

Diabetes Epidemic of Sri Lanka – the UCFM response

Prasad Katulanda

Department of Clinical Medicine, Faculty of Medicine, University of Colombo

Diabetes was not considered an important public health problem in Sri Lanka prior to the Year 2000. One of the earliest available local studies conducted in 1990 indicated a diabetes prevalence of 2.5%. However subsequent studies showed a rising trend which was also noticed by the medical practitioners in the country. This was not reflected in the data published by the international organizations as these organizations have used non-Sri Lankan data to extrapolate for the island due to unavailability of well conducted large scale studies. As a result, enough attention was not paid by the relevant stake holders to face the rising trend in diabetes.

Author responsible for correspondence:

Vidya Jyothi Professor Prasad Katulanda
Professor in Medicine, Faculty of Medicine,
University of Colombo,
Consultant Endocrinologist, University Medical Unit,
National Hospital of Sri Lanka
Email: prasad.katulanda@clinmed.cmb.ac.lk

 <https://orcid.org/0000-0003-4313-7528>

DOI: <http://doi.org/10.4038/cjms.v59i0.5033>

There were several needs in the public health response to the hidden epidemic at that time. The epidemic and its underlying factors had to be clearly demonstrated by well conducted large scale comprehensive epidemiological studies to provide a clear picture nationally and internationally for better resource allocation and public health interventions. More research had to be promoted by encouraging other researchers by ways of collaborative research and capacity building including training and mentoring of young researchers. Public health interventions had to be launched based on the new findings which needed to include community-based prevention programs through mass health education initiatives and formulation of cultural based diets and physical exercise interventions. In addition, further research to identify potential solutions based on traditional treatment methods had to be explored which would also provide economic gains to the country.

The Sri Lanka Diabetes and Cardiovascular Study (SLDCS) which was initiated in 2005 demonstrated that one in 10 adults in Sri Lanka was having diabetes and about one third was undiagnosed. This well conducted comprehensive study immediately led to



This is an open-access article distributed under the terms of the [Creative Commons Attribution 4.0 International License](https://creativecommons.org/licenses/by/4.0/), which permits unrestricted use, distribution and reproduction in any medium provided the original author and source are credited.

correction of the WHO and IDF data and as a result public health sector got sensitized to act. Creation of the Non-Communicable Disease (NCD) unit at the Ministry of Health that has become an NCD bureau, and a formal national NCD policy were major initiatives by the government that was seen subsequently. The Diabetes Research Unit at the Department of Clinical Medicine was recognized as premier research unit for diabetes and NCDs in Sri Lanka. In addition, many researchers started to collaborate with the DRU-UCFM (Diabetes Research Unit at the University of Colombo, Faculty of Medicine) team with more enthusiasm on diabetes and NCD research. Many professional and academic bodies formed action committees and task forces to face the diabetes challenge.

The importance of physical activity and obesity as risk factors for diabetes was not only reestablished in our population, but also were elegantly described by two young researchers Dr. Ranil Jayawardena and Dr. Chathuranga Ranasinghe who not only joined the UCFM but became pioneers in the fields of nutrition and physical exercise. The elegant demonstration of the obesity epidemic and its relationship with diabetes epidemic contributed to the international efforts to reclassify obesity in South Asians. Simultaneously, the interrelationship between the physical activity and obesity through its distribution according to different provinces and ethnic groups helped to understand the importance of physical activity in prevention of diabetes in South Asians.

In the first decade of the new millennium scientists strongly believed to have separate genetic markers to be present among South Asians to account for the marked risk for type 2 diabetes (T2DM) in this population. There were several international groups

working parallel to find the answers. We at UCFM joined with the Oxford-UK team and contributed to this effort. We contributed to the largest Genome Wide Scanning (GWAS) study on South Asian diabetes. However, it had not yet been possible to clearly explain the apparent genetic risk of South Asians for T2DM. It is postulated that it may be beyond simple genetic mechanisms, and other factors like epigenetics or gene-gene or gene-environment interactions may play a role, which are being investigated at present.

With the DRU-UCFM team coming out with very important research publications of South Asian diabetes, several renowned international research groups actively made collaborations with us in new initiatives to find solutions to the South Asian diabetes and NCD epidemics. The Oxford diabetes and metabolic research group, the Monash-Melbourne Australian group led by Prof. Brian Oldenburg and the Imperial UK group led by Prof. John Chambers were among main collaborators of the DRU-UCFM team.

A new research line on investigating the effects of Cinnamon on diabetes and dyslipidaemia in collaboration with Prof. Priyadashani Galappaththi of the Department of Pharmacology, UCFM co-supervised by Prof. Godwin Constantine of the Department of Clinical Medicine, UCFM helped to identify potential use of Ceylon Cinnamon in mitigating diabetes and dyslipidaemia. Dr. Priyanga Ranasinghe read for a PhD in ethnopharmacology. Two international patents were granted for Ceylon Cinnamon to the UCFM researchers.

Asian Collaboration for Excellence in Noncommunicable Disease Research (ASCEND)

Program initiated by Prof. Brian Oldenburg with a multinational team from India, Sri Lanka, Bangladesh, and Pakistan helped us train several dozens of young researchers in diabetes and NCD research. It became a huge success story in our efforts of capacity building. Many of these researchers completed research degrees and have become pioneers in diabetes and NCD action as health administrators in the Ministry of Health (one ACEND alumnus became the NCD director) and academics.

Finding solutions to diabetes and NCDs among South Asians living in South Asia as well as in the rest of the world has become a global health priority. The Global Health Research Unit is a collaborative group of eminent global researchers coming together from India, Pakistan, Bangladesh, Sri Lanka, and United Kingdom as a consortium to find solutions to South Asian NCD problem. The DRU-UCFM team was invited to be part of this consortium which has undertaken important research on the prevention of T2DM in South Asians, community interventions through health promotion and many other aspects.

When you are a researcher, many opportunities arise to undertake research out of the usual research agendas according to the novel challenges and

changing trends. The COVID 19 pandemic posed many challenges to us as researchers. We made use of this opportunity to undertake several important research projects relevant to COVID pandemic especially in relation to Diabetes and NCDs and Sri Lanka. In addition, as part of research mentoring and promotion among the postgraduate clinical trainees, we have undertaken clinical research to find answers to some important clinical questions, especially relevant to our population. These include real life experiments on novel diabetes therapeutics. Research on mHealth and falls among patients with diabetes has led to doctoral degrees through these programs.

Through a planned concerted research programme over two decades, we at the DRU-UCFM has made a very significant national impact to describe and understand the diabetes epidemic in Sri Lanka and to find solutions to this epidemic. During this journey we have also contributed to the NCD research capacity building and advocacy by producing several researchers of international repute through doctoral degree programs. The efforts of DRU- UCFM team has helped to improve the research standing of the University of Colombo and the country by many high impact publications.