## The Global State of Early Child Development: From Epidemiology to Interventions.

M Fernandes<sup>1, 2</sup>, K Blackett<sup>3</sup>, MM Crespo-Llado<sup>4</sup>, C Lau<sup>5</sup>, A Stevens<sup>6</sup>, A Richards<sup>7</sup>, S Bhopal<sup>8,9</sup>, D Devakumar<sup>10</sup>, H Brotherton<sup>11</sup> and M Nielsen<sup>12</sup>, <sup>13</sup>.

<sup>1</sup>MRC Lifecourse Epidemiology Centre and Human Development & Health Academic Unit, Faculty of Medicine, University of Southampton, Southampton, UK

<sup>2</sup>Nuffield Department of Women's & Reproductive Health, University of Oxford, Oxford, OX3 9DU, UK

<sup>3</sup>Department of Neonatology, Bradford Teaching Hospital NHS Foundation Trust, Bradford, UK

<sup>4</sup>Department of Women's and Children's Health, Institute of Life Course & Medical Sciences, University of Liverpool, Liverpool, UK

<sup>5</sup>Department of Paediatrics, Royal Hospital for Children and Young People, Edinburgh, UK

<sup>6</sup>The School of Public Health, Health Education England Yorkshire & the Humber, Leeds, UK

<sup>7</sup>Cardiff University School of Medicine, Cardiff, UK

<sup>8</sup>Population Health Sciences Institute, Newcastle University, Newcastle, UK

<sup>9</sup>Great North Children's Hospital, Newcastle upon Tyne, UK

<sup>10</sup>Institute for Global Health, University College London, UK

<sup>11</sup>Faculty of Epidemiology and Population Health, London School of Hygiene & Tropical Medicine, UK

<sup>12</sup>Institute of Infection, Veterinary & Ecological Sciences, University of Liverpool, Liverpool, UK

<sup>13</sup>Malawi-Liverpool-Wellcome Trust Clinical Research Facility, Blantyre, Malawi

## Correspondence to:

Dr Michelle Fernandes,

MRC Lifecourse Epidemiology Centre & Human Development and Health Academic Unit, Faculty of Medicine, University of Southampton, Southampton SO16 6YD, UK

E: m.c.fernandes@soton.ac.uk

Globally, one in five children are at risk of not achieving their developmental potential by their 5<sup>th</sup> birthday<sup>1</sup>. Moreover, the COVID-19 pandemic has resulted in considerable set back in previous progress in early child development (ECD)<sup>2</sup>. The International Child Health Group is a special interest group of the Royal College of Paediatrics and Child Health; its 2021 conference sought to answer the question of whether the global state ECD is a silent emergency, a unique opportunity, or perhaps both <sup>3</sup>. The conference featured keynote lectures on themes spanning the epidemiology of ECD; the effects of toxic stress on early brain development; the application of translational neuroscience to identifying targets for early intervention; community-based parent-driven interventions to rescue neurocognition in atrisk groups; the economic benefits of early investment into ECD; and the effects of the COVID-19 pandemic on family life and child development. Presentations were delivered by leading global experts based across 12 countries, including representatives from UNICEF and the WHO alongside

clinicians, non-governmental organisations (NGOs), field workers, parents and carers, all involved in the everyday reality of ECD. Abstracts for the conference's keynote lectures are published as a supplement to (https://adc.bmj. com/content/107/Suppl\_1).

To promote engagement with clinical, academic and public health communities globally, registration fees were waived for all participants from low- and middle-income countries. Additionally, the conference adopted a hybrid model with over 250 participants from 43 countries attending sessions virtually, and small socially distanced groups of 10 attendees attending from the conference hubs in Bratislava, Slovakia and Ibadan, Nigeria.

The conference's overall message was cautiously optimistic. While ECD remains a global challenge, especially in the context of rapidly changing societies, early childhood is indeed an opportunistic window of brain plasticity during which (1) similarities in brain growth and development between populations greatly outweigh the differences between them<sup>4</sup> and (2) seemingly simple and potentially scalable interventions, such as "Eat Play Love" and "Responsive Parenting", can have beneficial and enduring effects on the life course trajectories of children at risk. The event concluded with unanimous consensus between speakers and participants that investment into ECD is imperative to enable future generations to achieve their full potential.

The conference hosted a Creative Arts competition on the theme of international ECD featuring photography, videos, paintings, poetry and other artistic submissions from across the world. The prize-winning entry by the NGO CESTA VON (Figure 1) was entitled "Hope" and featured CESTA VON's ongoing work with mothers from disadvantaged Roma communities in Eastern and Central Slovakia to improve the neurocognitive and educational outcomes of their children through a parent-child brain stimulation intervention.

## References:

<sup>1</sup>Richter LM, Daelmans B, Lombardi J, Heymann J, Boo FL, Behrman JR, Lu C, Lucas JE, Perez-Escamilla R, Dua T, Bhutta ZA. Investing in the foundation of sustainable development: pathways to scale up for early childhood development. The lancet. 2017 Jan 7;389(10064):103-18. 
<sup>2</sup>Proulx K, Lenzi-Weisbecker R, Rachel R, Hackett K, Cavallera V, Daelmans B, Dua T. Responsive caregiving, opportunities for early learning, and children's safety and security during COVID-19: A rapid review. medRxiv. 2021 Jan 1.

<sup>3</sup>Chan M, Lake A, Hansen K. The early years: silent emergency or unique opportunity?. The Lancet. 2017 Jan 7;389(10064):11-3.

<sup>4</sup>Villar J, Fernandes M, Purwar M, Staines-Urias E, Di Nicola P, Ismail LC, Ochieng R, Barros F, Albernaz E, Victora C, Kunnawar N.

Neurodevelopmental milestones and associated behaviours are similar among healthy children across diverse geographical locations. Nature communications. 2019 Jan 30;10(1):1-0.