

NCORE 2019



Souvenir

FOREWORD

“Many things we need can wait. The child cannot. Now is the time his bones are formed, his mind developed. To him we cannot say tomorrow, his name is today.”

...Gabriela Mistral

Science tells us that early childhood is a time of both great promise and considerable risk. Having responsive relationships with adults, growth-promoting experiences, and healthy environments for all young children helps build sturdy brain architecture and the foundations of resilience. Meanwhile, significant disadvantages can disrupt the developmental process and lead to limited economic and social mobility that threatens the vitality, productivity, and sustainability of society.

Early intervention for children with developmental disabilities refers to timely provision of an optimal nurturing and learning environment that will maximize developmental outcomes and prevent activity based, functional and participation limitations. It is a system of coordinated services that promotes the child's growth and development and supports families during the critical early years.

Neural circuits, which create the foundation for learning, behavior and health, are most flexible or “plastic” during the first three years of life. Over time, they become increasingly difficult to change. High quality early intervention services can change a child's developmental trajectory and improve outcomes for children, families, and communities.

Early Childhood Assessment in the early years is a critical component and the gateway to evidence-based early intervention. A strong and skilled workforce is critical to effective and inclusive programs – there is a need to build workforce capacity through multi-layered and mandatory training in the commitment to best practice.

Every early childhood professional has a personal responsibility to develop and maintain their knowledge and skills to ensure professional competence throughout their careers. Studies show that both education and training are associated with more positive and stimulating therapists' competence and skills and in turn positive child outcomes.

I have a strong belief that such programs by eminent experts in the field of Neurodevelopment will help to produce the skilled workforce which is tuned in the usage of formal assessment tools. I wish the conference by NICE on ‘Assessments in Early Intervention’ a grand success.



Dr. A. Somasundaram

MD, PGDDN

Co-Founder and Developmental Pediatrician,
D'Soul Child Development Centre, Adyar, Chennai

DIRECTOR'S MESSAGE

Dear Patrons,

Greetings from NICE!

We are glad to have you here for yet another edition of NCORE. We are also happy that within a short time of our existence, we have been able to make an impact in terms of providing a platform for deliberations on pediatric neuro rehabilitation. Our belief that a collaborative and concerted effort from the professional community would steer the frontiers of science stands vindicated by your presence and engagement.

As set out, every conference of ours has been designed to throw light on multidisciplinary approach towards neuro rehabilitation. As a team, we firmly believe that this is the way forward in bettering outcomes and experiences.

This is all your platform, make the most of it. You make it vibrant and meaningful. We encourage each one of you to be an active participant and contributor rather than a mere attendee. Come speak to us during the conference or write to us at programs@smrthihealth.in to explore opportunities for collaboration and contribution.

Welcome to NCORE.

ASPIRE ACQUIRE ACHIEVE



Dr. S. Subramanian

DIRECTOR, NICE

PROGRAM & FACULTY



Workshop on Hammersmith Infant Neurological Assessment Scale



Dr. B Umamaheswari

Associate Professor Department of Neonatology,
Sri Ramachandra Medical College & University, Chennai

Areas of Interest

Neonatology, research in Nutrition in IEM; Feeding in preterm; MRI in preterm and IEM, Genetic counselling and metabolic medicine



Dr Abiramalatha

MD (Paeds); DCH; DM (Neo); PhD
Assistant Professor, Neonatology, SRMC

Areas of interest

Neonatal Research, Perinatology
MGR University Gold Medal for DM Neonatology
'Young Researcher Award' from Indian Academy of Pediatrics
21 Publications including 7 Original Articles and 3 Cochrane, Meta-analysis, Peer-reviewer in International Journals.

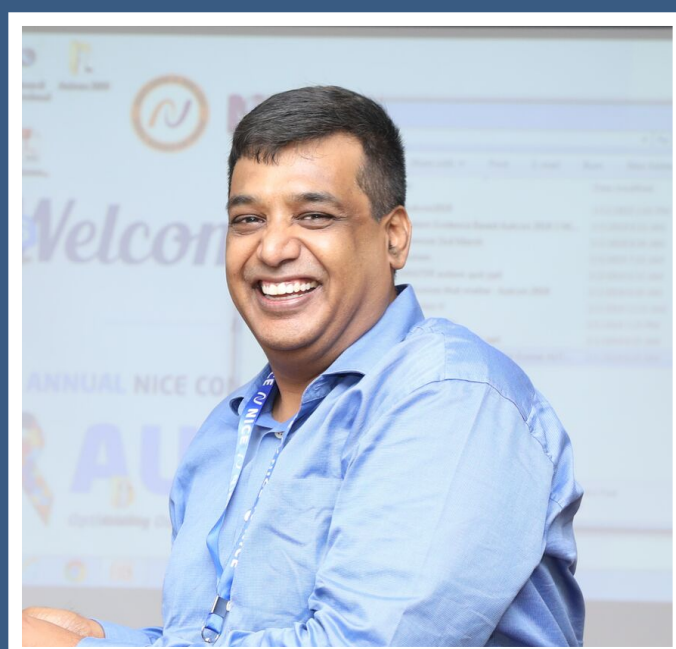


Dr Prabha S

Senior Resident, Neonatology, SRIHER.

Areas of Interest

Member of IAP Developmental Paediatrics Chapter.
Masters in Clinical Child Development (MHSc. CCD).
Early assessment programme of NICU Graduates and their follow up in Child Development Unit
Developmentally Supportive Care
QI for the follow up of High - risk Neonates.



Dr S.Subramanian

Director NICE.
Consultant Pediatrician, Neonatologist, St. Isabel's Hospital

Areas of Interest

General Pediatrics, Neonatology, Feeding and nutrition of young infants, Developmental pediatrics, Healthcare management, Preventive health care.

Workshop on Hearing Assessment in High Risk Infant (OAE, ABR, AABR)



Dr. Jayashree Bhat

Professor, Department of Audiology & Speech Language Pathology at KMC, Mangalore

Areas of Interest

Clinical Audiology, Rehabilitative Audiology, Language disorders in children and adults, Voice and swallowing disorders.



Dr. P Arivudai Nambi

Associate Professor, Kasturba medical college (Manipal Academy of Higher Education), Mangalore, Karnataka.

Areas of Interest

Clinical audiology, cochlear hearing loss, ABR and voice analysis



NICE

Our values define us!!



Day 2
29 September 2019



Prof. Rema Chandramohan

Introduction to Assessments in Early Intervention

Professor of Pediatrics, Institute of child health, Chennai.
Past President IAP CCB

Areas of Interest

Developmental Pediatrics, Neonatology, Neonatal resuscitation Programs, breastfeeding promotion and Social Pediatrics.



Dr. J Meenakshi

Global Developmental Scales

Director NICE.
Consultant Neonatologist and Pediatrician
Senior faculty DNB program at St. Isabel's hospital

Areas of Interest

Neonatology, Follow-up of High- Risk Infants and Early Intervention.



Mr. Karthik R Rao

Motor Developmental Scales

Senior Physiotherapist, Shrishti Centre

Areas of Interest

Sensory Integration, Neurodevelopmental therapy, aquatic therapy



Dr Lakshmi Venkatesh

Speech-Language and Communication Scales

Associate Professor at the Department of Speech, Language and Hearing Sciences, Sri Ramachandra Institute of Higher Education

Areas of Interest

Speech motor control, child speech-language, development and disorders, Motor speech disorders, feeding and swallowing disorders in children and adults.

Day 2
29 September 2019



Ms. S Deepa

Sensory Scales in Young Infants

Principal and Professor College of Occupational Therapy, NIEPMD

Areas of Interest

Sensory processing, child and adolescent mental health, adult mental health, school based occupational therapy, neuro psychiatry, neuro-rehabilitation, palliative care and group therapy.



Dr Lakshmi Venkatesh

Early Speech-language and communication intervention: SRMC experience

Associate Professor at the Department of Speech, Language and Hearing Sciences, Sri Ramachandra Institute of Higher Education

Areas of Interest

Speech motor control, child speech-language development and disorders, Motor speech disorders, feeding and swallowing disorders in children and adults.



