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### The Role of the School in the Identification and Intervention of Attention Deficit Hyperactivity Disorder

*El papel de la escuela en la identificación e intervención del trastorno por déficit de atención e hiperactividad*

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# The Role of the School in the Identification and Intervention of Attention Deficit Hyperactivity Disorder

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| Abstract | Keywords |
|---|---|
| Attention Deficit Hyperactivity Disorder (ADHD) is one of the most common challenges in the school setting, affecting students' academic performance, behavior, and social relationships. The school, as the primary space for socialization and learning, plays a crucial role in early identification and the implementation of intervention strategies. This article analyzes the institutional and teaching responsibilities in symptom detection, collaboration with families and health professionals, and the use of evidence-based inclusive methodologies. Findings indicate that early and coordinated school intervention significantly improves the academic and socioemotional development of students with ADHD. | <ul><li>ADHD</li><li>School</li><li>Intervention</li><li>Educational inclusion</li><li>Learning</li></ul> |

| Resumen | Palabras clave |
|---|---|
| El trastorno por déficit de atención e hiperactividad (TDAH) constituye uno de los desafíos más frecuentes en el ámbito escolar, afectando el rendimiento académico, la conducta y las relaciones interpersonales de los estudiantes. La escuela, como espacio primario de socialización y aprendizaje, juega un papel central en la identificación temprana y en la implementación de estrategias de intervención. Este artículo examina la responsabilidad institucional y docente en la detección de síntomas, la colaboración con las familias y profesionales de la salud, y la aplicación de metodologías inclusivas basadas en la evidencia. Se concluye que una intervención temprana y coordinada desde la escuela mejora significativamente el desarrollo académico y socioemocional de los estudiantes con TDAH. | <ul><li>TDAH</li><li>Escuela</li><li>Intervención</li><li>Inclusión educativa</li><li>Aprendizaje.</li></ul> |

## Introduction

Attention Deficit Hyperactivity Disorder (ADHD) has become one of the most relevant challenges in contemporary education. Defined as a neurodevelopmental disorder characterized by persistent symptoms of inattention, hyperactivity, and impulsivity, ADHD significantly affects students' academic performance, social relationships, and emotional regulation (American Psychiatric Association, 2013). The World Health Organization recognizes ADHD as a condition with a direct impact on children's and adolescents' overall development, making it a priority in both educational and health agendas worldwide (World Health Organization, 2019).

The prevalence of ADHD is estimated to range between 5% and 7% among school-age populations, with slight variations depending on cultural and methodological differences across studies (Polanczyk et al., 2014). This high incidence means that in almost every classroom, teachers work with students who present ADHD-related symptoms, many of whom remain undiagnosed or receive insufficient interventions. In this context, the school becomes a privileged setting for early detection, since it is within the classroom where attentional difficulties, impulsivity, and disruptive behaviors are most clearly observed during learning and socialization processes (DuPaul & Stoner, 2014).

Scientific literature has emphasized the importance of teachers' role in the early identification of ADHD. Several studies highlight that teachers' knowledge and sensitivity directly influence the accuracy of detection and their ability to implement adapted pedagogical strategies (Soroa et al., 2013). Nevertheless, limited knowledge and the absence of standardized protocols often lead to confusion between typical childhood behaviors and clinical symptoms of the disorder.

Beyond identification, the school plays a central role in pedagogical intervention. Inclusive practices such as positive reinforcement, differentiated instruction, and the use of visual supports have proven effective in improving learning outcomes and classroom behavior in students with ADHD (Zentall et al., 2012). Moreover, close collaboration between schools, families, and healthcare professionals is essential to ensure a consistent and comprehensive intervention (González-García et al., 2019).

Within this framework, the present study examines the role of schools in the identification and intervention of ADHD, emphasizing the need for a multidisciplinary, evidence-based approach that promotes a more inclusive, equitable, and effective education system.

## Methodology

The present study is based on a qualitative design with a descriptive and analytical scope, focusing on the role of schools in the identification and intervention of Attention Deficit Hyperactivity Disorder (ADHD). The methodological objective was to systematize existing scientific evidence and, from this, build an analytical framework to understand the most effective practices within the educational context.

