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Social Changes Effects on Children's Neurodevelopmental Problems (ADHD): A Qualitative Analysis

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Abstract **Background:** Attention-Deficit/Hyperactivity Disorder (ADHD) is a common neurodevelopmental condition in children and adolescents, and social environments shape its presentation and management. Shifts in family structures, education systems, technology, and economic conditions continue to influence how ADHD is understood and addressed. This study investigates how these societal changes affect the diagnosis, treatment, and lived experiences of young people with ADHD. **Methods:** A qualitative design was used, drawing on semi-structured interviews with parents, educators, and healthcare professionals. Thematic analysis guided the interpretation of perspectives on ADHD among individuals aged 6 to 18. **Results:** Findings show that digital technologies are both beneficial and challenging: extended screen use increased distractibility, whereas digital tools supported therapy and organization. Shifts in family composition were linked to disrupted routines and emotional regulation difficulties, although some families accessed support through community networks. In education, standardized testing and reduced playtime posed barriers, while inclusive frameworks promoted learning. Socioeconomic status emerged as a major determinant of access to diagnosis, quality care, and educational support. **Conclusion:** The study highlights the complex interplay of social, cultural, and economic factors shaping ADHD outcomes. It calls for teacher training, awareness initiatives, and policies that ensure equitable access to healthcare and education, alongside further longitudinal and cross-cultural research.

Keywords Neurodevelopmental Disorders, Societal Change, Family Dynamics, Digital Technology, Child Mental Health, Socioeconomic Status

1. Introduction

Attention-Deficit/Hyperactivity Disorder (ADHD) is one of the most common neurodevelopmental conditions among children and adolescents, marked by persistent patterns of impulsivity, hyperactivity, and inattention that interfere with daily functioning [1]. Although ADHD has strong neurobiological and genetic underpinnings, its presentation, diagnosis, and management are deeply influenced by social environments. Over recent decades, societal changes, including shifts in family structures, educational reforms, rapid technological developments, and widening socioeconomic disparities, have reshaped how ADHD is understood and addressed [2,3].

Digital technologies exemplify this duality. Excessive screen exposure has been linked to shorter attention spans and behavioural dysregulation [4], raising concerns for children already vulnerable to attentional difficulties. At the same time, digital platforms provide opportunities for therapeutic engagement and organisational support through applications, gamified learning tools, and telehealth interventions [5]. Similar contrasts emerge in family life, where dual-income households and nontraditional family arrangements may challenge the consistency of routines critical for managing ADHD symptoms. Yet many families adapt through community networks and structured parenting approaches, illustrating resilience amid shifting dynamics [3].

Educational reforms have likewise produced mixed outcomes. Greater emphasis on standardised assessments, reduced playtime, and rising academic demands often disadvantage students with ADHD. However, inclusive education policies and Individualised Education Plans (IEPs) have facilitated accommodations that support learning when adequately implemented [2]. Access to diagnosis and care is further stratified by socioeconomic status, as families in disadvantaged contexts encounter barriers such as limited healthcare access, under-resourced schools, and cultural stigma [6]. These disparities reinforce inequities in recognition, treatment, and educational support for ADHD across populations.

Research on ADHD has expanded considerably, yet important gaps remain. Much of the literature isolates

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variables such as family, technology, or education rather than examining how these factors interact in shaping lived experiences. Quantitative designs dominate, often overlooking contextual nuances and cultural differences that qualitative inquiry can capture. In addition, most studies originate from high-income settings, which restricts the global applicability of findings. These gaps highlight the need for context-sensitive approaches that integrate social, cultural, and economic dimensions into ADHD research and policy [3].

The present study responds to this need by qualitatively exploring how societal changes affect the diagnosis, treatment, and daily experiences of children aged 6 to 18 with ADHD. Through interviews with parents, educators, and healthcare professionals, it examines the interplay of family dynamics, educational settings, technological use, and socioeconomic factors in shaping ADHD outcomes. In doing so, the study seeks to provide practical recommendations for families, schools, healthcare providers, and policymakers, and to highlight directions for cross-cultural and longitudinal research that can inform more inclusive and equitable strategies for supporting children with ADHD.

2. Methods

Study design and approach

A qualitative design guided by an interpretivist paradigm was employed to explore how societal changes, family structures, technology, education, and socioeconomic systems shape the lived experiences of children with ADHD. This perspective allowed for a context-sensitive understanding of how ADHD is perceived, managed, and experienced. Thematic analysis [7] was used to identify patterns in participant narratives while drawing on theoretical insights from ADHD and social change literature [3,8].

