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## Centre for Advanced Research and Excellence in Autism and Developmental Disorders

St.John's National Academy of Health Sciences



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### *Patron*

Rev. Dr. Paul Parathazham  
Director, SJNAHS

### *Advisors*

#### *National:*

Prof. Shoba Srinath  
Prof. Swarna Rekha-Bhatt  
Prof. Dominic Misquith

#### *International*

Prof. Lonnie Zwaigenbaum

### *Core Team:*

Dr. M.V.Ashok (Head, CAREADD)  
Dr. Vijaya Raman  
(Research Lead - Behavioural Sciences)  
Dr. G.R.K. Sharma  
(Research Lead - Neurosciences)  
Dr. Aruna Korlimarla  
(Research Lead - Genetics)  
Dr. Shyam Rajagopalan  
(Research Lead - Computational Sciences)

### *Research Associate*

Dr. Sowmyashree Kaku

### *Research Staff*

Ms. Angelin Grace R.  
(Manager - Administration)  
Ms. Roopa N. (Manager - Data)  
Ms. Srividhya D.  
(Senior Research Fellow - Genetics)  
Ms. Bhavana Kumaraswamy  
(Senior Research Fellow - Clinical Psychology)  
Ms. Anjali Mathew  
(Senior Research Fellow - Clinical Psychology)  
Ms. Priyanka Srikantapuram  
(Junior Research Fellow - Psychology)  
Ms. Manjula W. J.  
(Nursing Research Fellow)  
Sandesh P. (Administrative Assistant)  
Veronica Mary (Housekeeping)

### *ComDEALL @ CARE-ADD*

#### *Early Intervention Therapists*

Ms. Supreetha Santhosh  
Ms. Satyalakshmi P. S.  
Ms. Athira N. D.

### *Consultants*

Dr. Vanitha S. Rao  
(Special Education & Neurocognition)  
Ms. Nirupama Srikanth  
(ComDEALL Early Intervention Program)

## The COVID Survey:

### Impact of Lockdown on Mental Health

The COVID-19 pandemic has greatly impacted all our lives.

When India was in a nationwide lockdown in March-April 2020, CARE ADD conducted an online survey with families of individuals with Autism Spectrum Disorder (ASD) to understand the impact of lockdown on mental health of both the individuals with ASD and their families.

The survey was a cross-sectional study conducted using an anonymous online questionnaire which was disseminated to families registered with CARE ADD and collaborating centres (Shrishti Special Academy, Academy for Severe Handicaps and Autism (ASHA), Hope Centre for Autism and Sunshine Autism Trust) that support families of individuals with ASD.

153 families participated in the survey.

Of these, 49% of individuals with ASD had poor understanding about the lockdown, 54% had increased screen time and 34% had new onset behavioural changes. Only 40% of them received online therapy among which 85% found them useful. About 55% of parents reported to have decreased interest and pleasure in doing daily activities and 43% of them felt depressed and hopeless. Positive changes were reported by 80% of the families, in the form of better progress in speech, language skills and participation in household chores.

The survey showed that increasing access to online therapies, implementing home-based therapy techniques using play, exercise and music for patients; maintaining a routine, providing counselling, education and supportive sessions, workshops, resource materials for families by therapists wherever feasible, could alleviate burden and improve coping skills of both individuals with ASD and family members.

CARE ADD will now conduct a second survey to understand the long term impact of the ongoing pandemic.

To learn more about the survey please write to [info.careadd@stjohns.in](mailto:info.careadd@stjohns.in).

## Inauguration of EEG Facility at CARE ADD



***Inauguration of EEG Facility***

Rev.Fr. Jesudoss Rajamanickam, Associate Director - Finance, St. John's Medical College Hospital and Rev. Fr. Pradeep Kumar Samad, Associate Director.

The 64 channel Geodesic EEG equipment specifically designed for pediatric patients also supports long-term monitoring,. This EEG system offers superior whole-head coverage and the Hydrocel Geodesic Sensor Net used here has been widely adopted by the neuroscience research community compared to the traditional caps.

This net is easy to use, comfortable and produces high resolution data. It is available in 3 sizes – head circumference 44-47 cm, 47-51 cm and 51-54 cm.

In the interest of understanding how Autism and related conditions develop, CARE ADD seeks to conduct foundational research that will help uncover the multitude of complex relationships between genetics, brain circuitry and behaviour.

To explore brain circuitry, a state-of-the-art EEG facility was inaugurated at the Centre on 10th August, 2020 by



***EEG Machine at CARE ADD***

This procedure does not require sedation or use of restraints for infants and children.

To date, 32 children have participated in the EEG research at CARE ADD.

CARE ADD is currently recruiting families to participate in this research.

## OPEN Symposium

CARE ADD is currently involved in research of the placenta from genetic, obstetric, epigenetic and clinical perspectives. To understand how these factors come together and contribute to the neurodevelopment and evolution of Autism, CARE ADD conducted an Autism Special Interest Virtual Symposium.



