



THE AGA KHAN UNIVERSITY  
INSTITUTE FOR HUMAN DEVELOPMENT

# Institute for Human Development International Conference

Unlocking Human Potential for Optimal  
Development across the Lifespan: A decade  
of evidence, innovation, and policy impact

## CONFERENCE PROGRAMME AND ABSTRACTS

June 8 -10, 2026 | Nairobi, Kenya

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information



## **ABOUT THE AGA KHAN UNIVERSITY**

The mission of the Aga Khan University (AKU) is to improve the quality of life in the developing world and beyond through world-class teaching, research and health-care delivery. The University educates students about local and global leadership, generates new knowledge to solve problems that affect millions of people, and raises standards and aspirations in the countries in which it works. We empower women and the disadvantaged, build support for pluralism, and collaborate with local partners and world-renowned organizations to achieve shared goals.

Founded in 1983 as Pakistan's first private university, AKU is a not-for-profit institution and an agency of the Aga Khan Development Network. Starting in 2000, the University expanded to Kenya, Tanzania, Uganda, Afghanistan, and the United Kingdom.

## **ABOUT THE INSTITUTE FOR HUMAN DEVELOPMENT**

The Aga Khan University's Institute for Human Development (IHD) was established to advance knowledge about human development, particularly focusing on children, families, communities, and the institutions that support them within resource-poor regions of the world. The Institute is dedicated to the pursuit of knowledge with direct relevance for policies, programmes, and practices that enhance life experiences at all stages of human development.

## Monday June 8, 2026

### Pre-conference Workshops

7:00 AM - 8:30 AM	Registration
8:30 AM – 3:30 PM	<p>Together for Every Child: Driving Integrated Government and Partner Action for Stronger Early Childhood Development Outcomes  <b>Facilitators: Easter Okello and Abdullahi Maalim</b>  <b>Venue: Simba 1 Meeting Room, Ground floor, Novotel Hotel</b>  <b>(Closed session; attendance only by invitation)</b></p>
8:30 AM – 4:00 PM	<p>Strengthening Community Organizations to Advance Early Childhood Development  <b>Facilitators: Mr. Ryan Ombara and Ms. Everlyne Okeyo</b>  <b>Venue: Meeting Room, 17<sup>th</sup> Floor, GTC</b></p>
8:30 AM – 4:00 PM	<p>Mechanistic Pathways of Human Behavior: Integrating Electrophysiological and Behavioral Approaches  <b>Facilitators: Prof. Robert Oostenveld and Dr. Ronald Kipkirui</b>  <b>Venue: Kifaru, 6<sup>th</sup> Floor, Pan Pacific Serviced Suites</b></p>
8:30 AM – 4:00 PM	<p>Navigating Ethical Concerns in AI and Data Science for Health  <b>Facilitators: Prof. Shawneequa Callier and Ms. Noni Mumba</b>  <b>Venue: Simba, 5<sup>th</sup> Floor, Pan Pacific Serviced Suites</b></p>
8:30 AM – 3:30 PM	<p>Supporting Families of Children with Developmental Disabilities: Early Identification, Interventions, Advocacy, and Sectoral Strengthening  <b>Facilitators: Dr. Patricia Kitsao-Wekulo, Ms. Beatrice Mkubwa and Dr. Vibian Angwenyi</b>  <b>Venue: Twiga, 5<sup>th</sup> Floor, Pan Pacific Serviced Suites</b></p>

## Tuesday June 9, 2026

### Day 1

7:00 AM - 8:30 AM	<b>Registration</b>
8:30 AM – 9:30 AM	<b>Plenary Sessions</b>
	<b>Opening Remarks</b> Session moderator: Mr. Gitonga M'Mbijjewe Venue: Tembo
8:30 AM - 8:35 AM	Greetings & Welcoming Remarks <b>Prof. Amina Abubakar</b> Director, Institute for Human Development Aga Khan University
8:35 AM – 8:40 AM	<b>Prof. Jane Rarieya</b> Vice Provost- Quality Teaching and Learning Aga Khan University
8:40 AM – 8:45 AM	<b>Prof. Anjum Halai</b> Professor and Vice Provost Aga Khan University   Asia and UK
8:45 AM – 8:50 AM	<b>Ms. Nafisa Shekhova</b> Global Lead, Education and Early Childhood Development Aga Khan Foundation, Geneva
8:50 AM - 8:55 AM	<b>Prof. Salim Virani</b> Vice Provost- Research Aga Khan University
8:55 AM – 9:10AM	<b>Invited Guests</b> <b>Chief Executive Officer, Frontier Counties Development Council, Kenya</b> <b>Dr. Idle Farah</b> Representing our Partners <b>Chief Executive Officer, the Science for Africa Foundation</b> <b>Dr. Tom Kariuki</b> Representing our Funders <b>H.E. the Deputy Governor of Lamu</b> <b>Dr. Mbarak Mohammed Mbarak</b> On behalf of Counties from FCDC
9:10 AM - 9:20 AM	<b>Chief Guest</b> <b>Prof Shaukat Abdulrazak, EBS</b> Principal Secretary State Department of Science, Research and Innovation Office of the Prime Cabinet Secretary, Republic of Kenya
9:20 AM –9:30 AM	Delegate Photo Session
9:30 AM – 9:45 AM	Entertainment   Videos   Break
9.50 AM – 10:30 AM	<b>Oral Presentations: Amplifying Impact: Building Centres of Excellence in Research</b> Session moderator: Dr Mercy Korir Venue: Tembo
9:50 AM - 10:10 AM	<b>Science for Africa Foundation's vision of what is needed to build Centers of Excellence in Research</b> <b>Dr. Dennis Chopera</b> Programme Manager Leadership for African Research Networks Science for Africa (SFA) Foundation

## Tuesday June 9, 2026

### Day 1

10:10 AM - 10:30 AM	<b>Building Academic Leaders for the African Ecosystem</b> <b>Prof. Charles Newton</b> <i>Cheryl and Reece Scott Professor of Psychiatry,                  Department of Psychiatry, University of Oxford UK                  Principal Investigator, KEMRI-Wellcome Trust Research Programme</i>
10:30 AM – 11:00 AM	<b>Gender Inclusivity and Equity at the Core of Academic Excellence (Oral Talks)</b> <b>Session moderator: Dr. Lucinda Manda-Taylor</b> <b>Associate Professor</b> <b>Kamuzu University of Health Sciences, Malawi</b>
10:30 AM - 10:40 AM	<b>Prof. Peninah Masibo</b> <i>Associate Professor of Public Health and Nutrition                  AMREF International University</i>
10:40 AM – 10:50 AM	<b>Prof. Jane Rarieya</b> <i>Vice Provost, Quality Teaching and Learning                  Aga Khan University  </i>
10:50 AM - 11:00 AM	<b>Prof. Anjum Halai</b> <i>Vice Provost – Office of the Provost                  Aga Khan University   Asia and UK</i>
11:00 AM - 11:15 AM	<b>Tea Break   Exhibition Area</b>
11:15 AM – 1:30 PM	<b>Invited Talks</b> <b>Session moderator: Dr. Mercy Korir</b> <b>Venue: Tembo</b>
11:15 AM – 11:35 AM	<b>Keynote Speech: Link Between Early Years Experience and Cardiometabolic Diseases</b> <b>Prof. Salim Virani</b> <i>Vice Provost, Research-Office of the Provost                  Aga Khan University</i>
11:35 PM to 12:15 PM	<b>Plenary Panel 1: Private-Public Partnerships to Unlock ECD Investments</b> <b>Session moderator: Ms. Nafisa Shekhova</b> <i>Global Lead, Education and Early Childhood Development                  Aga Khan Foundation, Geneva</i> <b>Venue: Tembo</b>
	<b>Dr. Henry Kilonzo</b> <i>Senior Manager, Foundations Programmes                  MPESA Foundation</i>
	<b>Dr. Idle Farah</b> <i>Chief Executive Officer                  Frontier Counties Development Council</i>
	<b>Mr. Arif Neky</b> <i>Regional Director of University Advancement                  Aga Khan University   East Africa</i>
	<b>Mr. Samuel Ochieng</b> <i>Director, Partnership, Data and Research                  State Department for Children's services</i>
12:15 PM - 1:15 PM	<b>A Focus on Digital Innovations and Human Development</b> <b>Keynote speeches</b> <b>Session moderator: Dr. Mercy Korir</b> <b>Venue: Tembo</b>

Tuesday June 9, 2026

Day 1

12:15 PM – 12:35 PM	<b>Keynote Speech: Using Scalable Technology to Understand Early Life Brain Health in sub-Saharan Africa</b> <b>Prof. Kirsty Donald</b> Deputy Director, Neuroscience Institute Department of Paediatrics and Child Health University of Cape Town
12:35 PM – 12:55 PM	<b>Keynote Speech: The future or futility: Digital Technologies for Mental Health Interventions in Sub-Saharan Africa</b> <b>Dr. Moses Kachama</b> Post-Doctoral Research Fellow- Global Mental Health Brain and Mind Institute Aga Khan University
12:55 PM – 1:15 PM	<b>Keynote Speech: Using Digital Systems to Support the ECD Ecosystem</b> <b>Prof. Mark Tomlinson,</b> <i>Co-Director, Institute for Life Course Health Research, Stellenbosch University</i>
1:15 PM – 1:45 PM	<b>Oral presentations: Use of Technology in Human Development and Ethical Considerations</b> <b>Session moderator: Dr. Ronald Ngetich</b> <i>Postdoctoral Fellow, Institute for Human Development Aga Khan University</i>
1:15 PM – 1:25 PM	<b>Ultra-Low-Field MRI for Equitable Brain Development Research and Clinical Applications in Sub-Saharan Africa</b> <b>Mr. Maclean Vokhiwa</b> ALMA Africa PhD Fellow Kamuzu University of Health Sciences (KUHeS)
1:25 PM – 1:35 PM	<b>Leveraging Structural and Functional MRI (sMRI &amp; fMRI) to Assess Brain Health in Children</b> <b>Dr. Farai Mberi</b> Neuroscience Institute, University of Cape Town, SA
1:35 PM – 1:45 PM	<b>Ethical Considerations in Neuroscience: Challenges and Opportunities in Sub-Saharan Africa</b> <b>Dr. Damian Eke</b> Assistant Professor, University of Nottingham, UK
1:45 PM - 2: 30 PM	<b>Lunch</b>
2:30 PM - 3:30 PM	<b>Breakout Sessions</b>
	<b>Breakout 1: Early Childhood Development – A Focus on Disabilities</b> <b>Session moderator: Ms Peris Musitia</b> <i>Research Manager Institute for Human Development Aga Khan University</i> <b>Venue: Tembo</b>
2:30 PM - 2:40 PM	Design and Adaptation of the Zambia Dyslexia Assessment Tool for Primary School-going Children: Insights from the Pilot Study <b>Prof. Beatrice Matafwali, University of Zambia</b>
2:40 PM - 2:50 PM	Practicality, usability and feasibility of an adapted social communication questionnaire as an autism screening tool in Lusaka province, Zambia <b>Mr. Bained Nyirongo, University of Zambia</b>
2:50 PM - 3:00 PM	Scaling Early Identification of Developmental Disabilities Through Multi-Cadre Capacity Strengthening in Kenya <b>Ms. Beatrice Mkubwa, Institute for Human Development, Aga Khan University</b>

## Tuesday June 9, 2026

### Day 1

3:00 PM - 3:10 PM	Developmental Outcomes and Quality of Life for Children with Disabilities and Their Caregivers in Nairobi's Informal Settlements. Findings from an Evaluation of the Tunza Program <b>Ms. Esther Ngatho</b> , <i>The Action Foundation Kenya</i>
3:10 PM - 3:20 PM	Strengthening Inclusive Early Childhood Development Systems Through Early Identification, Inclusive Education, and Rehabilitation in Kajiado East, Kenya <b>Dr. Thomas Odeny</b> , <i>Washington University School of Medicine, USA</i>
3:20 PM - 3:30 PM	Q&A: Session summary
<b>2:30 PM - 3:30 PM</b>	<b>Breakout 2: Risk and Resilience among Vulnerable Children</b> <b>Session moderator: Ms. Joan Mutahi</b> <i>Research Fellow, Institute for Human Development, Aga Khan University</i> <b>Venue: Kifaru</b>
2:30 PM - 2:40 PM	Association of maternal childhood trauma with child neurobehavioural outcomes: a scoping review <b>Ms. Dinisha Giga</b> , <i>University of Cape Town, South Africa</i>
2:40 PM - 2:50 PM	Lead Exposure and its association with Cognitive Outcomes in children of selected resource-limited communities of Kabwe, Zambia <b>Dr. Nosiku Munyinda</b> , <i>University of Zambia</i>
2:50 PM - 3:00 PM	Neurocognitive function in children from Karamoja, Uganda is associated with age, nutrition, schooling, and caregiving, not tungiasis <b>Mr. Berrick Otieno</b> , <i>Institute for Human Development, Aga Khan University</i>
3:00 PM - 3:10 PM	Executive function and language development in Malawian preschool children: Associations within contextual home environments <b>Ms. Chisomo Namathanga</b> , <i>Kamuzu University of Health Sciences, Malawi</i>
3:10 PM - 3:20 PM	Caregiver Assessment of Executive Function Deficits among HIV-Infected and Exposed-Uninfected Preschool children in Kenya <b>Mr. Antipa Sigilai</b> , <i>Institute for Human Development, Aga Khan University</i>
3:20 PM - 3:30 PM	Q&A: Session summary
<b>2:30 PM - 3:30 PM</b>	<b>Breakout 3: Adolescent Vulnerability, Mental Health and Behavioural Outcomes</b> <b>Session moderator: Dr. Amin Hassan</b> <i>Assistant Professor and Senior Research Scientist Institute for Human Development Aga Khan University</i> <b>Venue: Simba</b>
2:30 PM - 2:40 PM	Mental health problems and risk behaviours associated with alcohol consumption among adolescents in Nairobi and coastal Kenya: a cross-sectional study <b>Ms. Eunice Chepkemoi</b> , <i>Institute for Human Development, Aga Khan University</i>
2:40 PM - 2:50 PM	Longitudinal Trajectories of Emotional and Behavioral Problems in Adolescents Living with HIV <b>Mr. Ezra Too</b> , <i>Institute for Human Development, Aga Khan University</i>
2:50 PM - 3:00 PM	Effects of exposure to HIV on early-life immune regulation, and neurodevelopment, in African HIV exposed but uninfected children <b>Ms. Zethembiso Ngcobo</b> , <i>University of Cape Town, South Africa</i>

## Tuesday June 9, 2026

### Day 1

3:00 PM - 3:10 PM	Prevalence and predictors of multiple health risk behaviour in a community sample of Kenyan adolescents: a machine learning approach <b>Mr. Brian Kigen</b> , Institute for Human Development, Aga Khan University
3:10 PM - 3:20 PM	The C.R.A.D.L.E. framework: coordinated school-linked mental health support for a primary school pupil <b>Mr. John Ojo</b> , CRADLE of Wellbeing CIC, UK <b>Ms. Susan Nyamanya</b> , AMREF Health Africa, Kenya
3:20 PM - 3:30 PM	Q&A: Session summary
<b>2:30 PM - 3:30 PM</b>	<b>Breakout 4: Mental Health Interventions for Caregivers</b> <b>Session moderator: Easter Olwanda</b> PhD Fellow Institute for Human Development Aga Khan University <b>Venue: Twiga</b>
2:30 PM - 2:45 PM	The feasibility, acceptability, and preliminary evaluation of the effectiveness of SMS and Self-Help Plus interventions among community health workers in Kenya <b>Ms. Sabina Odero and Mr. Edwin Omari</b> , Institute for Human Development, Aga Khan University
2:45 PM - 3:00 PM	Co-creating Sustainable Mental Wellbeing Interventions for Community Health Workers in Kenya- Lessons from Community-Based Participatory Research in Kiambu and Nairobi counties <b>Dr. Stephen Mulupi</b> , Head of Research Implementation, LVCT Health, Kenya
3:00 PM - 3:15 PM	Pilot Implementation and Feasibility of a Group-Based Task-Shifted Low-Intensity Psychological Intervention for Adults Living in a Kenyan Urban Informal Settlement <b>Dr. Patrick Mwangala</b> , Postdoctoral Fellow Institute for Human Development, Aga Khan University
3:15 PM - 3:30 PM	Q&A: Session summary
<b>3:30 PM - 3:45 PM</b>	<b>Tea Break</b>
<b>3:45 PM - 5:00 PM</b>	<b>Breakout Sessions</b>
	<b>Breakout 5: Early Childhood Development - A Focus on Child Development Outcomes</b> <b>Session moderator: Ms. Linet Kaloki</b> ECD Technical Specialist Institute for Human Development Aga Khan University <b>Venue: Tembo</b>
3:45 PM - 3:55 PM	Developmental health and vulnerability among young children in Pakistan: Findings from a large-scale early childhood development assessment in Karachi <b>Dr. Seema Laasi</b> , Human Development Programme, Aga Khan University   Pakistan
3:55 PM - 4:05 PM	Early childhood developmental outcomes and associated factors in a nomadic pastoralist community in northern Tanzania <b>Ms. Esther Chongwo</b> , Institute for Human Development, Aga Khan University
4:05 PM - 4:15 PM	Environmental and psychosocial determinants of school readiness in South African children residing in a peri-urban setting <b>Dr. Monika Kamkuemah</b> , University of Cape Town, South Africa

## Tuesday June 9, 2026

### Day 1

4:15 PM - 4:25 PM	Strengthening Hospital-Based Early Childhood Development (ECD) Centers: A Capacity-Building Initiative in Partnership <b>Dr. Kausar Waqar</b> , Human Development Programme, Aga Khan University   Pakistan
4:25 PM - 4:35 PM	Facility-linked donor human milk and caregiver support system for strengthening early childhood development outcomes in low-resource settings <b>Ms. Naomi Omwoyo</b> , Founder & Lead, MamaDrop Initiative, Kenya
4:35 PM - 4:50 PM	Q&A: Session summary
<b>3:45 PM - 5:00 PM</b>	<b>Breakout 6: Digital technologies and innovation</b> <b>Session moderator: Ms. Everlyne Okeyo</b> , <i>ECD Technical specialist</i> <i>Institute for Human Development</i> <i>Aga Khan University</i> <b>Venue: Kifaru</b>
3:45 PM - 3:55 PM	Status of early childhood development data systems in Kenya: imperatives for a centralized visualization platform <b>Dr. George Owino</b> , Africa Population Health Research Center, Kenya
3:55 PM - 4:05 PM	Enhancing inclusive and competency-based STEM learning through digital platforms and data-informed pedagogy in resource-constrained settings in East Africa <b>Ms. Mercy Nthuli</b> , Institute for Educational Development, Aga Khan University Tanzania
4:05 PM - 4:15 PM	Multi-channel surface electromyography framework for silent alphabet recognition toward a wearable virtual keyboard <b>Dr. Ahsan Naveed</b> , Aga Khan University   Pakistan
4:15 PM - 4:25 PM	Association of sleep parameters, depression symptoms and daily mood: A prospective mobile monitoring study of health care workers in Kenya <b>Mr. Willie Wainaina Njoroge</b> , Brain and Mind Institute, Aga Khan University
4:25 PM - 4:35 PM	Feasibility and Acceptability of a Mobile Application and Wearable Device for Collecting Mental Health Survey and Passively Sensed Data Among Healthcare Workers in Kenya: Mixed Methods Pilot Study. <b>Ms. Linda Khakhali</b> , Brain and Mind Institute, Aga Khan University
4:35 PM - 4:50 PM	Q&A: Moderator session summary
<b>3:45 PM - 5:00 PM</b>	<b>Breakout 7: Early Childhood Development – A Focus on Risk Factors and Outcomes</b> <b>Session moderator: Ms. Joyce Marangu</b> <i>ECD Hub Manager</i> <i>Institute for Human Development</i> <i>Aga Khan University</i> <b>Venue: Simba</b>
3:45 PM - 3:55 PM	Factors associated with stunting and underweight indices among children 0–3 years in Nairobi, Kenya: a cross-sectional study <b>Ms. Eunice Njoroge</b> , Institute for Human Development, Aga Khan University
3:55 PM - 4:05 PM	Identification of Dietary Challenges and Assessment of the Impact of Dietary Counselling Methodologies in Children with Neurodevelopmental and Genetic Disorders <b>Ms. Ayesha Khan</b> , Aga Khan University   Pakistan
4:05 PM - 4:15 PM	Artificial Intelligence / Machine Learning-Based Tool for Early Identification of Developmental Risk in Children <b>Ms. Faith Neema Benson</b> , Institute for Human Development, Aga Khan University

Tuesday June 9, 2026

Day 1

4:15 PM - 4:25 PM	Parent-Child Engagement in Underprivileged Households: Evidence from Family Care Indicators <b>Dr. Sidra Afzal</b> , Aga Khan University   Pakistan
4:25 PM - 4:35 PM	The relationship between pregnant women's IPV experience and their child's developmental delay in rural and urban Malawi: Results from the Generation Malawi Birth Cohort Study <b>Ms. Providence Nindi</b> , Kamuzu University of Health Sciences, Malawi
4:35 PM - 4:50 PM	Q&A: Session summary
<b>3:45 PM - 5:00 PM</b>	<b>Breakout 8: Climate and Health</b> <b>Session moderator: Ms. Willah Nabukwangwa</b> CLEAN-Air (Africa) Global Health Research Unit Centre of Respiratory Disease Research Kenya Medical Research Institute  <b>Venue: Twiga</b>
3:45 PM - 3:55 PM	Climate-resilient maternal nutrition in extreme heat: Development of a novel indigenous heat-mitigation dietary intervention for pregnant women in rural Pakistan <b>Ms. Fatima Nazir</b> , Aga Khan University   Pakistan
3:55 PM - 4:05 PM	Climate change, water quality, and health of pastoral communities in the drylands of Southwest Kenya <b>Prof. Bilal Butt</b> , Center for Global Health Equity, University of Michigan, USA
4:05 PM - 4:15 PM	Subnational heat stress patterns and vulnerability among pregnant women, young children, and older adults in Kenya <b>Dr. Felix Oluoch</b> , Population Health Department, Aga Khan University Kenya
4:15 PM - 4:25 PM	Building Climate-Resilient Early Childhood Systems in East Africa: Innovation and Evidence from Madrasa Early Childhood Programme <b>Mr. Mohammed Dau</b> and <b>Mr. Harrison Kamau</b> , MECP Kenya
4:25 PM - 4:35 PM	Floods, Heat, and Survival: Refugees and Climate Vulnerability in Urban Pakistan <b>Dr. Sanaa Alimia</b> , Institute for the Study of Muslim Civilisation, Aga Khan University   UK
4:35 PM - 4:50 PM	The Living-Lab: Advancing Transdisciplinary, Indigenous-Informed Experiential Learning for Sustainable Human Development? <b>Dr. Anil Khamis</b> , Aga Khan University
4:50 PM - 5:00 PM	Q&A: Session summary