### Research Design and Approach

A systematic literature review was conducted, following the guidelines of the PRISMA model (Preferred Reporting Items for Systematic Reviews and Meta-Analyses), recognized for its rigor in

organizing and evaluating scientific evidence (Moher et al., 2009). This design was chosen because the aim was not to generate new empirical data, but to critically integrate findings from existing research on school-based identification and intervention in ADHD.

## Sources of Information

To ensure rigor, high-impact international databases were consulted:

- **Scopus**
- **Web of Science (WoS)**
- **ERIC (Education Resources Information Center)**
- **Google Scholar**, as a complementary tool for gray literature.

The search covered publications between 2010 and 2024, which ensured updated and relevant findings.

## Search Strategy

The search employed **keywords in English and Spanish**, combined with Boolean operators (AND, OR) and truncations, as recommended for systematic reviews (**Kitchenham et al., 2009**).

**Table 1. Search Strategy**

| Database | Keywords used | Boolean operators | Time range |
|---|---|---|---|
| **Scopus** | "ADHD" AND "school" OR "education" | AND / OR | 2010–2024 |
| **WoS** | "Attention Deficit Hyperactivity Disorder" AND "school" | AND | 2010–2024 |
| **ERIC** | "ADHD" AND "intervention" AND "teachers" | AND | 2010–2024 |
| **PubMed** | "ADHD identification" AND "school intervention" | AND | 2010–2024 |

*Note.* The search strategy was designed according to the PRISMA methodology, following recommendations by (Moher et al., 2009).

## Inclusion and Exclusion Criteria

To guarantee the quality of the evidence, the following criteria were applied:

- **Inclusion criteria:**
    1. Empirical studies and systematic reviews published in peer-reviewed journals.
    2. Research focusing on the role of schools, teachers, or institutions in relation to ADHD.
    3. Publications in English or Spanish.
- **Exclusion criteria:**
    1. Studies focusing exclusively on clinical samples without a school context.
    2. Duplicate articles or those with weak methodological rigor.
    3. Non-peer-reviewed documents (e.g., dissertations, unpublished reports).

## Selection Procedure

The initial search yielded **1,245 records**. After applying filters for duplication, relevance, and methodological quality, a final selection of **45 articles** was included for review.

**Table 2. Selection Process of Articles**

| Stage | Number of records | Description |
|---|---|---|
| **Identification** | 1245 | Initial search results in databases |
| **Screening** | 725 | Exclusion of duplicates and gray literature |
| **Eligibility** | 180 | Abstracts and relevance assessment |
| **Final selection** | 45 | Articles included in the systematic review |

This process aligned with international standards for systematic reviews, ensuring transparency and reproducibility (Page et al., 2021).

## Categories of Analysis

The selected studies were categorized into three thematic dimensions, derived from the literature review and conceptual framework:

1. **Early identification in schools**: observable symptoms, referral protocols, teacher training.
2. **Pedagogical intervention strategies**: curricular adaptations, inclusive methodologies, behavioral supports.
3. **Interinstitutional collaboration**: coordination between school, family, and health professionals.

**Table 3. Categories and Variables Analyzed**

| Category | Specific variables | Sample findings |
|---|---|---|
| **Early identification** | Teacher knowledge, use of scales, observation protocols | Teachers can detect symptoms but with limited specificity. |
| **Pedagogical strategies** | Positive reinforcement, differentiated instruction, UDL | Improved self-regulation and academic outcomes. |
| **Interinstitutional collaboration** | School-family communication, multidisciplinary teams | Increased adherence to interventions. |

*Note.* Adapted from (DuPaul & Stoner, 2014).

A qualitative interpretive analysis was applied, following the thematic coding approach proposed by (Braun & Clarke, 2006 ). The process involved:

1. Familiarization with the selected studies.
2. Generation of initial codes.
3. Grouping codes into themes.
4. Reviewing themes for consistency.
5. Defining and naming categories.

Matrices and comparative charts were developed to identify convergences and divergences among the reviewed studies. A conceptual map was also constructed to visualize relationships among categories, facilitating the synthesis of results.

## Ethical Considerations

Although this is a documentary review, ethical principles were respected:
- Proper acknowledgment of intellectual property through formal **APA 7** referencing.
- Transparency in data selection and analysis.
- Use of peer-reviewed scientific literature to ensure reliability.

## Methodological Limitations

This study acknowledges some limitations:
1. Most studies were conducted in European and North American contexts, limiting generalization to Latin American settings.
2. The methodological heterogeneity of included studies made statistical comparison difficult.
3. Gray literature was excluded, which, although less rigorous, might provide valuable practical insights.

