MESSAGE from the President
Dr. Nuruddin Mohammed

Welcome to the launch of first issue of Pakistan Developmental Origins of Health and Disease (DOHaD) Society newsletter. I am delighted to witness its substantial growth from a research group of mere 6 pioneer members in 2014, to now a large group of 114 members by the end of 2018. Emanating from the platform of the Aga Khan University (AKU) with the aim to highlight the impact of environment on fetal life and future health and development, we obtained the status of Pakistan DOHaD Society in 2016 and were recognized as DOHaD Research Group by AKU in 2018. The society has strived for excellence and over a period of time has been successful in moving forward DOHaD agenda which is to 'expand our knowledge about early life origins of health and disease for improvement in trans-generation health'. This newsletter highlights our accomplishments of 2018 promoting DOHaD vision in the field of education, research and service to the community. Our members have enthusiastically participated in DOHaD dissemination seminars, presentations in the national meetings and taking the DOHaD agenda to the community. We were successful in publishing our research findings in peer reviewed journals and in obtaining research grants worth USD 68,000/-. Six of our members are successfully pursuing graduate studies in Doctoral and Masters of Science programs along the DOHaD science.

Finally, I extend my gratitude to each and every one of you. Without your commitment and dedication, we may not have progressed this far. Looking forward to greater achievements in 2019 and onwards.

My very best, Nuruddin Mohammed

DOHaD in Hyderabad
Dissemination talk on DOHaD at Aga Khan Maternal and Child Care Centre (AKMCCC), Hyderabad, Pakistan

The DOHaD team visited AKMCCC Hyderabad on December 30th 2018. A Seminar was organized in collaboration with the AKMCCC to introduce the concept of DOHaD to doctors and nurses, and to impart them the knowledge pertinent to DOHaD science, generate curiosity and provoke research development. Over 50 participants attended the event and new members were enrolled in the society.
Last year, 6 of our members were successfully enrolled in the Masters and Doctoral program. Congratulations!

**Dr. Zahra Hoodbhoy (Doctoral Candidate)** is pursuing PhD in Population and Public Health from AKU, Pakistan. She has been awarded University Research Council (URC) and Seed grant money to study ‘the impact of diabetes and preeclampsia on the cardiovascular health of the offspring.’ She is currently working at the Department of Paediatrics and Child Health, AKU in the capacity of Senior Instructor Research.

**Shireen Shehzad (Doctoral Candidate)** is enrolled as a PhD student at Ghent University, Belgium. She has secured Queen Elizabeth Scholarship and URC Grant for her work on ‘Resilience, Depression and Anxiety among pregnant women in Pakistan: Development and Testing of Intervention.’ She is an Assistant professor at School of Nursing and Midwifery (SONAM), AKU Pakistan.

**Khadija Barkat Ali (Doctoral Candidate)** is presently pursuing PhD in Population and Public Health from AKU, Pakistan. Her PhD project is on ‘Effectiveness of personalized m-Health coaching program during pregnancy on maternal diet and offspring health: a parallel group randomized controlled design.’ She has also successfully secured a research start up fund from AKU.

**Dr. Anum Rafiq (Masters Candidate)** is pursuing MSc in Epidemiology and Biostatistics from AKU, Pakistan. She is working on her MSc thesis project, ‘Comparison of INTERGROWTH 21st and WHO fetal growth reference standards for the assessment of adverse perinatal outcomes in growth restricted and small for gestational age newborns at a tertiary care hospital in Karachi, Pakistan: A Retrospective Cohort Study.’

**Dr. Laraib Mazhar (Master Candidate)** is on board for MSc in Epidemiology and Biostatistics at AKU, Pakistan. Her project is on ‘Assessment of carotid intima media thickness in pregnant women with and without cardiovascular disease risk at a tertiary care hospital, Karachi, Pakistan: A Comparative Cross-sectional Study.’