Dr Selvam Ramachandran

General Movement Assessment in Predicting CP in Infants

Associate Professor of Physiotherapy, Manipal College of Health Professions, Manipal Academy of Higher Education

Areas of Interest

Developmental care interventions, Pediatric neurological rehabilitation and Pedagogy



Ms. S Deepa

Supporting Parents of Preterm Infants in Their Transition from the NICU to Home

Principal and Professor College of Occupational Therapy, NIEPMD

Areas of Interest

Sensory processing, child and adolescent mental health, adult mental health, school based occupational therapy, neuro psychiatry, neuro-rehabilitation, palliative care and group therapy.

Day 2
29 September 2019



Dr Lakshmi Venkatesh

Importance of Hearing Evaluations in Early Intervention

Associate Professor at the Department of Speech, Language and Hearing Sciences, Sri Ramachandra Institute of Higher Education

Areas of Interest

Speech motor control, child speech-language development and disorders, Motor speech disorders, feeding and swallowing disorders in children and adults.



Mr. Karthik R Rao

Primitive Motor Reflexes in Early Intervention

Senior Physiotherapist, Shrishti Centre

Areas of Interest

Sensory Integration, Neurodevelopmental therapy, aquatic therapy



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EFFECT OF DIETARY INTERVENTION ON ANTHROPOMETRY AND SCHOLASTIC PERFORMANCE IN CHILDREN WITH CONGENITAL HEART DISEASES

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Shri Sathya Sai Medical College and Research Institute

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Lalitha Sridahr

VEXCEL EDUCATIONAL TRUST,CHENNAI

CONGENITAL TORTICOLLIS IN NEW BORN

Dr.P.Paramanantham, Dr.A.Jeremy, Dr.P.G.Rajakumar
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Shri Sathya Sai Medical College and Research Institute

OUTCOME BASED ASSESSMENT FOR AN EARLY INTERVENTION INTEGRATIVE GROUP PROGRAM.

Apoorva Sriram,
DIRECT

SPECIFIC LEARNING DISORDER AND ITS EARLY DIAGNOSTICS AND INTERVENTION CONVENTIONS: AN ORDEAL

Akshaya Prabhakaran,
DIRECT

DEVELOPMENTAL DYSPLASIA OF HIP IN A NEWBORN

Dr.P.Paramanantham, Dr.D.Sneha, Dr.A.Jeremy, Dr.P.G.Rajakumar
Shri Sathya Sai Medical College and Research Institute

ABSTRACTS

IMPLEMENTING A MODULE FOR TRAINING CAREGIVERS ON SPEECH AND LANGUAGE STIMULATION THROUGH TELEPRACTICE: A FEASIBILITY STUDY

Jayakumudha R S, Preethy S, Vipula R, & Lakshmi Venkatesh,
Department of Speech, Language & Hearing Sciences, Sri Ramachandra Institute of Higher Education and Research (Deemed to be University), Chennai.

TO FIND THE EFFECTIVENESS OF CHILD POSE ASANA AND SUPER BRAIN YOGA IN IMPROVING MEMORY AND CONCENTRATION AMONG STUDENTS

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School of Physiotherapy, Vistas.

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Meenakshi Academy of Higher Learning

APPLICABILITY OF PEABODY DEVELOPMENTAL MOTOR SCALES-2 IN SPASTIC DIPLEGIA: A SINGLE CASE STUDY

E. Deepika, P. Sreelekha

RECENT ADVANCES IN PEDIATRIC ROBOTIC REHABILITATION

Swathi.N

PHONOLOGICAL PROFILE OF TAMIL SPEAKING (PRETERM) CHILDREN WITH AND WITHOUT LANGUAGE DELAY AT TWO YEARS OF AGE

Roshini L, Lakshmi Venkatesh & Adhirai Garibaldi
Dept. of Speech, Language and Hearing Sciences, Sri Ramachandra Institute of Higher Education and Research. (Deemed to be University)

CASE HISTORY OF KARTAGENER SYNDROME WITH SITUS INVERSUS TOTALIS (IMMOTILE CILIA SYNDROME)

Dr. Paramanatham, Dr. Kata Sai Vinuthna, Dr. Rajakumar,
Shri Sathya Sai Medical College and Research Institute

Faculty for Judging Posters



Dr Senthil Kumar Natarajan
Saveetha College of
Physiotherapy



Dr K Vadivelan
SRM College of Physiotherapy



Dr Jaya
Institute of Speech and
Hearing,
Madras Medical College

FIRST PRIZE



Phonological profile of Tamil-speaking (preterm) children with and without language delay at 2-years of age

Roshini L*, Lakshmi Venkatesh** & Adhirai Garibaldi*

*Research Assistant, **Associate Professor, Dept. of Speech, Language and Hearing Sciences, Sri Ramachandra Institute of Higher Education and Research (Deemed to be University)



Introduction

- Children with delayed onset of early language skills raise the concern on making clinical-decisions regarding diagnosis and intervention.
- Late Talkers (LTs):**
 - Around 2 years with language delay
 - Fewer than 50 words; no 2-word utterances
 - Not secondary/other conditions
- Relationship between phonological development and lexical acquisition shows that LT with large phonetic inventories had larger lexicon than those with smaller phonetic inventories (Thal et al., 1995).
- Bidirectional relationship between phonological development and lexical acquisition (Stoel-Gammon, 2011).
- Phonological information might help in planning the direction of intervention for young children with language delays (Carson, Klee, Carson & Him, 2003).
- Also, research on phonological skills of Tamil-speaking children with normal language development and those with language delay are limited.

Aim and Objectives

Aim: To profile the phonological characteristics of Tamil-speaking LT and typically developing (TD) children using spontaneous utterances.

Specific objectives:

- To compare the size and nature of phonetic inventory
- To compare the percentage of vowels based on positions
- To compare the percentage of occurrence of different syllable structures

Method

- Participants:** 68 children at 24-28 months of chronological age
- 34 LT (19 males & 15 females) and 34 age and gender matched TD
- Tool:** Modified 3-Dimensional Language Acquisition Tool was used for language assessment

| LT | TD |
|--|--|
| Less than 50 words and no 2-word combinations | More than 50 words & 2-word combinations |
| Receptive-expressive or only expressive language delay | Age adequate receptive & expressive language |

- Groups did not differ significantly on age of assessment, gestation age at birth, birth weight, mother's education and socioeconomic status
- Children were engaged in unstructured play with toys for 30-40 minutes and the interaction was video recorded



Speech and language assessment in sound treated room

Phonological analysis

Unstructured play session was screened for 50 different spontaneous utterances

| TD | LT |
|---------------------------------------|---|
| Median of 53 utterances in 23 minutes | Median of 32 utterances in whole sample |

Transcription done using PHON software



Computer screen image of PHON software with display of audio and video sample and window for IPA transcription.