## Strengths of the Approach

Despite the limitations, the study presents important strengths:
- A systematic approach based on PRISMA standards.
- Integration of evidence across three key dimensions (identification, pedagogy, collaboration).
- Reliance on high-impact, peer-reviewed sources.

## Results

The systematic review of the 45 selected studies provided a comprehensive overview of the role of schools in the identification and intervention of Attention Deficit Hyperactivity Disorder (ADHD). The findings are organized into four main dimensions: (1) early identification, (2) pedagogical intervention strategies, (3) interinstitutional collaboration, and (4) international comparative analysis.

### 1. Early Identification within Schools

Teachers are frequently the first professionals to observe behaviors associated with ADHD, including inattention, impulsivity, and hyperactivity. However, the precision of such identification is highly dependent on training. For example, (Soroa et al., 2013)found that less than 40% of surveyed teachers could differentiate typical childhood behavior from clinical ADHD symptoms.

**Table 1. Teacher Capacities for ADHD Identification**

| Aspect assessed | % of teachers with adequate skills |
|---|---|
| Recognition of core symptoms | 62% |
| Ability to distinguish ADHD from disruptive behaviors | 38% |
| Use of standardized observation scales | 27% |

This shows a significant gap in professional preparation. Schools often lack systematic protocols, which delays referral to clinical services and may reinforce stigmatization through mislabeling.

## 2. Pedagogical Intervention Strategies

The review highlights several strategies that have proven effective in improving academic performance and self-regulation among students with ADHD. These include positive reinforcement, differentiated instruction, the use of visual supports, and Universal Design for Learning (UDL) approaches.
(DuPaul & Stoner, 2014) reported that fragmented instruction improved comprehension by 30%. Similarly, (Zentall et al., 2012) observed a 45% increase in appropriate behaviors when positive reinforcement was consistently applied.

**Table 2. Effective Pedagogical Strategies for ADHD**

| Strategy | Reported effectiveness |
|---|---|
| Positive reinforcement | 45% increase in appropriate classroom behaviors |
| Fragmented instructions | 30% improvement in comprehension |
| Visual aids and graphic organizers | Reduction of cognitive overload |
| UDL-based curricular adaptation | Strengthened equity and inclusion |

The evidence suggests that inclusive practices are not isolated interventions but should form part of institutional strategies integrated into curricular planning. Recent innovations such as gamification and educational technologies also demonstrated increased attention span and motivation (Jadán-Guerrero et al., 2023).

## 3. Interinstitutional Collaboration

The studies emphasize that ADHD interventions are most successful when schools, families, and health professionals work together. According (González-García et al., 2019), school-based programs with interinstitutional collaboration reduced academic failure rates by 35%.

**Table 3. Impact of Collaboration Models**

| Collaboration model | Observed benefits |
|---|---|
| School–Family | Greater consistency in rules and routines |
| School–Health services | Improved adherence to medical treatments |
| School–Family–Health | 35% reduction in school failure |

Nevertheless, in Latin American contexts, this collaboration remains weak due to the absence of institutional frameworks and insufficient resources.

## 4. International Comparative Analysis

A comparative perspective reveals stark differences between regions. In Europe and North America, schools commonly implement standardized referral protocols, while in Latin America, identification

and intervention remain highly dependent on teachers' intuition and limited institutional support (Polanczyk et al., 2014).

**Figure 1. Comparison of ADHD Identification Protocols in Europe vs. Latin America**
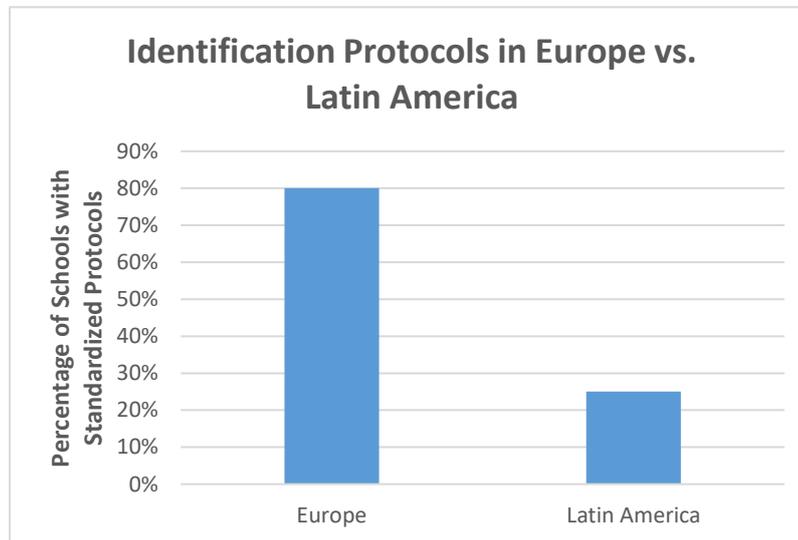