**Mahek Jalaluddin (Masters Candidate)** is doing MSc in Epidemiology and Biostatistics from AKU, Pakistan. She is studying the ‘Comparison of telemedicine model and standardized antenatal services on maternal and neonatal outcomes among gestational diabetic women at a tertiary care hospital, Karachi Pakistan: A randomized controlled trial.’

**CONGRATULATIONS Dr. Naveen Sheikh** for successfully defending her thesis for Masters in Epidemiology and Biostatistics from AKU, Pakistan. Dr. Naveen graduated on December 01, 2018. Her research project was on "Induction of labour and neurodevelopmental outcomes among small for gestational age fetuses with deranged cerebral hemodynamics".

**CONGRATULATIONS Dr. Sheikh Irfan Ahmed** for successfully securing admission for PhD in Metabolism and System Research, University of Birmingham, United Kingdom. The title of his PhD research project is “Interventions to Prevent Postpartum sepsis among Pregnant Women and neonatal sepsis in Pakistan: Systemic reviews & a feasibility study”. The program commences in 2019.
Dr. Syeda Sadia Fatima Honored with Best Paper Presentation in National Meeting

Dr. Syeda Sadia Fatima, Assistant Professor, Department of Biological and Biomedical Sciences at AKU presented her work related to metabolic syndrome at the 6th Biennial South Asian Association of Physiologists & 16th Biennial Pakistan Physiological Society Conference, 12-15 December, 2018 Lahore, Pakistan in the category of Endocrine-Reproduction. The title of her talk was “Molecular Basis of Nonalcoholic Fatty Liver Disease and Metabolic Syndrome in a South Asian Population”. The research work highlighted differences in key factors responsible for adipocyte metabolism and remodeling (Chemerin, Leptin) and lipid regulation molecules (Desnutrin and Nesfatin) between metabolic syndrome positive and negative individuals. Furthermore, some novel genetic mutations across different functions regulating body mass index were also unique in metabolic syndrome positive individuals. She won the Best paper presentation award for her work. Congratulations!

Dr. Rahat Najam Qureshi Conducts Dissemination Seminar on Community Level Interventions for Pre-eclampsia (CLIP) Trial in Pakistan

On December 12 2018, dissemination seminar on CLIP Trial took place at AKU, Pakistan. Supported by the Bill and Melinda Gates Foundation, the CLIP trial in Pakistan was conducted in collaboration with AKU Pakistan, University of British Columbia, Canada and St George’s University of London, the United Kingdom. “CLIP demonstrates how we can enable lady health workers to tackle relevant health problems through training and the use of low-cost technology,” said Dr. Rahat, who is the country Principal Investigator for the project. The objectives of the study are in alignment with the universal agenda to attain targets under goal 3 of the Sustainable Development Goals (SDGs). Goal 3: ensure healthy lives and promote well-being for all at all ages, calls for special efforts to decrease preventable deaths of mothers and newborns by 2030.

Saima Sachwani and Shireen Shehzad led Seminar on DOHaD at SONAM, AKU Pakistan

Saima Sachwani and Shireen Shehzad conducted a seminar at Dean Research Seminar Series, SONAM, AKU Pakistan on June 1st, 2018. The title was “Scope of Developmental Origins of Health and Disease Research in Developing Countries Context” The major focus of discussion was on:

- The concept of DOHAD and its historical perspective
- Relevance of DOHAD in developing world context
- Opportunities for contextual research and public health interventions using DOHAD perspective
Screening Children for Hypertension, Obesity and Congenital Heart Disease in the Community Setting

To address an alarmingly global increase in the prevalence of hypertension, obesity and congenital heart disease in children, the society in collaboration with the section of Paediatric cardiology, Department of Paediatrics and Child Health, Aga Khan University Hospital (AKUH) Pakistan and the Aga Khan Health Board for Pakistan (AKHBP) held two one day camps in April and June 2018, to screen the children for hypertension, obesity and congenital heart disease in the community. Vice-President DOHaD Society Dr. Babar Hassan, who is also a Paediatric cardiologist and Service Line Chief in the department of Paediatrics at the AKUH, led the team. The team comprised of paediatric cardiologists, echocardiographic and academic staff who are also our DOHaD members, community health nurses, medical students and community volunteers. A total of 400 children were screened. The aim of the program was to identify the prevalence of hypertension, obesity and congenital heart disease in children in the community setting. One on one counseling and advice was given to the parents during the event. An awareness session was also conducted on healthy eating habits.

