Children with ADHD in India: Strengthening Diagnosis, Support, Training and Research

***Manisha Gore Ph.D, Julia Morgan Ph.D**

1. Associate Professor, Symbiosis Community Outreach Programme and Extension, Faculty of Medical Health Sciences, Symbiosis International Deemed University, Lavale, 412115, India researchofficerscope1@siu.edu.in 0000-0002-4558-1983. 9763345091

2. Associate Professor Public Health and Wellbeing, University of Greenwich, Department of Human Sciences, Old Royal Naval College, Park Row, Greenwich, London, SE10 9LS, United Kingdom j.e.morgan@gre.ac.uk 0000-0002-1098-9671

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Introduction

Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common neuro-developmental conditions affecting children and is characterised by a pattern of inattentive, impulsive and hyperactive behaviours that occur in different settings and often persist into adulthood.[1] The DSM-5 categorizes ADHD into different presentations: predominantly inattentive, hyperactive/impulsive and combined presentation (meeting criteria for both). It also includes a category for partial remission.[2] ADHD is associated with increased psycho-social burden and can impact on life-chances including education success and employment [3,4,5] this may be especially the case if ADHD is untreated[6]. Treatments for ADHD can be divided into two types: pharmacological treatments such as medications and non-pharmacological such as therapies, coaching and other support mechanisms. However, concerns have been raised about the use of medication and the impact of diagnosis of ADHD on children and young people and emphasis placed on the importance of support.[7] The global prevalence rate of ADHD, for children and adolescents, has been estimated at 8.0 % (95% CI 6.0–10 %) with boys twice as likely to be diagnosed with ADHD than girls.[8] Potential explanations for gender differences in diagnosis include gender bias and the androcentric focus of many ADHD assessments as well as potential variations in the presentation of ADHD symptoms; with girls more likely to display internalising behaviours, emotional dysregulation and inattention as opposed to externalising behaviours which may be more typical of boys.[9] This can result in girls being less likely to be referred for diagnosis for ADHD as a child or make it more likely that they are (mis) diagnosed with another mental health conditions such as depression and anxiety.[9,10] As well as underdiagnosis of ADHD in females, research has also pointed towards under-diagnosis of ethnic minorities.[9] Within low and middle countries, the prevalence of neuro-developmental conditions including ADHD is said to be 'considerable' but there is a lack of quality data on the topic.[11] In India, for example, a lack of research on some areas related to ADHD has been identified together with a need to increase the methodological quality of the research that is under-taken.[12] In this commentary we will outline the context in India and argue that ADHD is a significant public health issue which requires more resourcing to ensure that children and their families in India are appropriately supported. We identify areas for strengthening diagnosis and support for children and families including in school settings. Recommendations for improving professional training and research are also highlighted.

ADHD and Children in India

A meta-analysis indicates that the prevalence of ADHD among children and adolescents in India is broadly aligned with global prevalence rates. The point prevalence of ADHD varied between 1.30% and 28.9%, with a pooled prevalence of 7.1%. Notably, the prevalence was higher among males (9.40%) compared to females (5.20%).[13] In a specific study conducted in South India, the prevalence among preschool children was reported as 11.32%, with a higher rate in males (14.8%) compared to females (7.7%). This study also identified a higher prevalence in low-socioeconomic groups and among children aged 9-10 years.[14] Another large-scale survey of preschool children in South India found an overall ADHD prevalence of 8.8%, with equal proportions of 43.3% for inattentive type and hyperactive type, and 13.2% for the combined type of ADHD.[15] Furthermore, a different study in South India reported that approximately 22% of school children screened positive for ADHD.[16] In contrast, North India reported a prevalence of 6.3%, with a higher proportion of affected children residing in joint families and belonging to lower or lower-middle socioeconomic classes. Notably, no ADHD-positive children had a family history of the disorder.[17] Additionally, a study conducted in Western India at a tertiary hospital between 2017 and mid-2019 found an ADHD prevalence of 17.6% among children aged 6-15 years.[18]

In a highly populated nation such as India, timely identification and effective interventions for ADHD are crucial to support children and adolescents. These interventions may mitigate the progression of additional mental health conditions and minimize the long-term effects of ADHD bringing benefits to individuals, families and society including reducing the costs associated with the treatment. Below we discuss some priority areas to strengthen support for children and adolescents with ADHD in India.

