reflections about conducting bilingual research collaboratively and we anticipate that this will be a significant impact from the project alongside the results of the analysis of interview data.

3.5 Speech, language and communication needs in the early years: evidence based screening and intervention for children in Wales

Investigators: Sharon Baker, Sam Harding, Robert Mayr, Rhonwen Lewis, Cristina McKean and Yvonne Wren.

Timescale: November 2022- June 2023

Funder: Cardiff Metropolitan University Research and Innovation Accelerator

This project will build on existing work funded by the Welsh Government which has the potential for high impact (WIRE project and WELS-R https://www.gov.wales/review-early-language-screening-suitable-children-wales-birth-5-years-summary-html?_ga=2.20469371.299278512.1675274973-634618958.1675274973).

This project will ensure that peer reviewed papers are produced from the work already carried out, as well as other professional facing dissemination platforms such as professional magazines and websites. This is important as impact is already being seen from this work and peer reviewed publications are needed for the next Research Excellence Framework submission. The work will also facilitate the development of a web-based resource to assist in communicating the findings of the work already carried out and promote further impact via policy makers and the early years children's workforce.

3.6 Supporting Spoken Language in Classrooms (SSLiC)

Investigator: Ioanna Bakopoulou (University of Bristol), Yvonne Wren, Sam Burr, Jenny Short.

Timescale: September 2022 – May 2023.

Funder: University of Bristol

Following the success of the SSLiC study in London and Bristol schools, this phase of the programme is working with early years education settings in Plymouth and more Bristol schools to increase awareness and skills of staff for increasing oracy among Early Years Foundation Stage and Key Stage one children. Dr Sam Burr is one of the Research Facilitators on the SSLiC study, working closely with Dr Ioanna Bakopoulou and a team of speech and language therapists. Teaching staff are supported to use the freely available Communication Supporting Classroom Observation Tool to evaluate their practice and implement actions to bring about improvement in spoken language opportunities and skills in the classroom. The study culminates in May with an evidence review day enabling each setting to present their successes, learning and

next steps to each other. Further rollout of the SSLiC programme to other schools in the South West is planned for 2024.

3.7 Maximising the Impact of Speech and Language Therapy for children with Speech Sound Disorder (The MISLToe_SSD study)

Investigators: Yvonne Wren, Sam Harding, Sam Burr, Joanne Cleland and Helen Stringer

Timescale: March 2022- August 2023

Funder: NIHR Research for Patient Benefit (RfPB) Tier 3



This study aims to maximise the impact of speech and language therapy for children with speech sound disorder by developing a Core Outcome Set (COS) and minimum dataset to be used by SLT services. This study comprises three workstreams, the first of which was an umbrella review to collect data to serve as content for the COS and minimum dataset. The umbrella review protocol has been accepted for publication in BMJ Open. Workstream two has brought together specialist SLTs from five NHS sites and parents of children with speech sound disorder in a participatory workshop to discuss and agree a diagnostic pathway for children with speech sound disorder. Consensus has been achieved through online survey and card sorting activity. The final workstream, currently underway, will present the COS and minimum dataset, populated by the umbrella review, to an expert panel, including parents and people with lived experience, to reach final consensus on these. The planned follow-on study for this work will involve rolling the COS and minimum dataset out to a small number of NHS sites across the UK for data collection. Key to this next phase are close, collaborative relationships with NHS IT systems teams, business development and innovation, clinicians, service managers and families to ensure data collection is feasible within the context of day-to-day clinical service delivery. The long-term impact of this work will be an agreed process for the collection of data through NHS systems on children with speech sound disorder and use of that dataset to address questions relating to the effectiveness and efficiency of the various different interventions which are used with children with speech sound disorder.

3.8 Can technology optimise Speech and Language Therapy services to meet the National Institute for Health and Care Excellence (NICE) guidelines for people with aphasia following a stroke in Northern Ireland? – Phase 3

Investigators: Jane Mortley and Sam Harding

Timescale: October 2022 – February 2024

SPONSOR: Steps Consulting Ltd

FUNDERS: Small Business Research Initiative (SBRI)



Following a previous SBRI grant the study team were invited to submit a project for follow on funding to assess implementation and efficacy of the developed aphasia software. Acceptability and access ability for both clinical staff and patients has been at the heart of the development of the software and the programme of research. This has been recognised and praised by both funders and ethics committees.

