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Article — Published Version

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Social Forces

Provided in Cooperation with:

WZB Berlin Social Science Center

Suggested Citation: Tuncer-Ebetürk, Irem; Kim, Jessica; Soysal, Yasemin Nuhoğlu (2026) : The global rise in children's attention-deficit/hyperactivity disorder prevalence: a macro-sociological explanation, Social Forces, ISSN 1534-7605, Oxford University Press, Oxford, Vol. 104, Iss. 4, pp. 1607-1629,
<https://doi.org/10.1093/sf/soaf153>

This Version is available at:

<https://hdl.handle.net/10419/340055.2>

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The global rise in children's attention-deficit/hyperactivity disorder prevalence: a macro-sociological explanation

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In the past three decades, the global diagnosis rate of attention-deficit/hyperactivity disorder (ADHD) has grown drastically. While existing sociological studies demonstrate the complexity of ADHD diagnoses and treatment in specific national contexts, their ability to explain ADHD's global growth is limited. In this article, starting from a macro-sociological perspective and drawing on world society theory, we empirically investigate the prevalence of ADHD diagnosis rates across 135 countries from 1996 to 2019. We find that the increasing rates of ADHD diagnosis worldwide since the 1990s are linked to two interconnected global cultural processes: (1) the global rise and institutionalization of child-centered cultural perspectives and (2) the global diffusion of narratives that define ADHD as a health condition impairing children's well-being and development. Our findings do not support alternative explanations such as a nation's level of development (measured by GDP, poverty, democracy, and tertiary enrollment rates) or healthcare quality and universal access. These findings highlight the substantial influence of global conceptions of childhood and health on ADHD prevalence rates worldwide, while downplaying the importance of national conditions. We contribute to the existing sociological literature on ADHD in two key ways. First, by conducting the first cross-national, longitudinal study of ADHD worldwide we provide novel insights about ADHD prevalence at the world level while identifying the key global factors driving this trend. Second, in merging the existing ADHD literature with the analytical frameworks advanced by world society theory, we introduce a new conceptualization of ADHD as not only a medical disability but also a global cultural phenomenon and institutional priority.

Key words: ADHD; Global Diagnosis Rates; World Society; GBD.

Attention-deficit/hyperactivity disorder (ADHD) is a neurodevelopmental disability characterized by a lack of attention, impulsivity, and hyperactivity (Farone et al. 2003; Polanczyk et al. 2007). The number of children diagnosed with ADHD has increased globally since the 1990s, and ADHD is now increasingly recognized as a global issue by both international medical associations and

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Received: October 28, 2024. **Revised:** August 2, 2025. **Accepted:** August 5, 2025

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the broader public (Conrad and Bergey 2014). Accompanying this trend, advocacy groups have emerged and flourished globally, actively promoting ADHD awareness in countries around the world (Conrad and Potter 2000; Conrad and Bergey 2014; Filipe 2016). Additionally, national-level legal regulations increasingly define ADHD as a disability, and there is a concerted push for healthcare systems to provide diagnostic and treatment services for ADHD. For instance, both the Americans with Disabilities Act (USA) and the Equality Act 2010 (UK) classify ADHD as a disability, provisioning accommodations in schools, including extended time on tests, individualized learning plans, assistive technologies, and modified teaching methods. Such accommodations are not specific to Western contexts; similar laws and provisions have also been adopted in other parts of the world (Almakrob et al. 2024; Kondo et al. 2015; Ortega and Müller 2021; Vashisth and Sharma 2020).

Yet, despite years of medical research, ADHD remains contested. Unlike other mental disabilities with explicit and standardized diagnostic criteria and treatment, uncertainty remains regarding ADHD etiology, diagnosis, and treatment (Nigg et al. 2020). While broadly considered to be a congenital and neurodevelopmental disability, no objective medical test for ADHD based on brain abnormalities or biochemistry yet exists; the current diagnostic criteria are based on observational tests and behavioral markers (Sáenz, Villemonteix, and Massat 2019). For instance, the third (DSM III) and later the fifth edition (DSM V) of the American Psychiatric Association's *Diagnostic and Statistical Manual*—the most widely used ADHD diagnostic tool since the 1990s—describes ADHD as a combination of behavioral patterns of inattention, impulsivity, and hyperactivity (American Psychological Association 1980, 2013).

Together, these trends make the growing prevalence of ADHD an interesting subject of sociological study. Despite a lack of medical consensus surrounding ADHD's origins, diagnosis, and treatment, children's global ADHD rates continue to grow. This implies that prevailing sociocultural factors, rather than objective biological markers, are the predominant drivers of this trend (Bergey 2024; Lusardi 2019; Timimi and Taylor 2004). This is particularly true for children, who, despite comprising the majority of ADHD cases, are unlikely to be agents in their diagnosis. Instead, it is often adults—mainly parents and educators—who recognize possible symptoms and project ADHD as a diagnostic solution. Under these conditions, we contend that ADHD prevalence primarily reflects a cultural understanding of such symptoms and, consequently, the collective prioritization of ADHD diagnosis and treatment within society. In arguing so, we do not discount the possibility of ADHD as an objective disease with genetic and biological causes. Neither do we see it as a pure cultural construct. Rather, we build on the observation that only in the last thirty years or so has ADHD become culturally significant and prevalent on a global scale.

Surprisingly, we still possess limited insights about the factors driving this trend. On the one hand, existing sociological literature on ADHD identifies medicalization as the primary explanation for its increasing prevalence, highlighting how ADHD has been culturally constructed and treated as a medical disorder (Bergey 2024; Banaschewski et al. 2024; Rafalovich 2013; Timimi and Taylor 2004). Empirically, however, this literature remains either descriptive or confined to country case studies—providing few global insights. On the other hand, although World Society scholars document the critical role of global cultural forces in shaping cross-national health outcomes, including female genital cutting (Boyle 2002) and children's vaccination (Cole et al. 2023), such influences have yet to be considered in relation to ADHD. This leaves us with an incomplete understanding of growing ADHD diagnosis rates.