## Wednesday June 10, 2026

### Day 2

7:00 AM - 8:00 AM	Registration
8:00 AM – 10:30 AM	Breakout Sessions
8:00 AM - 9:15 AM	<b>Breakout 9: Early Childhood Development – A Focus on Nurturing Care and Interventions</b> <b>Session moderator: Dr. Fortidas Bakuza</b> <i>Institute for Educational Development East Africa</i> <i>Aga Khan University</i> <b>Venue: Tembo</b>
8:00 AM - 8:10 AM	Multisectoral Perspectives on Early Childhood Development in Pakistan: Implications for Nurturing Care Framework Implementation <b>Ms. Saima Siyal, Aga Khan University   Pakistan</b>
8:10 AM - 8:20 AM	Strengthening Responsive Caregiving through Coaching and Supportive Supervision: Evidence from the Familia Bora Program in Tanzania <b>Ms. Julieth Bhoke, Tanzania Home Economics Organization Mwanza, Tanzania</b>
8:20 AM - 8:30 AM	Closing the Gap: Advancing Nurturing Care for Children Aged 0–3 in Isiolo County- Evidence from a Situational Analysis on the Implementation of Nurturing Care Practices in Isiolo County Health Facilities <b>Mr. Daud Abdullahi, Institute for Human Development, Aga Khan University</b>
8:30 AM - 8:40 AM	Integration of Nurturing Care for Early Childhood Development in Primary Health Care: Stocktake Assessment Findings from Kenya <b>Ms. Susan Nyamanya, AMREF Health Africa, Kenya</b>
8:40 AM - 8:50 AM	Nurturing Care for Early Childhood Development in Primary Health Care: Case of Nyamira County <b>Ms. Sarah Moraa, County Government of Nyamira, Kenya</b>
8:50 AM - 9:00 AM	Q&A: Session summary
9:00 AM - 9:15 AM	Moderator: speaker introductions, reflections/session summary
9:15 AM - 9:20 AM	Next session set-up
8:00 AM - 9:15 AM	<b>Breakout 10: Adolescent Development and Mental Health</b> <b>Session moderator: Dr. Patrick Mwangala</b> <i>Postdoctoral Fellow</i> <i>Institute for Human Development</i> <i>Aga Khan University</i> <b>Venue: Kifaru</b>
8:00 AM - 8:10 AM	Experiences of Re-Admitted Teenage Mothers in Selected Secondary Schools in Nzega District, Tanzania: A Hermeneutic Phenomenological Study <b>Mr. Josiah Kazenga, University of Zambia</b>
8:10 AM - 8:20 AM	<i>But in itself, it hurts</i> ”: Experiences of adolescents with Sickle Cell Disease and their caregivers attending a specialized clinic in Kilifi, Kenya <b>Ms. Joan Mutahi, Institute for Human Development, Aga Khan University</b>
8:20 AM - 8:30 AM	Evaluating the effect of school-based mental health literacy programs on health and educational outcomes of adolescents in low- and middle-income settings: a systematic review and meta-analysis <b>Ms. Easter Olwanda, Institute for Human Development, Aga Khan University</b>

## Wednesday June 10, 2026

### Day 2

8:30 AM - 8:40 AM	Mentor support, psychosocial well-being, and resilience among adolescents in urban informal settlements: evidence from secondary school students in Kibra, Kenya <b>Ms. Catherine Naliaka Wafula</b> , St. Paul's University, Kenya
8:40 AM - 8:50 AM	Food insecurity, diet quality, and cognitive function among adolescents: evidence from a mining-affected district in Ghana. <b>Mr. Lewis Agyabu</b> , University of Cape Coast, Ghana
8:50 AM - 9:00 AM	Q&A: Moderator session summary
9:00 AM - 9:15 AM	Moderator: speaker introductions, reflections/session summary
9:15 AM - 9:20 AM	Next session set-up
<b>8:00 AM - 9:15 AM</b>	<b>Breakout 11: Harnessing Technology to Understand Human Development</b> <b>Session moderator: Dr. Farai Mberi</b> <i>Neuroscience Institute</i> <i>University of Cape Town, South Africa</i> <b>Venue: Twiga</b>
8:00 AM - 8:15 AM	Community-driven Neuroimaging Innovations: Caregivers' Perceptions and Experiences of the Importance of Neuroimaging Techniques in Improving Child Brain Stimulation in Rural Kenya <b>Mr. Paul Otwate</b> , African Population and Health Research Center (APHRC), Kenya
8:15 AM - 8:30 AM	Validating Eye-Tracking Biomarkers for Autism Diagnosis in Low- and Middle-Income Countries <b>Violet Amondi and Mark Nyalumbe</b> , Academic Model Providing Access to Healthcare (AMPATH) and Moi University, Kenya
8:30 AM - 8:45 AM	Neural correlates of executive functioning among adolescents and young adults living with HIV: A systematic review of structural and functional imaging studies <b>Mr. Ezra Too</b> , Institute for Human Development, Aga Khan University
8:45AM – 9:00 AM	Deep Learning-Based Classification of EEG Patterns in ICU/CCU Recordings <b>Ms. Dorothy Chepkoech</b> , Institute for Human Development, Aga Khan University
9:00 AM - 9:15 AM	Q&A: speaker introductions, reflections/session summary
9:15 AM - 9:20 AM	Next session set-up
<b>8:00 AM - 9:15 AM</b>	<b>Breakout 12: Early Childhood Development – A Focus on Education</b> <b>Session moderator: Ms. Everlyne Okeyo</b> <i>ECD Technical Specialist</i> <i>Institute for Human Development</i> <i>Aga Khan University</i> <b>Venue: Simba</b>
8:00 AM - 8:10 AM	Scaling Evidence, Systems, and Innovation in Early Childhood Development and Education: Lessons from the LEGO Foundation Childhood Development Activity in Ethiopia <b>Mr. Nurhusein Awol</b> , Save the Children International, Ethiopia
8:10 AM - 8:20 AM	Expanding STEM Opportunities for Girls with Disabilities in Kenya: Endline Evaluation of the Ibuka Girls in STEM Project (2021–2024) <b>Mr. Ikonya Stephen</b> , The Action Foundation, Kenya

## Wednesday June 10, 2026

### Day 2

8:20 AM - 8:30 AM	Teachers' and parents' awareness and knowledge of dyslexia in selected primary schools in Lusangazi District, Eastern Province, Zambia <b>Ms. Thelma Ngosa Mulimbika</b> , University of Zambia
8:30 AM - 8:40 AM	Scaling Early Childhood Learning through Child-to-Child Play-Based Pedagogy <b>Dr. Nasima Zainulabid</b> , Assistant Professor, Institute for Educational Development, Aga Khan University   Pakistan
8:40 AM - 8:50 AM	From Community Model to National Systems: Scaling a Government-Approved Teacher Professional Development Model for Sustainable ECD Workforce Development <b>Ms. Samira Mbarak</b> , Region Coordinator, Madrasa Early Childhood Programme Kenya (MECP-K)
8:50 AM - 9:00 AM	Q&A: Moderator session summary
9:00 AM - 9:15 AM	Moderator: speaker introductions, reflections/session summary
9:15 AM - 9:20 AM	Next session set-up
<b>9:25 AM - 10:25 AM</b>	<b>Invited Symposia</b>
<b>9:25 AM - 10:25 AM</b>	<b>Symposium 1: The triple benefits of quality childcare: better childhood outcomes, empowered caregivers and enhanced gender equity</b> <b>Session moderator: Ms. Amar Nijhawan</b> Senior Program Officer International Development Research Centre (IDRC) <b>Venue: Tembo</b>
9:25 AM - 9:35 AM	From unpaid care to economic inclusion: advancing women's empowerment and gender inequality. <b>Ms. Linet Kaloki</b> , ECD Technical Specialist, Institute for Human Development Aga Khan University
9:35 AM - 9:45 AM	Promoting women's economic empowerment by increasing access to quality and affordable childcare services in market centres. <b>Ms. Peninnah Ndegwa</b> , Founder and Managing Director, Wow Mum, Kenya
9:45 AM - 9:55 AM	High social value, fragile systems: rethinking informal childcare provision for inclusive care systems in Kenya <b>Mr. Chrystin Afifu</b> , Gender and Women's Economic Empowerment (WEE) Specialist, International Centre for Research on Women (ICRW), Kenya
9:55 AM - 10:05 AM	Scaling proven ECD and Childcare models for children, women and communities <b>Ms. Samira Mbarak</b> , Region Coordinator, Madrasa Early Childhood Programme Kenya (MECP-K)
10:05 AM - 10:20 AM	Q&A and Discussant Reflections <b>Ms. Amar Nijhawan</b> , Senior Program Officer, International Development Research Centre (IDRC)
<b>9:25 AM - 10:25 AM</b>	<b>Symposium 2: Child &amp; Adolescent Mental Health</b> <b>Session moderator: Dr. Patrick Mwangala</b> Postdoctoral Fellow Institute for Human Development Aga Khan University <b>Venue: Kifaru</b>

## Wednesday June 10, 2026

### Day 2

9:25 AM - 9:35 AM	Acceptability, Feasibility, and preliminary Effectiveness of a stepped collaborative treatment model (Ushirikiano Treatment Model) for managing depression, anxiety, and somatic symptom disorders among Kenyan adolescents <b>Dr. Nabila Amin Ali</b> , Psychiatrist, Mathari National Teaching & Referral Hospital, Kenya
9:35 AM - 9:45 AM	Resilience and Mental Health among Adolescents in Kenya <b>Dr. Victoria Mutiso</b> , Director of Research and Administration, Africa Institute of Mental and Brain Health (AFRIMEB), Kenya
9:45 AM - 9:55 AM	Scaling Youth Mental Healthcare: Shamiri's experience <b>Mr. Nickson Mugambi</b> , Senior Associate, Shamiri Institute, Kenya
9:55 AM - 10:05 AM	Engaging Community-Based Organizations to promote Adolescent Mental Health Literacy in Kenya and Uganda <b>Mr. Gideon Mbithi</b> , Research Fellow, Aga Khan University, Institute for Human Development, Kenya
10:05 AM - 10:20 AM	Q&A and Discussant Reflections <b>Dr. Patrick Mwangala</b> , Postdoctoral Fellow, Institute for Human Development, Aga Khan University, Kenya
9:25 AM - 10:25 AM	<b>Symposium 3: Neurogenetics and Neuroethics</b> Session moderator: Prof. Kirsty Donald Venue: Twiga
9:25 AM - 9:35 AM	<b>Phenotypic and genetic characterisation of neurodevelopmental conditions in Kenya and South Africa</b> <b>Dr. Patricia Kipkemoi</b> , Institute for Human Development (Kenya) and Broad Institute (USA) <b>Prof. Amina Abubakar</b> , Institute for Human Development, Aga Khan University
9:35 AM - 9:45 AM	<b>Ethical and Socio-Cultural Issues in Involving People with Intellectual Disability in Genetic Research in Kenya</b> Dorothy Chepkirui, KEMRI/Wellcome Trust Research Programme, Kilifi, Kenya
9:35 AM - 9:45 AM	Behavioural Profiles by Sex in Children with Autism in Kenya and South Africa <b>Ms. Daniela Iniguez</b> , University of Cape Town, South Africa
9:55 AM - 10:05 AM	Enhancing community identification and referral for children 6–17 years living with neurodevelopmental disabilities using community health promoters in a rural coastal setting <b>Ms. Pauline Mwatsuma</b> , KEMRI-Wellcome Trust Research Programme, Kenya
10:05 AM - 10:15 AM	Ethics of pangenomic data sharing for rare disease research in South Africa <b>Ms. Lexie Timina</b> , University of Cape Town, South Africa
10:15 AM - 10:20 AM	Q&A and Discussant Reflections
9:25 AM - 10:25 AM	<b>Symposium 4: Supporting Children's Social Emotional Learning: Lessons from Different Contexts</b> Session moderator: Dr. Anil Khamis Aga Khan University Venue: Simba
9:25 AM - 9:35 AM	From Evidence to Systems: Policy Pathways for Scaling Socioemotional Learning in Early Childhood across Arid and Semi-Arid Regions of Kenya and Uganda <b>Dr. Japheth Adina</b> , Institute for Human Development, Aga Khan University

## Wednesday June 10, 2026

### Day 2

9:35 AM - 9:45 AM	Integrating Socio-Emotional Learning in Kenya's Competency-Based Curriculum: Building School and Community Partnership for 21 <sup>st</sup> Century Learners <b>Mr. Wesley Onsongo</b> , Aga Khan University Institute for Human Development
9:45 AM - 9:55 AM	A Multi-Sector Training Model to Nurture Social-Emotional Development in Early Childhood Dr. Yasmeen Mehboob, Aga Khan University, Pakistan
9:55 AM - 10:05 AM	Social Emotional Learning Among Grade Three Learners with Reading Difficulties in Selected Primary Schools in Lusaka. <b>Dr. Magdalane Simalalo</b> , University of Zambia, Zambia
10:05 AM - 10:20 AM	Q&A and Discussant Reflections <b>Dr. Anil Khamis</b> , Aga Khan University
10:30 AM - 11:00 AM	<b>Tea Break, Poster viewing and Exhibition</b>
11:00 AM - 1:00 PM	<b>Plenary Sessions</b>
11:00 AM – 12:20 PM	<b>Keynote Speeches: A Focus on Climate and Human Development</b> <b>Moderator: Dr. Amin Hassan</b> <i>Assistant Professor and Senior Research Scientist Institute for Human Development Aga Khan University</i> <b>Venue: Tembo</b>
11:00 AM - 11:20 AM	Climate Change and Maternal Newborn and Child Health (MNCH): Perspectives from Asia <b>Dr. Jai Das</b> <i>Associate Director, Institute for Global Health and Development Aga Khan University</i>
11:20 AM - 11:40 AM	Climate Change and Maternal Newborn and Child Health (MNCH): Perspectives from Africa <b>Dr. Adelaide Lusambili</b> <i>Associate Professor, Environmental Health and Governance Lead Africa International University, Kenya</i>
11:40 AM – 12:00 PM	Climate Change and Early Childhood Development and Education <b>Prof. Amina Abubakar</b> <i>Director, Institute for Human Development Aga Khan University</i>
12:00 PM - 12:20 PM	Climate Change and Mental Health <b>Prof. Zul Merali</b> <i>Director, Brain and Mind Institute Aga Khan University,</i>
12:20 PM - 1:00 PM	<b>Plenary Panel 2: Climate Change and Human Health - What are the intervention options?</b> <b>Session moderator: Prof. Adelaide Lusambili</b> <i>Associate Professor, Environmental Health and Governance Lead Africa International University, Kenya</i> <b>Venue: Tembo</b>

## Wednesday June 10, 2026

### Day 2

	<p><b>Dr. Felix Oluoch</b> Postdoctoral Fellow, Department of Population Health &amp; Institute for Global Health Development Aga Khan University</p>
	<p><b>Dr. Bilal Butt</b> Professor, School for Environment and Sustainability Senior Advisor at the Center for Global Health Equity University of Michigan, USA</p>
	<p><b>Dr. Emmanuel Sulle</b> Assistant Professor &amp; Director Arusha Climate &amp; Environmental, Research Centre Aga Khan University   Tanzania</p>
	<p><b>Mr. Ahmednadhira Omar</b> County Executive Committee Member County Government of Garissa, Kenya</p>
1:00 PM - 2:00 PM	Lunch
1:20 PM - 2:00 PM	Poster viewing   Exhibition Area
2:00 PM - 3:20 PM	<p><b>Keynote Speeches: A Focus on Strengthening the ECD Ecosystem</b> <b>Moderator: Prof Amina Abubakar</b> Institute for Human Development Aga Khan University <b>Venue: Tembo</b></p>
2:00 PM - 2:20 PM	<p>Strengthening the ECD Ecosystem <b>Prof. Aisha Yousafzai</b> Associate Professor of Global Health Department of Global Health and Population Harvard T.H. Chan School of Public Health, USA</p>
2:20 PM - 2:40 PM	<p>Childcare and the early childhood development (ECD) ecosystem in urban and low-resourced settings across Africa <b>Dr. Patricia Kitsao-Wekulo</b> Research Scientist and Lead, Early Childhood Development Unit, Africa Population Health Research Center, Kenya</p>
2:40 PM - 3:00 PM	<p>Strengthening Antenatal and Delivery Health Care Systems for Optimal Start of Life <b>Prof. Marleen Temmerman</b> Professor and Director Centre of Excellence in Women &amp; Child Health East Africa Aga Khan University</p>
3.00 PM – 3.20 PM	<p>Effectiveness of a Father-inclusive, Couples-based Parenting Program (Familia Bora) on Maternal, Paternal, and Early Child Development Outcomes in Rural Tanzania: A Cluster-Randomized Controlled Trial Dr. Joshua Jeong, Assistant Professor Rollins School of Public Health Emory University, USA</p>

## Wednesday June 10, 2026

### Day 2

3.20 PM – 4:00 PM	<p><b>Plenary Panel 3: Working with CSOs to Support and Empower Families</b>  <b>Session moderator: Ms. Amina Mwit</b>  <i>Regional ECD Advisor, East Africa</i>  <i>Aga Khan Foundation</i>  <b>Venue: Tembo</b></p>
	<p><b>Dr. Caroline Bosire,</b>  Knowledge and Learning Advisor  <i>African Early Childhood Network (AfECN), Kenya</i></p>
	<p><b>Ms. Joyce Marangu,</b>  <i>ECD Hub Manager,</i>  <i>Institute for Human Development</i>  <i>Aga Khan University</i></p>
	<p><b>Ms. Mwajuma Kibwana</b>  <i>Executive Director</i>  <i>Tanzania Early Childhood Development Network (TECDEN), Tanzania</i></p>
	<p><b>Mr. Omar Kofa Komora</b>  Chief Executive Officer  JUHUDI Community Support Centre</p>
	<p><b>Prof. Teresa Mwoma</b>  <i>National Coordinator</i>  <i>ECD Network of Kenya</i></p>
4:00 PM - 4:15 PM	Tea Break
4:15 PM - 5:00 PM	<p><b>Closing Ceremony</b>  <b>Session moderator: Dr. Mercy Korir</b>  <b>Venue: Tembo</b></p>
4:15 PM - 4:20 PM	Entertainment
4:20 PM - 4:30PM	<p><b>Awards</b>  <b>Moderator: Dr. Japheth Adina</b>  <i>Postdoctoral Fellow</i>  <i>Institute for Human Development</i>  <i>Aga Khan University, Kenya</i></p>
	<ul style="list-style-type: none"> <li>• Best Poster (Early Career Researcher)</li> <li>• Best Oral Presentation (Early Career Researcher)</li> </ul>
4:30 PM - 4:40PM	<p><b>Conference Communique</b>  <b>Dr. Anil Khamis</b>  <i>Aga Khan University</i></p>
4:40 PM - 5:15 PM	<p><b>Closing Speeches</b>  <b>Moderator: Dr. Mercy Korir</b></p>

Wednesday June 10, 2026

Day 2

- Vote of Thanks: Ms. Margaret Kabue, Senior Institute Manager, IHD
- Closing remarks on behalf of Aga Khan University East Africa Leadership: Prof. Peter Gatiti
- Closing Remarks on behalf of Aga Khan University Leadership: Prof. Salim Virani
- Closing Remarks on behalf of Aga Khan University Leadership: Prof. Tania Bubela
- Closing Remarks on behalf of Aga Khan University Institute for Human Development: Prof. Amina Abubakar

## MESSAGES FROM THE AGA KHAN UNIVERSITY LEADERSHIP



### **Dr. Sulaiman Shahabuddin, President, Aga Khan University**

The Aga Khan University's Institute for Human Development is the result of the vision of our founding Chancellor, His Late Highness the Aga Khan IV, who believed that understanding and supporting early human development are essential to improving quality of life. The Institute was set up to carry out research that can influence policy and practice, and to help train frontline workers, all with the aim of enhancing the lives of those living in vulnerable communities. Over the past decade, the Institute has exemplified this mission by working to understand and address the factors that shape human well-being across the lifespan. As we convene for this conference, we are reminded that unlocking human potential requires sustained commitment, shared responsibility, and a focus on the needs of the communities we serve. On behalf of the Aga Khan University, I welcome all participants and look forward to the ideas and insights that will emerge from this gathering.



### **Dr. Tania Bubela, Provost and Vice President, Academic, Aga Khan University**

The challenges shaping human development are complex, cumulative, and deeply embedded within social, cultural, economic, biological, and policy contexts. They cannot be adequately understood or addressed through a single disciplinary lens. At Aga Khan University, the Institute for Human Development (IHD) advances rigorous, locally grounded, and globally relevant in this domain. This conference reflects IHD's commitment to interdisciplinary inquiry and translational impact by creating a platform for researchers, practitioners, policymakers, and communities to engage critically with emerging evidence, challenge assumptions, and co-develop responsive approaches to human development. Through open dialogue and collaboration, the conference seeks to strengthen collective understanding and contribute to more equitable, evidence-informed, and contextually meaningful pathways for improving developmental outcomes across the life course.



### **Dr. Salim S. Virani, Vice Provost, Research, Aga Khan University**

Research has the power to transform lives. It helps us better understand complex challenges, informs decision-making, and creates pathways for meaningful change. This conference showcases the breadth of work being undertaken to improve outcomes in areas ranging from early childhood development and brain health to climate resilience and emerging technologies. It is also an opportunity to strengthen scientific networks and explore how evidence can be translated into action for the benefit of communities across low- and middle-income settings.

## MESSAGES FROM THE AGA KHAN UNIVERSITY LEADERSHIP



**Dr. Amina Abubakar, Director, Institute for Human Development, Aga Khan University**

Welcome to the Institute for Human Development's tenth anniversary conference. This milestone offers an opportunity to reflect on how far we have come, the lessons we have learned, and the opportunities that lie ahead. As we gather to share evidence and experiences, I hope these conversations will inspire new ideas and practical solutions that improve lives and expand opportunities for future generations.

During the Institute's inaugural conference, our founding director, Prof. Kofi Marfo, said, "It is my wish that when we look back, decades from now to take stock of the success of the Institute, its success will be manifested not just in the amount of knowledge generated and disseminated but also in the breadth and magnitude of our commitment to foster and sustain partnerships across sectors and stakeholder groups within our local contexts to ensure that the science we generate is put to practical use to inform policy, develop innovative professional programmes, and enhance the quality of services for children, families and communities."

I hope that the breadth and depth of work presented here and the range of stakeholders present is a clear indication that we are on track to achieve this aspiration.



**Abdullahi Hassan Maalim, Education & Governance Sector Lead, Frontier Counties Development Council (FCDC)**

Abdullahi Hassan Maalim is an Education Governance and Policy Specialist with over 25 years of experience in public administration, devolution, education planning, and institutional reform. He currently serves as Education & Governance Sector Lead at the Frontier Counties Development Council (FCDC), where he leads regional education and governance initiatives across Kenya's ASAL counties. His key areas of expertise include Early Childhood Development (ECD) systems strengthening, development of inclusive digital learning ecosystems in underserved regions, and governance transformation through cross-county collaboration, stakeholder engagement, and public sector reform. He is passionate about transformative leadership, equitable access to quality education, and sustainable development.



**Prof. Adelaide Lusambili, Lead, Environmental Health and Governance Centre, Africa International University**

Prof Adelaide Lusambili is a Pan-African climate and health scientist whose work examines how a warming planet affects human health across the full life course — from pregnancy and newborns to adolescents and ageing populations. She is a Professor and Lead of the Environmental Health and Governance Centre at Africa International University, and Founder of NextGen for Earth, where she mentors the next generation of African climate and health leaders. She is the Principal Investigator on major studies exploring heat exposure and maternal health, adolescent wellbeing, and the impact of heat and flooding on older adults. Adelaide has led or co-led more than 23 studies across Africa and the UK, shaped global climate policy from COP26 through COP29, and had her work featured in Science, The New York Times, National Geographic, and the BBC.

## SPEAKER BIOS



**Ahmed Nadhir Omar, County Executive (CECM), Department of Health, County Government of Garissa**

Ahmed Nadhir Omar has been a County Executive Committee Member (CECM) in Garissa since 2017. He currently holds the health docket in the County Government of Garissa. He is a key figure in the national Caucus of County Executives for Health and represents the Council of Governors on the Global Fund's Kenya Coordinating Mechanism (KCM), contributing to strategic investments in Kenya's health response.

Internationally, Mr. Omar serves on the International Advisory Council of the Alliance of NGOs and CSOs for South-South Cooperation (ANCSSC). He has undertaken executive training in Leadership, Health Systems, and Climate Change from institutions such as Harvard Kennedy School, the University of Melbourne and the Nossal Institute for Global Health, the United Nations Institute for Training and Research (UNITAR), and the McCabe Centre for Law & Cancer, with a focus on resilient, community-centred healthcare.

He occasionally contributes columns to the Daily Nation and The Star, offering insights on public health, climate change, and traditional medicine at the intersection of policy, equity, and thinking systems.