Phonological measures:

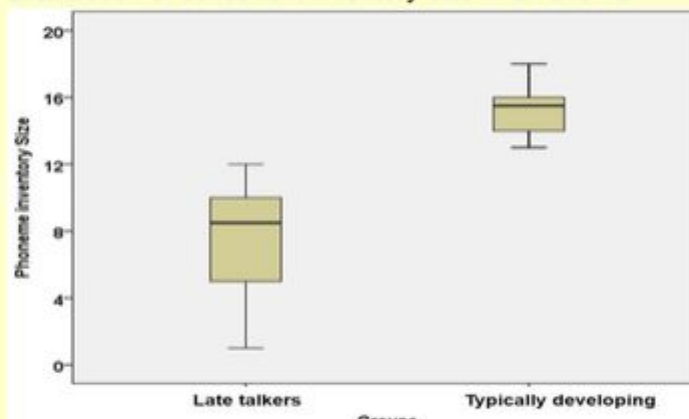
- Size of the inventory-** number of different consonants present in a child's inventory
- Percentage of occurrence of types of vowels based on vowel position** (front, mid, back)
- Percentage of occurrence of different syllable structures based on length and levels of syllable**
- Structures outlined by (Pharr, Ratner & Rescorla, 2000)
 - Level 1 structure eg: /a/, /m/ or /ha/, /ji/
 - Level 2 structures eg: /ta:/, /baba/, /ava/
 - Level 3 structures eg: /vena/, /kani/, /ka:di/
 - Level 4 Geminates eg: /amma:/, /bomma/

Inter-Rater Reliability: 94.93% of agreement; 6 out of 68 (total consonants sounds)

Statistical Analyses: *Whitney U test* to analyze difference in phonological measures between 2 groups

Results & Discussion

Distribution of consonant inventory size in LT and TD



Comparison of consonants as per proportion of children with different consonants inventories among LT and TD

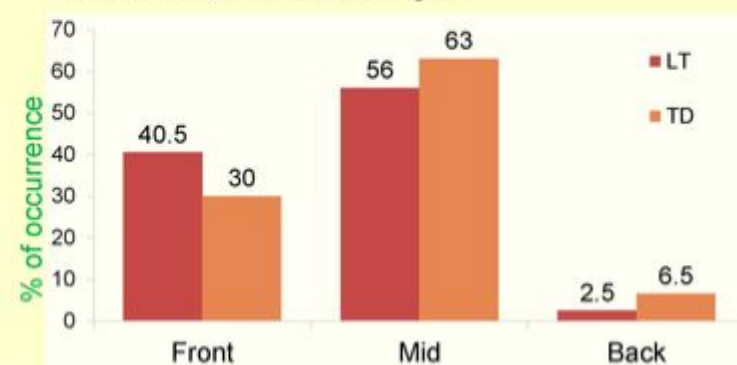
| % of children | Late Talkers | Typically Developing |
|---------------|---|--|
| >90 | /m/, /p/ | /p/, /b/, /V/, /d/, /t/, /k/, /m/, /v/, /d/, /n/ |
| 75 - 90 | | /g/, /l/ |
| 50 - 75 | /V/, /k/, /b/, /t/ | /s/, /ʃ/, /h/, /r/, /j/ |
| < 50 | /d/, /n/, /j/, /h/, /v/, /d/, /V/, /g/, /r/, /ʃ/, /s/ | /f/, /dʒ/, /j/, /r/, /r/ |

- Consonant inventory of LT was half the size of TD. Similar pattern was reported by Carson et al. (2003) among 2 years old children with and without language-delay children.

- LTs predominately produced stop /p/ and nasal /m/ whereas TD children produced stops, nasals and semivowels followed by liquids, fricatives and affricates.

- Results are in conjunction with early-8 consonant category by Shriberg (1993) except /j/, /h/ which are less frequent in Tamil.

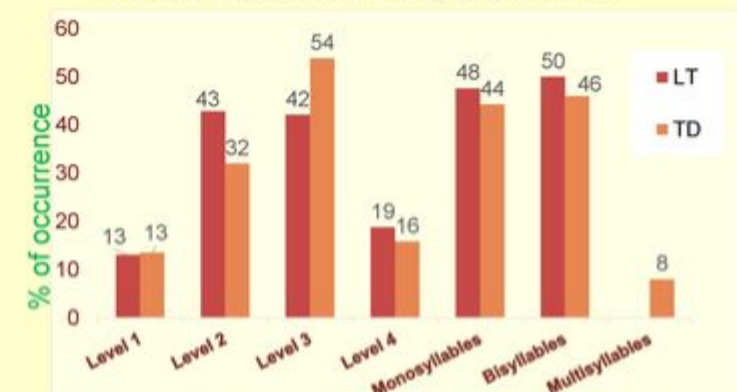
- The stops /t/, /k/ and /g/ and semivowel /v/ were observed in nearly all the TD children which was classified in middle-8 consonants in English.



Percentage of occurrence of vowel based on position

- Both groups produced the mid schwa vowel /i/ in final position of words, e.g., /kanni/

- LT demonstrated a higher proportion of front vowels and lower proportion of mid and back vowels



Percentage of occurrence of different syllable structures

- LTs had a higher proportion of level 1 and lower proportion of level 2 and level 3 syllable structure compared to TD. No difference in proportion of geminates.

- LT at younger ages around 24 months preferred simple syllable shapes including CV and V utterances (e.g., Williams & Elbert, 2003; Pharr, Ratner & Rescorla, 2000).

- Overall LT demonstrated a profile of a delayed rather than a deviant phonological pattern in comparison to TD concurrent with earlier findings of (Paul and Jennings, 1992) & Rescorla & Ratner (1996)

Conclusion & Future Directions

- This study contributed to database of phonetic characteristics of Tamil-speaking children with language delay & normal-Language at 2-years of age.

- Materials for early intervention may be geared to enhance repertoire along with developing early language skills

- Future studies may include follow-up of phonological development and overall language development among LT to elucidate the predictors of persistence of language delay in smaller subgroups among LTs

Acknowledgments: Authors thank the children and their families who participated in the study. Children were recruited from an ongoing project funded by DST-SERB in the Dept. of Speech Language & Hearing Sciences, SRIHER (DU). Authors thank the project staff for their support with data collection and analysis.

SECOND PRIZE



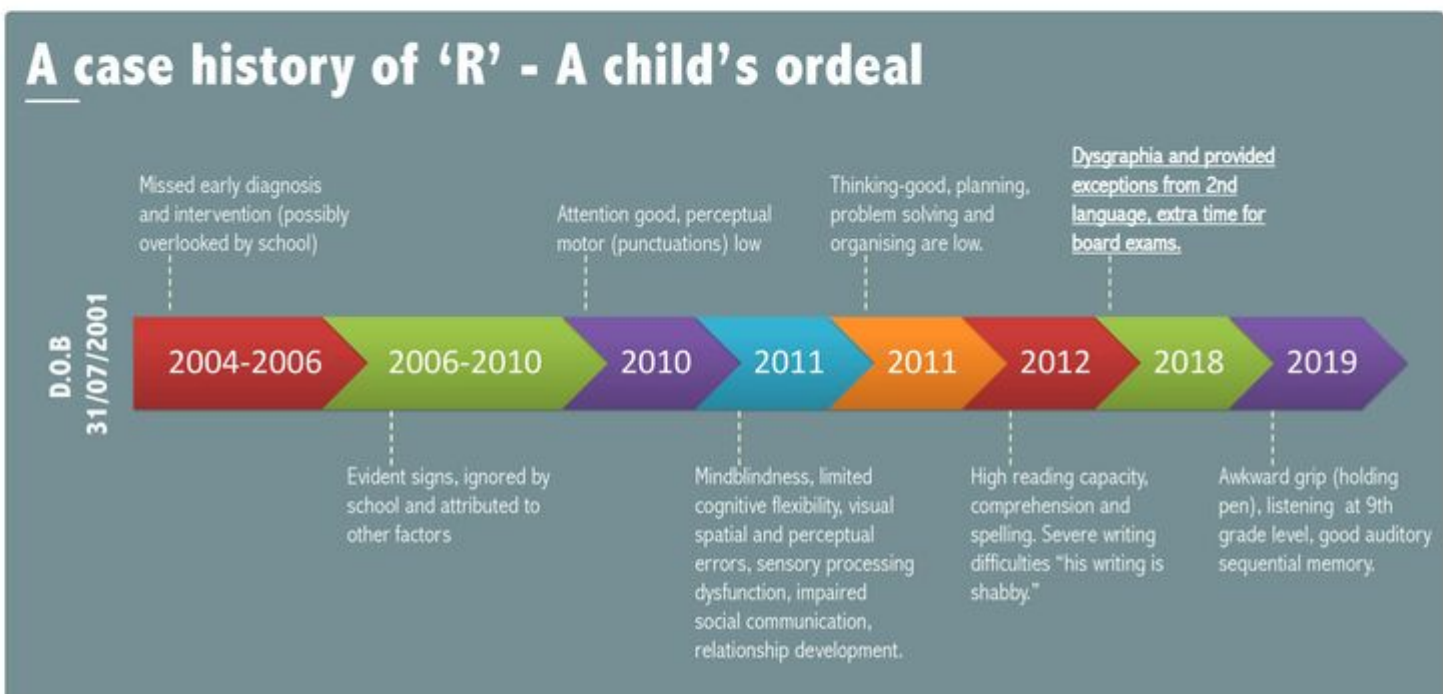
2ND ANNUAL NICE CONFERENCE ON PEDIATRIC NEURO REHABILITATION

SPECIFIC LEARNING DISORDER AND ITS EARLY DIAGNOSTICS AND INTERVENTION CONVENTIONS: AN ORDEAL

DR. SHARANYA ANIL, AKSHAYA P., APOORVA SRIRAM, MANISHA ROY
DIRECT, CHENNAI, INDIA

Why an ordeal?