In this article, starting from a global cultural perspective, we empirically investigate the prevalence of ADHD diagnosis among children across 135 countries from 1996 to 2019, using fixed and random effects panel models. Controlling for alternate explanations, we find that increased ADHD diagnosis rates are linked to two interconnected global cultural processes: (1) the global rise and institutionalization of child-centered cultural perspectives and (2) the global institutionalization and diffusion of narratives that define ADHD as a health condition impairing children's well-being and development. These results add to the literature in two key ways. First, by conducting one of the few cross-national, longitudinal studies of ADHD, we provide novel

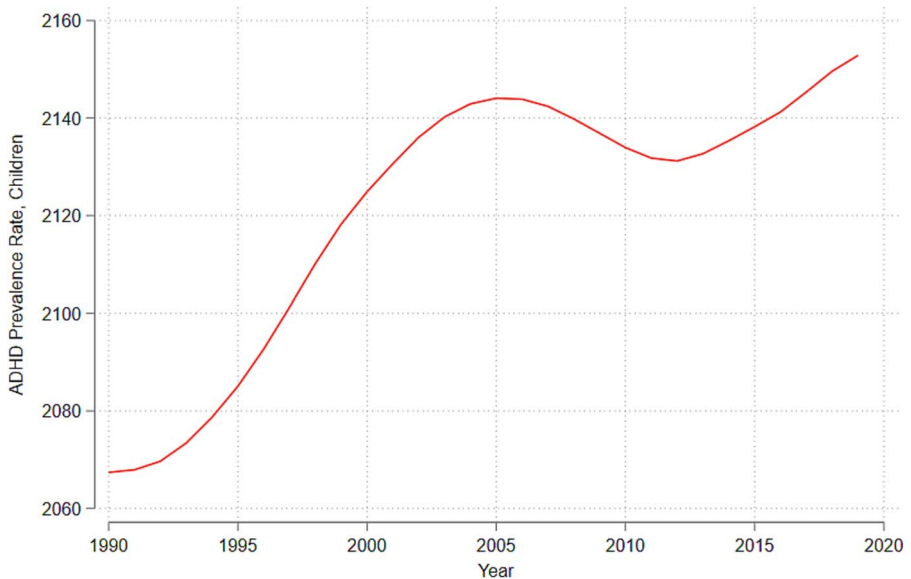


Figure 1. ADHD prevalence rate in children, 1996–2019. Note: ADHD prevalence rate presented as cases per 100,000.

insights at the global level while identifying central factors that drive this trend. Second, we extend the medicalization literature by applying a global theoretical lens. While prior research recognizes cultural and institutional influences on ADHD—such as schools, the drug industry, and government policy (see [Bergey 2024](#))—it does not examine these processes through a World Society perspective. As a result, the drivers of ADHD within an idealized and interwoven system of globally prioritized norms and values remain underexplored, leaving the key role of World Society untested. By merging ADHD research with World Society frameworks, we reconceptualize ADHD as not only a medical disability but also a global cultural phenomenon and institutional priority.

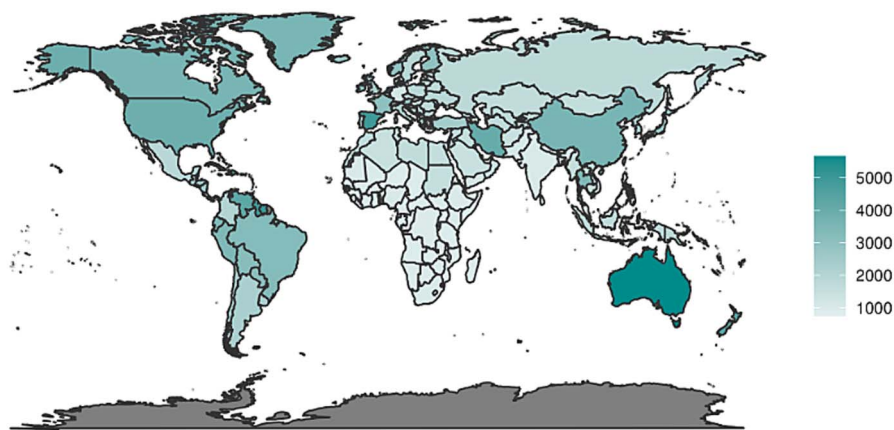
In the following sections, we discuss the global prevalence of ADHD and briefly summarize the existing sociological literature on the topic. Next, we introduce our arguments and hypotheses prioritizing a global cultural approach and then evaluate our arguments empirically. We conclude by discussing our findings and their implications, both practical and theoretical.

Global Prevalence of ADHD and the existing sociological literature

Recent research identifies ADHD as the most commonly diagnosed developmental or psychiatric disability among children in the 21st century ([Wong 2021](#)). In the United States, diagnoses increased steadily since the 1970s, growing from under 500,000 to over 2 million children between 1987 and 1997 ([Olfsen et al. 2003](#)). This surge was followed by greater global attention to ADHD, with the World Health Organization (WHO) collecting prevalence data for the first time.¹ Today, meta-analyses estimate global ADHD prevalence among children and adolescents to range between 5 and 8 percent ([Ayano et al. 2023](#); [Polanczyk et al. 2007](#); [Thomas et al. 2015](#)). Our analysis of 135 countries from 1996 to 2019, using data from the Global Burden of Disease, Injuries, and Risk Factors (GBD) study, confirms a persistent rise in global rise in childhood ADHD ([fig. 1](#)).

Despite the overall global increase in children's ADHD diagnoses, cross-national variation remains. The top panel of [figure 2](#) illustrates this disparity, with the highest prevalence found

Children's ADHD Prevalence Rate (per 100,000) 2019



Change in Children's ADHD Diagnosis Rates, 1996-2019

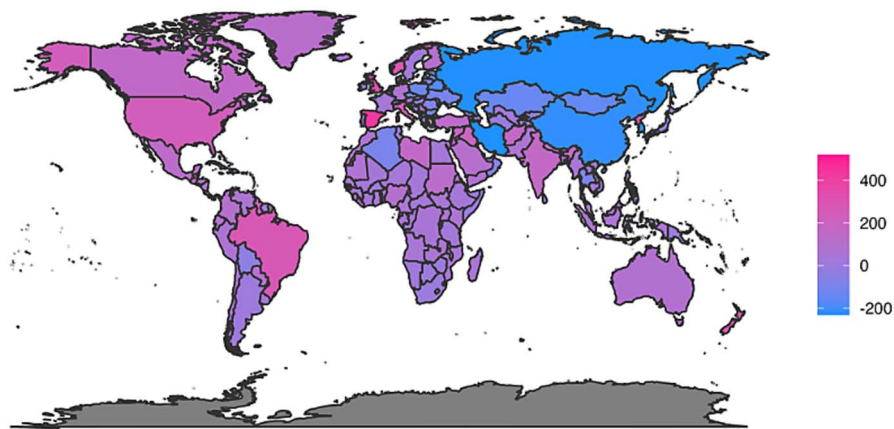


Figure 2. Global heat maps of ADHD diagnosis rates. The top panel depicts differences across nations for the latest time point, with darker hues indicating higher rates. The bottom panel depicts changing diagnosis rates over time, with pinker hues indicating an increase and bluer hues indicating a decrease. Note: ADHD prevalence rate presented as cases per 100,000.

primarily in industrialized nations of the Global North and Latin America and the lowest in Sub-Saharan Africa and South Asia. Within nations, however, a more nuanced pattern emerges—as the bottom panel indicates. While diagnoses remain less common in Sub-Saharan and South Asian countries, cases are rising rapidly to match—or even surpass—those of higher-prevalence regions.

What explains these global patterns in children’s ADHD diagnosis rates?

