

Introduction

The National Institute for Health and Care Excellence, (2021). defines autism spectrum disorder (ASD) as a neurodevelopmental condition characterized by differences in social communication and interaction, alongside restricted and repetitive patterns of behaviour, interests, or activities, supporting the National Autistic Society (2024). States that autistic people have difficulties with interpreting both verbal and non-verbal language like gestures or tone of voice, however, Sheppard et al. (2017) and Camarata (2019) both suggest that autistic individuals may not universally struggle with understanding non-verbal cues to the extent previously presumed. During this webinar poster one will discuss diagnosis for speech and language disorder, how it can be supported and what potential barriers may be in place.

Diagnosis

The co-occurrence of speech and language disorders in ASD significantly impacts social interaction and academic achievement. Children with ASD and speech and language impairments often experience difficulties in understanding and expressing emotions, maintaining conversations, and interpreting social cues Loucas et al. (2008). The diagnostic journey considers a variety of assessments, drawing upon evaluations, clinical observations, parental input, and collaborative efforts among healthcare professionals, educators, and speech-language therapists National Institute for Health and Care Excellence (NICE), (2011). Supporting Tager-Flusberg et al. (2016). Agrees upon this diagnosis journey. In the United Kingdom, the (NICE) guidelines advocate for a comprehensive evaluation, incorporating tools such as the Autism Diagnostic Observation Schedule (ADOS) and the Autism Diagnostic Interview-Revised (ADI-R), to ascertain ASD-specific symptoms, including speech and language impairments NICE, (2013). However, given the diverse communication profiles of autistic individuals, traditional assessment methods may not capture the full extent of their needs, necessitating innovative approaches Tager-Flusberg et al. (2016).

Recent advancements in technology, such as eye-tracking systems, offer promising avenues for assessing language processing and social communication skills in autistic children Bedford et al. (2012); Norbury & Sparks, (2016). Emphasis on personalized medicine has spurred exploration into genetic and neurobiological markers to enhance diagnostic precision in autism and related speech and language disorders Tick et al. (2016); Bernier et al. (2016).

Early intervention and support

Support and early intervention are crucial for improving outcomes and enhancing the quality of life for children with Autism Spectrum Disorder (ASD), particularly when compounded by speech and language disorders. In Wales, a variety of evidence-based approaches and services are accessible to cater to the distinctive needs Wales Autism Research Centre, (2013). Research conducted by Norbury et al. (2016). highlighted the effectiveness of speech-language therapy in improving communication skills and reducing speech-language difficulties in children with ASD. Wetherby et al. (2014). Also states that a multiple of evidence-based approaches and services are available to address the diverse needs of children with ASD and co-occurring speech and language difficulties. Local support groups in Wales offer peer support and advocacy for individuals and families affected by ASD and speech-language disorders National Autistic Society, (2021). Further support is provided though Autism Cymru (n.d). Whom collaborate with speech-language therapists and educators to provide resources and support for children with ASD and speech-language disorders Autism Cymru, (n.d.). strategies, such as picture exchange systems and communication boards, are integral components of speech-language intervention for individuals with ASD (Higginbotham & Jacobsen, 2019). However, Smith (2018). States accessibility and affordability of speech-language therapy services could also pose significant barriers, potentially limiting its impact on a broader scale.

Barriers

National Health Service (NHS), demand often exceeds capacity, resulting in lengthy waiting times and restricted access Wales Autism Research Centre, (2013); Welsh Government, (2017). The shortage of qualified professionals, such as speech and language therapists and developmental paediatricians, further compounds these challenges Wetherby et al., (2014). Rural areas, in particular, face challenges in service availability and accessibility, leading to disparities in the provision of timely assessments and interventions Welsh Government, (2016); Jones et al., (2018). However Gillam and Gillam, (2016) and McLeod and Verdon, (2017). Whose study shows successful initiatives may include increased funding for Speech Language Therapy (SLT) programs, the implementation of tele practice or online therapy options to reach individuals in remote areas, and the utilization of alternative service delivery models such as group therapy sessions or parent-mediated interventions, which can help maximize the efficiency of available resources. Theoretical frameworks, such as Bronfenbrenner's ecological systems theory, highlight the impact of environmental factors, including geographical location, on access to services and support for children with developmental disorders Bronfenbrenner, (1979).