Diagnosis of ADHD

ADHD diagnosis in India is ideally undertaken by a psychiatrist with their signature on any statutory forms that are required by the government of India.[19] Guidelines highlight the importance of a comprehensive assessment of children referred for ADHD diagnosis including clinical interviews with the young person and their parents/caregivers as well as teacher reports.[20] Moreover, diagnosis according to clinical nosology such as the Diagnostic and Statistical Manual (DSM-5) or the International Classification of Diseases (ICD) is recommended. Whilst structured assessment tools such as Conners' Parents Rating Scale (CPRS), Conners' Teachers Rating Scale (CTRS), and Vanderbilt Assessment Scale (VAS) may be used these should not over-ride the need for a through and holistic clinical assessment.[20] Once treatment is decided upon, for example medication, clinicians should review ongoing needs for medication annually. Medication is not recommended for children under the age of 6 years old. It is considered if target behaviours do not improve with behavioural intervention and the child's functioning does not improve.[20]

However, whilst the National Mental Health Policy 2014 and the Mental Healthcare Act 2017 offers strategic guidance on how mental health provision should be provided , there is unequal implementation of the policy across regions and for some groups.[21] Additionally, whilst clear guidelines exist for the diagnosis and treatment of ADHD[19,22] there is a lack of research and information on barriers to diagnosis of ADHD and challenges in accessing treatment including medication and psychosocial support. The existing research on mental health in India highlights issues in accessing mental health services, poor quality services and a lack of access to mental health professionals especially in rural areas.[23] There is no reason to suggest that this would be different for ADHD diagnosis and treatment. Thus, to support improved diagnosis and treatment of ADHD in children it is key that the number of mental health professionals is increased. This may require the expansion of pre-registration training schemes to increase the number of medical professionals and a focus from District Mental Health Programmes on improving practitioner understandings of ADHD. Moreover, initiatives to support mental health professionals to work in un-served areas are required to ensure equity of coverage. The use of community based mental health services could also support easier access to ADHD diagnosis and treatment at the local level in tandem with improved referral from primary health centres to specialist centres.[23] Improved health promotion and health literacy around ADHD for the general

population is needed which should promote non-stigmatising health promotion messaging. Moreover, the development and promotion of guidelines that encourage more interdisciplinary collaboration among healthcare professionals, including paediatricians, psychiatrists, and therapists as well as educational professionals are essential for providing holistic care and support to children diagnosed with ADHD and their families.

Improving Parental and Child Support

Previous research has found that psychological interventions, including behaviour modification, are effective for managing mild to moderate ADHD, particularly when parents prefer non-medication options. Cognitive Behavioural Therapy (CBT) and Parent Training are among the most well-studied interventions, often used in conjunction with medication, and have demonstrated positive outcomes.[24] Parent training is a cost-effective intervention that provides parents with strategies to manage their child's behaviours. Programs such as the "Defiant Children" manual, a ten-week course, have been shown to significantly improve management outcomes.[25] Additionally, educating parents about the nature, causes, prognosis, and potential side effects of ADHD medications can enhance their understanding and ability to support their children effectively.[26] Ensuring that parental education and support is situated within an ethos of care and listening to parent's concerns is important to support parent's in coming to terms with the diagnosis and counteract feelings of guilt or shame that may arise.[20] Fostering social skills and friendships is another crucial aspect of managing ADHD. Programs designed to help parents facilitate their children's social interactions can lead to improved peer relationships and overall social well-being.[27] In the Indian context, complementary therapies like the ONTRAC program (Online Neuroplasticity Targeted Remediation of Attention Deficits in Children) have shown significant improvements. While yoga and play therapy may provide additional benefits, however, their effectiveness can vary. The use of psychostimulants remains a viable option for managing ADHD symptoms[24] but is not recommended for very young children.[20] As stated above, regular medication maintenance visits are critical for assessing progress, addressing parental concerns, and providing necessary support and encouragement. Additionally, when applying therapies developed in high-income countries, it is crucial to culturally adapt these interventions to ensure their effectiveness in low- and middle-income countries (LMICs), including India.[24]

Strengthening Support Systems within Schools

Children spend more time in school, making educational establishments crucial for their development.[28] Moreover, schools play a vital role in providing access to and support for children and adolescents who may face challenges. This makes school-based mental health interventions significant worldwide[29] and highlights the importance of school-based initiatives in India as crucial platforms for supporting children's mental health. However, there is lack of school based mental health provision across India which can impact on children's wellbeing and children reaching their full potential.[30] Mental health support in schools across India, therefore, needs to be improved with Kumar et al. (2021) highlighting the importance of the training and recruitment of school psychologists as well as the training of teachers to better understand mental health. These recommendations are of relevance to children who are neurodivergent such as those with ADHD.