3.9 Evidence Review of Universal, Population and Targeted Interventions which support Speech, Language and Communication Development in the Early Years - WIRE

Investigators: Sharon Baker, Sam Harding, Jennifer Short, Yvonne Wren

Timescale: December 2021 - January 2023

Funder: Welsh Government

This study was funded by Welsh Government and contributes to the objectives of the Talk with Me: Speech, Language and Communication Delivery Plan (Welsh Government, 2020). The project consisted of three rapid scoping reviews to identify the speech, language and communication elements of parental mental health and parenting interventions as well as interventions specifically targeting speech, language and communication skills. The reviews explore the evidence for the effectiveness of the interventions and consider how they could be implemented in the Welsh context.

3.10 Softly non-spoken: soft robotics as non-verbal communication aids

Investigators: Katherine Broomfield, Hemma Philamore, Alice Haynes, Richard Sewell, Alison Oldfield

Timescale: October 2021 - October 2022

Funder: EPSRC Impact Accelerator award

Softly non-spoken is a project about using soft robotics to develop non-verbal communication aids (also known as augmentative and alternative communication (AAC)) for people with communication difficulties. This multi-disciplinary team brings

together speech and language therapists, researchers in communication, and roboticists from academia and industry to investigate the use of current soft robotics research in a new, and often overlooked, healthcare and educational application. We developed some prototype soft-robotics and demonstrated them with professionals with experience of working with people who use AAC at the Communication Matters conference in Leeds (Sept 2022) and with young people and their parents at the Bristol Futures event at the SS Great Britain (Sept 2022). This collaboration has led to another grant application exploring knowledge mobilisation about embodied communication and we are planning to further develop the softly non-spoken prototype using participatory co-design methods.



3.11 Chin Tuck Against Resistance with Feedback: Swallowing Rehabilitation in Frail Older People (CTAR-SwiFt) - A feasibility study a Research for Patient Benefit

Investigators: Lydia Morgan, Aiofe Stone-Ghariani, Ian Swaine, Dharine Hansjee, Alberto Gambaruto, David Smithard

Timescale: September 2021- May 2023

Funder: NIHR Research for Patient Benefit

This is a feasibility randomised controlled study of two types of rehabilitation exercises to improve swallowing using Chin Tuck against resistance, funded by the NIHR. BSLTRU are working with the main study site (Lewisham and Greenwich NHS Trust) to recruit patients with pneumonia to this study. Six participants were recruited at NBT to this trial and analysis is ongoing. Lydia is Principal Investigator for North Bristol Trust as well as the research associate for this study.

3.12 The CHATTER Study: Children's Activities and Talk in their Everyday Routines

Investigator: Caitlin Holme

Timescale: June 2020 – June 2024

Funder: Heather van der Lely Foundation



This study is being conducted by Caitlin Holme as part of her PhD at the University of Bristol and is funded by the Heather van der Lely foundation. The goal of this qualitative study is to build a rich description of different family experiences and communication environments and use this information to consider how parent-child interaction approaches can work best for the wide range of families that SLTs serve. In the past year we have published the findings of a scoping review conducted as part of the study. Recruitment of families and data collection began in Autumn 2021 and concluded in Summer 2022. Caitlin then put her study on hold to take maternity leave and will restart in April 2023.

For more information about the study see the website: <https://www.nbt.nhs.uk/bristol-speech-language-therapy-research-unit/bsltru-research/chatter-study>

You can watch a Youtube video of Caitlin talking about the study here: <https://www.youtube.com/watch?v=DzOKphACBOW>

3.13 The effect of infant feeding and non-nutritive sucking on speech sound development at age 5 years

Investigator: Samantha Burr

Timescale: June 2017- January 2022
(including 8 months maternity leave)

Funder: HEE/NIHR Clinical Doctoral Fellowship



This study aimed to explore whether the way babies are fed and whether or not they suck their finger or a dummy has any impact on how they develop their sounds for speech. The study found that different patterns of feeding and sucking were associated with different patterns of speech sound development at ages 2 and 5 years. Papers from this PhD study are in preparation for peer-reviewed publication later this year.