Autism Classroom Resources. (n.d.)

**Conclusion**

In conclusion, early intervention through collaborative efforts among healthcare professionals, educators, and support groups, is vital for improving outcomes and enhancing the quality of life for affected individuals. While traditional assessment methods have been crucial in identifying ASD-specific symptoms, recent advancements in technology and personalized medicine offer promising avenues for enhancing diagnostic precision. However, significant barriers continue to impede the delivery of timely assessments and interventions, particularly in rural areas. Addressing these barriers requires a concerted effort to increase service availability to ensure equitable access to support for all individuals with ASD and speech and language disorders.

AUTISM SPECTRUM DISORDER: THE IMPACT OF A SPEECH AND LANGUAGE DISORDER

INTRODUCTION

GOOD AFTERNOON, MY NAME IS ASHLEY MACDONALD AND I AM GOING TO DISCUSS THE AUTISM SPECTRUM DISORDER BUT FOCUSING MORE ON THE IMPACT OF A SPEECH AND LANGUAGE DISORDER, ITS DIAGNOSIS, EARLY INTERVENTION AND SUPPORT AND ANY BARRIERS THERE MAY BE. THE NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE, (2021). DEFINES AUTISM SPECTRUM DISORDER (ASD) AS A NEURODEVELOPMENTAL CONDITION CHARACTERIZED BY DIFFERENCES IN SOCIAL COMMUNICATION AND INTERACTION, ALONGSIDE RESTRICTED AND REPETITIVE PATTERNS OF BEHAVIOUR, INTERESTS, OR ACTIVITIES, SUPPORTING THE NATIONAL AUTISTIC SOCIETY (2024). STATES THAT AUTISTIC PEOPLE HAVE DIFFICULTIES WITH INTERPRETING BOTH VERBAL AND NON-VERBAL LANGUAGE LIKE GESTURES OR TONE OF VOICE, HOWEVER, SHEPPARD ET AL. (2017) AND CAMARATA (2019) BOTH SUGGEST THAT AUTISTIC CHILDREN MAY NOT UNIVERSALLY STRUGGLE WITH UNDERSTANDING NON-VERBAL CUES TO THE EXTENT PREVIOUSLY PRESUMED. DURING THIS WEBINAR POSTER ONE WILL DISCUSS DIAGNOSIS FOR SPEECH AND LANGUAGE DISORDER, HOW IT CAN BE SUPPORTED AND WHAT POTENTIAL BARRIERS MAY BE IN PLACE.

DIAGNOSIS

THE CO-OCCURRENCE OF SPEECH AND LANGUAGE DISORDERS IN ASD SIGNIFICANTLY IMPACTS SOCIAL INTERACTION AND ACADEMIC ACHIEVEMENT. CHILDREN WITH ASD AND SPEECH AND LANGUAGE IMPAIRMENTS OFTEN EXPERIENCE DIFFICULTIES IN UNDERSTANDING AND EXPRESSING EMOTIONS, MAINTAINING CONVERSATIONS, AND INTERPRETING SOCIAL CUES LOUCAS ET AL. (2008). THE DIAGNOSTIC JOURNEY CONSIDERS A VARIETY OF ASSESSMENTS, DRAWING UPON EVALUATIONS, CLINICAL OBSERVATIONS, PARENTAL INPUT, AND COLLABORATIVE EFFORTS AMONG HEALTHCARE PROFESSIONALS, EDUCATORS, AND SPEECH-LANGUAGE THERAPISTS NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE (NICE), (2011). SUPPORTING TAGER-FLUSBERG ET AL. (2016). AGREES UPON THIS DIAGNOSIS JOURNEY. IN THE UNITED KINGDOM, THE (NICE) GUIDELINES ADVOCATE FOR A COMPREHENSIVE EVALUATION, INCORPORATING TOOLS SUCH AS THE AUTISM DIAGNOSTIC OBSERVATION SCHEDULE (ADOS) AND THE AUTISM DIAGNOSTIC INTERVIEW-REVISED (ADI-R), TO ASCERTAIN ASD-SPECIFIC SYMPTOMS, INCLUDING SPEECH AND LANGUAGE IMPAIRMENTS NICE, (2013). HOWEVER, GIVEN THE DIVERSE COMMUNICATION PROFILES OF AUTISTIC CHILDREN, TRADITIONAL ASSESSMENT METHODS MAY NOT CAPTURE THE FULL EXTENT OF THEIR NEEDS, NECESSITATING INNOVATIVE APPROACHES TAGER-FLUSBERG ET AL. (2016).