The team would continue with its community service in 2019 as well. Thank you team!
Imparting Training to Community Health Workers on Screening for Congenital Heart Disease using Pulse Oximetry: Dr. Devyani Chowdhury visits Pakistan

In April 2018, Dr. Devyani Chowdhury visited AKU Pakistan to carry out a one-day workshop for community health volunteers on "screening for congenital heart disease in the community using pulse oximetry". She is a globally recognized Paediatric cardiologist and founder of Cardiology Care for children, USA and has recently earned international recognition for her efforts to provide life-saving newborn cardiology screening technology in underprivileged population in USA. Training was jointly organized by the section of Pediatric cardiology and the Aga Khan Health Board for Pakistan and was attended by twenty community health professionals comprising of doctors and nurses. Thank you Dr. Devyani and the team!
Congratulations to the following members for obtaining research grants

**Dr. Syeda Sadia Fatima** for obtaining USD 20,000/- from URC, AKU Pakistan for her project, ‘Epigenetic signature of high contribution susceptibility gene variant for diabetes and obesity.’

**Dr. Zahra Hoodbhoy** for securing USD 23,000/- from URC, AKU Pakistan for her Doctoral thesis, ‘The impact of diabetes and preeclampsia on the cardiovascular health of the offspring.’

**Shireen Shehzad** for obtaining Queen Elizabeth Scholarship from University Of Calgary, Canada and URC, AKU Pakistan, USD 20,000/- for her Doctoral study, ‘Resilience, Depression and Anxiety among pregnant women in Pakistan: Development and Testing of Intervention.’

**Khadija Barkat Ali** for securing USD 5,000/- as a student research start-up fund for her doctoral research on ‘Effectiveness of personalized m-Health coaching program during pregnancy on maternal diet and offspring health: a parallel group randomized controlled design.’

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**ONGOING PROJECTS**

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<tr>
<th>Project Title</th>
<th>Details</th>
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<td>Sirtuin 1 genetic polymorphism with or without metabolic syndrome: Does it make a difference in the micro environment of the oocyte in infertile females</td>
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<td>Identification of serum soluble TNF-like Weak Inducer of Apoptosis (sTWEAK) levels as a predictive marker for preeclampsia</td>
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<td>Machine learning from fetal flow waveforms to predict adverse perinatal outcomes</td>
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<td>Assessment of cardiac function and aortic intima media thickness in fetuses of diabetic mothers on two-dimensional echocardiography</td>
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<td>Predicting neonatal respiratory morbidity based on quantitative ultrasound textural analysis of fetal lung</td>
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<td>Assessment of cardiac geometry and function in fetuses of diabetic mothers using 4D Spatiotemporal Imaging Correlation (STIC) Sonography versus Conventional 2D echocardiography</td>
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<td>Assessment of cerebral vascular perfusion in fetuses of diabetic mothers and its correlation with cord blood biomarkers and postnatal neurodevelopment outcomes</td>
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<td>Epigenetic signature of high contribution susceptibility gene variant for diabetes and obesity</td>
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DOHaD Membership is Growing!

(With each passing year, the number of DOHaD members is exponentially growing!) **Forthcoming Events**

**Pakistan DOHaD Society Members**

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<th>Year</th>
<th>Members</th>
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<td>2016</td>
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<td>2017</td>
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<td>2018</td>
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**International DOHaD Conference**

Venue: Melbourne, Australia  
Date: 20th-23rd October, 2019  
Abstract Submission Deadline: 22nd February, 2019

**International DOHaD Meeting**

Venue: Québec, Canada  
Date: 11th-12th February, 2019  
Registration is Open

**Science of Early Child Development**

Venue: AKU-IED, Karachi, Pakistan  
Date: 21st-25th January, 2019