Participants

Purposive sampling recruited 55 participants: 30 parents of children aged 6–18 with ADHD from urban and rural settings, 15 educators from public and private schools with experience in inclusive and mainstream classrooms, and 10 healthcare professionals (paediatricians, psychologists, counsellors, general practitioners) involved in ADHD diagnosis and treatment. Recruitment occurred via professional networks, educational institutions, and support groups to ensure diverse perspectives.

Among the 30 parents who participated in the study, 18 were mothers and 12 were fathers. Their ages ranged from 29 to 52 years, reflecting a broad spectrum of parental experiences. Roughly half of the parents (n=16) were from urban households, while the rest came from rural and peri-urban areas, providing a balanced representation of different living contexts. Socioeconomic backgrounds varied, with participants drawn from lower-, middle-, and upper-income brackets, ensuring that the perspectives captured reflected diverse household realities.

The educators who took part in the study had an average of 12 years of teaching experience, underscoring their depth of professional knowledge. Eight of them were teaching in public schools while seven were based in private institutions, which provided insights into differences in resources and learning environments. Their subjects ranged across mathematics, science, and language studies, but only five had received formal training in inclusive education, pointing to an important gap in professional development related to supporting learners with special needs.

The healthcare professionals included in the study brought equally diverse expertise. The group comprised four pediatricians, three clinical psychologists, two school counsellors, and one general practitioner. Their years of practice ranged from 5 to 20 years, highlighting both early-career and highly experienced perspectives. This variety in roles and professional experience enriched the dataset by ensuring that insights into ADHD and child development were informed by multiple healthcare angles, from medical management to psychosocial and educational support.

The proportions of parents, educators, and healthcare professionals in the study were deliberately chosen to capture a broad spectrum of viewpoints from key stakeholders who directly influence the support systems for children with ADHD. Parents were prioritized to provide firsthand accounts of daily experiences and family-level challenges, while educators were included to represent the school context where learning and socialization occur. Healthcare professionals were sampled to bring in clinical and psychosocial perspectives, ensuring a holistic understanding of ADHD management.

By balancing participants across families, schools, and healthcare systems, the study sought to triangulate data from multiple angles and reduce bias toward any single perspective. This diversity was essential for highlighting convergences and divergences in experiences, identifying systemic gaps, and proposing integrated interventions that can be meaningful in both policy and practice.

Data Collection

Semi-structured interviews, lasting 45–75 minutes, were conducted in person or via secure video conferencing. Interview guides addressed five areas: evolving understanding of ADHD, impacts of technology, family dynamics, educational expectations, and socioeconomic influences on care access. All interviews were audio recorded and transcribed verbatim. Field notes and reflective journals documented non-verbal cues and contextual observations.

Analysis of Data

Data were analysed following Braun and Clarke's six-step thematic framework. NVivo software supported data management, and open coding enabled inductive theme development. Investigator triangulation and discussion resolved coding discrepancies, ensuring dependability. Major themes included: the dual impact of digital technologies, changes in family support systems, and opportunities and challenges in inclusive education.

Ethical Considerations

The study was conducted according to the guidelines of the Declaration of Helsinki. Ethical approval was obtained from the University of Education, Winneba. Informed consent was secured from all participants, with anonymity maintained using pseudonyms and encrypted data storage. Interview protocols were culturally sensitive, and a multidisciplinary team supported ethical and rigorous interpretation of findings.

3. Findings

Three interconnected themes emerged from the examination of qualitative data from parents, educators, and medical professionals. These themes illustrate the dynamic ways in which societal shifts influence the diagnosis, care, and experiences of children with ADHD. The dual-edged nature of digital communication, changes in family dynamics, and changing educational contexts are the main topics of these themes.

Theme 1: More Digital Communication

The widespread use of digital communication tools was one of the most often mentioned effects of contemporary life on kids with ADHD. Online platforms, according to parents, provided vital channels for social engagement, particularly for kids who have trouble interacting with others in person. Social media and virtual gaming settings, for instance, gave kids with ADHD the freedom to interact as they wanted, fostering a sense of belonging and independence. Parents praised these platforms for their ability to foster peer bonding and emotional expression, many stating that their kids felt more comfortable engaging online than in person.

Teachers, however, expressed serious worries about excessive usage of digital devices, especially in unstructured or unsupervised environments. Many observed that children with ADHD who spent too much time on screens were more impulsive and distracted. They specifically noted that extended use of digital devices frequently resulted with poorer classroom behaviour and trouble maintaining focus during in-person instruction. Teachers also stressed how digital multitasking, including switching between tabs, apps, or devices, can cause attentional fragmentation and affect working memory processes.