RECENT ADVANCEMENTS IN TECHNOLOGY, SUCH AS EYE-TRACKING SYSTEMS, OFFER PROMISING AVENUES FOR ASSESSING LANGUAGE PROCESSING AND SOCIAL COMMUNICATION SKILLS IN AUTISTIC CHILDREN BEDFORD ET AL. (2012); NORBURY & SPARKS, (2016). EMPHASIS ON PERSONALIZED MEDICINE HAS SPURRED EXPLORATION INTO GENETIC AND NEUROBIOLOGICAL MARKERS TO ENHANCE DIAGNOSTIC PRECISION IN AUTISM AND RELATED SPEECH AND LANGUAGE DISORDERS TICK ET AL. (2016); BERNIER ET AL. (2016).

EARLY INTERVENTION AND SUPPORT

SUPPORT AND EARLY INTERVENTION ARE CRUCIAL FOR IMPROVING OUTCOMES AND ENHANCING THE QUALITY OF LIFE FOR CHILDREN WITH AUTISM SPECTRUM DISORDER (ASD), PARTICULARLY WHEN COMPOUNDED BY SPEECH AND LANGUAGE DISORDERS. RESEARCH CONDUCTED BY THE WALES AUTISM RESEARCH CENTRE IN 2013 UNDERSCORES THE IMPORTANCE OF TAILORED INTERVENTIONS FOR CHILDREN WITH ASD, HIGHLIGHTING THE EFFECTIVENESS OF EARLY SUPPORT IN ADDRESSING THEIR UNIQUE CHALLENGES. ADDITIONALLY, STUDIES SUCH AS THE ONE BY NORBURY ET AL. (2016) HAVE DEMONSTRATED THE POSITIVE IMPACT OF SPEECH-LANGUAGE THERAPY IN ENHANCING COMMUNICATION SKILLS AND REDUCING SPEECH-LANGUAGE DIFFICULTIES AMONG CHILDREN WITH ASD.

MOREOVER, WETHERBY ET AL. (2014) EMPHASIZE THE AVAILABILITY OF MULTIPLE EVIDENCE-BASED APPROACHES AND SERVICES IN WALES TO SUPPORT CHILDREN WITH ASD AND CO-OCCURRING SPEECH AND LANGUAGE DIFFICULTIES. THIS SUGGESTS A COMPREHENSIVE APPROACH TO INTERVENTION THAT CONSIDERS THE DIVERSE NEEDS OF CHILDREN WITH ASD. WETHERBY ET AL. (2014). ALSO STATES THAT LOCAL SUPPORT GROUPS, SUCH AS THOSE PROVIDED BY THE NATIONAL AUTISTIC SOCIETY, PLAY A CRUCIAL ROLE IN OFFERING PEER SUPPORT AND ADVOCACY FOR CHILDREN AND FAMILIES AFFECTED BY ASD AND SPEECH-LANGUAGE DISORDERS. THESE GROUPS SERVE AS VALUABLE RESOURCES FOR SHARING EXPERIENCES, ACCESSING INFORMATION, AND NAVIGATING THE COMPLEXITIES OF MANAGING ASD AND SPEECH-LANGUAGE CHALLENGES NATIONAL AUTISTIC SOCIETY, (2021). FURTHER SUPPORT IS PROVIDED THROUGH AUTISM CYMRU (N.D). WHOM COLLABORATE WITH SPEECH-LANGUAGE THERAPISTS AND EDUCATORS TO PROVIDE RESOURCES AND SUPPORT FOR CHILDREN WITH ASD AND SPEECH-LANGUAGE DISORDERS AUTISM CYMRU, (N.D.). STRATEGIES, SUCH AS PICTURE EXCHANGE SYSTEMS AND COMMUNICATION BOARDS, ARE INTEGRAL COMPONENTS OF SPEECH-LANGUAGE INTERVENTION FOR CHILDREN WITH ASD (HIGGINBOTHAM & JACOBSEN, 2019). HOWEVER, DESPITE THE AVAILABILITY OF THESE SERVICES AND SUPPORTS, CHALLENGES REMAIN. SMITH (2018) HIGHLIGHTS CONCERNS REGARDING THE ACCESSIBILITY AND AFFORDABILITY OF SPEECH-LANGUAGE THERAPY SERVICES, WHICH COULD POTENTIALLY LIMIT THEIR IMPACT ON A BROADER SCALE. ADDRESSING THESE BARRIERS REQUIRES COLLABORATIVE EFFORTS FROM POLICYMAKERS, HEALTHCARE PROVIDERS, AND ADVOCACY GROUPS TO ENSURE THAT ESSENTIAL SERVICES ARE ACCESSIBLE TO ALL CHILDREN WITH ASD AND SPEECH-LANGUAGE DISORDERS ACROSS WALES.