Much of the foundational literature on ADHD comes from medical sociology, which uses social constructionist approaches to analyze how ADHD has been problematized and treated through

medicalization. Defined as the framing and treatment of human conditions through a biomedical lens (Busfield 2017; Conrad 2007), medicalization has expanded significantly in recent decades (Gracia-Arnaiz 2017; Lowy and Gaudilliere 2006; Lunbeck and Tracy 2007; Rosen 1996).

In fact, ADHD is among the earliest and most prominent case studies of medicalization (Conrad 1975). Some sociologists consider ADHD diagnosis as a form of “medical authoritarianism” aimed at regulating a socially constructed notion of childhood “deviance,” pathologizing inattentive, hyperactive, and impulsive behaviors (Lusardi 2019). As Lusardi notes, through the medicalization process, these characteristics “cease to be simply disturbing behaviors and become disorders to be responded to with specific treatments” due to their “negative impact on social and personal functioning and quality of life” (2019, 2). This framing signifies a “fundamental cultural shift” in the societal expectations of children (Rafalovich 2013, 345). In his seminal work exploring the rise of ADHD in the United States, Conrad (1975) describes how schools and other institutes delegate authority to medicine, alongside the medical field’s prioritization of biomedical approaches over behavioral or learning-support remedies. This, alongside the rise of pharmaceutical companies seeking to expand the stimulant market, is seen as a key driver of ADHD’s rise in the United States (Filipe 2016; 2023).

Yet, figure 2 suggests that ADHD is salient beyond the United States—and increasingly so. Building on early US-focused work, recent studies have started examining ADHD worldwide (Bergey et al. 2018; Conrad and Bergey 2014; Conrad and Singh 2018; Smith 2017). They identify several drivers of ADHD’s cross-national spread: the cultural influence of American psychiatry, pharmaceutical expansion, broader diagnostic criteria, and the Internet’s role in disseminating information. Scholars of this tradition argue that global mental health initiatives since the mid-2000s have advanced a Western, medicalized, profit-driven approach, fueling overdiagnosis and reliance on pharmaceuticals (Ortega and Müller 2021) while sidelining holistic, context-sensitive responses that account for cultural and socioeconomic variation (Conrad and Bergey 2014).

In contrast, meso- and local-level comparative studies show how diverse national institutions filter broader cultural and market forces, producing divergent diagnosis and treatment patterns (Bergey et al. 2018; Filipe 2016; Hinshaw and Scheffler 2014; Smith 2017; Timimi and Leo 2009). For instance, different school systems and pedagogical approaches, as well as more open-ended courses of treatment and diagnosis, help explain the UK’s relatively lower ADHD rates (Hinshaw and Scheffler 2014). Likewise, in France, variations in diagnostic approaches (e.g., symptom counting versus more interpretive methods) similarly influence ADHD rates (Vallée 2011). These differences shape how societies adopt, modify, or resist medicalization, suggesting that ADHD prevalence may reflect diagnostic frameworks rather than actual behaviors.

Within nations, ADHD diagnosis rates vary across class, gender, and ethnicity (Bergey et al. 2022). Class is a particularly salient factor. In both Brazil and Denmark, most diagnosed children come from higher-socioeconomic status (SES) families, amidst unequal access to healthcare (Madsen et al. 2020) and pressures on children to succeed academically (Ortega and Müller 2021). By contrast, ADHD is more common among lower-SES children in China (Liu et al. 2018), and in Germany and Sweden, among urban working-class families (Huss et al. 2008; Hornborg et al. 2023).

While existing studies shed light on ADHD in specific country contexts, they do not fully explain its cross-national growth. Pharmaceutical expansion may play a role, yet diagnoses rise even where drug treatments are limited (NHS 2023). In many countries, rates continue to rise, often independently of social class or educational pressures (Becker, Liu, and Proctor 2020). This widespread surge in ADHD across diverse regions and contexts suggests that broader global factors are at play—underscoring the need for research that sufficiently explains its rapid, worldwide expansion.

This study begins to address that gap. Applying a world society framework, we explore the global factors shaping ADHD diagnoses to offer new theoretical and empirical insights into ADHD’s rapid worldwide expansion. Below, we briefly outline the premises of our approach, hypothesizing about the global processes that drive ADHD growth variation across countries.

Global cultural processes and the rise of ADHD

World society theory emphasizes the role of global cultural frameworks in shaping decisions and behaviors at all levels, from individuals to nation-states. These frameworks, centered around “rationalization, universalism, belief in progress and individualism” (Schofer et al. 2012), are institutionalized as normative and legitimate models across economic, political, educational, medical, and familial domains. They are supported by an expansive global infrastructure comprising international health-focused nongovernmental organizations (INGOs), international governmental organizations (IGOs), and international treaties, as well as scientific and professional expertise, which disseminate global culture to national contexts (Boli and Thomas 1999; Finnemore 1993). Empirical work has documented the influence of these processes across numerous fields, including human rights, women’s rights, environmentalism, science, and education (Berkovitch and Bradley 1999; Drori et al. 2003; Meyer, Ramirez, and Soysal 1992; Ramirez, Soysal, and Shanahan 1997; Schofer and Hironaka 2005; Schofer and Meyer 2005). Following this approach, we evaluate which normative frameworks, cultural scripts, and global processes drive children’s ADHD diagnosis rates worldwide. We argue that the prioritization of diagnosis and treatment of ADHD speaks to several features of the current global cultural order, particularly (1) the institutionalization of a concept of childhood centered around children’s rights and well-being and (2) the diffusion of this concept via international organizations. Below, we elaborate on these arguments and our hypotheses.

The global institutionalization of child-centeredness

The idea that children have unique needs due to their developing capabilities is linked to two post-World War II advancements: the rise of individualism (Meyer 1987), and the emergence of societal models prioritizing autonomous individuals as central to progress (Meyer et al. 1997). Reflecting these priorities, international conventions and declarations pertaining to children, constitutional statements on children’s rights (Boli-Bennett and Meyer 1978), and the global expansion of mass education (Meyer, Ramirez, and Soysal 1992) have helped institutionalize a cultural script of childhood across nations (Boyle, Smith, and Guenther 2007).²

Perhaps the epitome of this cultural shift was the 1990 ratification of the United Nations Children’s Rights Convention (CRC) (United Nations 1989). As one of the most widely ratified international treaties, the CRC established childhood as a global priority—legitimizing and institutionalizing children as individuals with universal rights and personhood (Doek 2009; Fuchs 2007). Within countries, its passage contributed to national policies that banned child labor, regulated the age of consent and marriage (Boyle, Kim, and Longhofer 2016; Ebetürk 2021), and replaced strict disciplinary measures with positive socialization practices (Brehm and Boyle 2018; Schaub, Henck, and Baker 2017). Although the CRC does not explicitly address mental illness, it recognizes children’s right to a full, dignified, and active life and requires protections for mentally disabled children (Article 23). While ADHD is not universally recognized as a mental disability, this increased emphasis on children’s rights and well-being has facilitated greater recognition of neurodevelopmental conditions, laying the groundwork for the framing ADHD as a mental disability.