Healthcare practitioners also observed a paradox: whereas technology may be used to promote organisation and behavioural therapy (e.g., calendar applications, reminders), its uncontrolled use frequently made it difficult to maintain cognitive discipline. Digital media's combined effects of enabling and hindering highlighted the necessity of balanced screen time recommendations for kids with ADHD.

Theme 2: Modifications to Support Systems for Family Dynamics

The family environment has become a significant factor in determining how well ADHD symptoms are managed. In order to control their children's behaviour, parents in stable family units frequently emphasised the importance of cooperative parenting, shared caregiving duties, and regular routines. These parents said they had more success with behaviour management techniques and experienced less conflict at home. They highlighted the role that daily structure played in fostering predictability, which is especially beneficial for kids with ADHD.

Parents from single-parent, divorced, or low-income households, on the other hand, reported more difficulties in upholding consistent behavioural expectations. Some reported that lack of assistance or work limitations made it impossible to supervise coursework, enforce bedtime habits, or attend treatment sessions. In these situations, emotional stress in the home and inconsistent discipline methods frequently made ADHD symptoms worse. Teachers attested to the fact that kids from less organised homes were more likely to interrupt class, be less focused, and require more specialised help.

The impact of unstable family environments was also lessened, according to participants, by community support networks such as extended family networks and school-based counselling. However, low-income families reported having few resources or little awareness of the interventions that were offered, making access to this assistance frequently unequal. According to the findings, controlling ADHD in vulnerable populations requires institutional and social initiatives to improve community-based support and family resilience.

Theme 3: Changing Learning Settings

The third subject focused on the combined effects of classroom technology integration and educational reforms. The advantages of inclusive education policy, especially the use of Individualised Education Plans (IEPs), were generally recognised by teachers. Targeted behavioural interventions, adjusted assessments, and customised instruction were made possible by these tactics. Pupils with ADHD who were given these adjustments demonstrated enhanced peer relationships and increased academic engagement.

Notwithstanding these advantages, new challenges were brought up by the quick digitisation of education. Despite its potential, teachers warned that instructional technology could cause overstimulation in pupils with ADHD. Online assignment platforms, educational games, and interactive whiteboards frequently lacked the constraints or structure required to promote concentrated learning. The necessity for training on how to balance the use of technology with conventional teaching methods was mentioned by a number of educators.

Additionally, it was observed that the amount of time allotted for play-based learning and physical activity has decreased recently due to increased academic pressure and standardised testing. Both educators and parents emphasised how children with ADHD, who frequently gain from movement-based and hands-on activities, had been disproportionately impacted by this transition away from kinaesthetic and experiential learning. By providing flexible

seating or mindfulness classes, some schools have tried to offset this, but different school systems have not adopted these ideas consistently.

In conclusion, these results show that family structures, school settings, and digital technology interact intricately to shape ADHD experiences. While some advancements present chances for increased support and inclusion, others create fresh obstacles that may make the condition's difficulties worse. These revelations highlight the necessity of multifaceted approaches that take into consideration the social contexts in which kids with ADHD live.

4. Discussion

This study examined how societal changes influence the experiences of children with Attention-Deficit/Hyperactivity Disorder (ADHD), revealing the complex interactions among awareness, education, technology, family dynamics, and socioeconomic factors. Increased public recognition of ADHD through advocacy, educational programs, and media exposure has improved early identification, allowing timely interventions that enhance academic and social outcomes [2,3]. Despite these advances, heightened awareness raises concerns about overdiagnosis and misdiagnosis, particularly among children whose behaviours fall within typical developmental ranges. Cultural and regional variations in diagnostic practices further highlight the need for context-sensitive assessments that balance vigilance with caution [6,9].

Changes in education have created both challenges and opportunities for children with ADHD. Greater emphasis on standardised testing, academic competitiveness, and reduced playtime can exacerbate attentional and behavioural difficulties, contributing to frustration, low self-esteem, and disengagement. Inclusive education initiatives, including Individualised Education Plans (IEPs) and Section 504 accommodations, provide targeted support when implemented effectively [2,10]. However, inequities in school resources, insufficient teacher training, and inconsistent policy enforcement limit the reach and impact of these interventions, emphasizing the importance of systemic support alongside individualized strategies.