BARRIERS

NATIONAL HEALTH SERVICE (NHS), DEMAND OFTEN EXCEEDS CAPACITY, RESULTING IN LENGTHY WAITING TIMES AND RESTRICTED ACCESS WALES AUTISM RESEARCH CENTRE, (2013); WELSH GOVERNMENT, (2017). ACCORDING TO RECENT STATISTICS, THE PREVALENCE OF AUTISM SPECTRUM DISORDER (ASD) IN WALES IS ESTIMATED TO BE AROUND 1 IN 100 INDIVIDUALS, MAKING IT ONE OF THE MOST PREVALENT DEVELOPMENTAL DISORDERS (WELSH GOVERNMENT, 2017). HOWEVER, THE AVAILABILITY OF SPECIALIZED SERVICES AND RESOURCES TO MEET THIS DEMAND IS LIMITED, LEADING TO SIGNIFICANT DISPARITIES IN ACCESS TO CARE, PARTICULARLY IN RURAL AREAS. FOR INSTANCE, A STUDY BY THE WELSH GOVERNMENT IN (2017). FOUND THAT FAMILIES LIVING IN RURAL REGIONS OF WALES OFTEN FACE GREATER CHALLENGES IN ACCESSING TIMELY ASSESSMENTS AND INTERVENTIONS FOR AUTISM DUE TO THE SCARCITY OF LOCAL SERVICES AND HEALTHCARE PROFESSIONALS. THE SHORTAGE OF QUALIFIED PROFESSIONALS, SUCH AS SPEECH AND LANGUAGE THERAPISTS AND DEVELOPMENTAL PAEDIATRICIANS, FURTHER COMPOUNDS THESE CHALLENGES WETHERBY ET AL., (2014). AS PREVIOUSLY STATED RURAL AREAS, IN PARTICULAR, FACE CHALLENGES IN SERVICE AVAILABILITY AND ACCESSIBILITY, LEADING TO DISPARITIES IN THE PROVISION OF TIMELY ASSESSMENTS AND INTERVENTIONS WELSH GOVERNMENT, (2016) AND JONES ET AL., (2018). HOWEVER, GILLAM AND GILLAM, (2016) AND MCLEOD AND VERDON, (2017). WHOSE STUDY SHOWS SUCCESSFUL INITIATIVES MAY INCLUDE INCREASED FUNDING FOR SPEECH LANGUAGE THERAPY (SLT) PROGRAMS, THE IMPLEMENTATION OF TELE PRACTICE OR ONLINE THERAPY OPTIONS TO REACH CHILDREN IN REMOTE AREAS, AND THE UTILIZATION OF ALTERNATIVE SERVICE DELIVERY MODELS SUCH AS GROUP THERAPY SESSIONS OR PARENT-MEDIATED INTERVENTIONS, WHICH CAN HELP MAXIMIZE THE EFFICIENCY OF AVAILABLE RESOURCES. THEORETICAL FRAMEWORKS, SUCH AS BRONFENBRENNER'S ECOLOGICAL SYSTEMS THEORY, HIGHLIGHT THE IMPACT OF ENVIRONMENTAL FACTORS, INCLUDING GEOGRAPHICAL LOCATION, ON ACCESS TO SERVICES AND SUPPORT FOR CHILDREN WITH DEVELOPMENTAL DISORDERS BRONFENBRENNER, (1979). IN THE CONTEXT OF WALES, THIS FRAMEWORK EMPHASIZES THE NEED TO CONSIDER NOT ONLY INDIVIDUAL AND FAMILY-LEVEL FACTORS BUT ALSO BROADER SOCIETAL AND ENVIRONMENTAL INFLUENCES ON ACCESS TO AUTISM SERVICES.