**Dr. Aisha K. Yousafzai, Professor of Child Development and Health, Department of Global Health and Population, Harvard T.H. Chan School of Public Health & Visiting Faculty, Department of Paediatrics and Child Health, Aga Khan University**

Professor Aisha K Yousafzai completed her doctoral degree at the Institute of Child Health, University College London with a focus on international child health, nutrition and development. Her research has focused on understanding what interventions work to support early child development. She has 20 years of field research experience in low- and middle-income countries, having lived and worked in South Asia and led programme evaluations in East Africa, and Central and Eastern Europe. Her work primarily focuses on:

- Developing new interventions and approaches to support early child development with a particular interest in how to strengthen child and caregiving related outcomes through existing health, nutrition, and education systems.
- Analyzing for whom early childhood interventions work, how they work, in which contexts, and for how long.
- Understanding the implementation structures and processes for early childhood interventions to achieve sustainable impact at-scale.
- Promoting capacity development in local communities, services, and systems for the effective delivery of interventions to promote early child development.

Professor Yousafzai also serves in several global advisory groups on ECD for agencies such as UNICEF, WHO, and the World Bank.

## SPEAKER BIOS



**Dr. Amin S. Hassan, Research Scientist, Institute for Human Development, Aga Khan University**

Dr. Amin S. Hassan is a research Scientist at the Aga Khan University Institute for Human Development. He obtained his PhD in Epidemiology from the University of Amsterdam and a Master of Science in Epidemiology from the London School of Hygiene and tropical Medicine. He has over 18 years of interdisciplinary research experience in epidemiology, public health and molecular virology. His research integrates molecular and population-level approaches towards understanding drivers of infectious diseases and informing effective public health interventions. Dr. Hassan has held postdoctoral positions at the Public Health England, London, UK; Lund University, Malmo, Sweden, and the KEMRI-Wellcome Trust Research Programme, Kilifi, Kenya. Through these positions, he has contributed to advances in understanding HIV epidemiology, genomics and transmission dynamics. He is currently supporting the establishment and implementation of a mother-infant surveillance cohort that aims to study effects of environmental and pathogenic exposures during pregnancy on early childhood neurodevelopmental disorders. He is passionate about generating rigorous, policy relevant evidence to address known and emerging public health challenges. He is also deeply committed to mentorship and strengthening biomedical research capacity in Africa.



**Amina Mwit, Regional ECD Advisor for East Africa, Aga Khan Foundation**

Amina Mwit is a passionate Early Childhood Development (ECD) specialist with almost three decades of experience advancing high-quality ECD initiatives across East Africa. As a senior advisor at the Aga Khan Foundation, she provides technical guidance and strategic leadership for programmes in Kenya, Uganda, and Tanzania, including multi-year regional grants implemented with Aga Khan Development Network agencies. Amina plays a pivotal role in shaping policy and practice by fostering collaboration among government ministries, donors, ECD networks, and implementing partners, and she regularly represents AKF at regional and international forums to share lessons and best practices. Prior to AKF, she held senior leadership in a nationally recognised ECD organisation, contributing to national curriculum reforms, policy reviews, and leading a curriculum accreditation process. She combines deep technical expertise, policy influence, and cross-cultural leadership to drive innovation and excellence in early childhood development across East Africa and beyond. Amina holds a Master's in Education and International Development from the University of Central London, UK, among other qualifications.



**Dr. Anjum Halai, Professor and Vice Provost, Aga Khan University Pakistan**

Anjum Halai is a Professor and Vice Provost at the Aga Khan University Pakistan. She has a long standing and international experience in higher education especially in low and middle-income countries like Pakistan, East Africa and Syria. She holds a doctoral degree in education from Oxford University UK. She was an adjunct professor at the University of Alberta Canada (2011-2016) and a research fellow at the Centre for International Education and Development University Sussex UK. She has recently been elected as a Fellow of the prestigious World Academy of Arts and Sciences.

Dr. Halai's research interests are in social justice issues in education, teacher education and gender and education. Dr. Halai has led several new and highly relevant programmes at AKU. As founding Dean Faculty of Arts and Sciences, she led the development of academic programmes, financial plans and space plans for the Faculty in Pakistan. Most recently she led the development of the LEADS platform for offering an innovative programme of micro-credentials to provide multiple learning pathways to the underserved communities and for re-skilling and upskilling early career professionals.

## SPEAKER BIOS



**Arif Neky, Regional Director for Advancement at the Aga Khan University, Founding Honorary Chairman of the UN SDG Partnership Platform in Kenya**

Co-founder & Deputy Chairman for East Africa of the Africa Venture Philanthropy Alliance (AVPA). Deputy Chairman of the Finance, Trade & Investment Network FINTRINET and a Trustee of the Agriculture Sector Network ASNET of Kenya. Former Chairman of the Task Force for the creation of Impact Investing Kenya.

Founding Coordinator of the first SDG Philanthropy Platform globally in Kenya, Founding Co-Chair of the EA Philanthropy Network and co-creator of the Kenya Philanthropy Forum. Co-creation of the SDG Accelerator Lab for Kenya.

Former Regional CEO of the Aga Khan Foundation (AKF) East Africa for over 13 years

Previously the Regional Representative across Eastern Africa for the French & International Bank - Société Générale.

Founder & CEO of the Microsoft certified Academy of Learning, Vancouver Canada.



**Prof. Beatrice Matafwali, Associate Professor, Department of Educational Psychology, Sociology and Special Education, University of Zambia**

Prof Beatrice Matafwali is an Associate Professor at the University of Zambia, Department of Educational Psychology, Sociology and Special Education. She has 18 years of experience in Special Education and Early Childhood Development. Her research work spans Early Childhood Development, Early Grade Reading, inclusive education, and Child Rights. She has contributed to various international joint research initiatives and has published book chapters and journal articles in the field of early childhood, early literacy, and Special Education. Beatrice is passionate about initiatives that promote opportunities for early identification and interventions for improved learning outcomes.



**Beatrice Mkubwa, PhD Fellow, Institute for Human Development**

Ms. Mkubwa is a PhD fellow at the institute. She has a background training in BSc. Nursing from Moi University, a postgraduate diploma in Health Research Methods from Pwani University, and a master's degree in Implementation Science from the University of the Witwatersrand. Beatrice also has clinical research experience in understanding child neurodevelopment and health systems which she gained during her previous work at KEMRI-Wellcome Trust Research Programme. She is currently pursuing a doctorate at the Vrije Universiteit Amsterdam (Netherlands). She has keen interest in child and adolescent mental health, neurodevelopment, implementation science, and mixed methods research.

## SPEAKER BIOS



**Professor Charles Newton, Principal Investigator, KEMRI-Wellcome Trust Research Programme, Cheryl and Reece Scott Professor of Psychiatry, University of Oxford**

Charles Newton was born in Kenya, qualified in Cape Town, South Africa, with postgraduate training in Paediatrics in Manchester and London, United Kingdom. As a lecturer at University of Oxford, he returned to Kilifi Kenya in 1989, to help set up an unit to study severe malaria in African children. Thereafter he spent 2 years as a Post-doctoral fellow at Johns Hopkins, USA; studying mechanisms of brain damage in central nervous system infections. He completed his training in Paediatric Neurology at Great Ormond Street Hospital, and Queens Square in London, UK. In 1998 he was awarded a Wellcome Trust Senior Clinical Fellowship at University College London, to return to Kilifi, to study CNS infections in children. He conducts research on CNS infections in children; epidemiological studies of epilepsy and neurological impairment; tetanus, jaundice and sepsis in neonates. In 2011 he took up a professorship in Psychiatry at the University of Oxford to concentrate of Neurodevelopmental Disorders, Epilepsy and mental illness disorders (particularly Psychosis and Depression) in Africa.



**Chryspin Afifu, Senior Advisor- Research, Policy and Partnerships, International Center for Research on Women (ICRW) Africa**

Chryspin Afifu is a Senior Advisor- Research, Policy and Partnerships at the International Center for Research on Women (ICRW) Africa, with extensive experience in evidence-informed policy engagement, gender-responsive research, care economy programming, and multi-stakeholder advocacy across Kenya and East Africa. His work sits at the intersection of gender equality, social protection, childcare systems, women's economic empowerment, and inclusive human development. He has contributed to national and county-level policy processes aimed at recognizing, reducing, redistributing, rewarding, and representing care work, while advancing practical pathways for strengthening childcare ecosystems, supporting women-owned care enterprises, and improving access to quality, affordable, and inclusive childcare services for marginalized households.

Drawing on his leadership in gender-transformative research, policy translation, and care economy advocacy, he offers critical insights on how childcare systems can be positioned not only as social services, but as foundational human development infrastructure that enables children to thrive, supports families, expands women's economic participation, and strengthens inclusive development outcomes.



**Dr Denis Chopera, Senior Programme Manager, Leadership for Africa Research Networks (LEARN R&D), SFA Foundation**

Denis Chopera is the Senior Programme Manager, Leadership in African Research Networks (LEARN), which includes the flagship DELTAS Africa Initiative. Prior to joining SFA Foundation, he was an Associate Director at the International AIDS Vaccine Initiative (IAVI) where he led the implementation of strategies to strengthen translational research capacity across the IAVI-ADVANCE network. He also led the Virus Surveillance Flagship and the T-Cell Immunology analysis workstream.

He has also worked with the Sub-Saharan African Network for TB/HIV Research Excellence (SANTHE), a DELTAS Africa funded research capacity building initiative focusing on basic, clinical and translational research on HIV, TB and associated comorbidities as a Programme Executive Manager. He is a medical virologist by training and previously held a faculty position in the Division of Medical Virology at the University of Cape Town. In addition to a PhD in Medical Virology, he also holds a master's in Molecular and Cell Biology from the University of Cape town, a master's in Public Health from university of the Western Cape – Cape Town and a degree BSc (Honours), Biochemistry from the University of Zimbabwe.

## SPEAKER BIOS



### **Easter Elizabeth Okello, Technical Lead, Education and Training Pillar, Lake Region Economic Bloc (LREB)**

Easter Elizabeth Okello is the Technical Lead for the Education and Training Pillar at the Lake Region Economic Bloc (LREB) Secretariat, where she spearheads initiatives on Nurturing Care for Early Childhood Development (NCfECD) across 14 member counties. A PhD candidate in Development Studies at Jomo Kenyatta University of Agriculture and Technology, Easter has extensive experience in education, gender, and human resource development. She has led the formulation of regional policies, coordinated the rollout of ECD programs, and built multisectoral partnerships with local and international stakeholders to strengthen early learning systems. Passionate about empowering women and youth, she also advocates for inclusive, gender-responsive education and sustainable community development.



### **Dr. Emmanuel Sulle, Assistant Professor & Director, Arusha Climate & Environmental Research Centre, Aga Khan University**

Dr. Sulle is an Assistant Professor and Director of the Aga Khan University's Arusha Climate and Environmental Research Centre in Tanzania. He is a leading scholar in African agrarian studies and a contributor to the Network of Excellence on Land Governance in Africa. He holds a PhD in Poverty, Land and Agrarian Studies from the University of the Western Cape (South Africa) and a master's degree in public policy, specializing in Environmental Policy, from the University of Maryland (USA). His academic achievements include awards such as the Harvard University Doctoral Student Fellowship and the CODESRIA Doctoral Grant. Sulle currently holds a Global Faculty position at the University of Cologne (Germany), serves as an Adjunct Professor at Simon Fraser University (Canada), and is a Research Fellow at the University of the Western Cape. Before joining AKU, he worked at the University of the Western Cape, where he led multidisciplinary research teams on complex projects across Eastern, Southern, Western, and Northern Africa. These include large-scale studies on women's land rights in seven countries and development corridors in four countries in Eastern and Southern Africa. His current research focuses on climate change, sustainable agriculture and food systems, policy analysis, the green economy, biodiversity, land tenure, and agrarian transformation in Africa.



### **Esther Ndungu, Child Protection Officer, State Department for Children Services, Kenya**

Esther Mugure Ndungu is a Kenyan child protection officer with over 20 years of experience, working at the national level within the State Department for Children Services. Her work focuses on protecting children and adolescents and strengthening the systems that support them across Kenya.

She has contributed to work on harmful practices, violence against children, missing and found children, as well as broader childcare and protection initiatives. She has also supported the development of standards, guidelines, and other tools that shape practice across the sector.

Her experience brings together policy, coordination, and implementation, with a strong commitment to practical, prevention-focused approaches that uphold dignity, safety, and wellbeing for children, adolescents, and families.

## SPEAKER BIOS



**Everlyne Okeyo, ECD Technical Specialist, Institute for Human Development, Aga Khan University**

Everlyne is an Early Childhood Development (ECD) Specialist with over a decade of experience in managing ECD programmes across different contexts. She is currently the ECD Technical Specialist at the Aga Khan University's Institute for Human Development. She holds a master's degree in education (ECD) and a Diploma in Project Management.

Over the years, she has led the development and delivery of various courses for different cadres of ECD stakeholders including government leaders and frontline workers in Kenya and beyond. Her technical expertise spans across different areas such as Science of Early Child Development, early years literacy, numeracy and socio-emotional learning. Her passion is to strengthen systems that ensure equitable access to high-quality early childhood development services for all children



**Dr Felix Oluoch, PhD, Institute for Global Health and Development, Aga Khan University, Nairobi**

Dr Felix Oluoch is a Postdoctoral Fellow in Climate, Environment and Health at the Department of Population Health, Aga Khan University, Nairobi, with an affiliation to the Institute for Global Health and Development. His work applies geospatial analytics, epidemiological methods, statistical modelling and health systems research to understand how climate and environmental risks affect population health, service delivery and community resilience. He co-leads the Kenya case study of PREPARE-CC, the Promoting Resilience, Preparedness, Adaptation, and Response to Climate Change in Complex Crises initiative, with Dr Fred Gudda. In Kenya, the study examines how climate shocks, conflict dynamics, displacement and fragile service delivery interact in refugee hosting borderlands, including Garissa and Dadaab, and Turkana and Kakuma/Kalobeyei. His current research includes subnational heat vulnerability mapping for pregnant women, children younger than five years and older adults, climate and health surveillance, water, sanitation and hygiene risk analytics, and the use of routine health and geospatial data to guide devolved planning. Felix is especially interested in producing decision ready evidence that helps governments, humanitarian actors, communities and civil society organizations identify vulnerable populations, strengthen preparedness and design context relevant climate adaptation and health system responses.



**Fikirte Girma Bayouh, MD, MPhil, Assistant Professor and Head of the Department of Psychiatry, Addis Ababa University**

Fikirte Girma Bayouh, MD, MPhil, is Assistant Professor and Head of the Department of Psychiatry at Addis Ababa University, and Consultant Child and Adolescent Psychiatrist at Zewditu Memorial Hospital. She completed her clinical fellowship in Child and Adolescent Psychiatry at the University of Toronto and holds an MPhil in Public Mental Health from the University of Cape Town. Her research and leadership focus on child and adolescent psychiatry, maternal mental health, and the adaptation of global mental health interventions for low-resource settings. As country co-principal investigator on several international collaborations, including the WHO Caregiver Skills Training and the SPARK trial, she has contributed to evidence, innovation, and policy shaping mental health services.

## SPEAKER BIOS



**Dr. Fortidas Bakuza, Associate Professor and Interim Associate Dean Research and Partnerships, Institute for Education Development East Africa, Aga Khan University**

Dr. Fortidas Bakuza is an Associate Professor at the Aga Khan University- Institute for Education Development East Africa in Dar-es-Salaam, Tanzania where he specializes in Early Childhood Education and Teacher Education. Dr. Bakuza is a member of ILO/ UNESCO Joint Committee of Experts on the Application of the Recommendations concerning Teaching Personnel. His research focuses on Early Childhood Education leadership and policies with emphasis on evidence-based policies and programs on Early Childhood Education leadership. He has successfully led a number of Early Childhood Development and Education interventions in Tanzania and across East Africa, which include, Fursa kwa Watoto (Opportunity for Children) as a project Principal Investigator, Strengthening Education Systems in East Africa (SESEA) as project facilitator, Strengthening Teaching and Raising Achievement in Pre-Primary and Primary Schools (STRAPPS) as project facilitator and Foundation for Learning (F4L) East Africa project where he led Pre-Primary Education Tutors and Teachers professional development. Dr. Bakuza has had opportunities to participate in different Early Childhood Development research and capacity building across East Africa and in other parts of Africa and internationally. He is determined to use evidence-based advocacy and awareness raising in the call for improved investment in the lives of young children especially in areas with limited access to quality care and development of young children and their families. Dr. Bakuza is a national facilitator of Teachers Continuous Professional Development in Tanzania.



**Mr. Gideon Mbithi, Research Fellow, Institute for Human Development Aga Khan University, Kenya**

Gideon is a Research Associate in the Institute for Human Development, Aga Khan University. He holds an Msc. In Global Health from the Royal Holloway: University of London through Commonwealth Scholarship. He has a Postgraduate Diploma in Health Research Methods from Pwani University. He was previously based at the KEMRI-Wellcome Trust Research Programme, where he examined the epidemiology and outcomes of traumatic brain injuries among patients admitted to Kilifi County Hospital. While at the institute, he has coordinated a research project that aimed to assess and support mental health outcomes among adolescents in Kenya and Uganda. Currently, he is supporting the UZIMA-KIPMAT study that aims to develop early warning systems to identify mothers and children at risk for poor health trajectories



**Henry Kilonzo, PhD, Public Health and Social Development Leader, Safaricom and M-PESA Foundations**

Henry Kilonzo is a public health and development professional with deep expertise in strategy development, health systems strengthening, sustainable philanthropy, Corporate Social Investment (CSI), measurement of social impact and strategic partnerships. With proven experience across government, international NGOs, local NGOs, donors and the private sector, Henry has a unique cross-sector perspective to designing and leading teams in delivering high-impact social investments. He currently serves as Senior Manager, Foundations Programmes at Safaricom and M-PESA Foundations, where he leads the Foundations' strategy, programmes, resource mobilisation and operations. His prior roles span MSH Southern Africa, FHI360, and the Children's Investment Fund Foundation (CIFF)—supporting large, complex portfolios across Africa and Southern India. He is a mission-oriented people leader. He holds a PhD in Public Health (Maseno University), MPH (University of the Western Cape), and BSc in Information Sciences (Moi University), with executive training from Strathmore and Harvard Business Schools, UNISA, University of Michigan, and AMREF.

## SPEAKER BIOS



**Dr. Idle O. Farah, OGW, Chief Executive Officer, Frontier Counties Development Council (FCDC)**

Dr. Idle O. Farah, OGW, is the Chief Executive Officer of the Frontier Counties Development Council (FCDC), a coalition of ten county governments advancing development across Kenya's frontier regions. A native of Wajir County, he brings over 36 years of distinguished leadership spanning senior roles in both the public and private sectors. He currently serves as Chairman of the Council at the Technical University of Kenya and as a Research Associate at the National Museums of Kenya's Institute of Primate Research. Previously, he served as the Vice-Chancellor of Umma University, Director-General of the National Museums of Kenya, Chairman of the University of Nairobi Council, and Commissioner at the Commission for University Education. A recipient of numerous national and international honors and research grants, Dr. Farah is a widely published scholar with over thirty peer-reviewed publications, has co-supervised postgraduate students, and has advised multilateral and national institutions. His work reflects a deep and sustained commitment to advancing biomedical research, higher education, heritage preservation, governance, biodiversity, and climate resilience.



**Dr. Japheth Adina, Research Fellow, Institute for Human Development, Aga Khan University**

Dr Japheth Adina is a clinical psychologist and currently a research fellow at the Institute for Human Development, Aga Khan University, Kenya. Dr Adina holds a PhD in clinical and developmental psychology from The University of Queensland, Australia. His research interests include mental health, maternal psychopathology, neurodevelopmental disorders, child health and development, parenting and behavioural family interventions, cognitive behaviour therapy, adolescent social media use, and socioemotional learning. Recently, he has been working on a project focusing on social and emotional learning policy and practice targeting arid and semi-arid settings of Kenya and Uganda, funded by the Porticus Foundation, Netherlands.



**Joyce Marangu , Early Childhood Development (ECD) Hub Manager, Aga Khan University**

Joyce Marangu currently serves as the Early Childhood Development (ECD) Hub Manager at the Aga Khan University, where she oversees the strategic design and implementation of capacity-strengthening and policy initiatives. Joyce works closely with civil society, governments, and regional networks to strengthen ECD systems across multiple countries. She previously worked as a Research Associate at the Aga Khan University, contributing to research on maternal and child health and child development. She is a PhD candidate at Stellenbosch University and holds master's degrees in Development Studies and Development Management from the University of the Western Cape and Ruhr University Bochum. She is also a recipient of several fellowships, including the Moving Minds Alliance Fellowship, with a strong commitment to advancing evidence-based solutions for children and families in underserved contexts

## SPEAKER BIOS



### **Dr. Kerubo Bosire, Knowledge and Learning Advisor African Early Childhood Network (AfECN)**

Dr. Kerubo Bosire is an ecologist and knowledge systems specialist with over 13 years of experience working at the intersection of climate change, environmental sustainability, agrifood systems and community development across Africa. In her current role as the Knowledge and Learning Advisor at African Early Childhood Network (AfECN), she leads knowledge generation, learning, advocacy, and partnership initiatives that strengthen evidence-informed early childhood development (ECD) systems. Her work also involves identifying strategies for integrating ECD into the environment, climate and One Health approaches across the continent.

Dr. Bosire has a track record of generating and translating evidence to support policy and systems strengthening for inclusive development, particularly for communities affected by climate and environmental challenges.

She previously worked as a research scientist with the International Livestock Research Institute (ILRI) and has served in various research roles at the Stockholm Environment Institute, WorldFish, and Alliance of Bioversity International and CIAT.

Dr. Bosire holds a PhD in Water Engineering and Management from the University of Twente, a Master's degree in Biology of Conservation, and a Bachelor's degree in Zoology and Chemistry from the University of Nairobi.



### **Prof. Kirsty Donald, Head of Developmental Paediatrics, Department of Paediatrics and Child Health, University of Cape Town**

Professor Kirsty Donald is Head of Developmental Paediatrics in the Department of Paediatrics and Child Health at the University of Cape Town, based at Red Cross War Memorial Children's Hospital, and Deputy Director of the Neuroscience Institute. She is a clinician-researcher whose work focuses on early child neurodevelopment, particularly in resource-limited settings where environmental risks to brain development are high. Her research explores how biological and environmental factors, including HIV exposure, nutrition, maternal mental health, and other early-life risks, influence brain development and developmental outcomes. She uses neuroimaging, EEG, cognitive and developmental assessments, and genomic approaches to better understand the mechanisms underlying neurodevelopmental disorders in African populations. In addition to her research, she contributes to national policy work and serves on international expert panels focused on early childhood development and disability screening and intervention.



### **Linet Kaloki, ECD Technical Specialist, Institute for Human Development, Aga Khan University**

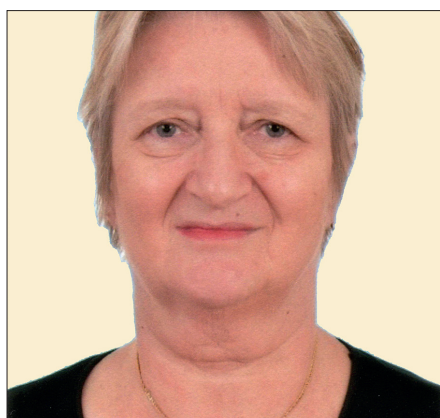
Linet Kaloki is an ECD Technical Specialist at the Aga Khan University - Institute for Human Development (AKU - IHD), with over ten years of experience advancing Early Childhood Development, gender equity, and women's economic empowerment. She has dedicated her career to championing the rights and wellbeing of children, women, and girls, with a particular focus on marginalized and underserved communities. A passionate advocate for systemic change, Linet has worked in implementing programs that advance women's economic empowerment and gender equity, working closely with government bodies, donors, and partner networks to ensure interventions are policy grounded and evidence driven. She firmly believes that the wellbeing of children and the empowerment of women are not separate conversations, but one and the same. Currently, she leads a pioneering project on care work in marginalized communities, with active implementation in Lamu and Isiolo. She will present insights on the intersection of childcare and women's economic empowerment, advocating for a community centered approach to redistributing care work, one that uplifts families, strengthens communities, and unlocks the potential of women and girls across Africa. Linet holds an MA in Child Development and several related professional certifications.