Misdiagnosis - wrongly treating for ADHD
 Shadow diagnosis - ignorance and set beliefs
 Over diagnosis - E.g. "The child is not listening and is moving a lot... I think the child has the learning disability"



Overcoming the ordeal

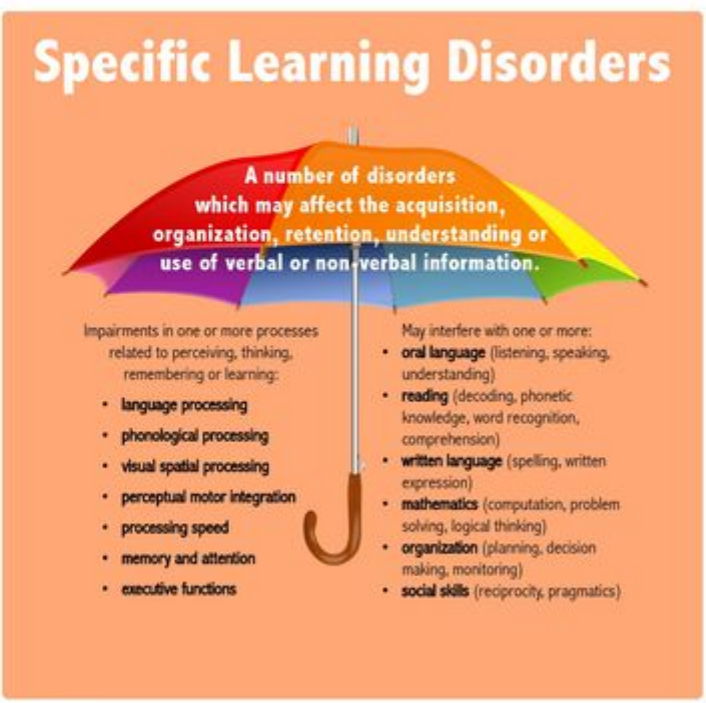
Alternative screening tool developed to recognize scientifically detailed characteristics of different forms of Specific Learning Disorders.
Tool: 6 FOLD (6 Functional Observations of LD)

How an ordeal?

- Ignorance and avoidance until child fails
- Lack of awareness among educators
- Experience in teaching does not make one an expert in assessing LD
- Persecution of child's identity - tarnishing self-image

6 FOLD

- Tool has two distinct parts
 1. early intervention (3-6) and
 2. primary years (7-9)
- This screening leads to a cross battery test involving:
 1. fluid and crystallised intelligence
 2. tests of oral and written language
- Tool is not a symptomatic analysis (E.g. not dyslexia just because B and D are reversed)
- Currently undergoing pilot



Myth

- b/d reversal is dyslexia
- dyslexia & dysgraphia are the same
- all types of LD is dyslexia,
- people with LD cannot learn, are not smart and have intellectual deficits

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THIRD PRIZE



2ND ANNUAL NICE CONFERENCE ON REHABILITATION 2019 "ASSESSMENTS IN EARLY INTERVENTION"

IMPLEMENTING A MODULE FOR TRAINING CAREGIVERS ON SPEECH AND LANGUAGE STIMULATION THROUGH TELE-PRACTICE: A FEASIBILITY STUDY

Jayakumudha R S, Preethy S, Vipula R, & Lakshmi Venkatesh



Department of Speech, Language & Hearing Sciences
Sri Ramachandra Institute of Higher Education and Research (Deemed to be University), Chennai

Introduction

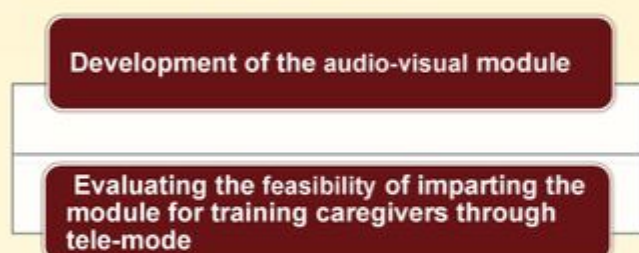
- Parent-education/training holds promise as a service delivery model for providing speech-language intervention services to young children identified with language delay or 'at-risk' for delay
- A brief, low-intensity training program for caregivers on speech-language stimulation and play development using a manual resulted in changes in parent's verbal interaction with their children (Rajesh & Venkatesh, 2019).
- However, several families report not being able to access early intervention services for improving communication development of their child due to various challenges including commuting with child, caring for another child at home etc.
- Tele-practice has demonstrated promise in successful delivery of training, coaching and/or parent-implemented intervention, which can be used to the advantage of the parents who are unable to come for face-to-face training programs (Meaden et al., 2017).

Aim of the study

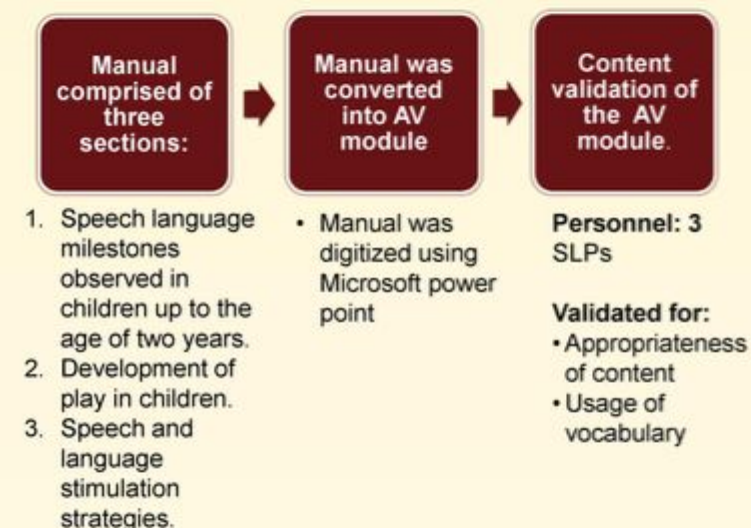
To explore the feasibility of implementing a module for training caregivers on speech-language stimulation through tele-practice.