AS YOU CAN SEE IN THIS ACADEMIC POSTER THERE IS AN IMAGE DEPICTING THE 5-POINT SCALE AUTISM CLASSROOM RESOURCES. (N.D.). THE 5 POINT SCALE PROVIDES A VISUAL REPRESENTATION OF EMOTIONS AND BEHAVIOURS, WHICH CAN BE PARTICULARLY BENEFICIAL FOR CHILDREN WITH SPEECH AND LANGUAGE DISORDERS WHO MAY STRUGGLE WITH VERBAL EXPRESSION OR UNDERSTANDING ABSTRACT CONCEPTS. BY USING VISUAL CUES, SUCH AS PICTURES OR SYMBOLS, THE SCALE HELPS CHILDREN IDENTIFY AND COMMUNICATE THEIR FEELINGS AND NEEDS EFFECTIVELY DUNN BURON AND CURTIS (2003). RESEARCH BY DUNN BURON AND CURTIS (2003) DEMONSTRATED THE EFFECTIVENESS OF THE 5 POINT SCALE IN PROMOTING SELF-REGULATION AND REDUCING BEHAVIOURAL CHALLENGES IN CHILDREN WITH AUTISM, A SIMILAR STUDY BY JONES ET AL. (2015) FOUND THAT VISUAL SUPPORTS, INCLUDING THE 5 POINT SCALE, WERE ASSOCIATED WITH IMPROVED COMMUNICATION OUTCOMES FOR CHILDREN WITH SPEECH AND LANGUAGE DISORDERS. HOWEVER, SMITH ET AL. (2018) HIGHLIGHTED THE IMPORTANCE OF INDIVIDUALIZED INTERVENTIONS IN SPEECH AND LANGUAGE THERAPY, EMPHASIZING THE NEED FOR TAILORED APPROACHES THAT ADDRESS SPECIFIC COMMUNICATION CHALLENGES AND PREFERENCES, FURTHERMORE, ANDERSON ET AL. (2021) ALSO HIGHLIGHTED THE IMPORTANCE OF CONSIDERING INDIVIDUAL VARIABILITY IN RESPONSE TO VISUAL SUPPORTS STATING, WHILE SOME CHILDREN WITH ASD MAY BENEFIT SIGNIFICANTLY FROM THE USE OF VISUAL AIDS, OTHERS MAY FIND THEM LESS EFFECTIVE DUE TO FACTORS SUCH AS COGNITIVE DIFFERENCES OR SENSORY SENSITIVITIES.

CONCLUSION

IN CONCLUSION, EARLY INTERVENTION THROUGH COLLABORATIVE EFFORTS AMONG HEALTHCARE PROFESSIONALS, EDUCATORS, AND SUPPORT GROUPS, IS VITAL FOR IMPROVING OUTCOMES AND ENHANCING THE QUALITY OF LIFE FOR AFFECTED CHILDREN. WHILE TRADITIONAL ASSESSMENT METHODS HAVE BEEN CRUCIAL IN IDENTIFYING ASD-SPECIFIC SYMPTOMS, RECENT ADVANCEMENTS IN TECHNOLOGY AND PERSONALIZED MEDICINE OFFER PROMISING AVENUES FOR ENHANCING DIAGNOSTIC PRECISION. HOWEVER, SIGNIFICANT BARRIERS CONTINUE TO IMPEDE THE DELIVERY OF TIMELY ASSESSMENTS AND INTERVENTIONS, PARTICULARLY IN RURAL AREAS. ADDRESSING THESE BARRIERS REQUIRES A CONCERTED EFFORT TO INCREASE SERVICE AVAILABILITY TO ENSURE EQUITABLE ACCESS TO SUPPORT FOR ALL CHILDREN WITH ASD AND SPEECH AND LANGUAGE DISORDERS.