## SPEAKER BIOS



### **Prof. Mark Tomlinson, Co-Director, Institute for Life Course Health Research, Stellenbosch University**

Professor Mark Tomlinson is a qualified clinical psychologist and currently the Co-Director of the Institute for Life Course Health Research Stellenbosch University. He is also a Professor of Maternal and Child Health in the School of Nursing and Midwifery, Queens University, Belfast, UK. His scholarly work has involved a diverse range of topics such as improving early childhood development, maternal mental health, maternal and child health, adolescent health, child and adolescent mental health, and on life course approaches to understanding child and adolescent development. He was elected as a member of the Academy of Science in South Africa in 2017. He has published 416 papers in peer-reviewed journals, edited four books and written numerous chapters. He is on the Editorial Board of PLoS Medicine; and also, Psychology, Health and Medicine.



### **Prof. Marleen Temmerman, Director, Centre of Excellence Women and Child Health, Aga Khan University**

Prof. Marleen Temmerman, MBS, MD, MMED-OB/GYN, MPH, PhD. Director, Centre of Excellence Women and Child Health, Aga Khan University, Nairobi, Kenya. AKU UNESCO Chair Youth Leadership in Health, Education, Gender & Sciences. Professor-Em Ghent University, Belgium. Adjunct professor School of Medicine and Health Sciences, Technical University Mombasa.

Previously, 1) Director Reproductive Health Research Department, World Health Organization, Geneva; 2) Senator Belgian Parliament – Chair Commission Foreign Affairs & Defense. Vice-President European Parliamentary Forum, Chair HIV/AIDS Advisory Group Inter-Parliamentary Union; 3) Founding Director International Centre Reproductive Health (ICRH), Ghent University, (1994), ICRH Kenya (2000) and ICRH Mozambique (2010), with a global academic network to translate research into impact (ANSER).

Over 600 peer-reviewed publications (H-index 113). Supervised over 60 PhD students.

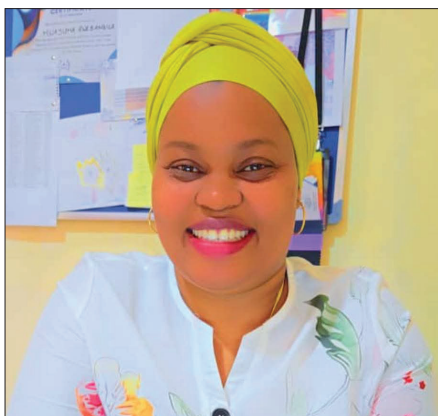
Ambassador African Academy of Sciences; Member US National Academy Medicine and American Academy Arts and Sciences; Fellow Royal College OB/GYN; Board Member CONSAMS; BMJ Lifetime Achievement Award; Moran of the Burning Spear, Kenya.



### **Dr. Moses Kachama, Global Mental Health Researcher, Brain and Mind Institute, Aga Khan University**

Dr. Moses Kachama Nyongesa is a global mental health researcher based at the Brain and Mind Institute, Aga Khan University in Kenya. His expertise spans measurement validation, psychiatric epidemiology, and implementation science, with over a decade of experience leading and collaborating on research across Kenya and sub-Saharan Africa. Dr. Kachama's work focuses on youth mental health, including the intersection of HIV and mental health. His research agenda emphasizes innovative, scalable, and contextually relevant mental health solutions, particularly those co-designed with youth and leveraging the growing potential of digital technologies. His scientific contributions can be found here.

## SPEAKER BIOS



### **Mwajuma Kibwana, Executive Director, Tanzania Early Childhood Development Network (TECDEN)**

Mwajuma Kibwana (M.A. Development Studies) is the Executive Director for Tanzania Early Childhood Development Network (TECDEN) since January 2021. For the past 20 years she has worked for different programs including HIV/AIDs, Youth and women empowerment, accountability, and early childhood development. Mwajuma provides strategic leadership and technical guidance to the Tanzania ECD Network, ensuring programmes align with the network's objectives, fostering strategic linkages and partnerships within Africa and beyond. For the past 5 years, Mwajuma has led TECDEN's coordination of ECD non-state-actors to work collaboratively with the government of Tanzania in promoting ECD agenda in the country including development, launch, and implementation of the National Multi-sectoral ECD Program (NM-ECDP) at both national and sub-national level. Mwajuma is the Global Leader for Young Children under mentorship of World Forum Foundation.

She is fluent in Swahili and English.



### **Dr. Nabila Amin Ali, Head of the Child and Adolescent Psychiatry Unit, Mathari National Teaching and Referral Hospital**

Dr. Nabila Amin is a Consultant Psychiatrist with over 15 years of medical experience, including more than 12 years dedicated to mental health care. She currently serves as the Head of the Child and Adolescent Psychiatry Unit at Mathari National Teaching and Referral Hospital, Kenya's national referral center for mental health care. She holds a Master's degree in Psychiatry from the University of Nairobi and a medical degree from Ege University School of Medicine, Turkey. She is currently pursuing a PhD at Vrije Universiteit Amsterdam in the Department of Clinical Neuro- and Developmental Psychology. Dr. Nabila has a strong clinical and research interest in child and adolescent mental health, particularly in early identification and intervention. She has contributed to national mental health research and policy, including authorship of the Adolescent Mental Health chapter in Kenya's National Adolescent Health Survey led by the Ministry of Health. She has also served as a clinician in the Kenya National Adolescent Mental Health Survey conducted by the Africa Population and Health Research Center. Her work focuses on advancing child and adolescent mental health through clinical care, research, training, and policy engagement, with particular emphasis on scalable, evidence-based interventions in low-resource settings.



### **Nafisa Shekhova, Global Lead, Education and Early Childhood Development, Aga Khan Foundation**

Nafisa leads the Human Development Cluster within the Global Programme Team at the Aga Khan Foundation, where she also oversees the Early Childhood Development (ECD) portfolio and co-leads the Education portfolio. She provides strategic direction and technical guidance to country teams, ensuring programme quality and alignment with the Aga Khan Foundation's global strategy, and supports the design of innovative, evidence-based programmes.

Nafisa has held several senior roles across the organisation, including Asia Education Advisor, Regional Education Programme Manager in East Africa, and Deputy Education Director in Afghanistan. Within the education portfolio, she focuses on early years of education, girls' education, and promoting pluralism through education, alongside cross-sector collaboration on adolescent wellbeing and youth employability.

She has played a key role in contributing to the Aga Khan Foundation's global education and ECD strategies and the development of the Aga Khan Foundation's strategic frameworks across multiple regions. Nafisa is a member of the Geneva Global Education in Emergencies Hub, the Moving Minds Alliance and the ESCO Institute Advisory Board. Nafisa holds a Master of Education from the University of Melbourne and speaks English, Russian, Tajik, and Shughni.

## SPEAKER BIOS



### **Noni Mumba, Head of Engagement, KEMRI Wellcome Trust Research Programme (KWTRP)**

Noni Mumba is an engagement practitioner with over 10 years' experience in community and public engagement for global health research in low-and-middle-income-country (LMIC) settings. This expertise also includes engaging with broader specific publics of interest, including local, national and international global health research stakeholders, including funders. Her role at KWTRP includes development of engagement strategies and innovative approaches for the engagement and involvement of host communities, stakeholders, and policy makers, in research planning, conduct and uptake of findings into policy. She also oversees monitoring, evaluation and learning of engagement activities. Prior to KWTRP, Noni has another 10 years of experience in Health Promotion and Strategic Health Communication with non-governmental health organizations across Kenya.

Noni is involved in building capacity of KWTRP engagement staff as well as researchers on engagement. In the last 5 years, this capacity strengthening has extended beyond KWTRP, through webinars, teaching engagements (University of Oxford's Post Graduate Diploma in Global Health Research – Community Engagement Module), and collaborative research projects. She has participated in the development of community engagement learning tools and courses including the Online CEI Course on MESH (an online community engagement Community of Practice [COP] platform) and the GPP WHO Toolbox for COVID-19 Clinical Trials (among others).

She is a member of the Global Health Bioethics Network (GHBN); the National Institute of Health and care Research – NIHR's Community Engagement & Involvement [CEI] Advisory Network; and has (co)authored several publications on community engagement and ethics. She has also been a long-standing member of NIHR funding committees (specifically Health Policy and Systems Research-HPSR). Previously, she was a member of an Ethics Advisory Board for Target Malaria a consortium looking for malaria solutions through mosquito gene editing.

She holds a Master of Arts degree in Development Communication.



### **Omar Kofa Komora, Executive Director, JUHUDI Community Support Center**

Omar Kofa Komora is an experienced human rights advocate, governance expert, and Executive Director of JUHUDI Community Support Center. With over 15 years of grassroots and institutional experience in NGO management and rights advocacy, Komora has dedicated his career to bridging the gap between global policy frameworks and local community realities. Under his leadership, JUHUDI has pioneered highly effective, creative grassroots communication strategies, including strategic integration of edutainment methodologies, such as theater, storytelling, and role-play to make complex developmental frameworks accessible to rural and vulnerable populations.

Komora is deeply engaged in social accountability monitoring and environmental governance across coastal and riverine ecosystems, including Tana Delta. His organization is currently partnering with Aga Khan University ECD Workforce Hub to implement "The Tana River Nurturing Melodies Impact Sessions," focusing on early childhood development and community mobilization. Recently accredited as a member of African Union Economic, Social & Cultural Council (AU ECOSOCC) 5th Permanent General Assembly, Komora brings a deeply practical, evidence-based perspective to the panel on how civil society organizations can co-create pathways to strengthen family support systems and unlock sustainable human potential

## SPEAKER BIOS



### **Peninah Ndegwa, Founder and Managing Director, Wow Mom Ltd**

Peninah Ndegwa is the Founder and Managing Director of Wow Mom Ltd, a social enterprise advocating for Children Friendly cities. With a B.A Urban Planning from the University of Nairobi and an ongoing Master's in Climate Change Adaptation, she believes that if children are not designed for, they are designed out. Peninah has spearheaded an award-winning initiative leading to the provision of quality and affordable childcare services in market centres in partnership with County Governments, serving over 3000 children and counting! Her aspiration is to create cities where all people can access social amenities easily and in dignity, regardless of age, gender, physical ability, or income level.

**Wow Mom** is a Kenyan-based female-owned and led social enterprise whose mission is to create cities where children grow, learn and thrive. We do this by bringing to attention policies and plans that plague women and children in cities with an aim of developing programs that promote gender equity and inclusion. Through the implementation of our programs, we have on-ground experience that enables us to design innovative solutions that empower women and children in partnership with Governments and policymakers. Founded in 2018 and legally incorporated as a company in 2019, Wow Mom started as a parenting blog that provided factual, evidence-based information on parenting attributed to a lack of local knowledge and deprivation of social amenities for women and children. Through research, Wow Mom became the voice of women and children, articulating their needs in decision-making tables, leading to policy change and investment towards inclusive infrastructure. Our programs include Women economic empowerment programs through the provision of Childcare Services in market centers to enable women to engage in paid labor; advocacy on the inclusion of children in toilet matters through the installation of baby changing stations in public toilets; Capacity building programs that equip women with skills on parenting and entrepreneurship.



### **Dr. Patricia Kitsao-Wekulo, Research Scientist and Lead, Early Childhood Development Unit, African Population and Health Research Center (APHRC)**

Dr. Patricia Kitsao-Wekulo is a Research Scientist and Lead of the Early Childhood Development Unit at the African Population and Health Research Center (APHRC). Her work focuses on strengthening caregiving environments through evidence-based, scalable interventions that improve child development, caregiver well-being, and women's economic empowerment. Her current research integrates neuroimaging, gender-transformative parenting, and childcare systems to generate policy-relevant evidence. She is widely recognized for translating research into action through cross-sector collaboration, capacity strengthening, and data-driven policymaking. Dr. Kitsao-Wekulo's work aims to institutionalize sustainable, high-impact early childhood interventions across sub-Saharan Africa.



### **Prof. Robert Oostenveld, Associate Principal Investigator, Donders Institute for Brain, Cognition and Behaviour**

Prof. Oostenveld is internationally recognised for his pioneering contributions to neuroscience data analysis and brain imaging methodologies, particularly in EEG and MEG research. He is ranked among the world's top 2,000 neuroscientists and among the top 100 in the Netherlands. He has also been named a Highly Cited Researcher in Neuroscience and Behaviour by Clarivate for seven consecutive years, among other international recognitions for his outstanding contribution to the field of neuroscience.

## SPEAKER BIOS



### **Dr Ronald Kipkirui, Postdoctoral Fellow, Aga Khan University Institute for Human Development**

Dr Ronald has experience applying neuroscientific techniques such as Transcranial Magnetic Stimulation (TMS) and Electroencephalography (EEG). Previously, he applied TMS to understand the causal role of distinct brain areas in various aspects of human cognition, including executive functions. Dr Ronald is passionate about studying the neurophysiology of developmental disorders, particularly in children and adolescents, and examining conditions like HIV and Sickle Cell Disease.



### **Ryan Ombara, Project Leader, Open Capital Advisors**

Ryan Ombara is a Project Leader at Open Capital Advisors with over eight years of experience in strategy consulting, development finance, and investment advisory across sub-Saharan Africa. He has extensive experience working with community-based organisations, governments, and foundations to design financing solutions and build organisational capacity for inclusive development. He recently co-facilitated Open Capital's three-day CBO financial management training with Aga Khan University's Institute for Human Development and has supported organisations across East Africa to strengthen their financial management, governance, and impact storytelling. He has also delivered enterprise training programmes for entrepreneurs across East and West Africa and designed train-the-trainer content for entrepreneurship training targeting women in South Sudan. Ryan holds a Bachelor of Science in Mechanical Engineering (Honours) from the University of Nairobi.



### **Samira Cheruto Mbarak, Region Coordinator, Coast, Madrasa Early Childhood Programme–Kenya (MECP-K)**

Samira Mbarak is an Early Childhood Development (ECD) specialist with over 20 years of experience advancing quality, inclusive, and community-responsive early learning systems. She serves as the Region Coordinator for the Madrasa Early Childhood Programme–Kenya (MECP-K), an affiliate of the Aga Khan Foundation, where she leads programme implementation, partnerships, and capacity strengthening initiatives.

Over her career, Samira has held several leadership roles, including Teacher Trainer, Lead Program Officer (Teacher Training), and Principal of the Madrasa Resource and Training Institute (MRTI). She played a key role in developing the MECP teacher training curriculum, which received accreditation from the Kenya Institute of Curriculum Development (KICD) in 2015.

She currently supports the implementation of the IDRC-funded “Care for All” initiative, which aims to improve access to quality childcare and ECD services while reducing the care burden on women.

A certified Master Facilitator in Science of Early Childhood Development (SECD), Care for Child Development (CCD), and Human-Centered Design (HCD), Samira holds a Master's degree in Organizational Psychology, a Bachelor's degree in Education, and a Diploma in Early Childhood Development.

## SPEAKER BIOS



### **Prof. Salim Virani, Vice Provost - Research, Aga Khan University**

Dr. Salim S. Virani is the Vice-Provost (Global Research) and The Nizar E. Noor Mohammed Mewawalla Endowed Professor at Aga Khan University (AKU). He leads AKU's global research agenda and international collaborations across South Asia, East Africa, and Europe, advancing research in medicine, nursing, education, climate change, environmental sciences, media, and culture.

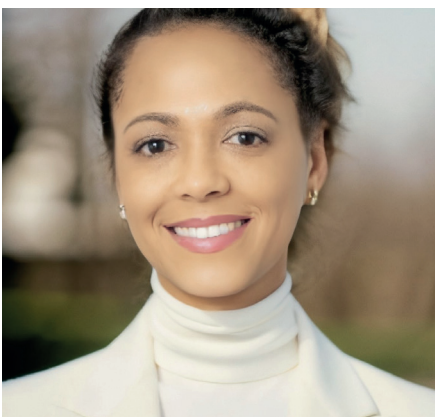
Prior to joining AKU, Dr. Virani was a tenured Professor of Cardiology and Cardiovascular Research at Baylor College of Medicine and an investigator at the Michael E. DeBakey VA Medical Center in Houston, Texas. He also directed the Cardiovascular Disease Fellowship Training Program and continues to practice as a preventive cardiologist with a focus on complex lipid disorders.

A graduate of AKU, where he received the Best Medical Graduate Award, Dr. Virani completed his Internal Medicine residency at the University of Miami and his Cardiology fellowship at the Texas Heart Institute, earning distinction as Chief Cardiology Fellow and Outstanding Graduating Fellow.

His research focuses on cardiovascular disease prevention, atherosclerosis, and improving the delivery of evidence-based care, particularly among South Asian populations and in low- and middle-income countries. Supported by major international funders, including the NIH, American Heart Association, and World Heart Federation, his work explores innovative approaches to preventive care, health informatics, machine learning, and technology-enabled healthcare delivery.

Dr. Virani has authored more than 850 peer-reviewed publications and book chapters, generating over 200,000 citations. He has been recognized among the world's top 2% most-cited scientists and named a global expert in cholesterol research by Expertscape.

An internationally respected leader in cardiovascular medicine, Dr. Virani has chaired and contributed to major global clinical guidelines, including the 2023 AHA/ACC Guideline for the Management of Chronic Coronary Disease. He currently serves in several leadership roles with the American College of Cardiology, National Lipid Association, and World Heart Federation, while remaining deeply committed to strengthening healthcare capacity and non-communicable disease prevention in underserved communities worldwide.



### **Dr. Shawneequa Callier, Associate Professor, Department of Clinical Research and Leadership, George Washington University**

Shawneequa Callier is an Associate Professor in the Department of Clinical Research and Leadership at the George Washington University School of Medicine and Health Sciences in Washington, DC. She has also served as a Special Volunteer at the Center for Research on Genomics and Global Health at the National Human Genome Research Institute, NIH for fourteen years. She has nearly two decades of experience analyzing the ethical, legal, and social implications (ELSI) of emerging technologies, which includes her time as a Postdoctoral Scholar at the Center for Genetic Research Ethics and Law, at Case Western Reserve University's School of Medicine. She works on various funded projects that focus on the ELSI of genomics research, data science, and artificial intelligence, including research on trustworthy AI adoption in clinical decision-making contexts.

## SPEAKER BIOS



### **Thomas Kariuki, PhD, Chief Executive Officer, SFA Foundation**

Dr Thomas Kariuki is Founding Director and Chief Executive Officer for the Science for Africa Foundation, established in 2021 to support, strengthen and promote science and innovation in Africa. A long-time advocate involved in the global effort to develop vaccines, drugs and diagnostics for poverty related diseases, Kariuki is a prolific science leader whose experience in science diplomacy has enabled the mobilization of support and hundreds of millions in USD funding from global funders and African governments for science and innovation in Africa.

Through his leadership, Kariuki is driving the SFA Foundation to establish global strategic partnerships and build a sustainable pan-African science funding organization that contributes to the growth of science and innovation in Africa. He is a recipient of various national and international awards including the Presidential honor of the Order of Grand Warrior of Kenya (OGW) for scientific leadership and public service, is a fellow of the African Academy of Sciences (FAAS) and an Honorary Professor of Research of the Liverpool School of Tropical Medicine, LSTM. He has served on many global boards and committees of Africa-wide professional networks including the Federation of African Immunological Societies (FAIS), CEPI, the World Health Organization among others.



### **Dr. Vibian Angwenyi, Assistant Professor, Aga Khan University Institute for Human Development**

Dr. Vibian Angwenyi is an Assistant Professor at the Aga Khan University's Institute for Human Development. She supports with implementing research on early childhood development, with a focus on parenting interventions and childhood disabilities, applying mixed-methods research and implementation science. She currently serves as the Nairobi-based project coordinator for the NIHR-funded multi-country collaborative research SPARK (Supporting African Communities to improve the resilience and mental health of children with developmental disabilities and their caregivers in Ethiopia and Kenya). The SPARK study aims to improve early identification, referral, and linkage of children with developmental disabilities in the community. SPARK research further seeks to evaluate the (cost) effectiveness of the World Health Organisation caregivers skills training delivered by non-specialist facilitators in diverse contexts through a cluster-randomised trial – see (<https://www.thesparkproject.net/>).



### **Dr. Victoria N. Mutiso, Clinical Psychologist and head of research and administration, Africa Institute of Mental and Brain Health (AFRIMEB)**

Dr. Victoria N. Mutiso is a Clinical Psychologist and head of research and administration at the Africa Institute of Mental and Brain Health (AFRIMEB), with over a decade of experience in mental health research, implementation science, and community-based interventions in Kenya and across Africa. Her work focuses on child and adolescent mental health, parenting and family interventions, psychosis-risk research, substance use, and integration of mental health into primary and community healthcare systems. She has served as Principal Investigator, Co-Principal Investigator, and Co-Investigator on several locally and internationally funded projects, including collaborations with the NIH, Grand Challenges Canada, NIHR, Washington University in St. Louis, and the University of Vermont. She has contributed extensively to the development of school mental health and life-skills interventions, task-sharing approaches, and multi-sectoral mental health systems strengthening in low-resource settings. Her current work includes research on youth mental health, homelessness and severe mental illness, and implementation of evidence-based parenting interventions aimed at improving child wellbeing and long-term developmental outcomes

## SPEAKER BIOS



### **Prof. Zul Merali, Founding Director, Brain and Mind Institute, Aga Khan University**

Professor Merali is a neuroscientist and pharmacologist by training (McGill University, University of Ottawa, and Wharton), with over 250 peer-reviewed scientific publications. He strives to address mental and brain health challenges, locally, nationally, and globally. He is the past CEO of the University of Ottawa Institute of Mental Health Research (in Canada) and was the Founding Scientific Director of the Canadian Depression and Intervention Network. He is the Founding Director of Aga Khan University's Brain and Mind Institute, with hubs in Kenya (serving East Africa) and Pakistan (serving South and Central Asia).

His research has spanned from the cellular and molecular mechanisms of stress-induced pathology to population-based approaches to mitigate the impact of stress and trauma on brain health. He believes in integrative methods, building and bridging academic and community-based approaches, promoting a 'neuron to neighbourhood' approach. Furthermore, he is dedicated to the development of innovative and sustainable solutions for low and middle-income countries. This includes the deployment of digital and task-sharing approaches to promote early detection, prevention, and intervention. His long-term objective is promoting brain and mental healthcare that is accessible, resource-sensitive, rights-based, and scalable.

## SPOTLIGHT ABSTRACTS

### Design and Adaptation of the Zambia Dyslexia Assessment Tool for Primary School-Going Children: Insights from the Pilot Study

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Early identification of dyslexia is essential for timely intervention and prevention of long-term academic and psychosocial difficulties. However, in many African contexts, identification remains limited due to the scarcity of culturally and linguistically appropriate assessment tools, resulting in delayed identification and support for children with dyslexia. Guided by the multi-disciplinary deficit model of dyslexia, which conceptualizes dyslexia as involving multiple interrelated literacy and language domains rather than a single deficit, this study aimed to evaluate the internal consistency and contextual suitability of the adapted Zambia Dyslexia Assessment Tool.

A cross-sectional pilot study was conducted among 76 Grade Three learners systematically sampled from three public primary schools in Lusaka District. Participants had a mean age of 10.0 years ( $SD = \pm 1.4$ ) and included 35.5% boys and 64.5% girls. The tool measured multiple literacy domains, including letter knowledge, phonological awareness, reading, writing, and oral language. Internal consistency was assessed using Cronbach's alpha coefficients and Mc Donald Omega Coefficients.

Findings demonstrated strong internal consistency across core literacy domains, including letter knowledge ( $\alpha = .96$ ), letter-sound knowledge ( $\alpha = .97$ ), reading ( $\alpha = .95$ ), and writing ( $\alpha = .94$ ). Phonological awareness and pseudoword decoding showed strong construct validity, whereas lower reliability in story comprehension ( $\alpha = .50$ ) and mental transformation ( $\alpha = .55$ ) highlighted areas for linguistic refinement.

