

Autism screening system could benefit millions of Indian children

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Credit: University of Reading

More than two million children in India could benefit from new research into a new low-cost ways to detect autism risk.

A group of researchers, led by Professor Bhisadev Chakrabarti at the University of Reading, have been awarded a £585,000 grant from the Medical Research Council UK to develop low cost, scalable tools to screen children in India for signs of Autism Spectrum Disorders (ASDs).

The project will begin trials this year in communities around New Delhi.

Professor Chakrabarti, Professor of Neuroscience & Mental Health at the University of Reading, said:

"Autism can cause social isolation and a poorer quality of life for children and their families. Estimates from across the world suggest that around one percent of all children have an [autism spectrum disorder](#). This means that countries such as India potentially have several million children with ASD, many of whom remain undiagnosed.

"Not having a diagnosis in time can reduce the chances of improvement later on through interventions. That's why it is paramount to develop tools that aid early detection of autism risk.

"Many parents are unaware that, if their child misses certain developmental milestones, it could be an early warning sign for ASD. This avoidable delay is a tragedy in light of the evidence that simple, early interventions, delivered by healthcare workers with help from parents, can lead to significant improvements for children and their families."

Low cost mobile solution

The programme will begin with the development of a low-cost mobile platform for detection of [autism risk](#) ('Screening Tools for Autism Risk using Technology' (START)) which can be used in the home or clinic by non-specialist health workers.

Following initial trials in the New Delhi region, it is hoped that with further funding the same technology could be used to reach any of the 350m children in India.

The developers also believe that if successful, such a system could be rolled out in other parts of the world which do not have adequate resources for [mental health](#) care.

Academic institutions that will be part of the consortium include

Harvard University, Indian Institute of Technology Bombay, Birkbeck University of London, Nottingham Trent University, All India Institute of Medical Sciences, and the Public Health Foundation of India, bringing together expertise in clinical psychology, neuroscience, technological innovation and public health research. This platform will be developed in collaboration with Therapy Box UK limited.

Reducing burden

The mobile platform will combine a range of measures including questionnaires for parents, as well as multiple measures of child behaviour that can be recorded on a regular tablet computer, such as an iPad.

Importantly, START will be designed to be used by non-specialist healthcare workers requiring very little extra training, allowing it to reach much wider populations. This is in keeping with the World Health Organisation concept of 'task-shifting'.

Professor Chakrabarti continued:

"We hope to reduce the burden on the small number of highly-skilled mental-health professionals, who then are free to focus on confirming diagnoses and prescribing appropriate interventions,"

"In this way, more people will get the support they require and the public can become better informed about Autism Spectrum Disorders in the process."

The project builds on previous research that showed the value of translating screening tests into two local languages, Hindi and Bengali. More recent research has also shown that cognitive tasks commonly used to measure autism-related behaviour in western countries, when

translated to Bengali, show similar properties in an Indian sample.

Worldwide, one in 161 children are diagnosed or diagnosable with Autism Spectrum Disorders (ASD). Although parents may notice ASD symptoms as early as 24 months, social and economic barriers to access to qualified health personnel mean that most of these [children](#) do not receive early diagnosis or intervention - or indeed any diagnosis or intervention at all.

More information: Alokanda Rudra et al. Bengali translation and characterisation of four cognitive and trait measures for autism spectrum conditions in India, *Molecular Autism* (2016). [DOI: 10.1186/s13229-016-0111-y](#)

Provided by University of Reading

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