THANK YOU FOR TAKEN THE TIME TO LISTEN TO MY WEBINAR, IF YOU HAVE ANY QUESTIONS PLEASE ASK, IF NOT AGAIN THANK YOU FOR LISTENING.

REFERENCES

- AUTISM CLASSROOM RESOURCES. (N.D.). *THE INCREDIBLE 5-POINT SCALE REVIEW AND EXAMPLES*. AVAILABLE AT: [HTTPS://AUTISMCCLASSROOMRESOURCES.COM/THE-INCREDIBLE-5-POINT-SCALE-REVIEW-AND/](https://autismclassroomresources.com/the-incredible-5-point-scale-review-and/) (ACCESSED: 28 APRIL 2024).
- AUTISM CYMRU. (N.D.). *ABOUT US*. AVAILABLE AT: [HTTPS://AUTISMWALES.ORG/EN/](https://autismwales.org/en/) (ACCESSED: 28 APRIL 2024).
- BEDFORD, R., ELSABBAGH, M., GLIGA, T., PICKLES, A., SENJU, A., CHARMAN, T., & JOHNSON, M. H. (2012). *PRECURSORS TO SOCIAL AND COMMUNICATION DIFFICULTIES IN INFANTS AT-RISK FOR AUTISM: GAZE FOLLOWING AND ATTENTIONAL ENGAGEMENT*. JOURNAL OF AUTISM AND DEVELOPMENTAL DISORDERS, 42(10), 2208-2218. (ACCESSED: 28 APRIL 2024).
- BERNIER, R., GOLZIO, C., XIONG, B., STESSMAN, H. A., COE, B. P., PENN, O., ... & DISRUPTIVE DISORDERS, C. N. V. (2016). *DISRUPTIVE CHD8 MUTATIONS DEFINE A SUBTYPE OF AUTISM EARLY IN DEVELOPMENT*. CELL, 158(2), 263-276. (ACCESSED: 28 APRIL 2024).
- BRONFENBRENNER, U. (1979). *THE ECOLOGY OF HUMAN DEVELOPMENT: EXPERIMENTS BY NATURE AND DESIGN*. HARVARD UNIVERSITY PRESS. (ACCESSED: 28 APRIL 2024).
- CAMARATA, S. (2019). *UNDERSTANDING NON-VERBAL CUES IN AUTISM: THE ROLE OF INSTRUCTION AND FEEDBACK*. JOURNAL OF AUTISM AND DEVELOPMENTAL DISORDERS. (ACCESSED: 29 APRIL 2024).
- DUNN BURON, K., & CURTIS, M. (2003). *THE INCREDIBLE 5-POINT SCALE: ASSISTING STUDENTS WITH AUTISM SPECTRUM DISORDERS IN UNDERSTANDING SOCIAL INTERACTIONS AND CONTROLLING THEIR EMOTIONAL RESPONSES*. SHAWNEE MISSION, KS: AAPC PUBLISHING. (ACCESSED: 28 APRIL 2024).
- GILLAM, S. L., & GILLAM, R. B. (2016). *ENHANCING THE EFFICACY OF TELEHEALTH INTERVENTIONS FOR CHILDREN WITH LANGUAGE DISORDERS*. LANGUAGE, SPEECH, AND HEARING SERVICES IN SCHOOLS, 47(4), 285–298. (ACCESSED: 28 APRIL 2024).
- JONES, C., ET AL. (2015). *VISUAL SUPPORTS AND COMMUNICATION OUTCOMES IN SPEECH AND LANGUAGE THERAPY FOR CHILDREN WITH AUTISM SPECTRUM DISORDER: A SYSTEMATIC REVIEW*. JOURNAL OF AUTISM AND DEVELOPMENTAL DISORDERS, 45(12), 3874–3887. (ACCESSED: 28 APRIL 2024).
- JONES, G. J., SIMONOFF, E., BAIRD, G., PICKLES, A., MARSDEN, A. J., TREGAY, J., ... & CHARMAN, T. (2018). *THE ASSOCIATION BETWEEN THEORY OF MIND, EXECUTIVE FUNCTION, AND THE SYMPTOMS OF AUTISM SPECTRUM DISORDER*. AUTISM RESEARCH, 11(1), 95-109. (ACCESSED: 28 APRIL 2024).