In conclusion, the dyslexia assessment tool demonstrated acceptable internal consistency across key literacy domains and shows promise as a contextually appropriate screening instrument for supporting early identification of dyslexia within Zambia's multilingual educational context.

### Practicality, Usability and Feasibility of an Adapted Social Communication Questionnaire as an Autism Screening Tool in Lusaka Province, Zambia

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Early identification and assessment for children with autism in Zambia remains a challenge due to limited availability of culturally appropriate screening and assessment tools. The Social Communication Questionnaire (SCQ) has been used to screen autism in a number of countries globally. However, its feasibility in Zambia remains unknown. This study aimed to validate an adapted SCQ among learners in inclusive schools of Lusaka province in Zambia.

A cross-sectional study design was employed on 108 primary school learners aged 5 to 10 years. The SCQ was culturally adapted and administered to all the recruited participants. Four of the original 40 items were removed resulting in an instrument of 36 items across three psychometrically valid domains. Data were analysed using Stata version 17 in which Wilcoxon rank sum test, Receiver Operating Characteristic (ROC) analysis (with autism criteria met through Diagnostic Statistical Manual Version five (DSM-V) being used as a reference standard) and logistic regression were conducted. Stakeholders including parents, special needs teachers, psychologists, Ministry of Health and Ministry of Education were consulted in the validation process.

The domains had a high sensitivity of 100% and specificity of 97.1%. The internal consistency of the adapted SCQ indicated a Cronbach of 0.83 (Cronbach's  $\alpha = 0.83$ ) based on the 36 items. The administration duration of the adapted SCQ results showed that the median administration time was 17 minutes (interquartile range: 14–22.5 minutes) while the mean administration time was 19.1 minutes ( $SD = 7.2$ ). Based on the results, adapted SCQ shows that it is a practical, usable and feasible autism screening tool in Zambia, particularly in inclusive education settings.

## SPOTLIGHT ABSTRACTS

### Scaling Early Identification of Developmental Disabilities Through Multi-Cadre Capacity Strengthening in Kenya

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Children with developmental disabilities (DDs) remain underserved, especially in low- and middle-income countries. In Kenya, workforce gaps, weak referral systems, and stigma delay identification and care. This study evaluated a multi-cadre training intervention to strengthen early identification, assessment, care, and referral of children with DDs.

A sequential mixed-methods design (2023–2025) examined a two-tier, task-sharing training approach for healthcare workers (HCWs) and community support workers (CSWs), including community health promoters, teachers, and caregivers. CSWs received a three-day training on early identification and referral of children at risk for DDs, while HCWs completed a three-day mhGAP-IG-based training on assessment and management of DDs. Quantitative data included sociodemographic surveys and pre–post knowledge assessments using a 15-item mhGAP-based questionnaire. Qualitative data from focus groups (CSWs n=58; HCWs n=48) explored training experiences and implementation. Quantitative analysis used descriptive statistics and Wilcoxon signed-rank tests; qualitative data were thematically analysed.

A total of 321 providers were trained across two counties. Ninety-seven HCWs from 25 facilities and 224 CSWs participated. Among HCWs with paired data (n=70), knowledge scores improved significantly (mean change +0.86, p=0.0007), with scores  $\geq 12$  rising from 51% to 75%. Qualitative findings showed improved assessment skills, confidence in identifying DDs, enhanced caregiver engagement, and improved referral pathways. Reduced stigma and improved teamwork were reported. Challenges included increased workload and resource constraints.

Multi-cadre training linking the community and health system can improve early identification, management, and referral for DDs. Sustained impact requires integration into routine care, supervision, and strengthened referral systems.

### Developmental Outcomes and Quality of Life for Children with Disabilities and Their Caregivers in Nairobi's Informal Settlements: Findings from an Evaluation of the Tunza Program

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An estimated 1.3 million children with disabilities aged 0 – 8 years in Kenya lack access to essential developmental care, particularly in informal settlements where health systems and caregiver support remain limited. Since 2009, The Action Foundation (TAF) has implemented the Tunza Program in Nairobi County, providing developmental rehabilitation, assistive technology, and caregiver livelihood support through therapy centres and 14 partner government health facilities. This evaluation examined child developmental outcomes and caregiver wellbeing over a five-year period.

A mixed-methods evaluation was conducted between January 2020 and December 2024. Structured questionnaires were administered to 441 caregivers selected through probability proportional to size sampling. Child development was assessed using the WHO Global Scales for Early Development (GSED). Qualitative data included 23 key informant interviews and six caregiver focus group discussions.

At baseline, 29.2% of children assessed fell below the GSED reference range, while 40.9% were well below the average Development-for-Age z-score. Following programme participation, 61.0% of children demonstrated improvement in developmental milestones. In addition, 88.7% of caregivers reported improved mental wellbeing and stronger emotional bonding with their child. Despite these gains, major barriers persisted: 70.3% of children needing medication were not receiving it, 65.6% lacked psychosocial support, and 70% of households experienced moderate or severe food insecurity. Self-stigma was reported by 60% of caregivers.

The Tunza Program demonstrates that community-based rehabilitation integrated with caregiver economic support can improve developmental and wellbeing outcomes in low-resource settings. However, sustained progress requires stronger health systems, improved medication access, psychosocial support, and disability-inclusive social protection policies.

## SPOTLIGHT ABSTRACTS

### Strengthening Inclusive Early Childhood Development Systems Through Early Identification, Inclusive Education, and Rehabilitation in Kajiado East, Kenya

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Research shows that early intervention for children with disabilities (CWDs) improves outcomes and reduces the need for later special needs education; yet many school-age CWDs in Kajiado are either out of school or enrolled without appropriate evaluations. To address this, The Action Foundation's ECDE intervention combines early screening, training on inclusive practices, and access to rehabilitation services. This study evaluated the intervention's effectiveness in increasing access and improving education outcomes for CWDs.

A mixed-methods midline, covering 46 schools and ECDE centres, was conducted (September 2025) and compared with baseline data (December 2025). Data points included Individual Rehabilitation Plan assessments (732), headteachers' surveys (40), teacher surveys (160), classroom observations (176), child assessments (ASER (481) and IDELA (243)), and 203 caregiver interviews.

Following stakeholder and educator training, positive trends emerged. The rate of schools with ramps rose from 14% to 30%. Teacher confidence in supporting CWDs increased, from 4% to 85%, in feeling capable. At pre-primary, 97.9% of children showed correct pencil grip. In primary, literacy outcomes rose from 44.8% to 80.1%. Despite successes, gaps remain. Notably, 58.1% of CWDs were out of school at midline. Among those in school, 73.6% lacked an EARC assessment. Additionally, 64.5% of CWDs needing rehabilitation services were not receiving them.

Data on TAF's ECDE wrap-around programme shows promise. Gains in teacher confidence suggest targeted professional development as a practical entry point for strengthening inclusive education. However, the number of children out of school and low evaluation rates indicate continued systemic challenges. Overcoming these barriers demands improving EARC capacity and upgrading county ECDE services.

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### Association of maternal childhood trauma with child neurobehavioural outcomes: a scoping review

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Research suggests that adverse consequences of maternal childhood trauma may be intergenerationally transmitted, manifesting as neurobehavioural problems in children in the subsequent generation. We aimed to map the relationships of maternal childhood trauma and its subtypes with child neurodevelopment, behaviour, and brain structure.

A PRISMA-aligned scoping review was conducted using six electronic databases: Africa-Wide Information, APA PsycInfo, CINAHL, Pubmed, Scopus, and Web of Science. Inclusion criteria were articles published in English, peer-reviewed, and measured maternal childhood trauma using the Childhood Trauma Questionnaire (CTQ) for methodological consistency. The CTQ was selected due to its childhood trauma subtype specificity and strong psychometric validity. Data charting, collation, and summarisation were performed.

Of the 10,232 publications reviewed, 42 studies were included, and most (n = 34) were conducted in high-income countries. Child behaviour (n = 36) was most frequently investigated, with 94% of these studies demonstrating associations of maternal childhood trauma with child internalising and externalising behaviour problems, primarily assessed using the Child Behaviour Checklist. Maternal childhood trauma showed negative associations with child neurodevelopment (n = 3), whereas associations with child magnetic resonance imaging-based brain structure were heterogeneous (n = 4). Only 24% of studies examined maternal childhood trauma subtypes, with childhood emotional abuse and neglect emerging as the most common predictors of adverse child neurobehaviour.

Overall, maternal childhood trauma is associated with child neurobehavioural outcomes, although more research is needed from low- and middle-income settings and on trauma subtypes. Only CTQ-based studies were included, potentially limiting generalisability.

## SPOTLIGHT ABSTRACTS

### Lead Exposure and Its Association with Cognitive Outcomes in Children of Selected Resource Limited Communities of Kabwe, Zambia

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Kabwe, Zambia is among the 10 most polluted cities in the world owing to its history of mining heavy metals. Despite evidence revealing high levels of lead in local communities, there is a dearth of studies examining the interaction of exposure, cognitive development and resource limitations. We aimed to document blood lead levels (BLLs) and examine cognitive development outcomes in children of selected resource limited communities of Kabwe, Zambia.

Utilizing a cross-sectional analytical study design, BLLs, cognitive scores, socio-economic and other variables were collected by an interviewer administered 'heavy metals parent' questionnaire and Adapted Cognitive Assessment Tool. Stratified and proportion-to-size samplings were utilized to recruit parent and child pairs. Data was analysed using STATA 17 and described using summary statistics and measures of central tendency. Tests for association and a p-value of <0.05 was set for significance.

A total of 121 children were studied with 57 being boys and 64 girls, and median age at 10 years old. The median BLLs were 34.9 µg/dL (IQR 22.1-48) with the highest at 98.8 µg/dL. The cognitive scores were 79.1% (97%- 16%). The domains of pencil tapping scored the highest with rapid automatized naming (RAN) the lowest. Negative, significant correlations were found between BLLs and cognitive domains for children who reside in areas close to the mine. Age of the child, sex and mother were significantly associated with cognitive outcomes.

There is need to address environmental health disparities in the development of children of lead exposed, resource limited settings.

### Neurocognitive function in children from Karamoja, Uganda is associated with age, nutrition, schooling, and caregiving, not tungiasis

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Tungiasis, a neglected tropical disease caused by the sand flea *Tunga penetrans*, disproportionately affects children in endemic sub-Saharan African communities. Its symptomology, including pain, itching, and sleep disturbance, could plausibly impair neurocognitive functioning, yet evidence remains scarce in deprived pastoralist settings. This study examined whether tungiasis is associated with neurocognitive outcomes in children.

A community-based cross-sectional study was conducted among 330 children aged 8–14 years in Napak District, northeastern Uganda. Children were stratified into uninfected, mildly infected, or severely infected groups. We assessed visual attention, fine motor control, and non-spatial executive ability. Group differences were examined using analysis of covariance; independent predictors were identified using mixed-effects linear regression with village-level clustering.

After adjustment, tungiasis was not significantly associated with any neurocognitive domain (all  $p > 0.05$ ; partial  $\eta^2 \leq 0.003$ ). Child age was positively associated with all three domains (all  $p < 0.01$ ). School attendance was associated with better visual attention and executive function ( $p < 0.05$ ). Male sex was associated with better non-spatial executive function ( $a\beta = -1.94$ , 95% CI  $-3.78$  to  $-0.10$ ,  $p = 0.04$ ). Underweight was associated with poorer visual attention ( $a\beta = -0.02$ ,  $p = 0.02$ ), stunting with poorer executive ability ( $a\beta = 3.93$ ,  $p = 0.01$ ), and having a male caregiver with better executive ability ( $a\beta = 5.38$ ,  $p = 0.01$ ).

Neurocognitive outcomes were more strongly associated with age, nutrition, schooling, and caregiving than tungiasis. In severely deprived contexts, structural adversities may mask any detectable effect of infection. Integrated interventions targeting nutrition, schooling, and caregiver support may yield greater neurocognitive benefit than antiparasitic treatment alone.

## SPOTLIGHT ABSTRACTS

### Executive function and language development in Malawian preschool children: Associations within contextual home environments

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Executive function (EF) and language are important developmental domains in early childhood and are associated with later learning and adaptive functioning. Evidence on their relationship from low-resource settings remains limited. This study examined the association between EF and language outcomes in Malawian preschool children and explored child and household factors influencing this relationship.

Data were analysed from 287 Malawian preschool children. EF was assessed using the Developmental Assessment on an E-Platform (DEEP), and language using the Griffiths-III. Child age, child sex, maternal education, household composition, and home learning environment (HLE) were included as covariates. Multiple linear regression analyses were used to examine the association between EF and language while adjusting for these factors.

A backward stepwise regression approach was used, and the final model showed higher EF scores were significantly associated with better language outcomes ( $\beta = 0.25$ ,  $p < .001$ ). Child age ( $\beta = 3.83$ ,  $p < .001$ ) and home learning environment (HLE) ( $\beta = 0.14$ ,  $p = .045$ ) were also significantly associated with language outcomes, while number of siblings showed a modest but non-significant contribution ( $\beta = 0.33$ ,  $p = .061$ ). This final model explained a substantial proportion of variance in language outcomes ( $F(4, 282) = 146.6$ ,  $p < .001$ , adjusted  $R^2 = .67$ ).

EF was positively associated with language in this sample of Malawian preschool children, independent of selected child and household characteristics. HLE was also associated with language outcomes, suggesting that developmental context may be relevant to early cognitive-language development. These findings support further investigation of early childhood approaches that integrate child development and caregiving environments in low-resource settings.

### Caregiver Assessment of Executive Function Deficits among HIV-Infected and Exposed-Uninfected Preschool Children in Kenya

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Perinatal HIV exposure is associated with adverse executive functioning outcomes. This study examined caregiver assessment of executive functioning (EF) in perinatally HIV-infected (PHIV) and perinatally HIV-exposed but uninfected (PHEU) children and the extent to which various biopsychosocial factors influence EF outcomes.

Children aged 3 - 5 years who were PHIV ( $n=43$ ), PHEU ( $n=52$ ), and HIV-unexposed uninfected (HUU,  $n=58$ ) and their caregivers were enrolled. EF was measured using the Childhood Executive Functioning Inventory. The Shona Symptoms Questionnaire (SSQ) and parenting behaviour scale were used to evaluate caregivers' common mental disorders (CMDs) and parenting behaviour, respectively. We used analyses of variance to assess groups' differences in EF scores, and a hierarchical linear regression model to explore covariates associated with EF outcomes.

Overall, we observed significant negative effects of HIV exposure on EF scores,  $F(2, 149) = 8.591$ ,  $p < 0.001$ . Compared to HUU children, PHIV children had poor performance in working memory (mean difference (MD), 2.89 [95%CI: 0.65-5.14],  $p=0.008$ ), inhibitory control (MD, 2.47 [95%CI: 0.55-4.40],  $p=0.008$ ), and composite EF (MD, 5.37 [95%CI: 1.97-8.76],  $p=0.001$ ). On their part, PHEU children had poor performance on working memory (MD, 3.24 [95%CI: 1.11-5.37],  $p=0.001$ ) and composite EF scores (MD, 4.97 [95%CI: 1.75-8.19],  $p=0.001$ ). The observed EF impairment was strongly associated with caregivers' CMDs and advanced HIV disease in children.

Our study suggests that caregivers can observe overt executive dysfunction in children who are perinatally exposed to HIV. These findings underscore the importance of antiretroviral treatment adherence in PHIV children and psychosocial support to their caregivers to help improve EF outcomes.

## SPOTLIGHT ABSTRACTS

### Mental Health Problems and Risk Behaviours Associated with Alcohol Consumption among Adolescents in Nairobi and Coastal Kenya: A Cross-Sectional Study

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Underage alcohol use among adolescents is an emerging public health concern in Kenya, with significant implications for mental health and overall well-being. However, there is limited evidence on how mental health problems and behavioural factors are associated with alcohol consumption among adolescents in Kenya. This study aimed to assess mental health outcomes and risk behaviours associated with alcohol consumption among adolescents in Nairobi and coastal Kenya.

Data from 632 school-attending and out-of-school adolescents aged 13-17 years were analysed from the Adolescent Mental Well-being cross-sectional study conducted between February and May 2022. Stratified analysis and multivariable logistic regression were used to examine associations between alcohol consumption, mental health outcomes, and risk behaviours among school-attending and out-of-school adolescents.

Among school-attending adolescents, alcohol use was strongly associated with depressive symptoms (AOR=3.20, 95% CI: 1.43-7.17) and anxiety (AOR=2.51, 95% CI: 1.02-6.16), as well as risk behaviours including engagement in physical fights (AOR=3.70, 95% CI: 1.61-8.50), early sexual activity (AOR=4.24, 95% CI: 1.86-9.66), and tobacco use (AOR=9.01, 95% CI: 1.68-48.46). Among out-of-school adolescents, alcohol use was strongly associated only with tobacco use (AOR=5.80, 95% CI: 1.08-31.14), while associations with other outcomes were not statistically significant.

Alcohol consumption was strongly linked to both mental health challenges and risky behaviours, with notable variations by school attendance status. The results highlight underage alcohol consumption as an important public health concern requiring targeted prevention and intervention strategies among adolescents in both school and community settings in Kenya.

### Longitudinal Trajectories of Emotional and Behavioral Problems in Adolescents Living with HIV

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Emotional and behavioural problems (EBPs) are common among adolescents living with HIV relative to controls. However, much of the evidence is from cross-sectional studies, limiting our understanding of the course of these problems throughout adolescence. We aimed to characterize the longitudinal trajectories of EBPs among perinatally HIV-infected adolescents (PHIV) in comparison to their HIV-uninfected peers (perinatally HIV-exposed but uninfected adolescents (PHEU) and perinatally HIV-unexposed uninfected adolescents (HUU)).

Data were drawn from a three-year longitudinal study of 201 PHIV, 159 PHEU, and 299 HUU (ages 12 -17 years at baseline, 47% male) in Kilifi, Kenya. EBPs were measured using the Child Behaviour Checklist (CBCL). Baseline group differences in total CBCL problems were evaluated using ANCOVA, while domain-specific problems were evaluated using MANCOVA. Linear mixed models were used to examine longitudinal CBCL trajectories.

At baseline, PHIV had significantly higher total and domain-specific problems compared to both PHEU and HUU, while there were no significant differences between PHEU and HUU. Longitudinally, CBCL total and domain problems generally declined significantly over time for all groups, with PHIV showing steeper declines than controls. Notably, there was no evidence of differential change over time between PHEU and HUU.

Perinatally HIV-infected adolescents are at higher risk of EBPs, but engagement with structured HIV care and developmental maturation appears to attenuate symptoms over time. HIV exposure without infection may not confer sustained mental health risk.

## SPOTLIGHT ABSTRACTS

### Effects of Exposure to HIV on Early-Life Immune Regulation and Neurodevelopment, in African HIV Exposed but Uninfected Children

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This study aimed to compare immune marker levels between HIV-Exposed but Uninfected (HEU) and HIV-Unexposed Uninfected (HUU) children, assess whether immune markers predicted neurodevelopmental outcomes at 2 years, and explore potential mediation pathways.

This sub-study included 280 mother-child dyads from the Khula birth cohort in Gugulethu, Cape Town. Sixteen immune markers were measured in children's peripheral blood at 2-5 (mean=3.3, SD=0.8), 6-11 (mean=8.3, SD=1.4), and 12-19 (mean=14.2, SD=1.8) months. Neurodevelopment at 2 years was assessed using the Bayley Scales of Infant and Toddler Development, Fourth Edition. Linear regression and mediation analyses were performed and adjusted for covariates.

The study included 98 HEU children (50.0% male) and 182 HUU children (50.5% male). At 12-19 months, HEU children had significantly lower interferon-gamma (IFN- $\gamma$ ) ( $\beta$ =-0.19,  $p$ =0.036), interleukin-10 (IL-10) ( $\beta$ =-0.27,  $p$ =0.004), IL-12p70 ( $\beta$ =-0.2,  $p$ =0.026), IL-13 ( $\beta$ =-0.2,  $p$ =0.038), IL-1 $\beta$  ( $\beta$ =-0.2,  $p$ =0.038), and IL-7 ( $\beta$ =-0.23,  $p$ =0.018), concentrations compared to HUU children. In HEU children, higher levels of IFN- $\gamma$  ( $\beta$ =-0.473,  $p$ <0.001), granulocyte-macrophage colony-stimulating factor ( $\beta$ =-0.322,  $p$ =0.015), tumour necrosis factor alpha ( $\beta$ =-0.406,  $p$ =0.003), IL-10 ( $\beta$ =-0.329,  $p$ =0.013), IL-12p70 ( $\beta$ =-0.325,  $p$ =0.015), IL-5 ( $\beta$ =-0.332,  $p$ =0.012), and IL-7 ( $\beta$ =-0.453,  $p$ <0.001), at 12-19 months were associated with poorer language performance at 2 years. Among these, IL-7 significantly mediated (indirect effect=1.52, bootstrapped 95% CI [0.07, 3.64]) the association between HIV exposure and language outcomes.

Prenatal HIV exposure is associated with immune dysregulation in early life, particularly at 12 -19 months, and with poorer language outcomes at 2 years in HEU children. IL-7 may contribute to biological pathways linking HIV exposure to early language development.

### Prevalence and predictors of multiple health risk behaviour in a community sample of Kenyan adolescents: a machine learning approach

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This study aimed to characterize the burden of multiple health risk behaviours (HRBs) among adolescents on the Kenyan coast and develop predictive models to identify their longitudinal determinants using machine learning (ML) approaches.

This was a two-wave longitudinal study that tracked 1,164 children in Kilifi, Kenya, from early childhood (T1: 2014, ages 1-6 years) to adolescence (T2: 2023-2025, ages 13-17 years). HRBs were assessed using the Kilifi Adolescent Health Risk Behaviour Questionnaire (KRIBE-Q). Ridge logistic regression (LR), random forest (RF), and extreme gradient boosting (XGBoost) models were trained using sociodemographic, psychosocial, clinical, and health-related predictors. Model performance was evaluated using area under the curve (AUC), accuracy, sensitivity, and specificity, with SHapley Additive exPlanations for interpretability.

Physical inactivity (82.7%) and violence-related behaviours (69.5%) were most prevalent, followed by poor diet (29.1%), gambling (26.3%), and substance use (23.8%), while unsafe sexual practices (11.0%) and suicidal behaviours (7.3%) were least common. All three models demonstrated comparable predictive performance, with AUC values exceeding 70% across outcomes. Key predictors consistently identified across models included higher levels of adolescent anxiety and depressive symptoms, male sex, food insecurity, and poor peer relationships. Other predictors included higher levels of behavioural and emotional problems at T1 and T2, lower wealth index, grade retention, and higher adolescent body mass index (BMI).

HRBs are common among adolescents on the Kenyan coast, reflecting a substantial burden influenced by early-life and ongoing psychosocial and socioeconomic factors, underscoring the need for early, multi-component, targeted interventions.

## SPOTLIGHT ABSTRACTS

### The C.R.A.D.L.E. Framework: Coordinated School-Linked Mental Health Support for a Primary School Pupil

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Children's distress is often recognised late, and support is delivered across fragmented pathways. The C.R.A.D.L.E. framework (Connect, Resolve, Affirm, Defend, Listen, Empower) provides a shared, safeguarding-aware language to coordinate support across school, family, and community.

An anonymised implementation case from routine school-linked practice is reported. A 10-year-old pupil with persistent low mood and irritability linked to peer difficulties received an eight-session behavioural activation intervention mapped to the framework pillars. Safeguarding liaison addressed environmental stressors ("Defend"), while goals and a relapse-prevention plan were co-produced through "Listen", "Affirm", and "Empower".

Routine child-reported measures improved. Child Outcome Rating Scale domain scores rose to 10/10 (personal, family, school). A self-reported depression score reduced from 7 to 1, and the Major Depression T-score fell from 54.76 to 44.23.

This case suggests the C.R.A.D.L.E. framework may strengthen multiagency coordination and child-centred planning at the school-community interface. Next steps are a small pilot across settings and a mixed-methods evaluation of feasibility, acceptability, and fidelity.