Method

The study comprised of two phases:



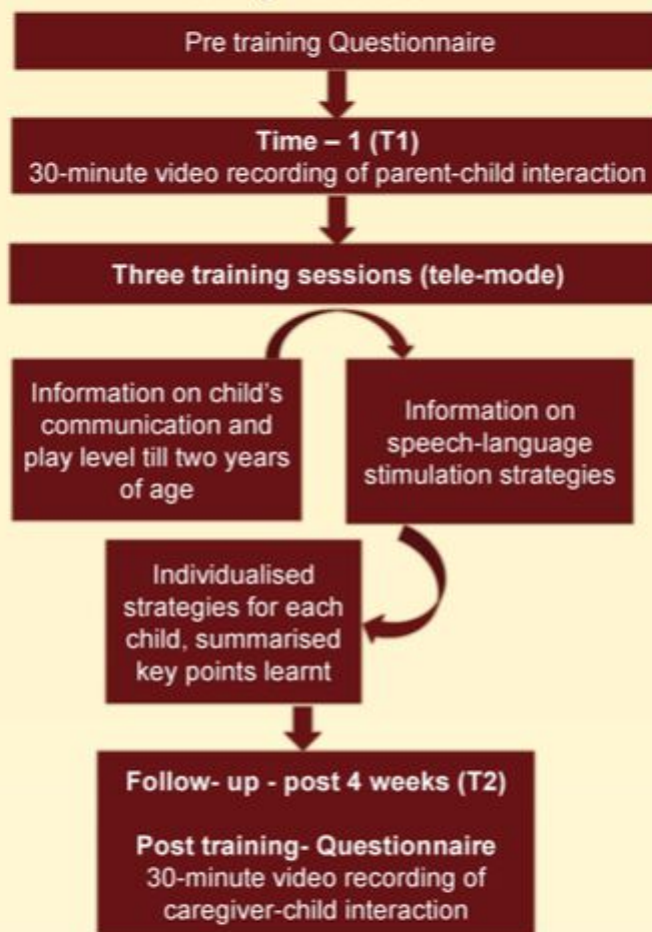
Phase 1:



Phase 2: Participants: 3 caregiver-child dyads

| | Child Age (Months)/ Sex | RLA & ELA (months) | Caregiver |
|----|-------------------------|--|-----------|
| C1 | 40/M | 14-16, scattered up to 18-20, 12-14 | Father |
| C2 | 20/M | 14-16, 11-12, scattered till 12-14 | Mother |
| C3 | 30/M | 12-14, scattered till 14-16, 11-12, scattered till 12-14 | Mother |

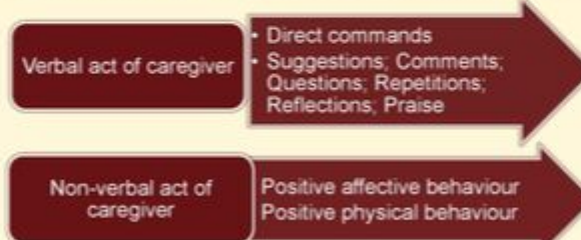
Study Protocol



Coding of parent behaviours

Middle 20-minutes of each video recorded at T1 and T2 were coded by an SLP.

Percentage of occurrence of each type of verbal behaviour was calculated as a function of overall verbalizations.



Results & Discussion

| Caregivers | Number of accurate responses (%) | |
|------------|----------------------------------|--------------------|
| | T1 (Pre training) | T2 (Post training) |
| C1 | 10 (50) | 17 (85) |
| C2 | 17 (85) | 18 (90) |
| C3 | 13 (65) | 18 (90) |

Table 2: Pre- and post training comparison of knowledge questionnaire for the three caregivers

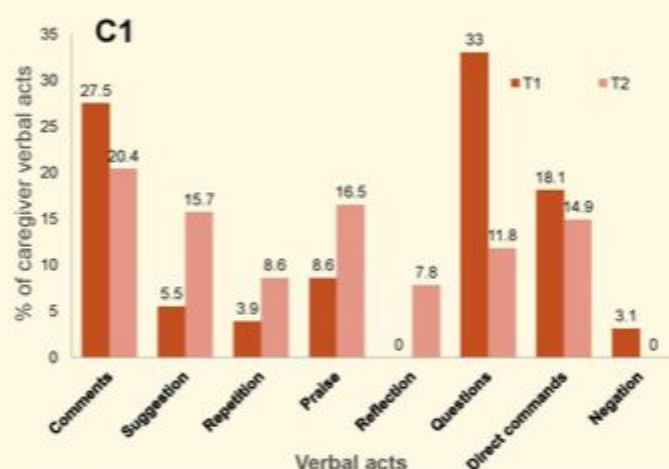


Fig 1. Percentage of caregiver's (C1) verbal behaviours across two time points

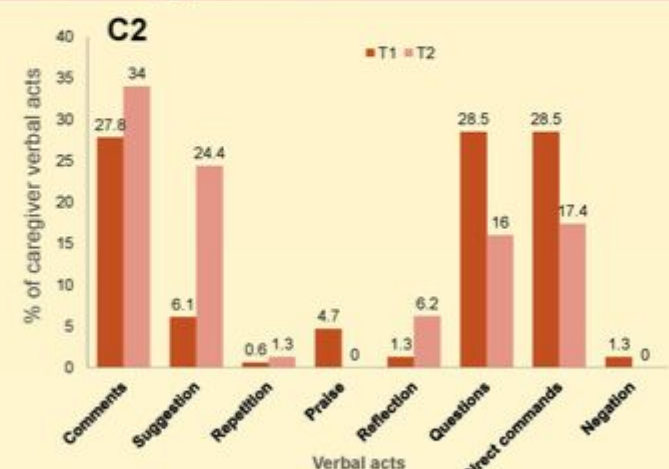


Fig 2. Percentage of caregiver's (C2) verbal behaviours across two time points

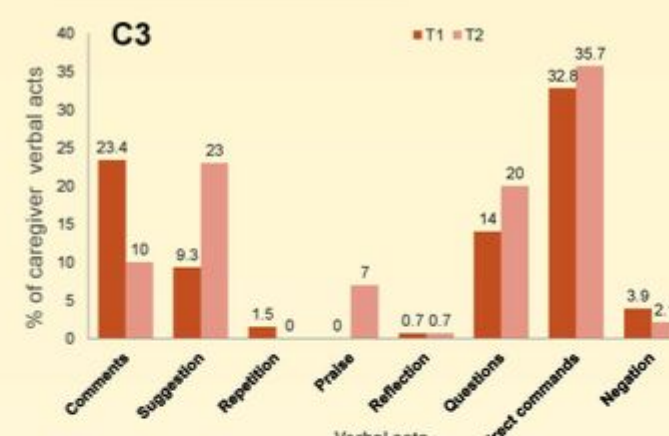


Fig 2. Percentage of caregiver's (C3) verbal behaviours across two time points



- Caregivers began identifying their child's language and play level. Also demonstrated more responsive verbal acts with their children and became less directive.
- Findings of the study agree with Rajesh and Venkatesh (2019), which implemented a similar parent- training program in the face-to-face mode.

- Tele-sessions were carried out using Vsee app. Internet speed was higher using Wifi (29 to 37 Mbps) followed by mobile data (197Kbps to 3.1 Mbps). This resulted in better video clarity and less distortion of voice.

- Caregiver of C1 & C2 reported a few changes in the child's communication and social behaviour during post training

Feedback from caregivers

- Reported positive experiences and satisfaction with the tele-training program.
- Caregivers felt more confident about identifying their child's level of communication and play behaviours with the help of the manual

Conclusion & Future Directions

- This study demonstrated the feasibility of implementing caregiver training on speech-language stimulation. Findings are promising for reaching out to several families who are unable to visit the therapy centres.
- Parent empowerment on providing speech-language stimulation may be considered the first step in intervention and can compliment regular intervention.
- Such programs can be initiated during the child's visits for developmental assessments for children with language delay.

Acknowledgments: Authors are grateful to the parents for their participation in the study. The study was carried out as part of Summer Research Fellowship 2018-19 of the first and second author while at the Dept. of SLHS, SRIHER (DU). Author's acknowledge the support of funding from SRIHER (DU).



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Pediatric Psychiatrist

Mind-Space Centre

NICE

VIDEO CAPSULE

PEDIATRICIAN THE PIVOT IN NEURODISABILITY CARE

Dr S.Subramanian

Director, NICE

With the growing incidence of disabilities, it is but natural that a pediatrician handles considerable caseload of kids with disability. Care for this group calls for intervention by multiple teams of professionals. The continuum of care means that a concerted effort is needed to better the outcomes. A general pediatrician is perceived to be a source of referral and the role of the pediatrician stops there. As the title for the article suggests, it is the other way around as the pediatrician has a vital role in coordinating the care for his disabled patients. In any healthcare there is a need for a generalist to provide an overarching perspective and charter the course of care. It is more so important as the pediatrician knows the child from infancy in most cases. Many a times, it is the regular wellness visits that throw clue to an issue of concern to the child. So this is the starting point and the role of the pediatrician becomes very important here as they are best suited to look at the needs of the child. A pediatrician knows the inherent risk factors both modifiable and non-modifiable right from neonatal stage. This gives them the edge to keep a tab on the child right from the start. Nutrition impacts the ideal growth to speed up the growth curve. It calls for an individualized, optimal advice. A pediatrician has a major role to play here apart from the nutritionist. Not just that, the other components of care including classification and stratification of needs like need for investigations like cardiac scans, hearing screening, managing drugs, handling metabolic disorders if any, are needed to preempt and prevent neuro development challenges. All these call for coordination and control of the various components. In this context, the general pediatrician's role becomes crucial.