Technological advances present both risks and benefits. Exposure to fast-paced, high-stimulation media can worsen inattention and impulsivity [11,12], whereas digital tools, such as gamified learning platforms, organizational apps, and teletherapy, offer new avenues for engagement, skill development, and access to care, particularly for children in underserved areas [5,13,14]. Effective use of these tools requires integration with structured routines and real-world interactions to prevent overreliance and unintended consequences.

Family and socioeconomic contexts play a central role in shaping ADHD experiences. Changes in family structure, parental availability, and daily routines influence symptom management, while socioeconomic disparities affect access to diagnostic, therapeutic, and educational resources [3,4,9]. Families often adapt through community networks and structured parenting strategies; nevertheless, systemic barriers persist for low-income or single-parent households. These findings reinforce the necessity of interventions that address structural inequalities, strengthen family and community support, and provide culturally responsive solutions.

Effective ADHD management requires integrated, multi-level approaches that coordinate families, schools, and policy systems. Strategies should equip parents with practical knowledge, strengthen school-based supports, and establish policies that ensure equitable access to healthcare, education, and digital resources. Attention to cultural, socioeconomic, and contextual factors is critical to developing interventions that are inclusive, feasible, and responsive to the diverse realities of children with ADHD. Understanding ADHD within its broader social environment provides a nuanced perspective on how societal changes influence neurodevelopmental outcomes and emphasizes the importance of interventions that are adaptable, contextually informed, and capable of addressing structural and environmental barriers. Moving forward, research and policy should focus on creating sustainable support systems that integrate family, educational, technological, and community resources to enhance the development and well-being of children with ADHD.

5. Conclusions

This study highlights how societal changes, including evolving family structures, educational demands, technological advancements, and socioeconomic disparities, shape the experiences of children with Attention-Deficit/Hyperactivity Disorder (ADHD). Increased public awareness has facilitated earlier diagnosis and access to interventions, yet risks of overdiagnosis and misdiagnosis remain, particularly across diverse cultural and regional contexts. Changes in schooling and digital environments present both challenges and opportunities, requiring careful integration of accommodations and technology to support learning and behavioural regulation.

Family and socioeconomic factors continue to influence access to resources, adherence to treatment, and overall outcomes for children with ADHD. Findings underscore the importance of multi-level, context-sensitive strategies that combine family education, school-based support, and equitable policies to address structural barriers. Ensuring culturally responsive, inclusive, and evidence-informed approaches can improve the management and quality of life for children with ADHD.

Future research should adopt longitudinal and cross-cultural designs to further elucidate the dynamic interactions between social environments and ADHD outcomes, guiding interventions that are adaptable to the rapidly changing societal landscape.

6. Future Research Direction

Longitudinal Tracking

Future research should prioritize longitudinal studies that follow children with ADHD across different developmental stages. Such studies would help illuminate how evolving family dynamics, shifting educational demands, and the growing influence of digital environments shape long-term outcomes. In particular, researchers should examine whether early interventions—especially those delivered through digital tools—produce sustained benefits or carry potential risks as children transition into adolescence and adulthood.

Cross-Cultural Comparisons

Another important area for investigation lies in cross-cultural comparisons. Exploring ADHD experiences in both low- and high-income contexts can highlight cultural variations in diagnosis, stigma, and support systems. Additionally, researchers should assess how national policy frameworks, such as inclusive education laws or disability rights legislation, influence outcomes across different regions. These comparisons will enrich understanding of how social and structural conditions shape the lived realities of children with ADHD.

Digital Intervention Research

The role of technology in ADHD management is rapidly expanding, warranting rigorous testing of digital interventions. Controlled trials could evaluate the effectiveness of gamified learning apps, teletherapy platforms, and digital organizational tools. At the same time, future research should address digital equity, paying particular attention to whether families in low-income or rural settings can reliably access and benefit from these innovations. Without equity in access, digital tools risk reinforcing rather than reducing disparities.

Policy and Systems-Level Research

There is also a need for policy-oriented studies that assess how educational policies—such as standardized testing regimes and curriculum reforms—impact children with ADHD. In parallel, research should evaluate the role of community-based and school-based support networks in mitigating inequities. Such systems-level analyses can provide evidence to inform inclusive policy reforms and strengthen institutional capacities to support learners with ADHD.

Intersectionality

Finally, intersectional research is essential to understand how ADHD experiences vary across gender, socioeconomic status, and cultural background. Future studies should explore disparities in diagnosis, treatment, and support among marginalized groups, where multiple disadvantages may compound vulnerabilities. By adopting an intersectional lens, research can generate more nuanced insights into inequities and help shape interventions that are both inclusive and context-sensitive.

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Conflict of Interest

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