3.14 The Cleft Collective Speech and Language Study

Investigator: Yvonne Wren, Sam Harding and Lucy Southby

Timescale: December 2014 to March 2027.

Funder: Scar Free Foundation, The Underwood Trust, University of Bristol



The Cleft Collective Cohort Study investigates the biological and environmental causes of cleft lip and/or palate, the best treatments for cleft and the impact of cleft on those affected and their families. With the help of every cleft team in the UK, children and their families are being recruited into the studies. Families are asked to contribute biological samples (such as saliva) and complete a number of questionnaires at important time points during their child's development. This information can be used by researchers including clinicians to answer important questions about the causes and treatments for cleft lip and/or palate and the wellbeing of children and adults born with a cleft and their families. There are three cohorts: the birth cohort (including an antenatal cohort), the five-year cohort, and the Speech and Language study (CC-SL) which is a nested study within the main birth cohort and is hosted by BSLTRU. The CC-SL study is collecting data on a range of potential risk factors for speech outcomes in children born with cleft palate including parent-child interaction, infant vocalisations, the audio environment, speech and language therapy assessments at 18-24 and 36 months and hearing assessment data. A substantial amendment approved in the last year will also enable speech and language therapy intervention information to be collected for participants. For more information about The Cleft Collective cohort studies, please see:

<http://www.bristol.ac.uk/cleft-collective/> and <https://www.nbt.nhs.uk/bristol-speech-language-therapy-research-unit/bsltru-research/cleft-speech-language-study>.

The long-term impact of this study will be an understanding of which children born with cleft palate are at greater risk of persistent speech disorder and therefore who should be identified for early preventive intervention. The dataset is made available to other researchers to allow a range of investigations to be carried out with the potential for clinical impact.

Hosted Projects

In addition to the speech and language therapists who are fellowship or internship awardees and supervised directly by BSLTRU staff, we also host a therapist/NIHR Clinical Doctoral Fellow who is local to the area but registered at a distant institution. The hosting arrangement means that we do not provide supervision but instead provide a research environment and networks with local clinical academics.

3.15 Unspoken Voices: What are the perspectives of people who use alternative and augmentative communication (AAC) on the impact and effectiveness of AAC equipment?

Investigator: Katherine Broomfield (Manchester Metropolitan University)

Timeline: April 2017-September 2022

Funder: HEE/NIHR Clinical Doctoral Fellowship



This project is concerned with people who use augmentative and alternative communication (AAC) because they cannot speak clearly or cannot speak at all. AAC refers to a set of strategies such as pointing to pictures, words or letters as well as the use of special equipment including computer-based devices that can speak out messages entered into or stored within it. The aim of this research project is to understand more about people's experience of using AAC to communicate to inform the development of clinical tool that will evaluate AAC interventions from the perspective of the patient. Katherine has completed a systematic literature review of patient-reported outcome measures (PROMs) currently used in AAC, and a narrative review of qualitative literature about the experiences of people who use AAC to communicate. She has conducted over 40 interviews with people who have communication difficulties to understand more about their expectations and experience of AAC to understand what outcomes are important to them. She has also written a paper adding to discussions concerning the theoretical basis for qualitative research with people who have communication difficulties through engaging with the concept of voice.

Katherine is working with an expert group of people who use AAC in the delivery of this project and has developed expertise in supporting patient and public involvement creatively to enable the involvement of hard to engage with groups in research. She has published information about the creative methods she has used and co-edited a book with contributions from colleagues at BSLTRU. The finding for this project finished in 2022 and Katherine submitted her PhD thesis in February 2023.

4. Research outputs and engagement

4.1 Publications

The unit continues to publish both as lead and co-authors with 11 publications in respected peer-reviewed journals for the field and two in non-peer reviewed publications and grey literature.