This emphasis on children’s rights and agency further paved the way for educational initiatives, such as the *Education for All* movement, as well as reforms promoted by international organizations in the 1990s and 2000s (Bromley et al. 2023; Chabbott 2003). For instance, the global expansion of mass schooling was heavily influenced by evolving ideas and scripts of childhood, which also helped to spread them (Ramirez and Boli 1987). While earlier education prioritized children as future rational, productive citizens, since the 1990s, child-centered perspectives have stressed cultivating children’s full potential. Accordingly, educational reforms and programs increasingly address early childhood, promoting children’s social, psychological, and cognitive well-being (UNESCO 2024). School curricula and textbooks, similarly, focus on children’s participation, agency, and interests (Bromley, Ramirez, and Meyer 2011; Wotipka et al. 2023).

This cultural shift also manifested in family dynamics and socialization practices, emphasizing greater parental involvement in support of children's overall well-being and growth (James and James 2004; Lareau 2003). Declining global fertility rates—themselves a manifestation of growing individualization—alongside family planning policies and economic factors, also play a role (Boongaarts 2001). Because parental resources are finite, children's attention in larger families tends to be diluted (Downey 1995). Having fewer children allows parents to better concentrate resources and invest in each child's developmental and cognitive needs (Willis 1973). This quantity–quality tradeoff is also highly culturally motivated. As part of the broader “developmental idealism” package, the notion of the “modern family” emphasizes individualism, youth autonomy, and, critically, planned and low fertility (Thornton 2005). As other world society scholars show, this social model—of which low fertility is a central component—has widely proliferated, enjoying a “taken-for-granted status among ... ordinary people around the world” (Thornton, Dorious, and Swindle 2015, 277).³

In sum, this institutional and cultural valorization of child-centeredness heightens attention to children's mental well-being across both educational and familial realms. This creates the perfect cultural environment within which ADHD prevalence flourishes. Close observation of children's development in schools and families makes deviations in behavior more visible. Both the “uniqueness” of the child and their “abnormal” development will be recognized and addressed. Accordingly, we expect higher ADHD diagnosis rates in societies with extensive early education reforms and low fertility rates, reflecting the elevated value placed on each child's development and the cultural prioritization of their flourishing.

H1: Greater children's educational reforms are associated with higher ADHD prevalence.

H2: Lower fertility rates are associated with higher ADHD prevalence.

Global institutionalization and diffusion of ADHD narratives

Alongside the cultural centering of children, we propose a second key mechanism driving children's ADHD prevalence: international organizational linkages facilitating the diffusion of ADHD narratives to national contexts. The Western origins of psychiatric concepts in general (Frank, Meyer, and Miyahara 1995) and ADHD in particular have been widely discussed in the literature (Anderson 1996; Conrad and Bergey 2014; Timimi and Taylor 2004). Here, we emphasize the role of international organizations in facilitating their global institutionalization and spread.

The legitimization of ADHD as a global concern has been significantly elevated by endorsements from key UN agencies, such as the WHO and UNICEF,⁴ as well as INGOs. Together, these entities critically elevate the importance of mental well-being within the global health agenda, positioning ADHD as a recognized and actionable health issue.

While INGOs lack formal coercive capacity, they possess significant normative influence—shaping public opinion, setting agendas, promoting policies, and transferring knowledge across borders (Keck and Sikkink 1998). Indeed, INGOs are central to advancing prevailing world cultural models, both as whole or by issue area (Boli and Thomas 1999). From women's rights (Berkovitch 1999) and democracy (Kim and Collins 2023) to LGBT+ rights (Velasco 2018) and environmental protection (Longhofer et al. 2016), area-specific INGOs have proven particularly effective in advancing their respective agendas.

Recent studies highlight the central role health INGOs play in advancing global health norms and improving population well-being (Heinzel and Koenig-Archibugi 2022). By promoting professional adherence to up-to-date protocols and practices, advocating for legislation, protecting overlooked groups, and supplementing state capacity through resources and programs, health INGOs drive national recognition of globally prevalent conditions (Heinzel and Koenig-Archibugi 2022). Within this broader process, ADHD-specific INGOs—though not systematically tabulated—have emerged since the 1990s as part of the push to move ADHD from the margins to the mainstream.⁵ Their activities vary, from promoting biomedical treatment to advancing neurodivergent or culturally specific frameworks (Bergey 2024), but together reinforce ADHD's visibility

in public discourse and professional practice. Whether through awareness campaigns, policy advocacy, or collaboration with medical and pharmaceutical stakeholders, these organizations exemplify the broader capacity of health INGOs to normalize conditions and embed them in national agendas.

We argue that these organizations form a dense international environment that frames ADHD as a global health concern, prioritizes children's mental well-being, and generates institutionalized norms. Being embedded in such an environment fosters the diffusion of ADHD narratives across countries, making recognition more accessible and acceptance less stigmatized. Accordingly, we expect countries with stronger ties to health INGOs to show higher ADHD diagnosis rate.

H3: Greater health INGO linkages are associated with higher ADHD diagnosis rates.

Data and methods

To test our hypotheses, we evaluate ADHD diagnosis rates across 135 nations between 1996 and 2019 from the GBD led by the Institute for Health Metrics and Evaluation (IHME). Cross-national in scope, the GBD data offer highly standardized, comprehensive health estimates on diseases and disorders worldwide. The GBD is particularly useful for studying ADHD for two reasons.

First, ADHD diagnosis rates are based on *DSM* and *International Classification of Diseases (ICD)* clinical thresholds, which together provide the dominant global standard for diagnosing mental disorders. Aligning its definition of ADHD with the *DSM-V*, the GBD requires six or more symptoms to have persisted for at least six months in two or more settings causing significant impairment to functioning, with at least some symptoms emerging prior to age twelve. The cases included meet either the *DSM* or *ICD* diagnostic criteria (GBD 2020). While these frameworks differ slightly and countries may prefer one over the other,⁶ adoption of either criteria signals the uptake of globalized ADHD scripts.

Second, both systems have remained largely stable during our study period, ensuring comparability. The *DSM* standard changed little between versions, with the *DSM-V* replacing the *DSM-IV* in 2013. The changes were minor, including added examples for older adolescents and adults and softened diagnostic language (e.g., “evidence of impairment” to “evidence of symptoms”)—indicating that the eighteen core symptoms underlying the *DSM-IV* definition have “withstood the test of time” (Epstein and Loren 2013, 2). Similarly, the *ICD-10* remained in use throughout the study period, providing continuity. Still, the *DSM* and *ICT* remain distinct: while equivalence is achieved under the *DSM*'s “combined presentation,” the “predominately inattentive” and “predominately hyperactive-impulsive” subtypes align less well (Gomez et al. 2023), and *ICD*-based diagnoses often produce lower prevalence rates (Döpfner et al. 2008). Despite these differences, the GBD remains the best—albeit imperfect—dataset for this analysis (Network GBoDC 2021). Appendix 1 lists the sampled nations.