### The Feasibility, Acceptability, and Preliminary Evaluation of the Effectiveness of SMS and Self-Help Plus Interventions among Community Health Workers in Kenya

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Community health workers (CHWs) experience significant psychological distress in the course of their work, but there is minimal development and evaluation of interventions tailored to their needs. This study assessed the viability of the WHO Self-Help Plus (SH+) and an SMS-based program – delivered individually and in combination – on mental health outcomes of CHWs in Nairobi, Kenya.

At baseline, 354 CHWs were assessed across three intervention groups: SMS (n=84), SH+ (n=190), and combined (n=80). Complete pre-post data were collected from 297 CHWs to assess intervention outcomes. Within-group changes in depressive and anxiety symptoms, resilience, mental health literacy (MHL), and burnout were measured using paired t-tests. Mixed-effects random intercept models were used to estimate adjusted intervention effects across groups, accounting for clustering at the community health unit level.

There were significant reductions in depressive (d = -0.32 to -0.58) and anxiety (d = -0.29 to -0.45) symptoms across all groups, with the largest improvements occurring in the SH+ and combined groups. Burnout significantly decreased while MHL improved across all groups. Resilience showed small, non-significant changes across all intervention groups. While there was significant pre-post improvement across depressive (-1.73, p = 0.005) and anxiety symptoms (-1.29, p = 0.015), this did not differ by group. The feasibility and acceptability of the interventions were generally high across all interventions.

All interventions improved mental health outcomes among CHWs, with SH+ (alone and combined) showing the largest effect sizes, suggesting potential scalability.

## SPOTLIGHT ABSTRACTS

### **Pilot Implementation and Feasibility of a Group-Based Task-Shifted Low-Intensity Psychological Intervention for Adults Living in a Kenyan Urban Informal Settlement**

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The prevalence and burden of common mental disorders (CMDs) in Kenya have increased over the past few years. Unfortunately, more than 75% of Kenyans in need of mental health services cannot access mental healthcare. The objective of this study was to evaluate the feasibility, acceptability and effectiveness of the Group Problem Management Plus (gPM+) intervention among adults with moderate symptoms of CMDs.

274 adults (63.5% females) in Changamwe sub-county were identified through screening of depressive symptoms, anxiety symptoms and symptoms of post-traumatic stress disorder – PTSD. gPM+ comprised of 5 weekly group sessions. The intervention was delivered by 10 trained non-specialist facilitators from a local civil society organisation in 2025. Primary outcomes were scores on PHQ-9, GAD-7, and PC-PTSD-5 assessed at baseline, 3 weeks, 5 weeks and 3 months follow-up as the primary outcome time-point. Secondary outcomes were functional disability, personally identified problems, self-perceived social support, self-perceived wellbeing, and a measure of gPM+ acceptability, feasibility and appropriateness.

393 participants were screened for eligibility, of whom 274 (69.7%) participated in gPM+ at baseline, and there were 241 (88.0%) participants at follow-up. The sample had a mean age of 30.8 years. Relative to baseline, intent-to-treat analyses indicated that at follow-up, there was a statistically significant reduction in symptoms of depression, anxiety, and PTSD. We also observed statistically significant improvements in all secondary outcomes: personally identified problems, functional disability, self-perceived social support, and self-perceived general well-being. gPM+ also emerged as contextually appropriate, acceptable and feasible for delivery by trained non-specialist facilitators from the local communities.

This study suggests that mental health non-specialists can be briefly trained in gPM+, and they can deliver this intervention in a way that improves the mental health of adults facing cumulative psychosocial vulnerabilities. gPM+ has the potential to scale up mental health services for adults in urban informal settlements that lack adequate mental health resources.

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### **Developmental health and vulnerability among young children in Pakistan: Findings from a large-scale early childhood development assessment in Karachi**

**Seema Lasi**, Salima Kerai, Maram Alkawaja, Ghazala Rafique, Salman Kirmani, Eva Oberle

Assessing and supporting early childhood development is a global priority; however, our understanding of the developmental health of young children in Low- and Middle-Income Countries (LMICs), including Pakistan, remains limited.

Using an Urdu translation of the Early Years Development Instrument (EDI), this study assessed the developmental health and vulnerability of 9,372 kindergarten-aged children (Mean age = 6.2; SD = 1.1; 53.9% female) in 397 schools in Karachi, Pakistan. We also examined differences in vulnerability in physical, social-emotional and cognitive domains based on the children's gender, family income, and ethnic background.

Results from logistic regression analyses revealed that 10 % of children were vulnerable in each developmental domain, and 28 % were vulnerable in one or more domains. Boys, children from low-income families, and children with ethnic minority backgrounds were more likely to be vulnerable in any of the domains.

The findings highlight that children in our study who experienced social disadvantages were more likely to be developmentally vulnerable, potentially negatively affecting their subsequent development and academic success.

Our findings underscore the need for universal and targeted interventions to reduce childhood vulnerability in Pakistan. This includes supporting at-risk subgroups of children and promoting equity from an early stage in life

## SPOTLIGHT ABSTRACTS

### Early Childhood Developmental Outcomes and Associated Factors in a Nomadic Pastoralist Community in Northern Tanzania

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Children in pastoralist communities face unique developmental risks. This study examined early childhood developmental outcomes, associated factors, caregiver mental health, and community perspectives on contextual risks and protective factors in a nomadic pastoralist community in northern Tanzania.

A concurrent descriptive mixed-methods study was conducted among 170 caregivers of children aged 0–3 years and 17 key informants. Child development was assessed using the World Health Organization (WHO) Infant and Young Child Development (IYCD) tool. Caregiver mental health was measured using the Patient Health Questionnaire-9 (PHQ-9) and Generalized Anxiety Disorder-7 (GAD-7). Quantitative data were analyzed using descriptive statistics and partial correlations, while qualitative data used thematic analysis.

Developmental delays were observed in 11.5% of children. Stunting, underweight, and wasting prevalence were 31.6%, 14.5%, and 6.7%, respectively. Higher developmental age-for-z scores (DAZ) were associated with older maternal age ( $r = 0.24$ ,  $p = 0.002$ ) and availability of play materials ( $r = 0.25$ ,  $p = 0.001$ ). Lower DAZ scores were linked to underweight status, larger households, older caregivers, and home delivery. Depressive and anxiety symptoms were present in 15.8% and 7.3% of caregivers. Qualitative findings highlighted climate stressors, socio-cultural practices, and structural barriers as key risks, while communal support and indigenous practices were protective.

Culturally grounded, multisectoral interventions that leverage community strengths and indigenous knowledge are needed to improve early childhood outcomes.

### Environmental and psychosocial determinants of school readiness in South African children residing in a peri-urban setting

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Early childhood is a sensitive period for neurodevelopment, yet many children in low- and middle-income countries (LMICs) are exposed to biological and social risks that threaten school readiness. We examined multilevel determinants of school readiness in South African children. School readiness was assessed using the Early Learning Outcome Measure (ELOM) in children from the Drakenstein Child Health Study. Guided by Bronfenbrenner's socio-ecological framework, we examined univariate and multivariate associations between ELOM scores and biological, socioeconomic, and psychosocial factors measured antenatally and at six years, using linear regression models.

The analysis included 573 children (51% female; median age 6.4 years). In unadjusted analyses, male sex was associated with lower ELOM scores ( $\beta = -4.80$ ; 95% CI  $-6.92$  to  $-2.69$ ;  $p < 0.001$ ). Preterm birth ( $<37$  weeks) showed a strong negative association ( $\beta = -5.66$ ; 95% CI  $-8.52$  to  $-2.79$ ;  $p < 0.001$ ), while gestational age at delivery was positively associated with scores ( $\beta = 1.11$  per week; 95% CI  $0.69$  to  $1.52$ ;  $p < 0.001$ ). Maternal HIV infection was associated with lower scores ( $\beta = -3.04$ ; 95% CI  $-5.56$  to  $-0.52$ ;  $p = 0.018$ ). Higher school readiness was observed among children whose mothers had completed secondary education or higher ( $\beta = 4.31$ ; 95% CI  $2.12$  to  $6.49$ ;  $p < 0.001$ ) and those from higher-income households during pregnancy ( $\beta = 5.25$ ; 95% CI  $1.74$  to  $8.75$ ;  $p = 0.003$ ). Caregiver-reported childhood adversity was associated with lower scores ( $\beta = -3.64$ ; 95% CI  $-6.04$  to  $-1.24$ ;  $p = 0.003$ ). In adjusted models, preterm birth remained negatively associated and maternal education positively associated with school readiness, although the educational benefit was attenuated among boys. Community violence exposures showed no consistent associations. Model explanatory power was modest (adjusted  $R^2 = 0.09$ ).

School readiness in this cohort was primarily influenced by early biological and family-level factors. Preterm birth was associated with poorer outcomes, while maternal education conferred benefits, particularly among girls. These findings highlight the importance of early-life interventions that address biological risk, educational disadvantage, and gender inequalities to improve school readiness in LMIC settings.

## SPOTLIGHT ABSTRACTS

### **Strengthening Hospital-Based Early Childhood Development (ECD) Centres: A Capacity-Building Initiative in Partnership**

**Kausar Waqar**, Yasmeen Muhammad, Saima Siyal, Ayesha Zahid Khan

Early Childhood Development (ECD) centres in hospitals provide critical opportunities to promote nurturing care and early stimulation. The government's health Department established ECD centres in selected hospitals through the provision of ECD kits and allocation of space by hospital management. However, operational capacity remained a key challenge.

The current study aims to develop a capacity-building approach for operationalizing hospital-based ECD centres through the development of standardized guidelines and staff training.

An action research design was used, involving iterative cycles of assessment, intervention, and reflection. Baseline assessment led to intervention, followed by assessment and planning for the 2<sup>nd</sup> iteration. An initial assessment was conducted in three hospitals through site visit observations carried out through a checklist, focused group discussions (FGDs) with management, observation of ECD spaces, informal discussions with staff, and document review.

A comprehensive package for training, including standardized Standard Operating Procedures (SOPs), covering physical setup, staffing, service delivery, daily routines, and record keeping were developed. Hands-on training sessions were conducted for ECD staff to support the implementation of SOPs.

Hospital management and staff demonstrated strong motivation and ownership of ECD centres. Baseline assessment identified gaps in staffing, operational guidelines, and service organization. Following implementation, hospitals were equipped with standardized SOPs and trained staff. However, the need for dedicated (non-rotational) staff and ongoing refresher training was emphasized for sustainability.

Establishing ECD centres requires more than infrastructure and supplies; it necessitates the implementation of SOPs, trained personnel, and continuous capacity building. Aligning resources with structured guidance and dedicated staffing is essential for effective service delivery.

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### **Facility-Linked Donor Human Milk and Caregiver Support System for Strengthening Early Childhood Development Outcomes in Low-Resource Settings**

## SPOTLIGHT ABSTRACTS

### Status of early childhood development data systems in Kenya: imperatives for a centralized visualization platform

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Holistic and equitable early childhood development (ECD) planning requires timely access to comprehensive, accurate data. Yet in many low- and middle-income countries, ECD data are fragmented, siloed, and often non-digitized, limiting analysis and routine use for evidence-informed decision-making. This study presents findings on the status of ECD data systems in Kenya and actions needed to support a centralized data visualization platform.

We used mixed methods – quantitative surveys with 183 respondents and qualitative data from 76 key informants, 67 in-depth interviews, and 15 focus group discussions in Nairobi, Homa Bay, and Isiolo counties. Quantitative data were analysed descriptively; qualitative data were analysed thematically. For this study, we present the quantitative findings.

Routine data are captured monthly using both electronic and manual processes across sectors. The health sector has the most advanced systems, including electronic capture and management, whereas education and child protection rely on mixed approaches that remain largely paper-based, supplemented by basic electronic tools (e.g., Google Sheets). Because systems are not integrated, they are not interoperable, constraining cross-sector analysis and joint planning. Respondents identified needs for capacity strengthening in data collection, data entry, and analysis, and emphasized harmonization and standardization of data collection tools as prerequisites for a centralized ECD data visualization platform.

To enable a functional centralized platform, priority should be given to strengthening capacity for electronic and digital data capture and management, particularly in education and child protection, alongside efforts to harmonize routine tools across sectors.

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### Enhancing Inclusive and Competency-Based STEM Learning through Digital Platforms and Data-Informed Pedagogy in Resource-Constrained Settings in East Africa

**Mercy Kamene Nthuli**

STEM education in many low-resource contexts in East Africa is characterised by inequities in access, learner engagement, and conceptual understanding. Learners requiring additional support are often excluded from meaningful participation. Digital learning environments can extend access and support diverse needs; however, their effectiveness depends on integration with pedagogical practices that prioritise inclusivity and competency development. This study examines how digital platforms, combined with data-informed pedagogy, support inclusive STEM learning.

A classroom-based mixed-methods study was conducted over one academic term with secondary school learners. The intervention integrated curated digital video content, including externally sourced and locally developed materials, delivered through an accessible platform. Visual representations (simulations, diagrams, and worked examples) supported conceptual understanding. These were complemented by mobile-supported interaction and formative assessment. Learner performance and engagement data informed instructional adjustments. Data sources included pre- and post-assessments, classroom observations, learner feedback, and platform analytics.

Findings show modest improvements in conceptual understanding and learner engagement. Increased participation beyond classroom time was observed through asynchronous access. Data-informed feedback supported identification of misconceptions and improved problem-solving and critical thinking. Participation among previously less-engaged learners improved, indicating gains in inclusivity.

## SPOTLIGHT ABSTRACTS

### Multi-channel surface electromyography framework for silent alphabet recognition toward a wearable virtual keyboard

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Silent speech interfaces can improve communication for individuals with speech or motor impairments and provide reliable text entry in noisy environments. This study developed a multichannel surface electromyography (sEMG) framework for the recognition of silently articulated English alphabet letters to support a wearable virtual keyboard. Bioelectric signals were collected from 30 healthy participants aged 18–25 years using a BIOPAC MP360 system at 2 kilohertz.

Three articulatory muscle regions were monitored: mylohyoid, orbicularis oris superior, and mastoid process. Signals were segmented using an adaptive threshold approach and processed through 50 hertz notch filtering and 30–500 hertz bandpass filtering. Twenty-one time-domain features were extracted from each 500-millisecond active window.

Class imbalance across 11 letters (A–K) was handled using Synthetic Minority Oversampling Technique (SMOTE), SMOTE Edited Nearest Neighbors, and Adaptive Synthetic Sampling. Six machine learning classifiers and three deep learning architectures were evaluated using stratified 10-fold cross-validation on 7,906 feature vectors.

The optimized support vector machine achieved 81.74% accuracy, Random Forest achieved 82.10%, and the recurrent neural network achieved the best performance of 83.20% using SMOTE Edited Nearest Neighbors augmented data. Three-channel fusion improved recognition accuracy by 5.3 percentage points over the best single-channel model, while preprocessing improved accuracy by 7.6 percentage points compared with raw signals.

These findings demonstrate that multi-muscle sEMG combined with artificial intelligence can enable accurate, low-cost, and wearable silent text-entry systems for assistive communication and inclusive digital interaction.

### Association of sleep parameters, depression symptoms and daily mood: A prospective mobile monitoring study of health care workers in Kenya

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Sleep disturbances and mental health problems among healthcare workers are well documented, but most evidence comes from high-income settings, with limited objective longitudinal data from resource-constrained contexts. The study examined differences in sleep patterns among healthcare workers with and without depressive symptoms and identified sleep parameters strongly associated with depression severity.

We recruited 526 participants from five healthcare facilities and followed them prospectively for twelve months. Participants wore the Fitbit Inspire 2™ device continuously and objectively tracked daily sleep parameters in real-time. Baseline online survey data captured demographic characteristics, and depression symptoms were assessed using the Patient Health Questionnaire (PHQ-9). Subjective daily mood was assessed on ratings from 1 (low) to 10 (high). Group comparisons, Pearson correlation, and multivariate regression examined associations between sleep, depression, and mood.

Participants had  $M_{age}$  34 years (SD = 8), were female (66%), nurses (59%), married (56%), and diploma holders (48%). The average mood score was 7.19. Depressed participants showed higher PHQ-9 scores and higher sleep efficiency compared with non-depressed participants, and sleep efficiency increased across depression severity categories. Although sleep efficiency was significantly associated with depressive symptoms ( $\beta = 0.033$ ,  $p < 0.001$ ), the effect size was small ( $R^2 = 0.006$ ).

Overall, depressive symptoms among healthcare workers were generally mild. However, increasing depression severity was associated with altered sleep patterns, including higher sleep efficiency. These findings highlight the complex relationship between sleep and mental health and underscore the need for longitudinal, multimodal assessment of sleep quality and circadian functioning in healthcare workers.

## SPOTLIGHT ABSTRACTS

### Feasibility and Acceptability of a Mobile Application and Wearable Device for Collecting Mental Health Survey and Passively Sensed Data Among Healthcare Workers in Kenya: Mixed Methods Pilot Study.

Linda Khakali<sup>1</sup>, Andrew Aballa<sup>1</sup>, Dorcas G Mwigyeri<sup>2</sup>, Eileen M Weinheimer-Haus<sup>5,6,11</sup>, Willie Njoroge<sup>1</sup>, Rachel Maina<sup>1</sup>, Amos Bunde<sup>3</sup>, Peris Musitia<sup>4</sup>, Moses K Nyongesa<sup>1</sup>, James Orwa<sup>2</sup>, Jasmit Shah<sup>1</sup>, Zhenke Wu<sup>7</sup>, Anthony K Ngugi<sup>2</sup>, Lukoye Atwoli<sup>1,8</sup>, Srijan Sen<sup>9,11</sup>, Candace Kolars<sup>5,6</sup>, Akbar K Waljee<sup>5,6,11</sup>, Amina Abubakar<sup>4,10</sup>, Elena Frank<sup>9</sup>, Zul Merali<sup>1</sup>

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Mobile apps and wearable devices may help to facilitate early detection of mental health conditions by providing objective, real-time data to supplement other forms of feedback and diagnoses. Few studies have investigated the acceptability and feasibility of using a mobile app to track survey- and wearable-based data in mental health research in Sub-Saharan Africa.

This pilot study evaluated the feasibility and acceptability of using a mobile app and wearables to capture mental health-based survey data and passively sensed data among Kenyan healthcare workers. A 30-day mixed-methods study involving healthcare workers from four Nairobi hospitals used a mobile app and wearable devices to collect active and passive data. We assessed demographics, work environment, mental health, substance use, sleep, heart rate, and activity levels, alongside post-trial qualitative interviews exploring participant experiences and study engagement.

Fifty-one participants enrolled in the pilot study. They were primarily nurses N=24 (47%) and female N=36 (70%), with a median (IQR) age of 32 (29-36) years. Attrition over 30 days was low with only one participant dropping out due to device malfunction. Completeness of the baseline survey was high, with participants completing 96.1% of the questions. Further, 58% of the daily mood ratings were completed over 30 days. Participants submitted steps, heart rate, and sleep data on 93%, 73%, and 51% of study days, respectively. The proportion of days the wearable was worn for over 10 hours was 63%. Interviews revealed 2 primary themes. The first was intrinsic and extrinsic motivation; participants indicated having their health metrics tracked and receiving congratulatory messages from the app encouraged step counts. The second theme was technical and usability challenges; N=24(47%) of the participants reported discomfort while sleeping and challenges with synchronization of data due to the non-automated nature of the process.

### Factors Associated with Stunting and Underweight Indices among Children 0–3 years in Nairobi, Kenya: A Cross-Sectional Study

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Child undernutrition is a critical issue in low- and middle-income countries. There is limited evidence on determinants of stunting and underweight from urban Kenyan settings. Existing studies in Nairobi focus on sub-populations, constraining the representativeness of findings to the wider population. This study addresses that gap by investigating factors causing stunting and underweight in Nairobi's 0–3-year-olds.

A cross-sectional study of 2,903 caregiver-child dyads was assessed for stunting (HAZ) and underweight (WAZ) in 0–3-year-olds. Linear mixed-effects regression evaluated the associated child, caregiver, and household factors.

Mean (SD) HAZ and WAZ were -0.90 (1.5) and -0.38 (1.3), with 22.0% stunted and 10.0% underweight (<-2 Z-score). In multivariable models, factors associated with both stunting and underweight included older age ( $\beta = -0.04$  and  $-0.01$ ), male gender ( $\beta = -0.30$  and  $-0.22$ ), low birth weight ( $\beta = -1.19$  and  $-0.94$ ) (all  $p < 0.001$ ), and living in informal settlements ( $\beta = -0.15$ ,  $p = 0.010$ ;  $\beta = -0.14$ ,  $p = 0.008$ ). Severe food insecurity was associated with stunting ( $\beta = -0.47$ ,  $p = 0.004$ ), while high wealth index ( $\beta = 0.16$ ,  $p = 0.018$ ) and hospitalization history ( $\beta = -0.17$ ,  $p = 0.032$ ) were associated with underweight.

The high burden of stunting and underweight in this setting signals a serious public health risk and necessitates tailored interventions targeting individual and household-level vulnerabilities.

## SPOTLIGHT ABSTRACTS

### Identification of Dietary Challenges in Children with Neurodevelopmental and Genetic Disorders and Development of Inclusive Nutritional Guidelines

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Children with neurodevelopmental and genetic disorders (NDDs) are prone to imbalanced nutrition due to physical, medical, or behavioural issues, increasing their health risks. Evidence-based counselling is needed to improve the nutrition of children with NDDs. This study assessed the present diet and feeding challenges of children with Down syndrome (DS), autism spectrum disorder (ASD), and cerebral palsy (CP) to develop nutritional guidelines.

This mixed-method study enrolled 79 children (3–8 years) from 8 randomly selected centres of Karachi. Anthropometry was recorded to assess nutritional status. Caregivers of enrolled children were interviewed to explore dietary intake, diversity, and feeding difficulties. In-depth interviews (IDIs) were conducted with heads of enrolled centres to understand dietary challenges. Baseline findings spearhead the development of a nutrition education manual for children with NDDs.

Findings indicate certain common dietary challenges in all conditions, such as chewing and swallowing difficulties, communication barriers, low socioeconomic background, and limited awareness. Condition-specific issues included strong food selectivity and overeating in ASD, major chewing and swallowing difficulties in CP, and a preference for sweets and processed foods in DS. Data revealed poor dietary diversity, with 81% children consuming fewer than five food groups. Dual burden of malnutrition is reported (34.2% stunting; 27.8% underweight; 19% thinness and 11.4% overweight/obese), with significant differences across conditions ( $p < 0.05$ ), including higher stunting in DS and greater severe undernutrition in CP.

Preliminary findings provide insights into common and condition-specific dietary challenges for children with NDDs, laying the foundation for effective intervention to improve nutritional status and dietary diversity.

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### Artificial Intelligence / Machine Learning-Based Tool for Early Identification of Developmental Risk in Children

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### Parent-Child Engagement in Underprivileged Households in Karachi, Pakistan: Evidence from Family Care Indicators

Sidra Inayat Afzal<sup>1</sup>, Farzana Begum<sup>1</sup>, Ambreen Nizar<sup>1</sup>, Junaid Mehmood<sup>1</sup>, Imran Nisar<sup>1</sup>, Fyezah Jehan<sup>1</sup>,

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Early childhood development (ECD) is critical for lifelong outcomes, particularly in low- and middle-income countries. The home environment and caregiver interactions play a key role in shaping early development. The Family Care Indicators (FCI) scale is widely used to assess caregiving practices; however, there is limited evidence in peri-urban Karachi. Therefore, this study assesses caregiving practices and early learning environments using Family Care Indicators (FCI) within the GSED 2.0 study.

Between 2023 and 2025, trained data collectors conducted home-based assessments in 498 households in Ibrahim Hyderi, Karachi, Pakistan. Caregivers of children aged 3.5 and 5 years were interviewed using the FCI tool to assess early stimulation practices, caregiver engagement, and availability of learning materials.