Published- peer reviewed

1. Berman, S., Sharp, G., Lewis, S., Blakey, R., Davies, A., Humphries, K., **Wren, Y.**, Sandy, J.& Stergiakouli, E. (in press) Prevalence and Factors Associated with Behavioural Problems in 5-year-old Children Born with Cleft Lip and/or Palate from the Cleft Collective. *Cleft Palate and Craniofacial Journal*.
2. **Broomfield, K.**, Harrop, D., Jones, G. L., Sage, K. & Judge, S. (in press) A Qualitative Evidence Synthesis of the Experiences and Perspectives of Communicating Using Augmentative and Alternative Communication (AAC) *Disability and Rehabilitation: Assistive Technology*
3. Fell, M., Davies, A., Davies, A., Chummun, S., Cobb, A., Moar, K., **Wren, Y.** (in press) Current surgical practice for children born with a cleft lip and/or palate in the United Kingdom. *Cleft Palate and Craniofacial Journal*.
4. **Broomfield, K.**, Sage, K., Judge, S., Jones, G. & James, D. "The Unspoken Voice: Applying John Shotter's dialogic lens to qualitative data from people who have communication difficulties". *Qualitative Health Research*.
5. **Wren, Y.**, Pagnamenta, E., Orchard, F., Peters, T., Emond, A., Northstone, K., Miller, L., & **Roulstone, S.** Social, emotional and behavioural difficulties associated with persistent speech disorder in children a prospective population study. *Journal of Child Psychology and Psychiatry Advances*.
6. **Southby, L., Harding, S.**, Davies, A., Lane, H., Chandler, H., & **Wren, Y.** (2022). Parent/caregiver views of the effectiveness of speech-language pathology for children born with cleft palate delivered via telemedicine during COVID-19. *Language, Speech, and Hearing Services in Schools*, 53(2), 307-316.
7. Davies, A., Davies, A., **Wren, Y.**, Deacon, S., Cobb, A., McLean, N., David, D. & Chummun, S. (2022) Syndromes associated with Robin sequence – a national prospective cohort study. *Archives of Disease in Childhood* 0:1–5. doi:10.1136/archdischild-2022-324722.
8. **Harding, S., Burr, S.**, Cleland, J., Stringer, H., & **Wren, Y.** (2023) Outcome measures for Children with Speech Sound Disorder: An Umbrella Review Protocol. *BMJ Open*. January 2023. <https://bmjopen.bmj.com/content/bmjopen/13/2/e068945.full.pdf>
9. Bright, R., McKean, C., Ashton, R. **Wren, Y.** (in press) The Development of a Digital Story-retell Elicitation and Analysis Tool through Citizen Science Data

Collection, Software Development and Machine Learning. *Frontiers in Psychology, section Language Sciences. January 2023.*

10. McAllister, J., Skinner, J., Hayhow, R., Heron, J. & **Wren, Y.** (in press) The association between atypical speech development and adolescent self-harm. *Journal of Speech, Language and Hearing Research.*
11. Burnley, A., St Clair, M., Dack, C., **Wren, Y.** (in press) Exploring the psychosocial experiences of individuals with Developmental Language Disorder during childhood: a qualitative investigation. *Journal of Autism and Developmental Disorders*

Published - non peer reviewed

1. Stringer, H., Cleland, J., **Wren, Y.**, Rees, R., & Williams, P. (2022, December 13). Speech sound disorder or DLD (phonology)? Towards a consensus agreement on terminology. Retrieved from osf.io/3huce DOI: 10.31219/osf.io/3huce Licence: CC-BY Attribution 4.0 International (pre-print).
2. Cleland, J., **Burr, S., Harding, S.**, Stringer, H. & **Wren, Y.** (2023) Development of an agreed labelling system and protocol for the diagnosis of speech sound disorder subtypes in the United Kingdom. OSF Preprints DOI: <https://10.31219/osf.io/nm2c6>

4.2 Presentations and conferences

Members of BSLTRU have been invited to present at a number of national and international events as detailed above under indicators of esteem. We have also had two panels, 21 oral papers and nine posters accepted for presentation at conferences, both national and international.

Panel presentations

1. **Wren, Y.**, Humphries, K., Hobbs, A., Moar, K., van Eeden, S., Thompson, J. (July 2022) The Cleft Collective Cohort Studies. *14th International Cleft Congress*, Edinburgh, UK.
2. **Wren Y.**, Mehendale, F., Humphries, K., Hobbs, A., Moar, K., van Eeden, S., Thompson, J. (March 2022) The Cleft Collective Cohort Studies. American Cleft Palate Association. Fort Worth, Texas, USA.

Paper Presentations

1. Sharp, L., Patterson, J., Watson, L-J., Lu, L. & **Harding, S.** (May 2022) Prevalence and predictors of cancer-related fatigue in head and neck cancer: findings from HN5000' *British Association of Head and Neck Oncologists 2022* (oral presentation).