Apart from the medical aspects, counseling and managing the family around the child becomes easier when the pediatrician is in the center of management. With the trust and confidence already established the family compliance can be better induced if the pediatrician takes charge of guiding and supporting the family. With the already established common pathway, it is but natural for a smooth progress to happen. With every available opportunity, the pediatrician also watches out for any new red flags, medical symptoms and thus ensures timely care.

The above calls for a continuous coordination between the rehab professionals and the general pediatrician. This will also reduce the load of follow-up on the rehab team and provide holistic care resulting in improved outcomes. Pediatricians are aptly positioned to coordinate the well-meaning efforts of all other professionals involved. It is time we all come together and evolve into a cohesive system of care that provides seamless care rather than compartmentalized attention.



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1. P Singh ; JAPI | Vol. 66 | January 2018

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ATNA - EVIDENCE AND CLINICAL FEASIBILITY

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College of Physiotherapy, Madhav
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In physical therapy examination, objective measures are preferred over subjective measures to quantify disease effect and treatment impact, hence they are termed as outcome measures. There are certain characteristics which are very unique and subjective, like pain assessment in the musculoskeletal evaluation. When it comes to neurological examination, tone becomes a subjective phenomenon and a great challenge for a therapist to quantify. In addition, if the subject is a neonate, the challenge necessitates fine art which is inherited only through experience. Like the Modified Ashworth Scale (MAS) that measures tone abnormalities in adults, ATNA is a famous tool in measuring tone among the neonatal population.

Target population - ATNA assesses the neurological development during the first year of life, evaluating the changes in tone (active and passive tone) and primitive reflexes in term and preterm infant (at corrected age). The original scale was developed for term infants. It is administered within the first ten days of life, thereby evaluating the maturation of the central nervous system. Necessary follow up is done in case of any dysfunction in the higher centres or in high-risk infants.

Test Construction and Standardization - The increasing amount of cerebral maturation that takes place during the last three months of fetal life leads to sequential changes in the muscle tone and reflexes. ATNA is a comprehensive scale that can measure all the changes in tone resulting due to the maturation of the nervous system. The scale consists predominantly of 2 items with 16 subsets that measure the neurological status of the infant. The first item is tone, which is further classified as passive muscle tone and active muscle tone.

There are 6 subsets of passive muscle tone (posture, heel to ear manoeuvre, popliteal angle, dorsiflexion angle of the foot, scarf sign, return to flexion of the forearm) and 4 subsets of active muscle tone (lower extremity, trunk, neck extensors, neck flexors). The second item is reflex which has 6 subsets (sucking, rooting, grasp, moro, crossed extension and automatic reflexes).

How reliable and valid is ATNA? - The majority of items in ATNA for term infants and birth- to six years showed excellent intra-examiner reliability, good inter observer reliability with a kappa coefficient of 0.76. Inter-observer reliability on passive tone was yielded to be 90%. The concurrent validity is fair (relation between ATNAT and GMs), Predictive validity is good (relation between ATNAT and ASQ with a sensitivity of 6 to 18% and a specificity 89 to 97%).

Advantages and disadvantages -

There are many developmental and neurobehavioral scales to assess motor, language, cognitive and social development of infants (0 - 1 year). Primitive reflexes, muscle tone, and postural responses are the major reflectors of nervous system maturation. These are not taken into consideration in the majority of the neuro-behavioral scales. ATNA is one among the few scales that assess primitive reflexes, active and passive muscle tone and postural responses or reaction in order to evaluate the maturation of the central nervous system. ATNAT is a concise neonatal examination to identify abnormal neurological sign which can be completed within 5 minutes with a simple 0, 1, and 2 scoring system. One has to say that the only disadvantage if at all with ATNA is the 'moderate' evidence for negative predictive validity.

To find out more about muscle tone assessments for children aged between 0 to 12 years, I would suggest a systematic review performed by Miran Goo and colleagues, published in February 2018.

To conclude, in the present day scenario where non-parametric scales are being equally valued like parametric scales, it is high time that all rehabilitation centres follow a team approach, wherein the treatment effects are objectively measured using quality outcome measures. This approach can pave the way for enhanced treatment delivery and the making of a healthy society.

BRAZELTON'S NEONATAL BEHAVIOURAL ASSESSMENT SCALE (NBAS)



**DR MALLIKAI
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Developmental Pediatrician

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Brazelton's Neonatal Behavioural Assessment Scale

Dr Mallikai Selvaraj

Developmental Pediatrician

Royal Care Superspeciality Hospital

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VIDEO CAPSULE

SCREEN TIME: HOW MUCH IS TOO MUCH? -A PATH FOR EARLY INTERVENTION

Bhairavi Prasanna V

Research Assistant, Oral Dynamics
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The most common subject of any home with young parents is the extent of gadget exposure faced by their kids. One must accept that smart devices have become an essential part of life, akin, to a light or a fan in a room and such devices are further going to inundate our lives in the coming not so distant future. As human beings, we have always embraced new “technologies” whole heartedly, sometimes without knowing fully the effects of the same on the overall society as such. The exposure of infants and toddlers to gadgets is one such area that has created diverse viewpoints across the world. There are parents that feel that gadget exposure is good and it points towards intelligent development in a concentrated manner. On the other hand, continuous research has clearly been describing the loss of social capabilities in kids brought up solely on a rich diet of gadgets without control over the contents. According to a study presented by the American Pediatric Academic Society in August 2015, one in seven children have a screen time exposure of up to an hour a day and as they age, this keeps increasing. The American Academy of Pediatrics (AAP) recommends¹ no screen time before two years of age. The child's brain develops rapidly in this critical period, and young children learn best by interacting with human communication, and not other external stimuli like screens. Having said that, it is nearly impossible to keep children (or adults) away from their gadgets these days. It is not an uncommon sight to see parents feeding children with the help of online cartoon/rhyme video series. A growing body of evidence indicates that physical activity and inter-personal interactions in early childhood has a durable result for young children to develop as healthy future adults. Positive early experiences are essential for a healthy brain and lead to improved thinking and learning, emotional regulation, improved executive functions, brain plasticity – the growth of new brain tissue, improved stress management, the ability to cope with anxiety and depressive symptoms and improved self-image. In a recent study² conducted in North America (replicated since across 50 countries), it is known that 76% of 3 to 4 year olds and 51% of 5 to 17 year olds are engaging in more screen time than what has been recommended by the Canadian guidelines for screen-based sedentary behaviors. Kids are ‘sitting too much’ and ‘moving too little’ and unable to reach their full potential.

Simply said, excessive screen time is lowering resilience, decreasing learning potential, increasing anxiety and adding to stress levels; much of the effects detected late.

As professionals involved in early developmental interventions of children, certain easy dissemination of information is essential and the same is captured as below:

What is screen time?

‘Screen time’ refers to time spent with any screen, including but not limited to smart phones, tablets, television, video games, computers or any wearable technology.

Don't kids learn through screen time?

There are no proven benefits of media exposure for young children as compared to proven developmental risks. Children below 2 years cannot process the 2/3-dimensional images³ and do not have a matured mechanism of conversion to reality. Without the human communicative interactions to convert these images into functional vocabulary, repetitive exposure to screen time may contribute towards rote memory.

Is this language delay/motor delay/communication issues /behavioral problem because of gadget exposure alone?