Most households (72.1%) had six or more books, although only 28.1% included children's picture books. Children commonly used homemade toys (64.9%) and drawing/writing materials (83.1%). Caregiver engagement was moderate: 25.9% read books or looked at pictures with their child, 36.7% told stories, and 39.4% sang songs or rhymes. Fewer caregivers reported counting activities (24.9%) or drawing/painting (19.7%). Physical play was reported for 28.3% of children and was more common among 3.5-year-olds ( $p = 0.006$ ). Just over half (55%) used toys supporting shape and colour learning, higher among 5-year-olds ( $p < 0.001$ ). No sex differences were observed ( $p > 0.05$ ). Most assessments were conducted at home (99.2%) in Urdu (56.2%) and Sindhi (43.8%).

FCI provided feasible insights into caregiving environments in low-resource settings. Findings highlight gaps in early stimulation and support the need for parent-focused, pictorial interventions to strengthen nurturing care.

## SPOTLIGHT ABSTRACTS

### The Relationship between Pregnant Women's Intimate Partner Violence Experience and Their Child's Developmental Delay in Rural and Urban Malawi: Results from the Generation Malawi Birth Cohort Study

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Intimate partner violence (IPV) during pregnancy is a major public health concern and studies have linked it to adverse child developmental outcomes, but evidence from low- and middle-income countries, particularly during early infancy, remains limited. This study investigated the association between maternal experience of IPV during pregnancy and child developmental delays in the Generation Malawi (GM) birth cohort in rural and urban Malawi.

Analysed data from GM study (recruiting pregnant women with ultrasound-dated pregnancies from rural (Chilumba) and urban (Lilongwe) antenatal clinics. IPV was assessed during the second trimester, while child developmental outcomes were assessed at 16 weeks postpartum using the Malawi Developmental Assessment Tool (MDAT). Potential confounders were assessed, and multivariable linear regression was conducted to examine the association between maternal IPV experience and MDAT z-scores after adjusting for study site, maternal age, and maternal education.

Among 2,454 women, 58% reported lifetime IPV (emotional, physical, or sexual violence), of whom 41% experienced recent IPV within the previous three months. At the time of analysis, 1,297 infants had completed the 16-week MDAT assessment, with 2.3% (30/1,297) showing developmental delay (MDAT z-score < -2 SD). Maternal employment status and urban study site were associated with lower MDAT z-scores. However, no association was found between lifetime or recent maternal IPV experience and child MDAT z-scores. IPV was highly prevalent among pregnant women in this cohort. Absence of an observed association may reflect early timing of developmental assessment and incomplete follow-up data.

Ongoing longitudinal followup in GM cohort will allow further examination of the relationship between IPV and child development across early childhood

### Climate-Resilient Maternal Nutrition: Development of a Novel Indigenous Heat-Mitigating and Balanced Dietary Intervention for Pregnant Women in Rural Pakistan

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Climate change is increasing heat exposure during pregnancy, particularly in low-resource settings, yet culturally appropriate dietary strategies to improve maternal resilience are lacking. This study aimed to develop and pilot test an indigenous heat-mitigating balanced dietary intervention for pregnant women in rural Sindh, Pakistan.

A multi-phase mixed-methods formative study was conducted in Mithi, Tharparkar. Phase 1 used a narrative scoping review to synthesise antenatal nutrition guidelines, heat-nutrition physiology, and traditional South Asian food practices. Phase 2 analysed focus group discussions on food beliefs, acceptability, and dietary constraints. Phase 3 developed and had an expert review of a four-domain Meal Scoring Tool. Phase 4 applied the tool to design a 14-day rotating lunch plan. Phase 5 assessed sensory acceptability among 40 women using a 9-point hedonic scale, applying a priori acceptability criteria (mean score  $\geq 6.0$ ).

The evidence synthesis identified heat-nutrition design priorities, including hydration, electrolyte support, antioxidant-rich foods, gut-supportive components, and culturally recognised cooling foods. Focus group findings showed that food beliefs, pregnancy taboos, poverty, limited availability, and reduced summer appetite shaped maternal diets. Expert review supported the scoring tool's clarity and discriminatory capacity, and its application generated a 14-day meal plan. Sensory testing showed high acceptability for several indigenous foods with mean scores of approximately 7.9–8.6. Lower-scoring items were modified or excluded before finalising the intervention.

Food-based, culturally embedded nutrition strategies can operationalise climate resilience during pregnancy. This replicable framework offers a scalable approach to inform maternal nutrition interventions in heat-vulnerable settings.

## SPOTLIGHT ABSTRACTS

### Climate Change, Water Quality, and Health of Pastoral Communities in the Drylands of Southwest Kenya

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Pastoralists inhabit drylands that are characterized by rainfall heterogeneity across space and time. Over the last 50 years, the intensity, frequency, and magnitude of extreme events such as droughts and floods have increased. Intense precipitation and floods affect water quality, increasing the risk of water-borne diseases, especially diarrhoea and heavy metal poisoning. Prolonged droughts lead to water scarcity, forcing communities to consume contaminated water, increasing the risk of waterborne diseases. This study was conducted to ascertain the relationship between seasonal variation in water quality and health among pastoralists in Talek, Narok County, Kenya.

Water samples were collected from 11 sources during the dry season (February 2024) and again, from 25 sources during the wet season (August 2024). Samples were analysed (microbiological, physical, and chemical analysis) at the Crop Nutrition Services laboratory in Nairobi, Kenya. Paired samples were analysed using medians and the Wilcoxon Signed-Rank Test.

Faecal matter and associated pathogens (total coliforms, *Escherichia coli*, *Streptococcus faecalis*, and sulphate-reducing anaerobes) were detected in most water sources, with higher concentrations in the dry season than in the wet season. Chemicals, such as fluorides and manganese, were detected at high levels during the dry season. However, concentrations of toxic heavy metals such as arsenic, cadmium, chromium, lead, and mercury were below the KEBS guideline values.

Pastoralists are encountering water quality that is unsafe for human consumption. These findings underscore the need for targeted public health interventions to improve water safety in dryland regions.

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### Subnational heat stress patterns and vulnerability among pregnant women, young children, and older adults in Kenya

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Extreme heat is an increasing public health threat in Kenya, but subnational disparities in priority populations remain poorly characterised. We assessed heat hazard, exposure burden, and vulnerability among pregnant women, children younger than 5 years, and adults aged 60 years and older across Kenyan sub-counties.

We conducted a nationwide ecological panel study using annual sub-county data from 2015 to 2025, with climatological context from 1991 to 2025. Heat hazard was measured using the Universal Thermal Climate Index (UTCI) and annual counts of days above 38°C and 46°C. Population denominators were derived from WorldPop, and socioeconomic vulnerability from the Relative Wealth Index. We examined long-term trends, person-day exposure burden, hotspot persistence, and composite vulnerability rankings.

National mean annual days above 38°C increased significantly from 1991 to 2025, with a Sen slope of 0.97 days per year, and reached record levels in 2024 and 2025. In 2025, 61 sub-counties experienced at least 30 such days and accounted for 96.2% of the annual exposure burden in pregnant women, 96.8% in children younger than 5 years, and 95.0% in adults aged 60 years and older. Turkana East ranked highest for pregnant women, Wajir South for young children, and the top 20 priority sub-counties were identical for both groups.

Heat stress in Kenya is rising and concentrated in a stable set of disadvantaged sub-counties, supporting geographically targeted heat health planning for maternal, child, and healthy ageing programmes.

## SPOTLIGHT ABSTRACTS

### Building Climate-Resilient Early Childhood Systems in East Africa: Innovation and Evidence from Madrasa Early Childhood Programme

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Climate change is an immediate human development challenge already reshaping children's health, attendance, and learning outcomes across East Africa. Kenya's mean annual temperature has risen by 1.0°C since the 1960s and is projected to increase by up to 3.5°C by the end of the century (UNEP/EU, 2023), with coastal counties recording temperatures as high as 37°C (Odhiambo et al., 2022). Globally, 242 million students in 85 countries experienced climate-related school disruptions in 2024, including over 2 million learners in Kenya alone (UNICEF, 2025), highlighting the scale of education system vulnerability to climate shocks.

Evidence from the Aga Khan University Aga Khan University Institute for Human Development indicates that in similar Kenyan contexts, up to 77% of children are not school-ready, while 1 in 7 caregivers experience depressive symptoms, with household food insecurity affecting over 60% of families. This, underscores the compounding effects of environmental and socio-economic stressors on early learning outcomes. The Madrasa Early Childhood Programme (MECP), with over four decades of regional experience, is responding to this crisis through an integrated approach combining research, curriculum adaptation, teacher capacity strengthening, and community co-designed innovations.

An action-oriented approach was applied across two contexts. In coastal Kenya, baseline assessments were conducted across 30 pre-primary schools, gathering data from educators, administrators, and community members on climate risks, infrastructure gaps, and adaptation readiness. Findings informed a Human-Centred Design (HCD) intervention integrating teacher capacity strengthening with community-led innovation. In Zanzibar, a parallel teacher-led initiative across 30 pre-primary schools applied an Assess–Innovate–Showcase model to embed climate action into learning environments.

Baseline findings revealed pervasive risks: 100% of schools reported extreme heat and high dust levels, 67% reported toxic smoke exposure, and health risks included heat-related conditions (83%), respiratory illnesses (67%), and water- and vector-borne diseases, compounded by WASH infrastructure gaps. Despite over 90% of educators recognising climate change as critical, practical adaptation strategies remained limited. In response, locally developed solutions across Zanzibar schools included environmental clubs (30 schools), vegetable pots (22), tree nurseries (13), rainwater harvesting (4), vertical gardens (3), eco-cooling installations (2), and a natural light panel (1), improving learning conditions and strengthening community ownership.

These experiences demonstrate that early childhood systems are powerful entry points for climate action, where evidence, educator agency, and community innovation converge. MECP's integrated model offers a replicable framework for protecting children's learning today while building climate-resilient futures across East Africa and beyond.

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### Floods, Heat, and Survival: Refugees and Climate Vulnerability in Urban Pakistan

Sanaa Alimia

This paper draws on my published research that uses urban ethnography, qualitative interviews, personal narrative, and postcolonial urban analysis with low-income refugees and citizens living in four major cities in Pakistan — Karachi, Lahore, Islamabad, and Peshawar. It examines how these cities are increasingly on the frontlines of climate change, most evident via toxic air pollution, rising urban temperatures, flash flooding, and water shortages.

The paper argues that the effects of climate change are experienced unevenly and are felt most acutely by low-income populations and long-term refugees living in climate-vulnerable informal settlements on the rural-urban peripheries of major cities. Drawing on two longitudinal case studies from refugee settlements in Lahore and Peshawar, the paper explores how protracted refugee communities occupy an “in-between” position: legally excluded yet socially embedded within the city through everyday acts of survival, redistribution, and collective care. Occupying a position of “urban citizenship”, these groups are often the most active in responding to climate disaster events that are ever pronounced in cities.

The paper further demonstrates how the climate crisis in Pakistan's cities is not simply environmental, but structural and political, shaped by colonial legacies, speculative urban development, and privatized infrastructures that remain inaccessible to the urban poor. In response to these vulnerabilities, the paper explores how urban citizens — refugees and citizens — navigate environmental precarity using adaptive strategies that rely on social networks, political patronage, and alternative urban infrastructures, some of which are empowering, others of which continue to pose problems for affected communities.

## SPOTLIGHT ABSTRACTS

### **The Living-Lab: Advancing Transdisciplinary, Indigenous-Informed Experiential Learning for Sustainable Human Development?**

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The “triple planetary crisis” of climate change, biodiversity loss, and pollution demands transdisciplinary research and evidence-informed teaching and learning to prepare, engage, and build capabilities amongst leader cohorts to address wicked and super complex problems of the Anthropocene. This paper reports and presents a critical examination of immersive environmental pedagogy integrating indigenous knowledge(s) of pastoralist communities, particularly with regard to habitats and integrated and interdependent human-animal migration in Eastern Africa.

The methodology draws on transdisciplinary ecological, environmental, and pedagogical literature to analyse data from ethnographic observations, semi-structured interviews, and a targeted survey completed by four cohorts of students from both the Global South and the Northern Western Hemisphere, including secondary school students as well as higher education candidates from 2023-2025.

Findings show that the living-laboratory setting fosters people-centred, transformative learning experiences that stimulate active engagement and the development of social action projects leading to independent contextually and culturally relevant scholarship, deeper engagement in directed studies towards sustainability, and research for scholarship. In situ disciplinary inquiry and cross-disciplinary applications focused on land and ecosystem rehabilitation enhance learners’ appreciation of diverse knowledge systems, epistemological pluralism, and equity-oriented development. This whole-ecosystem approach supports the co-creation and implementation of context-specific actions that integrate scientific knowledge with innovative teaching practices, thereby strengthening learner agency. Framed by the UN Sustainable Development Goals, students identify areas of personal commitment, deepen respect for biodiversity, and re-engage with traditional knowledge systems in their academic and professional pathways.

Exposure to transdisciplinary and multisectoral research programmes cultivates environmental stewardship and bridges theory and practice, challenging the limitations of conventional positivist educational models.

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### **Multisectoral Perspectives on Early Childhood Development in Pakistan: Implications for Nurturing Care Framework Implementation.**

**Saima Siyal**<sup>1</sup>, Ayesha Zahid Khan<sup>2</sup>, Kausar Waqar<sup>3</sup>, Seema Lasi<sup>4</sup>, Salman Kirmani<sup>5</sup>

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Early childhood development (ECD) is critical for lifelong health and well-being, yet access to quality services remains limited in Pakistan. The Nurturing Care Framework (NCF) provides a comprehensive approach to ECD, but its implementation across sectors remains fragmented. This study examines the status of ECD across sectors to inform multisectoral operational guidelines for NCF implementation in Pakistan’s developmental and humanitarian contexts.

Using a qualitative exploration design, data were collected through 51 in-depth interviews (IDIs) and 19 focus group discussions (FGDs). Interview participants were policymakers, sector specialists, and development partners. FGDs were conducted with frontline workers and families. Participants represented six regions of Pakistan. IDIs and FGDs were audio recorded and manually transcribed. Coding was done manually by the researcher, and the data were analysed by using spreadsheet-based qualitative data analysis to identify key patterns.

Findings indicated consistently low awareness of ECD and the NCF among stakeholders, alongside fragmented sectoral programming and limited training coverage on NCF components. Data further highlighted weak multisectoral coordination mechanisms, which hinder integrated service delivery across sectors. Persistent access barriers were reported, particularly among rural and marginalized populations. Despite these challenges, families expressed strong trust in community-based approaches, and existing sectoral platforms demonstrated potential opportunities for improved coordination and service integration.

NCF implementation in Pakistan requires clear operational guidance, strengthened capacity building, and improved multisectoral coordination. Leveraging existing systems and community trust can support the delivery of culturally appropriate and scalable interventions.

## SPOTLIGHT ABSTRACTS

### **Strengthening Responsive Caregiving through Coaching and Supportive Supervision: Evidence from the Familia Bora Program in Tanzania**

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Although responsive caregiving is critical for early childhood development, it remains a challenge for caregivers to adopt and consistently apply these practices through coaching. Parenting programs offer a promising approach, but there is limited evidence on how to build the capacity of delivery agents to translate responsive caregiving content into behaviour change among caregivers.

Familia Bora is a multicomponent parenting intervention for couples with young children, focused on strengthening early learning and responsive caregiving. The program trains community health workers (CHWs) through regular trainings, field-based coaching, and supportive supervision. CHWs use demonstrations, guided practice, and feedback during group sessions, and home visits. Strategies are reinforced using videos, a play and communication guide, and homemade toys. Data were drawn from routine program monitoring data and in-depth interviews with CHWs and participating caregivers.

CHWs initially had limited familiarity with responsive caregiving but, through coaching and supervision, gained skills to observe and encourage responsive caregiving. This enabled caregivers to engage more consistently in such practices with their young children, including following the child's lead and integrating play and communication into everyday routines. Changes were observed among mothers and fathers, with increased engagement with children and strengthened co-parenting dynamics.

A multi-pronged approach to training, coaching, and supportive supervision enhanced CHWs' capacity to model and promote responsive caregiving. This led to behaviour change among caregivers. Investing in delivery agent capacity and continuous mentorship is critical for translating program content into sustained practice.

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### **Closing the Gap: Advancing Nurturing Care for Children Aged 0–3 in Isiolo County- Evidence from a Situational Analysis on the Implementation of Nurturing Care Practices in Isiolo County Health Facilities**

**Daud A. Abdullahi<sup>1</sup>**, Amina Abubakar<sup>1</sup>, Margaret Kabue<sup>1</sup>, Kevinson Mwangi<sup>1</sup>

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The first three years of life are critical for child development, yet nurturing care remains insufficiently integrated into routine health systems in many low-resource settings. In arid and semi-arid (ASAL) areas of Kenya, persistent structural and health system constraints threaten optimal early childhood outcomes.

We conducted a mixed-method situational analysis across 30 health facilities in three sub-counties within Isiolo County. Data were collected through qualitative and quantitative methods, including focus group discussions (n=22), in-depth interviews (n=12), and structured surveys (n=145).

The study findings indicated that core Maternal Newborn and Child Health (MNCH) services were widely available across the health facilities - antenatal care (53%), skilled delivery (85%), immunisation (70%), and early postnatal care (77%). However, service quality remains uneven, due to infrastructure gaps, workforce shortages, and frequent stock-outs of essential commodities. Only 36.6% of healthcare workers surveyed received training in nurturing care, limiting its integration into MNCH services. Critical components, including responsive caregiving, early learning, caregiver mental health, and child protection, were largely not addressed. High caregiver stress, weak psychosocial support, and fragmented referral systems further constrained care quality. These gaps were reflected in poor outcomes for mothers and children, with high maternal mortality (451 per 100,000), neonatal mortality (22 per 1,000), and wasting (17.4%).

Despite an established MNCH platform in the county, substantial gaps persist in embedding nurturing care within routine services. Integrating nurturing care into existing MNCH systems offers a practical, scalable pathway to improve early childhood development outcomes in Isiolo County.

## SPOTLIGHT ABSTRACTS

### Integration of Nurturing Care for Early Childhood Development in Primary Health Care: Stocktake Assessment Findings from Kenya

Nyamanya Susan<sup>1</sup>, Kimenye Richard<sup>2</sup>, Ndunge Fidelina<sup>1</sup>, Barasa Herbert<sup>1</sup>, and Gitimu Anne<sup>1</sup>

<sup>1</sup>: Amref Health Africa in Kenya, Nairobi, <sup>2</sup>: Ministry of Health

Since its launch in 2018, the Nurturing Care Framework (NCF) has gained visibility, but its integration into health systems remains uneven. Most initiatives focus on health and nutrition, while responsive caregiving, safety and security, and opportunities for early learning are consistently underprioritized. To address these gaps, the Ministry of Health (MoH) and Amref Health Africa, with support from the Conrad N. Hilton Foundation through Results for Development (R4D), undertook a stocktake exercise to generate evidence that can inform the integration of Nurturing Care for ECD (NCfECD) in Primary Health Care (PHC).

A mixed-methods approach combined a document review of national and county NCfECD policies, strategies, guidelines, and tools with primary data collection. This included 80 key Informant Interviews across national, county, and frontline levels (15 national; 30 Nairobi; 30 Nyamira; 5 across Kitui, Murang'a, Nakuru, Siaya, and Tana River), 12 focus group discussions with caregivers and community representatives, 8 structured observations, 8 facility assessments, and selected client exit interviews to assess counselling experience and perceived quality.

Qualitative data were analysed thematically using the WHO Health Systems Building Blocks framework. Data were coded and organised across the six domains - leadership and governance; health workforce; service delivery; health information systems; access to essential medicines and technologies; and health financing. This was done to identify patterns within and across categories. Findings were triangulated across data sources and levels (national, county, and facility/community) to highlight convergent insights and contextual variations. Illustrative anonymised quotations are included to preserve participant voice while ensuring confidentiality.

There is strong recognition that nurturing care is not an add-on programme, but a way of delivering family-centred PHC for children in their early years. Policy intent and related initiatives exist across nutrition, maternal and child health. However, translation into routine PHC practice is slowed by fragmentation of guidance across programmes and the absence of a single operational package that clearly spells out what providers should do, with what tools, at each PHC contact point for children under three.

Nurturing care is conceptually embraced but unevenly implemented within PHC systems. Bridging the gap between policy intent and everyday practice will require deliberate system-wide investments across governance, workforce, service delivery, information systems, and financing, so that all children and caregivers receive the nurturing care they need to thrive.

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### Nurturing Care for Early Childhood Development in Primary Health Care: Case of Nyamira County

Susan Nyamanya<sup>1</sup>, Sarah Moraa<sup>2</sup>, Kamundia John<sup>2</sup>, Ndunge F.<sup>1</sup>, Barasa H.<sup>1</sup>, and Gitimu A.<sup>1</sup>

<sup>1</sup>Amref Health Africa in Kenya, Nairobi, <sup>2</sup>County Government of Nyamira

Since its launch in 2018, the Nurturing Care Framework (NCF) has gained visibility, but its integration into health systems remains uneven. To address these gaps, the county government of Nyamira, in collaboration with Amref Health Africa (Amref), and with support from the Conrad N. Hilton Foundation through Results for Development (R4D), undertook a stocktake exercise. The aim was to generate evidence that can inform the integration of Nurturing Care for ECD (NCfECD) particularly 3 components which are consistently under-prioritized in Primary Health Care (PHC). These include responsive caregiving, opportunities for early learning, and safety and security.

Qualitative methods approach was used, comprising a desk review of national and county-level policies, guidelines, and strategic documents, supplemented by 30 key informant interviews (KIIs), 6 focus group discussions (FGDs) with stakeholders at the county level, 4 facility observation, and 4 facility assessments. The stock-take was structured around health system building blocks. This initiative aimed to guide the integration of NCfECD into national PHC guidelines and to support the development of county-level NCfECD in PHC action plan for Nyamira County. The exercise reviewed county-level implementation of the three components to identify persistent gaps, and opportunities for strengthening the integration of nurturing care in PHC.

In Nyamira County, NCfECD is not fully integrated into PHC. Where elements exist, they lack dedicated budgetary support and are embedded within broader health activities. However, a multisectoral coordination team has been established at county and sub-county levels to oversee NCfECD activities.

The findings informed the development of the Nyamira County NCfECD in PHC Action Plan and will support the integration of NCfECD into national PHC guidelines. Additionally, advocating for increased investments and inclusion of responsive care giving, opportunities for early learning and safety and security components are recommended for holistic child development.

## SPOTLIGHT ABSTRACTS

### Experiences of Re-Admitted Teenage Mothers in Selected Secondary Schools in Nzega District, Tanzania: A Hermeneutic Phenomenological Study

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This study explored the experiences of re-admitted teenage mothers in selected secondary schools in the Nzega District, Tanzania, using a qualitative approach with a hermeneutic phenomenological design. The study was guided by four objectives: (1) to examine personal, social, and academic experiences; (2) to identify challenges faced after re-entry; (3) to assess the perceived supportiveness of re-entry policies in addressing their needs; and (4) to explore support mechanisms that help re-admitted students cope with challenges.

Data were collected through semi-structured interviews with 19 participants, including teenage mothers, their peers, and academic masters. Thematic analysis was employed, and ethical standards and trustworthiness were ensured.

Findings revealed that teenage mothers experienced emotional distress, including shame, hurt, and feelings of abandonment, alongside social isolation and stigmatization. Academically, they faced unfair treatment, irregular attendance, and limited study time. Key challenges included community mistreatment, sexual harassment, lack of adolescent-friendly healthcare services, and absence of school-based support, such as academic assistance and childcare facilities. Participants also reported lack of mental health support, role conflict due to dual responsibilities, economic hardship, and physical and emotional strain. The study found that re-entry policies were inadequately supportive due to poor understanding among school leaders, limited dissemination of policy information, weak monitoring, and inflexible school environments. Although re-entry was possible, the policies did not sufficiently address the needs of teenage mothers.

The study recommends strengthening guidance and counselling services in secondary schools, training teachers, establishing school-based childcare facilities, and providing financial support to improve educational outcomes.