Dependent variable

Our dependent variable is derived from one GBD measure: ADHD prevalence rate per 100,000 among children and adolescents, reflecting all non-adult ADHD cases in a country relative to its population. While cultural definitions of “childhood” vary, we use rates for individuals under age 20, corresponding to the dataset's available age groupings (0–5, 5–14, and 15–19). The 15–19 age group accounts for a key period for children with ADHD—late adolescence—during which increased academic and behavioral demands often prompt diagnosis, especially among those overlooked in early childhood (Hinshaw and Scheffler 2014). This decision also conforms to global health conventions that define adolescence as extending through age 19 (World Health Organization 2021). This measure therefore provides a summary measure of children's/parental ADHD awareness, or children whose symptoms are classified as ADHD by their country's medical institutions.

Independent variables

Global culture and institutions

We use three measures for our independent variables, which together assess the impact of global institutions, organizations, and cultural norms in shaping ADHD prevalence. Our first two measures capture child-centeredness, approximating the presence of cultural values, beliefs, and practices prioritizing children's needs and well-being within society in two key areas: education and family.

The first, *children's educational reforms*, comes from the World Educational Reform Database (WERD)⁷ and captures the cumulative number of preprimary and primary educational reforms passed by a country each year since 1990. Because educational reforms represent publicly stated goals about the most salient educational problems and their perceived legitimate solutions (Bromley et al. 2023), reforms focusing on early schooling years approximate a cultural emphasis on children within the educational sector. Compiled from policy reports submitted to international organizations such as the OECD, World Bank, and UNESCO, WERD data expectedly reflect standards set by the international community prioritizing education expansion and child-oriented educational curricula and structures.

Our second measure, *fertility rate*, comes from the World Bank and captures the total average number of births per woman in a country per year. This measure serves as a proxy for the societal emphasis on child-centric cultural norms. As women have fewer children and family size decreases (i.e., fertility decreases), children's health and well-being becomes prioritized.

Our final measure, *health INGOs*, considers organizational effects, capturing the total number of health INGOs active in a nation. The data, compiled by Heinzl and Koenig-Archibugi (2022), derive from the Yearbook of International Organizations (YIO). Building on previous world society scholarship (Boyle 2002; Boyle et al. 2016), we test whether linkages to health-focused international organizations facilitate the diffusion of global health scripts—including those pertaining to neurodivergence and ADHD, manifesting as increased diagnosis rates.

Controls

Healthcare

Several measures address alternate explanations for ADHD prevalence, the first of which relates to healthcare. Following previous literature, our first variable, *health expenditures per capita*, reflects governmental focus on health and medicine (Heinzl and Koenig-Archibugi 2022; Hicks and Murdie 2013). When health prioritization is high, disorders such as ADHD may receive greater medical attention. Additionally, when capacity is high and benefits are equally distributed, resources can extend to nonacute conditions like ADHD, reducing access barriers and increasing diagnosis rates.

The second, *universalistic welfare*, uses V-Dem's index to capture whether a nation's welfare policies, including those related to health, are means-tested (targeting only the underprivileged) or universalistic (benefiting nearly all citizens) (Coppedge et al. 2021). When the latter is true, health resources are more accessible and equally distributed, reducing barriers to diagnosis.

Country characteristics

We also control for internal country characteristics. To account for perceptions of ADHD as a "Western" disorder prevalent in industrialized democracies (Anderson 1996), we include V-Dem's liberal Democracy index (Coppedge et al. 2021). Using two World Bank measures, we also control for ADHD prevalence as a function of class. The first, *tertiary education*, captures the gross enrollment ratio of students in postsecondary education relative to the population. The second, *poverty rate*, accounts for the proportion of the population living at or below the global absolute minimum poverty line (measured as a headcount ratio of the population living on less than \$2.15 per day). Higher socioeconomic status and education increase awareness of mental health issues and access to diagnosis and treatment (Evans-Lacko et al. 2018). Although we did consider including

GDP *per capita* as a measure of overall country wealth, we excluded it from our final models due to multicollinearity (Variance Inflation Factor (VIF) = 9.10) to ensure proper model specification and unbiased estimates (James et al. 2013). Together, these variables control for endogenous country attributes that likely impact ADHD prevalence within and between countries.

Analytic approach

In preparing our dataset for analysis, we integrated variables from multiple data sources, each with slight variations in coverage and missingness. To ensure consistency and comparability, we excluded countries with insufficient or unavailable data on key measures. Given our longitudinal focus, we also removed singletons (countries with data on a single time point) to examine within-country variation. These decisions resulted in a final sample of 1433 country-year observations across 135 countries. While this may slightly limit generalizability, our sample remains geographically and culturally diverse, surpassing the scope of previous ADHD studies.

To test the impact of our variables on ADHD diagnosis rates, we estimate both fixed and random effects panel regression models. Although an insignificant Hausman test indicated no systematic differences between modeling strategies, we present both approaches given the different comparisons they emphasize. Whereas the random effects model explores variation between countries, the fixed effects model evaluates within-country variation by controlling for unobserved country-specific characteristics. Together, these models provide a more complete understanding of country differences in ADHD diagnosis rates and the factors that shape them. All the models include year dummies and robust standard errors to address time effects and heteroskedasticity. Regional fixed effects control for region-specific characteristics, and all predictors are lagged one year to ensure proper temporal ordering.

Appendices 2 and 3 present the correlation matrix and descriptive statistics for all the variables. Table 1 shows three regression models: model 1 provides a baseline of global culture and institutions; model 2 adds healthcare and medicalization predictors; and model 3 includes country characteristics. In each model, part (a) reports random effects and part (b) reports fixed effects.

Results

Consistent estimates in Table 1 indicate well-specified models. In model 3, which includes all the explanatory variables, health INGOs ($P < .001$) and educational reforms ($P < .05$ for random effects; $P < .01$ for fixed effects) show positive and significant coefficients, while fertility is negative and significant ($P < .001$), highlighting a strong link between global cultural forces and children's ADHD prevalence. The random (3a) and fixed effects (3b) models indicate that ADHD prevalence both (1) increases as health INGO linkages and child-centeredness increase within nations and (2) is higher in countries with more linkages to health INGOs and greater emphasis on child-centeredness. Supporting H1–H3, the results suggest that as global cultural, institutional, and organizational pressures emphasizing children's health and well-being increase, so does ADHD prevalence.