Madgan and colleagues (2019)⁴ in a series of research studies indicated that gadget exposure has a lasting effect on the child's developmental outcomes. The exposure leads kids on high risk of deficient development to have language related challenges; however, it may not be the sole cause.

Does this mean no videos at all? Is screen time bad?

It does not have to be so. While it is inevitable that kids will be exposed to gadgets, one needs to understand how to harness the same in a positive manner use it as a service tool. It is important as early intervention professionals to provide the right empathetic information that will serve to empower rather than create discomfort and doubt. We must remember that no parent wants to willfully harm their own child and only want to provide amenities that they themselves may not have had as kids.

So, How much of gadget exposure is too much?

There is no golden number. Right now we can only say that lesser the better. It is recommended that children below the age of 2 not be exposed to any screen time. Young children between the ages of 2- 5 years are not recommended more than one hour of screen time in a day with a choice of high quality educational content

(eg: animal planet videos) and young children beyond the age of 6 years get independent screen time with the content under parental supervision (American Medical Association Guidelines)

We can suggest, in our discussions to make it logical and easier to practice for parents, to use the 4M technique in providing supportive/sustainable habit formation regarding screen time.

Minimize: Consider variable exposure. Certain types of interactive contents are better compared to others eg: Interactive (Dora) / Natural content (Animal Planet). By displaying better content over a pre-decided interval of time, we are increasing the chance of learning and inquisitiveness, a sure sign of social development. In a study done between gadgets, books and toys, young children and parents had maximum benefits using books. We could advocate the use of videos wherein the parents and their child have to read together with a book to complete the entire experience, for eg., a documentary on tigers can lead to reading up about overall types and qualities of felines, etc.,. Literacy based outcomes promise to build cognition, future mindedness and literacy skills. Restricting or scheduling the screen time can be a great strategy for anticipation, mental control and a wide variety of executive functions mediated by our pre frontal cortex.

Mitigate: Watch along with child and expand what the child is seeing as an extension to the previous segment. Relate to the present and express excitement when the child matches or points and shows recognition of something. Also, reminiscing, i.e. talking about the experiences through short videos of previous parent-child interaction can be a great memory tool and a good way to strengthen the emotional and comprehension abilities. Commenting, pausing and redirection of what the child is seeing as compared to his/her reality is a great learning tool.

Mindful: Make a family media plan. Set healthy boundaries and make family screen routines around permissible dynamics. A suitable plan can be created by using this website:
<https://www.healthychildren.org/English/media/Pages/default.aspx>

Model: Pose technology as a tool to aid communication and make yourself responsible as a user of technology that your child can model his/her behaviors on. The more time you spend lost in the cyber world after your professional commitments are completed, the less of a say you get to have on what your kid is watching and how it is affecting them. Respond to suggestions, discuss possibilities and give the kids a choice from your pre-made viewing list for them – this way they will feel a sense of control as well as responsibility.

In simple terms, use books to extend positive interactions. Declare boundaries for use of gadgets. Choose content wisely. Be what you want your child to follow.

Suggested Resources:

An excellent resource for finding educational apps and television programming is:

www.commonsemmedia.org

This company reviews a wide variety of apps, shows and movies and lets you know which age group they are intended for, and ranks them based on their quality and their content.

<https://www.screenagersmovie.com/> provides a unique platform for parental navigation in older children and our own understanding.

To summarize, the current generation of kids may not have the cognitive and social ability that their parents were able to develop while growing up. The easy blame is excessive screen time exposure and draconian measures to cut off the same completely. While unregulated screen time exposure is definitely proven to be detrimental, a positive use of the same can be achieved with thoughtful application and responsive actions. In our hastened lifestyles, we have forgotten the simple and lasting positive long term benefits of play, limited toys and creativity from boredom. Let's create avenues for our children to spend meaningful time by themselves and enjoy entertaining themselves without the constant need to be entertained. It is equally important as a team member in early intervention to support and encourage parents and to ask the right questions and provide suggestions without criticism about their child's screen time. We all need to acknowledge that navigating a child through this digital world is tricky but with enough time spent with the child and using technology as an aid, we can make strides in the right direction.

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W FOR WELL-BEING!: MENTAL HEALTH, YOUNG PEOPLE AND THE IMPORTANCE OF EARLY INTERVENTION.

Ahana Ghosh

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My conversations with young people in the past year has been an exciting space for me to lend a patient ear and learn from them about their lives and what matters to them, things a textbook could never teach me. And while I have sat, wide-eyed, listening to their stories about their dreams, there have also been far too many stories about how they are constantly finding themselves being pitted against one another and being stretched to the seams by forces of Performance, Perfection and Competition, to name a few. These forces, while pushing some children to grow, also makes their identities vulnerable to feelings of failure, anger that is often turned inwards and the voice that tells them that they “aren’t good enough”. At Ummeed, we have had the privilege of having a space that allows for young people and their families to tone down those voices and put up a tough fight against them. They discover different skills - emotional awareness, communication, problem solving- along with a sound awareness of their own agency and expertise, that they take back with them into their daily lives.

While I have been having these conversations with them, the mental health statistics in India and in the global context has been narrating a similar tale and urging people to take prompt action. The World Health Organization states that 10-20% of young people (children and adolescents) in the world experience mental health concerns. India currently has the largest youth dividend, indicating a large chunk of the country’s population constitutes of young people (Census, 2011). However, the National Mental Health Survey (NMHS) conducted by NIMHANS reported that the overall prevalence of any mental health concerns among adolescents between the ages of 13 years and 17 years is 7.3% with a similar distribution between males and females, with anxiety and mood disorders being the most prevalent concerns.

Suicidal risk is 0.50% among children below the age of 14 years and 1.3% among adolescents within the age or 13 years to 17 years (NIMHANS, 2016).

The NMHS also identified that while there are significant mental health concerns for children and adolescents in our country, the treatment gap has also been massive (84.5%, overall), indicating that mental health concerns are not receiving the attention that they require. Identified barriers to the treatment gap have been low perceived need for intervention due to limited awareness, socio-cultural beliefs, values and stigma. The treatment gap is also influenced greatly by high out-of-pocket costs and the poor quality of care associated with current mental health services in the country. Most often, children’s and adolescents’ mental health problems are not recognized or diagnosed properly, and available effective treatment is not employed (Ronad et al, 2017).

During my training as a counselling psychologist, we frequently revisited the idea of prevention as a guiding principle for the work that we do with young people. And the more we unpacked, the more it made sense. Starting the conversation early and equipping children with the skills to manage problems can help young people circumvent the possibility of allowing mental health concerns to take over their lives and impact overall development, education and their potential to live fulfilling and worthwhile lives. The role of family and community plays a crucial role in this regard too, which is why they deserve to be included in the intervention process, as much any mental health professional. A study conducted by Harvard University "Resilience", (2019) echoed these ideas through their findings that state that “combination of supportive relationships, adaptive skill-building, and positive experiences is the foundation of resilience."

Adding in voices of Acceptance, Support and Balance to a child’s life from a very early age has never been more important. Reaching out to people to work against grains of stigma, addressing the treatment gap and ensuring an early head-start to mental health conversation not only with children, but also with parents, neighborhoods and schools has to be the first step of many towards ensuring the youth dividend of our country have a decent shot at living the lives they aspire to live. Early intervention is necessary in our collective attempts to consciously create possibilities for any child to grow in a space that nurtures their well-being, celebrates their efforts more than “successes” and lead a meaningful life.



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**“நல்ல உணவே நல்ல உணர்வைத் தரும்
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நல்ல உறவே நல்ல உலகைத் தரும்”**

ஸ்ரீ சாய்ராம் கேட்டர்ஸ் தனது 25 ஆண்டுக்கால மக்கள் சேவையில் சிறப்பாக பணியாற்றி வருகிறது.

சுகாதாரமான உணவு, நல்ல உபசரிப்பு ,சிறந்த சேவை இதுவே எங்களது தாரக மந்திரம். தங்களது திருமணத்திற்கு “கோலம் முதல் கட்டு சாதம்” வரை சிறப்பாக செய்து தருகிறோம்

உங்களின் ஆதரவு எங்களின் வளர்ச்சி மேலும் சஷ்யாப்த பூர்த்தி, சதாபிஷேகம் போன்ற நிகழ்ச்சிகளுக்கு சிறப்பு சலுகை தருகிறோம்.