2. Gibbard, D., **Roulstone, S.**, Kandala, N.II., Markham, C., **Morgan, L., Harding, S.** & Smith, C. (May 2022) An RCT into the impact of parent-based intervention on the language of socially disadvantaged two to three year old children. *ESLA Congress 2022* (oral presentation).
3. Zajdó, K., Kelić, M., Ulfssdottir, T.S., Baena, S., Feilberg, J., Klatte, I., Lyons, R., Jensen de Lopez, K.M., Novogrodsky, R., Rodriguez-Ortiz, I.R. & **Harding, S.** (May 2022) Rearing a child with DLD: Parents experiences with SLT services in 10 countries. *ESLA Congress 2022* (oral presentation).
4. Lyons, R., **Harding, S., Roulstone, S.**, et al (May 2022) Exploring how speech and language therapists work with parents and families: Overview of Collaboration for Communication Network. Virtual oral presentation, *ESLA Congress 2022*.
5. **Harding, S.**, et al (May 2022) Rearing a child with DLD: Parents experiences with SLT services in 10 countries. F2F presentation, (Oral presentation) *ESLA Congress 2022*.
6. **Southby, L., Harding, S.**, Davies, A., Lane, H., Chandler, H. & **Wren, Y.** (May 2022) Parent/carer views of SLT delivered via telemedicine during the COVID-19 pandemic for children born with cleft palate. *University of Cambridge & Cambridge University Hospitals Annual Nursing, Midwifery and Allied Health Professional Research Conference*, Cambridge, UK.
7. Davies, J., Davidson, E., **Wren, Y., Southby, L., & Harding, S.** (July 2022) Identifying patient preferred outcomes for young people aged 15-20 years born with cleft lip and palate. *14th International Cleft Congress*, Scotland.
8. **Southby, L., Harding, S.**, Davies, A. & **Wren, Y.** (July 2022) A qualitative study of parent/caregiver experiences of multidisciplinary cleft care in the United Kingdom during the COVID-19 pandemic for children born with cleft lip and palate. *14th International Cleft Congress*, Scotland.
9. **Southby, L., Harding, S.**, Davies, A., Fell, M., Lane, H., Chandler, H. & **Wren, Y.** (July 2022) Parent/caregiver perspectives and experiences of SLT provision for children born with cleft palate in the United Kingdom during the COVID-19 pandemic. *14th International Cleft Congress*, Scotland.
10. **Seifert, M., Southby, L.**, Davies, A., **Wren, Y.**, & McLeod, S. (July 2022) Exploring the association between intelligibility and language skills in 3-year-old children born with a cleft palate +/- lip. *14th International Cleft Congress*, Scotland.
11. **Harding, S.**, Zajdó, K., Kelić, M., Ulfssdottir, T.S., Baena, S., Feilberg, J., Klatte, I., Lyons, R., Jensen de Lopez, K.M., Novogrodsky, R., & Rodriguez-Ortiz, I.R. (Sept 2022). Employing the COM-B model to understand parents' perceptions of barriers and facilitators to accessing services: experiences across 10 countries. *IDLDRC online conference*
12. **Harding, S.**, Zajdó, K., Kelić, M., Ulfssdottir, T.S., Baena, S., Feilberg, J., Klatte, I., Lyons, R., Jensen de Lopez, K.M., Novogrodsky, R., & Rodriguez-Ortiz, I.R. (Sept 2022). Rearing a child with DLD: Parents' experiences with SLT services in 10 countries. *IDLDRC online conference*