To convey the substantive meaning of these effects, figure 3 presents predicted margins for ADHD prevalence across the full range of health INGOs (3A), children's educational reforms (3B), and fertility (3C) for both random (left) and fixed effects (right), with all the other predictors held at their means. Under these conditions, ADHD prevalence is expected to increase from approximately 2,100 to 2,500 cases per 10,000 for health INGOs and educational reforms and decrease from approximately 2,500 to 1,500 cases per 10,000 for fertility (see Table 2 for a full margins by variable and method). These effects are substantial: health INGOs and educational reforms each predict roughly a 25% increase in ADHD diagnoses, and fertility differences correspond to over a 35% change. Across our 135-country sample, these shifts translate into more than 117,000 additional children diagnosed globally, highlighting the tangible impact of these global cultural forces.

Table 1. Fixed and random effects regression on children's ADHD prevalence.^a

	Model 1a (RE)	Model 1b (FE)	Model 2a (RE)	Model 2b (FE)	Model 3a (RE)	Model 3b (FE)
Global culture and institutions						
Children's educational reforms	3.943* (1.635)	4.059* (1.631)	3.921* (1.639)	4.038* (1.633)	4.117* (1.611)	4.270** (1.603)
Fertility	-135.485*** (15.031)	-134.453*** (15.202)	-138.724*** (14.524)	-137.574*** (14.724)	-135.681*** (13.716)	-133.943*** (13.949)
Health INGOs	2.510*** (0.494)	2.470*** (0.489)	2.202*** (0.576)	2.177*** (0.568)	2.184*** (0.601)	2.141*** (0.593)
Health and medicalization						
Health expenditures			0.027 (0.018)	0.026 (0.018)	0.020 (0.019)	0.018 (0.019)
Universalistic welfare			4.964 (10.363)	5.203 (10.410)	4.646 (9.720)	4.824 (9.706)
Country characteristics						
Democracy					-27.186 (39.777)	-30.905 (40.267)
Poverty rate					0.549 (0.602)	0.621 (0.600)
Tertiary education					-1.069 (0.589)	-1.131 (0.590)
Constant	2,169.208*** (71.524)	2,417.822*** (54.601)	2,170.990*** (68.745)	2,426.024*** (55.115)	2,226.168*** (75.169)	2,465.225*** (59.125)
R-squared	0.572	0.337	0.577	0.346	0.568	0.362
Year dummies	Yes	Yes	Yes	Yes	Yes	Yes
Country fixed effects	No	Yes	No	Yes	No	Yes
Region dummies	Yes	No	Yes	No	Yes	No
Country-years	1,433	1,433	1,433	1,433	1,433	1,433
Countries	135	135	135	135	135	135

Notes: Robust standard errors in parentheses. ^aR-squared for FE is within-country; for RE it is between-country.

***P < .001, **P < .01, *P < .05.

Surprisingly, none of our remaining predictors reach significance. While this contradicts previous findings, it may stem from the literature's overemphasis on industrialized nations with well-educated populations. Our study motivates further research exploring the determinants of ADHD from a *global* perspective, even (and especially) beyond the Global North.

This conclusion is reinforced by our regional effects: North America leads, followed closely by Latin America, East Asia and the Pacific, the Middle East and North Africa, and Europe and Central Asia, while South Asia and Sub-Saharan Africa show significantly lower rates. Despite these regional idiosyncrasies, our core predictors remain robust, underscoring the powerful global

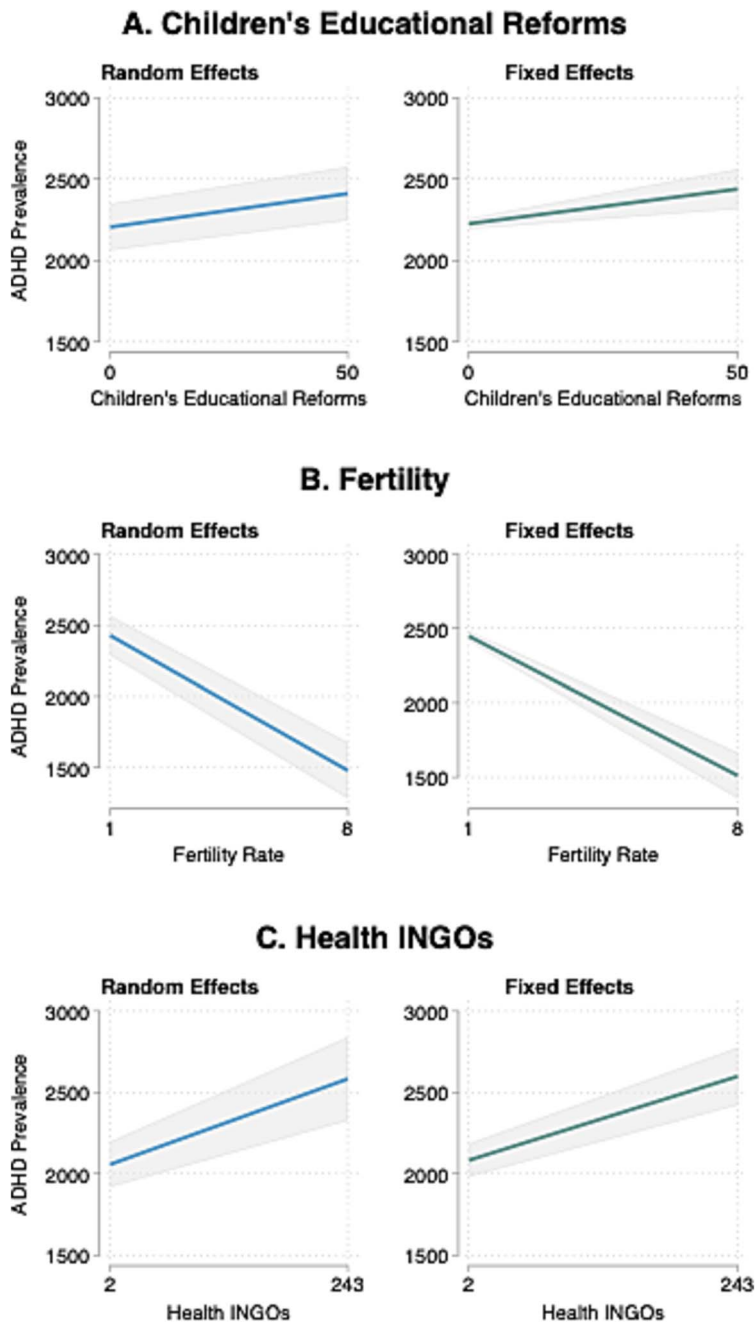


Figure 3. Predicted children's ADHD prevalence by (1) children's educational reforms, (2) fertility, and (3) health INGOs. Notes: Graphs plot the estimated effect of each respective predictor on ADHD prevalence using models 3a (left) and 3b (right) in Table 1. Figure 3A. Predictions for children's educational reforms; 3B presents fertility and 3C presents health INGOs. Notes: ADHD prevalence rate reported as cases per 100,000. All the controls are held at their means. Shading denotes 95% confidence intervals.

Table 2. Summary of predicted margins effects.