Several non-pharmacological school-based interventions for managing ADHD have been identified. In the educational setting, the Summer Treatment Program (STP) is highlighted as an effective model for intensive ADHD treatment. This program integrates evidence-based interventions into summer academic and recreational activities, employing techniques such as reward systems, response costs, time-outs, antecedent control strategies, and praise, complemented by parental training to reinforce these strategies at home.[26] Global research has also identified the possible effectiveness of school-based interventions such as daily report cards, study skills, organisation training, neurofeedback interventions, coaching and mentoring, interventions to improve self-regulation and one to one support. However, results varied across studies and the importance of multi-dimensional interventions was highlighted.[31]

Schools, therefore, should be equipped to offer additional support to students who are struggling with school-work and social emotional behaviours including tailored educational support for students diagnosed with ADHD. Government guidelines on how this support should be operationalized are, therefore, needed. All school-based policies should emphasize inclusivity and provide necessary accommodations to support the unique learning needs of these students, fostering a non-stigmatized environment that promotes their academic and personal growth. It is important that educational staff are responsive to parental concerns and treat both parents and their children with respect and dignity recognizing that both the child and the parent may be struggling with behaviours related to ADHD diagnosis which can often impact on the self-esteem of both the child and parents. Hence, empathetic support is crucial from educational establishments.

Moreover, under India's National Health Program for Children, Rashtriya Bal Suraksha Swasthaya Karyakram, there is a provision for screening children for ADHD mostly undertaken by the Government Medical Officers, but this is restricted to public schools. There is currently no such program in place for private schools. Guidelines for private schools, therefore, are key and there is a wide scope for expansion of the program in all private schools.[32] Moreover, it is crucial to ensure that screening in public schools is robust and is adequately resourced. This screening could be combined with screening for other types of neurodiversity such as Autistic Spectrum Disorder and Dyslexia. These screening programmes should aim to provide a supportive environment, free from discrimination and stigma.[30]

Improving Training for Medical, Psychology and Educational Professionals

Improved training for medical, psychology and educational professionals is needed on the symptomology of ADHD based on the Diagnostic and Statistical Manual of Mental Disorders (DSM-5) or other nosology as well as the Indian Academy of Pediatrics ADHD guidelines. [1,33,22] This is to improve recognition, referral and diagnosis of ADHD. Moreover, medical professionals along with other professionals such as teachers and counsellors require training on how ADHD in girls may present differently to boys to ensure that girls are not under-diagnosed. Increased training on the role of masking behaviours is needed as girls may be more likely to 'mask' ADHD symptomology due to gender-based expectations.[34] This is important as masking of ADHD symptomology to 'fit in' can lead to delayed diagnosis with masking behaviours being shown to impact on overall mental health and wellbeing.[35] Moreover, more awareness is needed amongst professionals about how the symptomatology of mental health conditions such as bipolar disorder, anxiety and depression often overlap, so called diagnostic overshadowing, with the presentation of ADHD, complicating the diagnosis of the latter. Hence, misdiagnosis or late diagnosis of ADHD may occur because of comorbidity with anxiety or depression, with the latter often treated first and ADHD not recognized. This can detrimentally impact on the life chances of individuals with ADHD as diagnosis and support may be delayed as a result. Emphasis should also be placed on communication and interpersonal skills, as professionals will need to work closely with parents and caregivers of children and adolescents. Training to reduce stigma within health and education professions around ADHD is a priority.

Research Opportunities and Funding:

Expansion of funding opportunities dedicated to research in this field in India is needed to better understand the aetiology, the impact of ADHD on the population, and effective treatments and support regimes including counselling, school-based initiatives, parenting support and mentoring and coaching of individuals diagnosed with ADHD. The findings can be translated into evidence-based policies, ensuring that new knowledge is effectively integrated into clinical practice, school-based practice and public health initiatives. There is also a need for high quality community-based studies to measure prevalence of ADHD amongst children with Kuppali et al., (2017)[12] recommending screening in epidemiological studies to inform public health planning. There is a significant need for research that specifically addresses the experiences and needs of females, minority populations and those in hard-to-reach areas regarding ADHD including any inequalities in provision, this should also include Scheduled Castes and Scheduled Tribes. This necessitates more rigorous research efforts to develop culturally specific and effective psychosocial interventions. More research on late diagnosis of ADHD in adulthood would also be worthwhile as well as the role of stigma in impacting on the lives of those diagnosed with the condition. This research should be high-quality with robust sampling and analysis

methods and should include both high quality quantitative longitudinal studies as well as high quality qualitative research to understand lived experiences. Quantitative studies with a sample of individuals who are not diagnosed with ADHD would be beneficial to understand the long-term impacts of ADHD. Given the scarcity of research on ADHD interventions in India, there is a need for further studies to enhance understanding and treatment options.

Conclusion

ADHD is a global public health issue and prevalence rates in India indicate that ADHD should be recognised as a significant concern. There is minimal research on ADHD in India and the research base needs to be strengthened with high quality research. Increasing diagnosis, treatment and support interventions is required including training on ADHD for professionals. Public health campaigns to tackle stigma around the condition and improve population health literacy are also needed. Concerted effort, therefore, needs to be applied by all stakeholders, working in a multidisciplinary way, to ensure that universal health coverage including access to quality mental and neurodevelopmental healthcare services and treatments is a focus. This is key to supporting the wellbeing of both children and adults with ADHD and to the attainable of Sustainable Development Goal 3 by 2030 which focuses on health including mental health.

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