13. Boyce, J. O., Davies, A., Day, S. C., Jiang, M., Lane, T. R., O'Grady, C. A., Phan, D., Tang, K., Morgan, A. T., & **Wren, Y.** (2022) 'Predictors of speech outcomes at 36 months in children born with non-syndromic cleft palate with or without cleft lip.' *14th International Cleft Congress*. Edinburgh, UK. July 2022.
14. Fell, M., Jones, G., Davies, A., Humphries, K., Chummun, S., Cobb, A., **Wren, Y.**, Sandy, J. & Lewis, S. (2022) 'A triangulated approach to understanding the role of cigarette smoking in orofacial cleft aetiology'. *14th International Cleft Congress*. Edinburgh, UK. July 2022.
15. Davies, A., Main, B., Davies, A., **Wren, Y.**, Deacon, S., Cobb, A., McLean, N., David, D. & Chummun, S. (2022) 'Association of perioperative antibiotics with the prevention of postoperative fistula following cleft palate repair' *14th International Cleft Congress*. Edinburgh, UK. July 2022.
16. Davies, A., Davies, A., **Wren, Y.**, Deacon, S., Cobb, A., McLean, N., David, D. & Chummun, S. (2022) 'Syndromes associated with Robin sequence – a national prospective cohort study' *14th International Cleft Congress*. Edinburgh, UK. July 2022.
17. Peryer, H., Davies, A., **Wren, Y.** (2022) 'Do early communication behaviours of infants born with cleft palate vary by cleft subtypes?' *14th International Cleft Congress*. Edinburgh, UK. July 2022.
18. Davies, A., Davies, A., **Wren, Y.**, Deacon, S., Cobb, A., McLean, N., David, D. & Chummun, S. Does a syndromic diagnosis increase the need for airway and feeding management in children with Robin sequence? Oral Presentations at *Royal Australasian College of Surgeons*, 2-6 May 2022.
19. **Broomfield, K.**, What Matters? Communication... and more. Platform presentation. *Communication Matters conference*, Leeds 2022
20. Mason, K., Kotlare, K., Davies, A., & **Wren, Y.**, (May 2023) Do patient-specific anatomic factors in the first year of life influence speech outcomes for children with cleft palate at age three? *American Cleft Palate Association Conference*, North Carolina, USA.
21. **Southby, L.**, Davies, A., Baker, S., **Wren, Y.**, & Extence, H. (May 2023) Understanding the impact of the COVID-19 pandemic on the early language development of children born with cleft lip and/or palate. *American Cleft Palate Association Conference*, North Carolina, USA.

Poster presentations

1. **Holme, C., Roulstone, S.**, McKean, C., Gilroy, V., Charlton, J. & Law, J. (May 2022) What makes screening of preschool children's speech and language acceptable? A qualitative study of parents' perspectives. *ESLA Congress*.
2. **Holme, C.**, Lucas, P.J., **Harding, S., Roulstone, S. and Wren, Y.** (June 2022) Exploring a novel method for plotting families' activities during a

- daylong recording of children's naturalistic language input. *Workshop on Infant Language Development*, San Sebastian, Spain.
3. **Southby, L. & Chesters, J.** (July 2022) Developing a theoretical model of speech processing for children born with cleft palate +/- cleft lip. *14th International Cleft Congress*, Scotland.
 4. **Wren, Y., Harding, S.,** Cleland, J., Stringer, H. & **Burr, S.** (Shortlisted for poster prize – July 2022) Maximising the Impact fo Speech and Language Therapy for children with Speech Sound Disorder (MISLToe_SSD). *Cardiff Metropolitan University-BSLTRU Launch Event*, Cardiff.
 5. **Harding, S.,** Zajdó, K., Kelić, M., Ulfsdottir, T.S., Baena, S., Feilberg, J., Klatte, I., Lyons, R., Jensen de Lopez, K.M., Novogrodsky, R., & Rodriguez-Ortiz, I.R. (June2022). Parental perspectives on obstacles to accessing speech and language therapy services in 10 countries. *Cardiff Metropolitan University-BSLTRU Launch Event*, Cardiff
 6. Patterson JM, Lu L, Watson LJ, **Harding S,** Ness AR, Thomas S, Waylen A, Pring M, Waterboer T, Sharp L. (June 2022) Associations between markers of social functioning and depression and quality of life in survivors of head and neck cancer: Findings from the Head and Neck Cancer 5000 study. *Cardiff Metropolitan University-BSLTRU Launch Event*, Cardiff
 7. Bakolpoulou, I., **Burr, S.** [others to be added]. Evaluating the Supporting Spoken Language in the Classroom (SSLiC) Programme in Early Years and Priary School Settings in South-West England, UK. *IALP* (Auckland)
 8. Lyons, R., Carroll, C., **Harding, S.,** Kelič, M., Klatte, I., Melvin, K., Sugden, E. Preparing allied health and social care students to work collaboratively with families of children with language disorders: A scoping review. *IALP* (Auckland)
 9. Chandler, H., **Southby, L.,** Davies, A., & Wren Y. (Poster - July 2022) Early language indicators and their relationship with Speech and Language Therapists ability to judge velopharyngeal function in children born with cleft palate at age 18-24 months. *14th International Cleft Congress*, Edinburgh.