இவண்,

மக்களின் அன்பான சேவையில்

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EARLY INTERVENTION AND TECHNOLOGY: RESEARCH PERSPECTIVE

Aishwarya Srinivasan

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Mental health has occupied various spaces in the society over a large period of time – from having been something considered mostly unknown (and unknowable) to arguably becoming one of the most pressing requirements of modern society. This need for understanding how mental health can be facilitated in better and wider contexts has led to a greater amount of research going into the area in the last two decades. Once ignored as merely being inside someone's head, the industry has now expanded to encapsulate a large section of public consciousness and conversation.

While reports suggest that one in five Americans (20%) suffer from some form of mental health disorders, the numbers for India are equally startling, with estimates between 7.5% and 15-20%, depending on the report and the sample taken into consideration. What is even more worrying, as organizations such as The Banyan have noted, is that there exists a treatment gap of almost 90% in the context of accessibility of mental health services needed in order to address the problem.

The mental health industry in India is growing at an annual rate of 23%. Elsewhere, the largest challenge faced by the mental health industry is that of diagnosis and early support, which become the largest part of the spending. From the perspective of research, then, it becomes important to note how mental health services can be made easily available, and in an accessible manner to ensure that the services reach those who truly need them – in the time of their need. This awareness is crucial from the perspective of early intervention in the case of mental health too. Children and youth benefit the most from early intervention in this context, as their lives are impacted for longer durations of time as a consequence of these disturbances. The opportunity to improve long-term physical, emotional, and health outcomes, in addition to the social context, is something that should be explored. Mitigating several risk factors associated with mental health has the potential to lead to a society where inclusive spaces are the norm and not the exception. In the context of understanding the role of technology in facilitating mental health services, past work has focused on providing mental health services online. For instance, facilitation of therapeutic services online was among the first to emerge that allowed people who previously had no access to gain the means to avail these services. This helps cut down on the costs required to administer these services, in addition to easing the time-crunch associated with help-seeking behavior.

While there is a recognition that they are not sufficient on their own, professionals in the field also recognize the role technology can play in streamlining processes associated with intervention, slotting them as an effective mediator in the process. Since this happened over a decade ago, numerous platforms have emerged that provide different degrees of services in the mental health context. In addition to teleconferencing and video calling, interventions designed around cognitive behavioral therapy (among other therapeutic modalities) have emerged in order to promote recovery in individuals. In addition to this, mobile health platforms have become a place for users to better understand their condition, as well as learn how to manage symptoms – either personally, or through the period of waiting. The role of early intervention technology then becomes important at several levels. Through monitoring functioning in real time, early intervention can be facilitated in an effective manner.

In this context, we are working with academicians, physicians, and mental health practitioners in order to identify what gaps in early intervention in the context of mental health can be filled by technology. Our project works in the space of mental health to create solutions that will help fill the awareness and care gap that currently exists in the industry. In addition to this, research is also going into communication, to identify what is most likely to translate into help-seeking behavior. Through equipping individuals with awareness, affordability, and accessibility – research, technology, and early intervention can go hand-in-hand in order to address the current demand of mental health services that the country is facing.

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UNDERSTANDING THE IMPORTANCE OF EARLY INTERVENTION IN INDIVIDUALS WITH CEREBRAL-PALSY (CP) BY COMPARING TWO CHILDREN WITH CP

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The International Workshop on Definition and Classification of Cerebral Palsy held in 2004 defined 'Cerebral Palsy (CP) as a group of disorders of the development of movement and posture, causing activity limitation, that are attributed to non-progressive disturbances that occurred in the developing foetus or infant brain'. Individuals with CP might have associated conditions viz., seizures, visual or hearing impairments, behavioral, communicative and/or cognitive deficits. Speech skills are often observed to be impaired in individuals with CP. Based on the intervention provided and severity of the disorder, individuals may adopt verbal and/or non-verbal modes of communication. However, a plethora of research has proven that early intervention for individuals with CP will help them to integrate better into the community.

Two children with CP with ongoing speech therapy interventions have been compared to understand the importance of early intervention in individuals with CP.

| DETAILS | CHILD A | CHILD B |
|------------------------------|--|--|
| Demographic details | 12 years old, male with spastic cerebral palsy | 7 years old, female with spastic cerebral palsy |
| Early intervention | Intervention began at 4.5 years of age. No early intervention was provided. | Intervention began close to 2 years of age. Early intervention was provided. |
| Current Physiotherapy | The child can lift his limbs and sit with support. The child has not achieved standing and walking. The child currently attends two sessions of physiotherapy per week. | The child can walk without support. The child has good hand control for the desired need. The child currently attends physiotherapy for stability and balance during walking. |
| Current Occupational Therapy | The child can reach the object of interest. However, gross and fine motor skills have not been achieved. The child is in level 6 of attention according to Reynell's scale. | The child has achieved gross and fine motor skills. Pincer grasp is present, and the child can write. The child is in level 6 of attention according to Reynell's scale. |
| Current Speech Therapy | Speech therapy was initiated at 6 years of age. The child received speech therapy intermittently till 8 years of age. No further intervention was given till 11 years of age. Receptive language: The child is able to understand all 'Wh' questions (who, when, why, what, how), cause and effect relationship, association, categorization, humour and is able to do three step sequencing. Expressive language: The child expresses predominantly through vocalizations. The SLP initiated app based AAC for the child. The child is able to indicate his needs through AAC. | Speech therapy was initiated at 2 years of age. Parents were counselled at the start. Home-based training was also provided. Receptive language: The child is able to understand 'Wh' questions (who, what, when, where, how), cause and effect relationship, association, categorization, sequence of events. Expressive language: The child currently expresses needs verbally. The child is able to form sentences for a narration task. The SLP is working on responding to 'why' questions and sequencing skills. |
| School | The child is currently not enrolled in a school. No special education received. | The child is currently enrolled in a special school. |

This helps us understand why early intervention for individuals with CP is crucial in helping them integrate better in their community. It aids the child in/to:

- Express needs verbally
- Improve fine and gross motor skills needed for writing
- Improve motor function for better mobility
- Inclusive education
- Integrate better into the community

However, the integration and improvements mentioned above also depend on the type, severity of disability, parental participation and cognitive abilities of the individual.

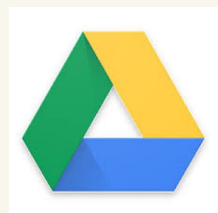
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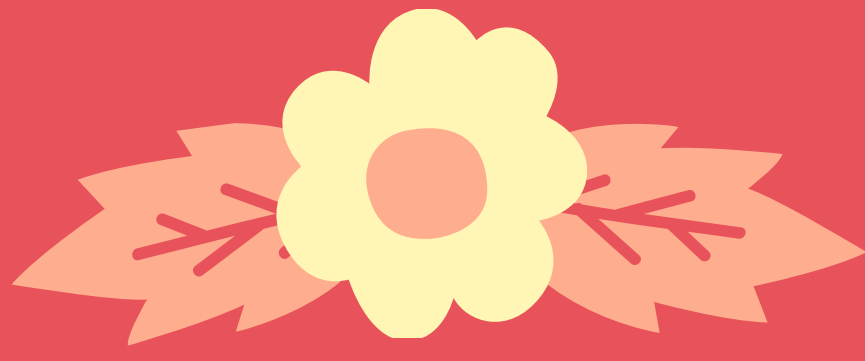


**THE GATHERING:
CAPTURED THRU
LENS**

**MORE SNAPS ON THIS
LINK**

**NCORE 2019 SNAPS-
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a warm note to say

THANK YOU!

TEAM NCORE





NICE

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AUTCON 2020

Stay Updated on Autism

MARCH 2020

DETAILS WILL BE RELEASED SOON

**SEE YOU
THERE**