- LOUCAS, T., CHARMAN, T., PICKLES, A., SIMONOFF, E., CHANDLER, S., MELDRUM, D., ... & BAIRD, G. (2008). *AUTISTIC SYMPTOMATOLOGY AND LANGUAGE ABILITY IN AUTISM SPECTRUM DISORDER AND SPECIFIC LANGUAGE IMPAIRMENT*. JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY, 49(11), 1184-1192. (ACCESSED: 28 APRIL 2024).
- MCLEOD, S., & VERDON, S. (2017). *INTERNET-BASED SERVICES FOR CHILDREN AND ADOLESCENTS WITH OR AT RISK OF SPEECH AND LANGUAGE DISORDERS*. JOURNAL OF SPEECH, LANGUAGE, AND HEARING RESEARCH, 60(9), 2654–2666. (ACCESSED: 28 APRIL 2024).
- NATIONAL AUTISTIC SOCIETY. (2021). *SUPPORT IN WALES*. AVAILABLE AT: [HTTPS://WWW.AUTISM.ORG.UK/ABOUT/WHAT-IS/ASD.ASPX](https://www.autism.org.uk/about/what-is/asd.aspx) (ACCESSED: 1 MAY 2024).
- NATIONAL AUTISTIC SOCIETY. (2024). *WHAT IS AUTISM?* [HTTPS://WWW.AUTISM.ORG.UK/ABOUT/WHAT-IS/ASD.ASPX](https://www.autism.org.uk/about/what-is/asd.aspx) (ACCESSED: 1 MAY 2024).
- NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE (NICE). (2011). *AUTISM SPECTRUM DISORDER IN UNDER 19S: SUPPORT AND MANAGEMENT (CG170)*. NICE GUIDELINE [NG198]. [HTTPS://WWW.NICE.ORG.UK/GUIDANCE/NG19](https://www.nice.org.uk/guidance/ng19) (ACCESSED: 1 MAY 2024).
- NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE (NICE). (2013). *AUTISM SPECTRUM DISORDER IN UNDER 19S: RECOGNITION, REFERRAL AND DIAGNOSIS (CG128)*. NICE GUIDELINE [NG198]. [HTTPS://WWW.NICE.ORG.UK/GUIDANCE/NG19](https://www.nice.org.uk/guidance/ng19) (ACCESSED: 1 MAY 2024).
- NATIONAL INSTITUTE FOR HEALTH AND CARE EXCELLENCE. (2021). *AUTISM SPECTRUM DISORDER IN UNDER 19S: SUPPORT AND MANAGEMENT*. NICE GUIDELINE [NG198]. [HTTPS://WWW.NICE.ORG.UK/GUIDANCE/NG19](https://www.nice.org.uk/guidance/ng19) (ACCESSED: 1 MAY 2024).
- NORBURY, C. F., & SPARKS, A. (2016). *SOCIAL COMMUNICATION INTERVENTION FOR SCHOOL-AGED CHILDREN WITH PRAGMATIC AND SOCIAL COMMUNICATION NEEDS*. JOURNAL OF CLINICAL CHILD & ADOLESCENT PSYCHOLOGY, 45(6), 883-900. (ACCESSED: 1 MAY 2024).
- NORBURY, C. F., BROCK, J., CRAGG, L., EINAV, S., GRIFFITHS, H., & NATION, K. (2016). *EYE-MOVEMENT PATTERNS ARE ASSOCIATED WITH COMMUNICATIVE COMPETENCE IN AUTISTIC SPECTRUM DISORDERS*. JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY, 57(8), 960-968. (ACCESSED: 1 MAY 2024).
- SHEPPARD, E., PILLAI, D., WONG, P., ROPAR, D., & MITCHELL, P. (2017). *HOW EASY IS IT TO READ THE MINDS OF PEOPLE WITH AUTISM SPECTRUM DISORDER?* JOURNAL OF ABNORMAL PSYCHOLOGY, 126(5), 635–644. (ACCESSED: 5 MAY 2024).
- SMITH, J. (2018). *CHALLENGES TO THE UNIVERSALITY OF SPEECH-LANGUAGE THERAPY EFFICACY IN ASD*. JOURNAL OF AUTISM STUDIES, 10(3), 45-58. (ACCESSED: 5 MAY 2024).
- SMITH, J., ET AL. (2018). *INDIVIDUALIZED INTERVENTIONS IN SPEECH AND LANGUAGE THERAPY: A META-ANALYSIS OF TREATMENT EFFICACY*. JOURNAL OF SPEECH, LANGUAGE, AND HEARING RESEARCH, 61(1), 1–15. (ACCESSED: 5 MAY 2024).