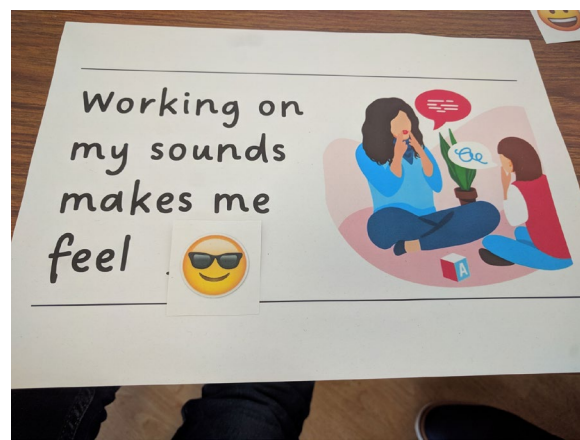
4.3 Public and Patient Involvement & Engagement (PPIE)

BSLTRU continues to actively engage with members of the public and patients to ensure that our activities are relevant and meaningful to the people that matter.

We have a number of PPIE groups specific to different studies. In the Cleft Collective, we run a Patient Consultation Group jointly with the Cleft Lip and Palate Association, the support group for anyone impacted by cleft. This is chaired by Dr Lucy Southby and meets three times a year.

The MISLToe study works closely with parents and young children with speech sound disorder to explore what it is like to engage with speech and language therapy services. Two PPIE workshops with a total of 7 children aged 4- to 7-years-old with SSD have taken place this year. The workshops took place in a clinical setting with

two speech and language therapists facilitating the interactions. Emotional mapping activities: drawing, using toy figurines, emojis and pictures, were used to explore the children's experiences of SSD interventions.



The MISLToe parents' group has met once using video conferencing. Parents have continued to have input into developed documents and materials and have plans to meet as a group in the coming year.

PPIE is a particular focus of work for Kath Broomfield. Following on from their book "Seldom Heard voices in Service User Involvement", published last year, Kath Broomfield and co-editor Anna Volkmer were invited to run a workshop on public involvement in research at the Early Career Researchers group for cleft specialist clinicians. Kath was also invited to host an online workshop for speech and language therapy and audiology colleagues at the Chris Hani Baragwanath Academic Hospital, Johannesburg, South Africa.

4.4 Social Media

We work with the web team at North Bristol NHS Trust to create an accessible, innovative web site for the unit. The website homepage is www.nbt.nhs.uk/BSLTRU. BSLTRU has several active social media platforms with a relatively small but targeted worldwide audience of key professionals, collaborators and colleagues as well as members of the public. These social media streams are an important way to help us stay connected with the speech and language therapy community world-wide, as well as providing a route of public engagement activities and recruiting to research studies.

Ways to engage with us on social media

<https://www.facebook.com/BSLTRU/>

@Bristol_SLTRU

<https://www.linkedin.com/company/bristol-speech-and-language-therapy-research-unit>

5. Glossary of Terms

AAC	Alternative and Augmentative Communication
BSLTRU	Bristol Speech and Language Therapy Research Unit
CBT	Cognitive Behavioural Therapy
CC-SL	Cleft Collective Speech and Language Study
CDRF	Clinical Doctoral Research Fellowship
CLAPA	Cleft Lip and Palate Association
CMU	Cardiff Metropolitan University
DLD	Developmental Language Disorder
ICA	Integrated Clinical Academic
i4i	Innovation for Invention
NBT	North Bristol NHS Trust
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
NIHR	National Institute for Health Research
PhD	Doctor of Philosophy
PHE	Public Health England
PI	Public Involvement
PPIE	Public and Patient Involvement & Engagement
PSD	Persistent Speech Disorder
SBRI	Small Business Research Initiative
SCL	Steps Consulting Ltd
SLCN	Speech, language and communication needs
SLT	Speech and Language Therapy
UK	United Kingdom
UoB	University of Bristol
UWE	University of the West of England

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