Independent variable	Random effects: ADHD prevalence at		Fixed effects: ADHD prevalence at	
	Minimum	Maximum	Minimum	Maximum
Health INGOs	2,057.617	2,584.061	2,083.500	2,599.408
Children's educational reforms	2,205.066	2,410.897	2,225.43	2,438.950
Fertility	2,415.913	1,531.273	2,435.822	1,562.511

influence of cultural forces. Still, future studies may wish to explore how and why certain regions lead or lag in ADHD diagnoses.

Considering healthcare and medicalization, *domestic* healthcare standards, unlike their *global* counterparts, are not a primary driver of children's ADHD diagnoses. Instead, ADHD prevalence is better explained by the global diffusion of cultural narratives emphasizing child-centeredness and framing ADHD as a significant health issue, facilitated by linkages between health INGOs and domestic actors. Consistent with our theoretical framework, global variations in ADHD prevalence are not predominantly explained by the domestic factors examined here, but rather by the broader global cultural context in which they are embedded and prioritized.

Robustness checks

Our results remain robust to alternate explanations.⁸ Despite high multicollinearity⁹ and concerns that our included predictors were artificially capturing the GDP's impact (indicated by a slight reduction in the coefficient magnitude upon including GDP), results including GDP (negative and significant at $P < .001^{10}$) hold (Appendix 4). Thus, cultural notions of children remain paramount to ADHD diagnosis independently of country wealth. Notably, the negative GDP coefficient indicates ADHD prevalence declines with national wealth, challenging the view of ADHD as primarily a Global North disorder. With nearly 70% of our sample (94 countries) in the Global South,¹¹ ADHD clearly extends beyond wealthy nations, underscoring the need for further research in these contexts.

Internet use was negative and insignificant, rebuking the notion that the Internet is driving ADHD—derived from concerns that fast-paced, short-form online content may reduce children's attention spans (Ducharme 2023) and prior studies linking Internet addiction to ADHD (Wang et al. 2017). Future studies can clarify when and why Internet use and GDP relate positively or negatively to ADHD.

ADHD may also be higher where children make up a larger population share. Controlling for the share of individuals aged 14 or younger was initially positive and significant; however, high correlation with fertility ($r = .91$) and severe multicollinearity ($VIF > 10$) rendered it insignificant when substituted for fertility, suggesting a potential yet uncertain link between ADHD prevalence and population age structure.

Although a previous work finds no effect (Chan et al. 2023), pharmaceutical sales may influence ADHD rates. Lacking public and unpaid access to IQVIA data on ADHD pharmaceutical medication sales as used by Chan et al. (2023), we use pharmacists per capita from the World Bank as a proxy. Despite limitations—including regulatory constraints over ADHD medication prescription and a reduced sample size (135 → 118 countries, 1,433 → 1,130 country-years)—our results remain robust and the coefficient for pharmacists reaches only marginal significance ($P < .06$ random; $P < .051$ fixed).

Finally, controlling for overall mental illness diagnosis rates as a proxy for general attention to mental health does not alter our main results, and the coefficient is not significant. Substituting it as the dependent variable leaves only fertility significant. Thus, the influence of our

global cultural predictors reflect unique attention to ADHD in children—rather than a broader prioritization of mental health.

Discussion: the globalization of ADHD narratives and diagnosis

Children's ADHD is a global phenomenon, both in scope and in origin. Beginning with the empirical observation that ADHD rates are increasing worldwide—even across diverse national contexts—we highlight several key points regarding this trend and its underlying factors.

While country-specific factors—including GDP, healthcare access, democracy, and poverty—may influence ADHD diagnoses, they cannot explain its global diffusion. Consistent with the World Society perspective, our analysis highlights global cultural and institutional forces as the primary drivers. Chief among them is the widespread adoption of child-centered norms, facilitated by educational systems prioritizing individualized attention to children's well-being (Bromley et al. 2023). Declining fertility rates, shaped by global developmental values promoting the “modern family” and heightened parental focus on children's behaviors (Thornton, Dorius, and Swindle 2015) further support a global cultural interpretation. This cultural shift places greater emphasis on each child as family sizes shrink. It also encourages intensive parenting practices—characterized by close monitoring and heightened expectations—enabling the identification and pathologization of behaviors associated with ADHD. Rising diagnoses thus reflect not only an actual increase in prevalence but also a global cultural shift in how children's behaviors are perceived and interpreted, consistent with sociological perspectives on medicalization and expanding norms of “normal” childhood behavior (Rafalovich 2013). Consistent with extensive research linking INGOs to norm diffusion (Boli and Thomas 1999; Schofer et al. 2012), health INGOs are strongly associated with higher ADHD rates. Through advocacy, information dissemination, and policy influence, health INGOs pivotally advance global cultural narratives that normalize ADHD. While we do not establish causality, INGOs' impact on health policy, education, and public awareness likely shapes ADHD diagnosis across diverse cultural contexts.

Robust effects across all three predictors suggest that world society simultaneously exerts itself through multiple cultural pathways. First, through ties to global institutions advancing the medicalization and treatment of mental disabilities, world society helps standardize how ADHD is recognized and addressed. Second, by prioritizing children's well-being and quality of life, global cultural norms shape societal expectations and responses to children's behaviors, leading to increased ADHD identification and diagnosis. Consistency across both random and fixed effects models further highlights the capacity of these multiple pathways to penetrate otherwise dissimilar or changing country contexts, transforming health priorities and narratives within and between nations. Together, these findings underscore the importance of broader, global-level influences that transcend local or national boundaries, providing several key implications.

Firstly, the sociological study of children's ADHD—long recognized by medical sociologists as a reflection of socially constructed cultural priorities—has largely been confined to country case studies in the United States and other Western contexts. By integrating this perspective with world society theory, our study (1) empirically validates this premise at a global scale and, in doing so, (2) provides a novel, macro-sociological conceptualization of ADHD, upon which future research can grow. Beyond its medicalized “objective” criteria, ADHD is a cultural phenomenon of global proportions. Increasingly universalized health, familial, and educational cultural scripts surrounding childhood foster greater awareness, acceptance, and diagnosis of ADHD worldwide. Put simply, this study situates the medicalization of ADHD within a broader global framework, illustrating how the social construction of disease operates not only within nations but also across them.

Secondly, this study advances existing world society research by foregrounding mental health, a largely overlooked dimension within global cultural frameworks. While prior scholarship examines global priorities such as the environment, women's rights, and education, and some health-related outcomes such as vaccine uptake (Cole, Schofer, and Velasco 2023), mental illnesses

remains underexplored. We address this gap by advancing a global cultural interpretation of ADHD. This growing attention placed on ADHD, like these other seemingly disparate topics, is a product of a larger liberal global cultural framework prioritizing its institutional and cultural prioritization. Just as environmental and gender norms diffuse through global organizational linkages, so too do mental disability narratives—reinforced by child-centric values advanced by the international community. Our findings demonstrate that the social construction of ADHD is fundamentally a global process—not merely local. Future research can build upon this perspective by examining the globalization of other aspects of mental health, neurodivergence, or childhood medical conditions.