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### “But in itself, it hurts”: Experiences of adolescents with Sickle Cell Disease and their caregivers attending a specialized clinic in Kilifi, Kenya

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Sickle cell disease (SCD) is associated with recurrent pain, fatigue, and other chronic complications that can disrupt daily functioning, mental health, and quality of life. During adolescence, the demands of social, emotional, and academic development may further intensify the burden of living with SCD. In sub-Saharan Africa (SSA), these challenges are often compounded by delayed diagnosis, mismanagement, and limited access to specialized care. In malaria-endemic regions such as Kilifi County, the high burden of SCD may further strain healthcare systems and families. This study explored adolescents' and caregivers' experiences attending a resource-supported SCD clinic.

This cross-sectional study consecutively recruited 54 participants, including 26 adolescents aged 10-16 years living with sickle cell disease and 28 caregivers. Data were collected qualitatively through eight focus group discussions using semi-structured guides to explore experiences and challenges related to SCD. Content analysis method was performed on the transcripts using NVivo 12.

Findings suggest that SCD imposes substantial physical, cognitive, and social challenges on adolescents and caregivers. Participants described the specialized clinic as supportive in improving disease-related knowledge and in facilitating coping strategies perceived to support daily functioning. Participants additionally emphasized the need for community awareness and education to enhance support for individuals living with SCD.

Access to resource-supported, specialized care services may help address some of the psychosocial and healthcare challenges faced by adolescents living with SCD in SSA. Findings from the specialized SCD clinic in Kilifi highlight the perceived value of supportive healthcare in promoting adolescent well-being and improving care experiences.

## SPOTLIGHT ABSTRACTS

### Evaluating the effect of school-based mental health literacy programs on health and educational outcomes of adolescents in low- and middle-income settings: a systematic review and meta-analysis

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Adolescence is a developmental stage characterized by an increased risk for mental health challenges. The effectiveness of school-based mental health literacy (MHL) programs for adolescents in low- and middle-income countries (LMICs) remains unclear. We aimed to evaluate the effectiveness of school-based MHL interventions for adolescents in LMICs on their health and educational outcomes.

We adhered to the Preferred Reporting Items for Systematic Reviews and Meta-Analyses guidelines. PubMed, CINAHL, PsycInfo, Cochrane, and Embase databases were searched. Randomized controlled trials (RCTs), quasi-experimental designs, and parallel-group non-randomized designs published between January 2000 and March 2026 that compared an MHL intervention to a control group, were included. We conducted a risk-of-bias assessment, a narrative synthesis, and a meta-analysis.

We included 14 studies (12 quasi-experimental designs, 1 RCT, and a parallel-group non-randomized design) conducted in Africa, the Americas, the Eastern Mediterranean region, the South-East Asia region, and the Western Pacific region. There were 12 classroom-based MHL interventions, 1 was implemented through intervention clubs, while 1 was web-based. Intervention duration ranged from a single one-hour session to a 9-month intervention. Pooled analysis using a random effects model indicated a statistically significant overall effect (Hedges'  $g = 0.7$ ; 95% CI: 0.57 to 2.70;  $p = 0.0027$ ) on mental health knowledge.

School-based MHL programs in LMICs are effective in improving adolescent mental health knowledge. Future research should emphasize cultural and contextual adaptation, rigorous evaluation, and monitoring to maximize benefits while minimizing unintended consequences.

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### Mentor Support and Psychosocial Well-being among Adolescents in Urban Informal Settlements: Evidence from Secondary School Students in Kibra, Kenya

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Adolescents in urban informal settlements in Kenya grow up in settings marked by poverty, insecurity, and limited structured psychosocial support. These conditions shape emotional stability, identity formation, and coping capacity during adolescence. Mentor support is widely viewed as a protective factor, yet evidence from high-risk urban settings remains limited. The specific objectives included assessing psychosocial well-being among mentored and non-mentored secondary school students, examining the relationship between mentor support and psychosocial well-being, and exploring adolescents' experiences of mentor support in Kibra.

A cross-sectional convergent mixed-methods design was used, drawing data from 349 mentored and 102 non-mentored secondary school students in Kibra. Quantitative data were analysed using descriptive statistics, chi-square tests, and logistic regression, while qualitative data from 10 key informants and 7 focus group discussions were analysed thematically.

Students in mentorship programmes reported higher levels of school connectedness (97.4%), goal orientation (95.1%), motivation (94.0%), collaboration (91.4%), and faith (98.3%) than non-participants did. Regression results showed significant associations between psychosocial outcomes and school connectedness ( $\beta = 0.32$ ), goal orientation ( $\beta = 0.21$ ), and collaboration ( $\beta = 0.184$ ), with model fit of  $R^2 = 0.555$  ( $p < 0.001$ ). Qualitative findings show that structured mentorship, consistent role modelling, and affirmation support emotional regulation, coping, and identity development in difficult environments.

Mentor support is associated with stronger psychosocial functioning and resilience among adolescents in urban informal settlements. The findings position mentorship as a relevant social factor in adolescent mental health and development in high-risk urban contexts.

## SPOTLIGHT ABSTRACTS

### Food insecurity, diet quality, and cognitive function among adolescents: evidence from a mining-affected district in Ghana.

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Food insecurity and poor-quality diet remain critical public health concerns among adolescents in rural Ghana, particularly in mining-affected communities such as the Twifo/Atti-Morkwa District. These conditions may adversely influence cognitive development, yet context-specific evidence remains limited. This study examined the relationship between diet quality, food insecurity, and cognitive function among adolescents, while identifying associated socio-demographic factors.

A cross-sectional quantitative study was conducted among 383 adolescents aged 13–19 years in selected schools within the Twifo/Atti-Morkwa District between April and June 2025. Participants were selected using a multistage stratified random sampling technique. Data were collected using structured interviewer-administered questionnaires, the Diet Quality Questionnaire (DQQ), Food Insecurity Experience Scale (FIES), and the Digit Span Test adapted from the Wechsler Intelligence Scale for Children to assess memory and attention. Diet quality scores were categorized as low, average, or high based on dietary diversity, while cognition scores were classified into low, average, and high categories using standardized digit span cut-offs.

Only 28.0% of households were food secure, while 36.4% and 20.7% experienced moderate and severe food insecurity, respectively. Low diet quality was observed among 67.4% of respondents, whereas 55.1% demonstrated low cognitive function. Food insecurity was significantly associated with lower cognitive performance ( $p = 0.025$ ). Adolescents from households with lower parental education and unstable occupations were more likely to have poor diet quality and lower cognition scores. Females were more vulnerable to severe food insecurity compared to males.

Food insecurity and poor diet quality were significantly associated with lower cognitive function among adolescents in the Twifo/Atti-Morkwa District. Interventions to improve household food access, nutrition education, and adolescent dietary diversity may improve cognitive outcomes in mining-affected communities.

### Community-Driven Neuroimaging Innovations: Caregivers' Perceptions and Experiences of the Importance of Neuroimaging Techniques in Improving Child Brain Stimulation in Rural Kenya

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Innovations in magnetic resonance imaging (MRI) are crucial for advancing child brain research. However, in Kenyan socioeconomically disadvantaged settings, communities' perceptions and experiences about MRI are crucial in informing similar research designs. Understanding caregivers' perceptions around safety and clinical utility of MRI can promote acceptance and ethical implementation of neurobehavioral research and interventions.

In this mixed-method cross-sectional study, we randomly sampled ( $n=267$ ) participants comprising mothers ( $n=109$ ), fathers ( $n=52$ ), childcare providers ( $n=106$ ) with children aged 6 - 24 months attending childcare centres or receiving home care in urban and rural settings within Kisumu and Nairobi counties. Additionally, we purposively sampled healthcare professionals ( $n=27$ ). Of 267 participants, we randomly sampled 97 to take part in the qualitative arm of the study. Quantitative data, knowledge, attitudes, and perceptions of neuroimaging were collected through semi-structured questionnaires, complemented by qualitative insights from focus group discussions and key informant interviews. Descriptive statistics were used to analyse responses, while thematic analysis explored community beliefs and lived experiences regarding neuroimaging.

While 87% of caregivers recognized MRI's role in diagnosing brain conditions, some (13%) expressed fear linking neuroimaging to brain damage and cancer. A majority (81%) expressed willingness to have their children scanned if fully informed about the clinical or research value of the MRI, emphasizing the importance of parental presence and involvement in the development of standard operating protocols. The healthcare across Nairobi and Kisumu study confirmed that caregivers exhibited safety concerns for the use of MRI in non-clinical research.

Caregivers' perceptions in two rural Kenyan settings reflect misconceptions that hinder the acceptance of neuroimaging as a tool for enhancing child brain research, but research design and implementation require contextualisation to suit local settings. Thus, targeted community sensitization and literacy are critical to promote acceptability and ethics of neuroimaging research aimed at promoting early childhood brain development.

## SPOTLIGHT ABSTRACTS

### Validating Eye-Tracking Biomarkers for Autism Diagnosis in Low- and Middle-Income Countries

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Most autism research occurs in high-income countries (HICs), yet 95% of autistic children live in low- and middle-income countries (LMICs), where limited expertise and culturally validated diagnostic tools hinder detection. Eye-tracking has shown promise for identifying autism in young children in HICs but has not been explored in LMICs. The main objective is to determine whether eye-tracking biomarkers differentiate children with and without autism in Western Kenya.

A culturally adapted eye-tracking battery (10 – 15 minutes) measures six biomarkers predictive of autism in HICs - non-social preference, attentional disengagement, pupillary light reflex, and oculomotor metrics. Data were collected from 66 children aged 24 – 72 months (26 autistic, 36 non-autistic; mean age 3.36 years; 18 females). Diagnoses were confirmed by Kenyan and US clinicians using DSM-5 criteria.

This abstract presents preliminary findings for one of six biomarkers - non-social preference - as data collection and analysis for the remaining biomarkers are ongoing across two studies. Non-social preference significantly predicted autism outcomes ( $p < 0.0001$ ). Applying a 35% looking-time threshold, 84% of cases were correctly classified - 27% true positives and 57% true negatives. Sensitivity was 65% (95% CI: 46.2–80.6), specificity 97% (95% CI: 86.2–99.5), PPV 94% (95% CI: 74.2–99.0), and NPV 80% (95% CI: 66.2–89.1).

Preliminary findings for the non-social preference biomarker demonstrate that eye-tracking data can be successfully acquired in low-resource settings, with promising diagnostic accuracy. While results across all six biomarkers are pending, these early findings support the continued development of culturally tailored eye-tracking tools as scalable diagnostic strategies for autism in LMICs.

### Neural Correlates of Executive Functioning among Adolescents and Young Adults Living with HIV: A Systematic Review of Structural and Functional Imaging Studies

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Reduced executive functioning (EF) – including working memory, cognitive flexibility, and inhibition – has been frequently observed among adolescents and young adults living with HIV (AYALH), despite antiretroviral therapy. EF deficit in the context of HIV are of particular importance, as they are associated with poor outcomes, such as sub-optimal adherence to antiretroviral therapy. These deficits may reflect HIV-associated alterations in brain structure and function. This review aimed to synthesize the available evidence of this relationship. Following the Preferred Reporting Items for Systematic reviews and Meta-Analyses (PRISMA) guidelines, we searched PubMed, Web of Science, PsycINFO, and Scopus databases for relevant studies reporting EF outcomes and neural correlates (structural or functional). To be eligible for this review, studies had to be:

- quantitative in nature,
- use any neuroimaging technique (including less commonly used imaging techniques such as magnetic resonance spectroscopy (MRS) and perfusion MRI),
- have EF as an outcome,
- include AYALH in their sample,
- have a comparison group, and (vi) be published in English or have an English version.

Nineteen studies met the inclusion criteria. Significantly lower brain volumes and cortical thickness, lower fractional anisotropy, higher mean diffusivity, higher cerebral blood flow, and altered cerebral metabolites were observed among AYALH relative to matched controls. EF problems, particularly in working memory, were frequently reported. Overall, the observed neural alterations correlated with decreased EF among AYALH. Evidence suggests that distinct HIV-associated neural alterations may underlie EF problems in AYALH. Neuroimaging may offer insight into these cognitive vulnerabilities, although more longitudinal and multimodal studies are needed.

## SPOTLIGHT ABSTRACTS

### Deep Learning-Based Classification of EEG Patterns in ICU/CCU Recordings

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Electroencephalography (EEG) interpretation in intensive and cardiac care units (ICU/CCU) is complex, time-consuming, highly expertise-dependent, and subject to significant inter-observer variability. These challenges are further amplified in peripheral hospitals, where access to specialized neurophysiology expertise is limited. There is therefore a need for automated methods capable of consistent and accurate classification of EEG patterns using standardized clinical terminology.

EEG recordings were segmented into overlapping windows and labelled using American Clinical Neurophysiology Society terminology. Patterns were grouped into four classes: Normal, Epileptiform activity, Rhythmic/Periodic patterns, and Background abnormalities. A convolutional neural network and a feature-based Random Forest were combined using a probability-based ensemble. Performance was evaluated using group-wise cross-validation and an independent test set, with area under the receiver operating characteristic curve (AUC), precision, recall, and F1-score.

The ensemble model outperformed individual models, achieving an AUC of approximately 0.89 and a test AUC of 0.80, with an overall test accuracy of 0.73. Classification performance was highest for Background and Normal patterns (F1-scores of 0.78 and 0.71, respectively). Epileptiform activity remained the most challenging class, with low recall, reflecting class imbalance and variability in EEG morphology. Embedding visualization demonstrated overlap between Epileptiform and Rhythmic classes, providing insight into the observed performance limitations.

Ensemble learning combining deep learning and feature-based methods improves EEG pattern classification in ICU/CCU settings. Clinically informed label grouping enhances model stability, although epileptiform activity remains challenging to classify. These findings highlight the potential of AI-assisted EEG analysis to support standardized interpretation and clinical decision-making.

### Real-time Evidence for Scaling Early Childhood Development and Education in Emergencies: Lessons from the Routine Monitoring Tool (RMT) Under the LEGO Foundation Childhood Development Activity in Ethiopia.

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Save the Children Ethiopia, with support from the LEGO Foundation, has been implementing the Childhood Development Activity (CDA) since 2022 across five crisis-affected regions through seven local partners to strengthen quality Early Childhood Development and Education (ECDE) for children aged 3–6+. Despite growing investment in ECDE, emergency settings continue to face limited systems for measuring programme quality, implementation fidelity, and outcome-level progress beyond routine output tracking. To address this gap, CDA introduced the ECDE Routine Monitoring Tool (RMT), an innovative system designed to generate real-time evidence across learning environments, teacher practices, and community engagement aligned with the programme's Theory of Change.

This study examines how the RMT supports adaptive management, systems strengthening, and evidence-based scaling of ECDE interventions in fragile contexts. The 2025 assessment employed a probabilistic, stratified, and cluster sampling methodology covering 81 ECDE centres across 33 woredas and 13 zones. Data were collected using KOBO Toolbox through classroom observations and teacher interviews.

Findings demonstrate substantial improvements between 2023 and 2025 across structural and process quality indicators. Centres with solid and reasonably maintained structures increased from 20% in 2023 to 72% in 2025, while centres with appropriate playful learning materials improved from 14% to 100%. Teacher practices also improved significantly, including the use of whole-group and small-group instruction (23% to 94%) and play-based teaching approaches (40% to 81%). Community engagement is strengthened through functional parent-teacher-student associations and parental sessions supporting learning continuity beyond classrooms.

The findings highlight that real-time and theory-driven routine monitoring systems can strengthen programme quality, support adaptive learning, and generate scalable evidence for ECDE programming in emergency settings. The RMT demonstrates the importance of integrating outcome- and quality-focused monitoring approaches within humanitarian ECDE systems.

## SPOTLIGHT ABSTRACTS

### Expanding STEM Opportunities for Girls with Disabilities in Kenya

#### Teachers' and Parents' Awareness and Knowledge of Dyslexia in Selected Primary Schools in Lusangazi District, Eastern Province, Zambia

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Dyslexia is a specific learning difficulty that affects reading and language-related processing. Limited understanding among teachers and parents may delay early identification and support for primary school learners and vice versa. This study examined teachers' and parents' awareness and knowledge of dyslexia and the influencing factors in selected schools of Lusangazi District.

A mixed-methods approach was used under the pragmatic paradigm with a convergent parallel design. The study involved 109 participants -- 89 teachers who completed questionnaires and 20 parents who participated in focus group discussions. Quantitative data were analysed using descriptive statistics and logistic regression in Stata version 17, while qualitative data were analysed thematically.

Teachers showed moderate knowledge of dyslexia, with 61.8% (n=55) demonstrating high knowledge and 38.2% (n=34) low knowledge. Over half (53.9%) correctly identified dyslexia, yet misconceptions persisted, such as linking it to laziness (42.6%) and limited recognition that it can occur in learners with average or above-average intelligence (15.7%). Logistic regression revealed that teachers who had taught suspected cases had significantly higher odds of good knowledge (AOR=4.64, 95% CI: 1.72–12.57, p=0.003). Qualitatively, both teachers and parents had limited understanding; most parents were unfamiliar with the term and viewed dyslexia as general reading difficulties or laziness.

Limited awareness and knowledge of dyslexia among teachers and parents hinder early identification and support. Direct experience with suspected learners improved teachers' knowledge. Targeted awareness programmes, teacher training, improved assessment services, and stronger parent-teacher collaboration are needed to better support learners with dyslexia.

### Scaling Early Childhood Learning through Child-to-Child Play-Based Pedagogy

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School readiness and smooth transition from preschool to primary education remain among the key challenges in Pakistan. To address this, a Play-Based Child-to-Child (PBC2C) model was tested. The model focuses on a structured peer-led play to strengthen foundational literacy, numeracy, and social-emotional competencies among Young Learners (YLS) while also enhancing ECCE teachers' capacities.

Action research with pre- and post-design was used, with the intervention spanning over 25 weeks in the participating schools in Chitral (rural) and Karachi (urban) contexts. ECCE teachers and YFs were trained to implement structured PBC2C activities. Data were collected through pre- and post-assessments, classroom observations, interviews with teachers, parents, and children, and research teams' field notes and reflections.

Findings show improvements in YL's foundational literacy, numeracy, and social-emotional competencies with enhanced participation and confidence in both YLS and YFs. Teachers also reported improved capacity in facilitating PBC2C learning approaches. Implementation challenges included timetable coordination, adapting activities to diverse learning needs, and managing emotional and behavioural variability among YLS.

The PBC2C model is a culturally responsive and scalable approach to improving school readiness and supporting transition to primary education in resource-constrained contexts. Both play and peer learning align with existing relational learning practices in the research contexts, supporting feasibility and sustainability. The findings support embedding child-to-child pedagogies within ECCE policy and teacher development systems to strengthen early learning outcomes and equity.

## SPOTLIGHT ABSTRACTS

### From Community Model to National Systems: Scaling a Government-Approved Teacher Professional Development Model for Sustainable ECD Workforce Development

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<sup>1</sup>Madrassa Early Childhood Programme – East Africa

Strengthening the Early Childhood Development (ECD) workforce is central to building resilient human development ecosystems that support young children's holistic development. This paper examines the evolution and large-scale implementation of a Teacher Professional Development (TPD) model led by the Madrassa Early Childhood Programme (MECP) in East Africa. Since its establishment in 1982, MECP has implemented evidence-based, culturally responsive, and cost-effective interventions integrating teacher professional development, parental engagement, and systems strengthening, positively impacting over 300,000 children, training 7,000 teachers, and empowering 32,000 parents and caregivers through collaboration with education and health systems

In Kenya, between 2016 and 2018, MECP adapted its proven community-rooted ECE model into a scalable Teacher Professional Development (TPD) programme, reaching 704 teachers across 151 schools in five counties across Kenya. Evidence from the Tayari impact evaluation demonstrates that the model significantly improves instructional quality and is both feasible and cost effective for delivery through county governments in partnership with the Ministry of Education. The programme achieved strong value for money, with costs of \$8.47 per child over two years, and a project-long-term cost of \$3.37. The model has since been strengthened and aligned to the Competency-Based Education (CBE) framework and further adapted under the FCDO-supported INSPIRED programme to address the needs of children in arid and semiarid lands (ASAL) contexts. Within one year of implementation, which targeted 1,258 teachers from 571 schools, 95% of teachers rated the course as excellent, and 71% demonstrated improved competencies in delivering play-based, child-centred pedagogy.

A key milestone in this journey has been the transition from locally adapted, community-based curricula to nationally recognized and accredited training systems. MECP's pre-service certificate course is now approved across Kenya, Uganda, and Zanzibar, with in-service training materials nearing accreditation. This shift reflects a move towards institutionalization, enabling governments to adopt and scale high-quality, standardized training across systems. The paper argues that aligning community-driven innovations with national systems can strengthen the entire human development ecosystem, linking families, schools, and government structure to sustainably improve teaching quality and child outcomes at scale.

### Engaging Community-Based Organizations (CBOs) to Support Mental Health Service Delivery in Schools in Kenya and Uganda

Gideon Mbithi<sup>1</sup>, Adam Mabrouk<sup>1</sup>, Ahmed Sarki<sup>2,3</sup>, Rachel Odhiambo<sup>1</sup>, Nimo Jamal<sup>1</sup>, Ann Karendi<sup>1</sup>, Mary Namuguzi<sup>2</sup>, Stephen Mulupi<sup>4</sup>, Joseph Atukwatse<sup>2</sup>, Margaret Kabue<sup>1</sup>, Amina Abubakar<sup>1,5,6</sup>

<sup>1</sup>Institute for Human Development, Aga Khan University, Nairobi, Kenya, <sup>2</sup>School of Nursing and Midwifery, Aga Khan University, Kampala, Uganda, <sup>3</sup>Family and Youth Health Initiative (FAYOHI), Jigawa state, Nigeria, <sup>4</sup>LVCT Health, Nairobi, Kenya, <sup>5</sup>Neurosciences Group, KEMRI-Wellcome Trust Research Programme, Centre for Geographic Medicine Research (Coast), Kilifi, Kenya, <sup>6</sup> Department of Psychiatry, University of Oxford, Oxford, UK. Despite the high burden of mental health problems among adolescents in sub-Saharan Africa, school-based mental health services remain limited. In Kenya and Uganda, there is a lack of structured mental health services in schools, heavy teacher workloads, and weak referral pathways. These challenges limit the delivery of mental health support in schools. Community-based organizations (CBOs) may offer a feasible strategy to strengthen school mental health services. This study evaluated the impact of an adapted mental health literacy curriculum delivered through CBOs in schools in Kenya and Uganda.

We conducted a pre-post intervention study among school-going adolescents aged 10 –19 years in 11 schools (7 in Kenya, 4 in Uganda). Trained facilitators from eight CBOs delivered a six-module adapted Mental Health Literacy Programme over a period of eight weeks between January and July 2023. Primary outcomes of the study included mental health knowledge and mental health attitude. Secondary outcomes included depressive symptoms and anxiety symptoms. Additionally, we evaluated implementation outcomes, including acceptability, appropriateness, and feasibility. Paired analyses were conducted among 668 participants with complete baseline and endline data.

The mean age was 15.8 years (SD=1.6), of which 57.3% were female. Mental health knowledge improved significantly from a mean baseline score of 7.4 (SD=2.4) to 9.5 (SD=1.9) post-intervention (Cohen's  $d=0.80$ ,  $p<0.001$ ). Positive attitudes toward mental health increased from 31.1 (SD=7.8) to 37.2 (SD=8.2) (Cohen's  $d=0.66$ ,  $p<0.001$ ). The prevalence of depressive symptoms reduced from 18.3% to 8.8% ( $p<0.001$ ), while anxiety symptoms reduced from 11.4% to 6.1% ( $p<0.001$ ). Participants reported high implementation ratings across both countries, with mean scores above 15/20 for appropriateness, feasibility, and acceptability.

The findings showed that engaging CBOs to deliver school-based mental health literacy interventions is a feasible and acceptable approach that can improve mental health knowledge and attitudes among students. However, further randomized studies are needed to confirm effectiveness and sustainability.



## SPOTLIGHT ABSTRACTS

**From Community Model to National Systems: Scaling a Government-Approved Teacher Professional Development Model**