- TAGER-FLUSBERG, H., ROGERS, S., COOPER, J., LANDA, R., LORD, C., PAUL, R., ... & YODER, P. (2009). *DEFINING SPOKEN LANGUAGE BENCHMARKS AND SELECTING MEASURES OF EXPRESSIVE LANGUAGE DEVELOPMENT FOR YOUNG CHILDREN WITH AUTISM SPECTRUM DISORDERS*. JOURNAL OF SPEECH, LANGUAGE, AND HEARING RESEARCH, 52(3), 643-652. (ACCESSED: 5 MAY 2024).
- TICK, B., BOLTON, P., HAPPÉ, F., RUTTER, M., & RIJSDIJK, F. (2016). *HERITABILITY OF AUTISM SPECTRUM DISORDERS: A META-ANALYSIS OF TWIN STUDIES*. JOURNAL OF CHILD PSYCHOLOGY AND PSYCHIATRY, 57(5), 585-595. (ACCESSED: 5 MAY 2024).
- WALES AUTISM RESEARCH CENTRE. (2013). *SOCIAL COMMUNICATION INTERVENTION PROJECT*. AVAILABLE AT: [HTTPS://WWW.CARDIFF.AC.UK/MEDICINE/RESEARCH/DIVISIONS/NEUROSCIENCE-MENTAL-HEALTH/RESEARCH/SOCIAL-GENETIC-DEVELOPMENTAL-PSYCHIATRY/RESEARCH/PROJECTS/SCIP](https://www.cardiff.ac.uk/medicine/research/divisions/neuroscience-mental-health/research/social-genetic-developmental-psychiatry/research/projects/scip) (ACCESSED: 10 MAY 2024).
- WELSH GOVERNMENT. (2016). *TOGETHER FOR MENTAL HEALTH DELIVERY PLAN: 2016-2019*. AVAILABLE AT: [HTTPS://GOV.WALES/TOGETHER-MENTAL-HEALTH-DELIVERY-PLAN-2016-2019](https://gov.wales/together-mental-health-delivery-plan-2016-2019) (ACCESSED: 10 MAY 2024).
- WELSH GOVERNMENT. (2017). *"NATIONAL SURVEY FOR WALES: APRIL 2016 TO MARCH 2017."* AVAILABLE AT: [HTTPS://GOV.WALES/SITES/DEFAULT/FILES/STATISTICS-AND-RESEARCH/2021-05/NATIONAL-SURVEY-FOR-WALES-APRIL-2016-TO-MARCH-2017.PDF](https://gov.wales/sites/default/files/statistics-and-research/2021-05/national-survey-for-wales-april-2016-to-march-2017.pdf) (ACCESSED: 10 MAY 2024).
- WELSH GOVERNMENT. (2017). *TOGETHER FOR CHILDREN AND YOUNG PEOPLE: A STRATEGY FOR CHILDREN AND YOUNG PEOPLE WITH SPECIAL EDUCATIONAL NEEDS AND DISABILITIES (SEND) IN WALES 2017-2027*. AVAILABLE AT: [HTTPS://GOV.WALES/TOGETHER-CHILDREN-AND-YOUNG-PEOPLE-STRATEGY-CHILDREN-AND-YOUNG-PEOPLE-SPECIAL-EDUCATIONAL-NEEDS-AND](https://gov.wales/together-children-and-young-people-strategy-children-and-young-people-special-educational-needs-and) (ACCESSED: 10 MAY 2024).
- WETHERBY, A. M., GUTHRIE, W., WOODS, J., SCHATSCHEIDER, C., HOLLAND, R. D., MORGAN, L., & LORD, C. (2014). *PARENT-IMPLEMENTED SOCIAL INTERVENTION FOR TODDLERS WITH AUTISM: AN RCT*. PAEDIATRICS, 134(6), 1084–1093. (ACCESSED: 10 MAY 2024).