### **Online interactions at the OPEN Symposium**

mechanisms which play a role, understanding strengths and challenges of conducting a longitudinal study based on the OPEN themes, and presenting data from the CARE ADD obstetric database.

The learning from the symposium helped us formulate innovative research ideas

The OPEN (Obstetrics, Placenta, Epigenetics & Neurodevelopment) Autism Symposium was hosted by CARE ADD on 17th and 18th of July 2020.

A team of 25 experts speakers from across India including 2 speakers from North America were part of this symposium.

Around 100 delegates from around the world participated enthusiastically in this online programme.

Sessions of the symposium included topics exploring pediatrics, obstetrics and pathology perspectives, genetic and epigenetic

### **Key Learnings from OPEN Symposium**

This symposium helped understand the potential strength and challenges in setting up the placental cohort for conducting various research avenues.

Placenta could be a model to explore potential biomarkers that mediate early brain development.

Epigenetic biomarkers in placenta that regulate the gene expression could be predisposing for Autism spectrum Disorder

## **Learning is an Ongoing Process for the CARE ADD Team**

Dr. Sowmyashree, Dr. Suhas Chandran and Ms. Bhavana Kumaraswamy participated and got certified in the PEERS for Adolescents module conducted by the PEERS clinic UCLA, USA. This module was designed for social skills training of adolescents with autism and other disorders.

Using the skills learnt at the training to design and develop an adolescent and adult intervention program for the patients and families at CARE ADD

## CARE ADD at INSAR

### 2020 Virtual Annual Meeting

Team CARE-ADD was selected to make a Special Interest Group presentation on 21st August 2020 as part of the INSAR 2020 Virtual Annual Meeting.

The SIG had around 40 international participants interested in our theme - OPEN Autism.

Dr.Ashok Mysore laid the framework for discussion of the OPEN theme by describing its evolution, the need for research in these domains and the potential it holds.

There were 4 presentations - 'Clinical Perspective on Obstetric Risk Factors and Autism' by Dr.Sowmyashree Kaku, 'Pathologist Perspective on Predictions from Placenta' by Dr. Gayathri Ravikumar, 'Geneticist Perspective on Placental Epigenetics' by Dr.Aruna Korlimarla and 'Placental Trophoblastic Inclusions as a Marker of Autism' by Dr. Harvey Kliman (USA).

Dr.Sowmyashree summarized findings from the OPEN Symposium conducted by CAREADD in July 2020

'Obstetrics and Placenta - The Predictors', 'Placenta and Epigenetics - The Mediators' and 'Epigenetics and neurodevelopment - The Outcomes'- were the topics for small group discussions in the 3 breakout rooms

The SIG concluded with a panel discussion and Q & A session with Dr. Ashok and Dr.Lonnie Zwaigenbaum (Canada). They discussed factors to be considered in establishing a longitudinal prenatal to infancy network for research in the OPEN theme. The confounders/challenges from a LMIC vs HIC perspective and the ethical concerns were also discussed.

### Research Corner

Autism research is being conducted all over the world, and it is important to know who is doing what, where, and how. By spotlighting a research group, lab, or consortium, we hope to foster more (inter)national collaborations, research stays, sharing of methods and data, and internationalization of doctoral and postdoctoral positions. One of INSAR's Strategic Initiatives is "to represent and serve a diverse and global community."

#### Our pick for this edition:



The [Centre for Advanced Research and Excellence in Autism and Developmental Disorders \(CARE-ADD\)](#) at St. John's National Academy of Health Sciences (Bangalore, India) is a multidisciplinary clinic-cum-research centre established with philanthropic support. It's goals are to perform state-of-the-art research towards tracing the biological underpinnings of autism and related conditions, while exploring cost-effective interventions. In addition to formal multidisciplinary clinical services, the Centre offers research and training tracks with a focus on community engagement.

#### Research Track:

- Design computational models (using dyadic play-behaviours) for screening and diagnosis of autism in infants and toddlers and scale them into public health settings
- Explore brain circuitry with longitudinal EEG studies in children at risk for autism
- Examine neuro-developmental outcomes and placental molecular associations
- Build a large genotypic data base (trios) and make it available for research groups globally

#### Training & Community Track:

- Scale screening, diagnostic, and intervention services to remote regions across the state in public health centres
- Developing productive routines for youth with autism
- Involve families in prioritizing research and service goals of CARE-ADD

The Centre plans to build a clinical database/ bio-repository representative of autism in India and use fellowship & collaborative models to further research.

*Sparked your interest? Sure, it did! There might be a future PhD opening, postdoc position, or collaboration in it for you, so be sure to check their website or write to [sowmyashree.careadd@stjohns.in](mailto:sowmyashree.careadd@stjohns.in)!*



### CARE ADD in the INSAR Newsletter