Still, while this framework may extend to other conditions, ADHD offers a particularly compelling case for how cultural forces amplify societal attention and concern around specific health issues. Unlike childhood conditions such as scoliosis or chicken pox—where diagnosis relies on clear biological markers—ADHD is defined by subjective behavioral interpretations and shifting societal norms. Thus, the rise in ADHD prevalence reflects not only a potential increase in the condition itself but also the diffusion and intensification of cultural ideas rooted in child-centrism and health-oriented concerns. Nevertheless, the applicability of this framework to other children's medical conditions remains an empirical question. As scholars investigate this further, they can provide critical insight into which conditions are (or are not) salient from a global cultural perspective.

Thirdly, while our study underscores the role of global cultural dynamics, global market forces are also likely to contribute to the increasing prevalence of ADHD worldwide, as suggested in the literature (Busfield 2017). Although we lack longitudinal data on pharmaceutical sales to assess this possibility directly, we find some indirect support for the role of market logic using pharmacists per capita as a proxy. Exploring the interactions between cultural and market factors would help understand the full extent of ADHD's macrolevel shaping.

At the same time, while our study traces the diffusion of ADHD scripts through international organizations and states, its macrolevel research design limits our ability to evaluate individual-level influences on ADHD recognition and diagnosis. One such factor is the impact of Internet use on parenting and pedagogical practices. Although we found no effect of Internet use at the global level, expanding digital connectivity is likely to shape ADHD awareness by providing parents and educators with diagnostic resources, treatment information, and international support networks (Bergey 2024). Additionally, understanding the role of social media and online platforms in shaping public perceptions of ADHD will be essential to fully grasp the influence of digital communication on global health trends. Future studies could take up this charge by conducting country case studies to explore the specific mechanisms of this process. The macrolevel scope of our analysis limits access to detailed cross-national variables, highlighting the need to prioritize the collection and analysis of more nuanced measures as they become available.

Finally, while our data provide valuable cross-national and longitudinal insights, limitations remain. Though the GBD offers the most comprehensive estimates of ADHD prevalence to date, its reliance on evolving DSM and ICD criteria restricts our ability to assess changes over time, especially across countries. Within-country comparisons and the use of year-fixed effects help mitigate this concern. Additionally, while we capture the broader normative influence of health INGOs, variations in their power and focus, as well as the degree and quality of their engagement with ADHD, remain obscured. Case studies of ADHD-focused INGOs could offer more targeted insights. Growing government restrictions on INGOs may constrain their normative reach (Heinzl and Koenig-Archibugi 2022); future work can explore how such constraints shape ADHD discourse and diffusion.

Concluding remarks

In summary, our analysis suggests that the global rise in ADHD diagnoses reflects broader cultural shifts, particularly the prioritization of children's needs and the dissemination of global health

norms by health INGOs. Together, these factors create an environment where ADHD is more readily recognized, diagnosed, and treated, reflecting the profound impact of global cultural norms and institutional practices on children's health and behavior.

By contributing to understanding global patterns in ADHD diagnoses, our study also helps raise ADHD awareness and prioritization in countries where it may otherwise be overlooked. It also highlights key pathways for advocacy efforts. For instance, civil society actors committed to advancing recognition and reduce stigma may find health INGOs effective vehicles for driving national change. Likewise, parents and educators can lobby for early educational reforms that institutionalize child-centric norms. Given the significant consequences of untreated ADHD—including its impact on academic achievement and performance, as well as its association with depression, anxiety, stress, and poor occupational, social, and physical health outcomes in adulthood (Arnold et al. 2020; Ogrodnik, Karsan and Heisz 2023; Shaw et al. 2012)—it is critical that future research and activism account for global cultural factors in shaping its acceptance and diagnosis. Acknowledging these influences will be critical to fostering a more inclusive and supportive global environment for individuals with ADHD.

Endnotes

1. The WHO collects and analyzes data on ADHD through various sources, including the Global Burden of Disease (GBD) study and the World Mental Health Surveys. GBD data range from 1980 onward, relying on clinical diagnoses based on *DSM* and *ICD* criteria. Other sources, including the World Mental Health Surveys, may incorporate *DSM* criteria in some countries in addition to *ICD*, reflecting the dual use of *DSM* and *ICD* in research and clinical practice.
2. Boyle, Smith, and Guenther (2007) identify 45 international conventions between 1919 and 2000, about half after 1990.
3. Global declines in fertility are widely documented; in 2021, 41% of the global population lived in areas with very low fertility (below 1.7 children per woman) (Vandermotten and Dessouroux 2024).
4. The WHO and UNICEF jointly argue that failing to address ADHD “put[s] an entire generation at risk,” while advocating for neurological differences and self-advocacy (WHO and UNICEF 2023, 5).
5. Examples include Children and Adults with Attention-Deficit/Hyperactivity Disorder (CHADD) (founded 1987), which advocates for ADHD's recognition as a disability and promotes educational accommodations, Attention Deficit Disorder Association (ADDA), which supports youth empowerment and professional training, and international groups like ADHD Europe and the World Federation of ADHD, which foster global collaboration (Conrad and Bergey 2014).
6. Because most ADHD research is produced and funded in the United States, and latecomers had to align with American standards, the *DSM* is more common (Bergey 2024). However, the *ICD* was developed by the WHO, thus constituting a globally legitimized classification system.
7. WERD (Bromley et al. 2024) includes 14,375 reforms from 216 countries and territories. Close to 80 percent of the reforms range from 1970 to 2021.
8. Available upon request.
9. Correlation coefficients: health INGOs ($r = 0.77$); health spending ($r = 0.78$); democracy ($r = 0.77$); tertiary education ($r = 0.71$); poverty ($r = -0.70$); fertility ($r = -0.66$).
10. Results are consistent even when building from a null model and progressively adding predictors.
11. Reflecting World Bank country and lending classifications, Global South nations include those classified as Low Income, Lower-Middle Income, or Upper-Middle Income, with a 2023 GNI per capita of \$14,005 or less.

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Acknowledgments

The authors gratefully acknowledge the generous sharing of health INGO data and .do files by Mirko Heinzel and Mathias Koenig-Archibugi, as well as the WERD dataset on children's educational reforms by Patricia Bromley, Rie Kijima, Lisa Overbey, Jared Furuta, Minju Choi, Heitor Santos, Jieun Song, Tom Nachtigal, and Marcia Yang, without which this article would not be possible. This article benefited from comments and feedback from John Boli, members of the WZB Global Governance Colloquium, and the Stanford Comparative Sociology Workshop.

Funding

None declared.

Conflicts of interest

None declared.

Data availability

The data underlying this article are available in OSF Home at <https://osf.io/>, and can be accessed here: <https://osf.io/n9wvz/>.

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