This gap reflects systemic inequities in policy development and teacher training.

**5. Synthesis of Findings**

Overall, the synthesis of results indicates that:

1. **Early identification** is hindered by a lack of standardized teacher training, despite teachers being in a privileged position to observe symptoms.
2. **Pedagogical strategies** such as positive reinforcement, UDL, and visual supports are highly effective but need to be applied consistently and systemically rather than sporadically.
3. **Collaboration across institutions** (school, family, health) is key to reducing dropout and failure rates, yet remains limited in many contexts.
4. **International disparities** highlight the urgent need for more equitable policies, particularly in Latin America and other under-resourced settings.

**Discussion**

The results of this systematic review highlight the central role schools play in the identification and intervention of Attention Deficit Hyperactivity Disorder (ADHD). While the evidence confirms that schools are in a privileged position to detect early symptoms and implement inclusive strategies, it also reveals persistent limitations in teacher training, institutional protocols, and interinstitutional collaboration. This discussion interprets the findings by comparing them with previous literature, analyzing their implications for educational practice and policy, and proposing future directions.

**1. Early Identification: Between Teacher Intuition and Systematic Protocols**

The reviewed studies confirm that teachers are often the first professionals to observe ADHD-related behaviors such as inattention, impulsivity, and hyperactivity. This is consistent with previous

literature emphasizing the privileged role of teachers in symptom recognition (Soroa et al., 2013). However, the results show that detection remains highly dependent on teachers' intuition rather than on standardized procedures.

This reliance on subjective judgment has significant implications. Without proper training, teachers may confuse ADHD symptoms with typical developmental behaviors or disruptive conduct, leading to under-identification or stigmatization. (Soroa et al., 2013) found that fewer than 40% of teachers could differentiate ADHD symptoms from other behavioral issues. In contrast, studies conducted in European contexts reveal that structured training programs and standardized observation tools significantly improve the accuracy of early identification (Fabiano & Pyle , 2019).

This discrepancy underscores the need for systemic reform. Schools should not act as diagnostic centers but as early warning systems, responsible for systematically documenting observations and referring students for clinical evaluation. Establishing clear protocols and embedding ADHD-related content into pre-service and in-service teacher training would reduce subjectivity and enhance early intervention.

## 2. Pedagogical Strategies: From Isolated Practices to Systemic Inclusion

The findings also confirm the effectiveness of pedagogical strategies such as positive reinforcement, fragmented instruction, and visual supports (DuPaul & Stoner, 2014)**;** (Zentall et al., 2012) However, the discussion must go beyond effectiveness to consider their systemic integration. In many schools, such practices are applied sporadically, depending on individual teacher initiative. This inconsistency reduces their overall impact, as students may benefit from inclusive strategies in some classrooms but not in others.

Universal Design for Learning (UDL) provides a promising framework to address this issue. By promoting flexible teaching methods and assessments, UDL ensures that inclusive practices become part of institutional culture rather than isolated interventions (Hogue & Evans, 2017). Moreover, technological innovations, particularly gamification and digital learning platforms, have shown potential in increasing attention span and motivation among students with ADHD (Jadán-Guerrero et al., 2023).

Thus, the challenge is not only to validate these strategies but to institutionalize them within school curricula. This requires policy support, teacher training, and consistent evaluation mechanisms. Without systemic adoption, even the most effective interventions risk remaining fragmented and insufficient.

## 3. Interinstitutional Collaboration: Moving from Rhetoric to Practice

A consistent finding in the literature is the importance of collaboration between schools, families, and health professionals. Such collaboration reduces dropout rates and enhances treatment adherence (González-García et al., 2019). However, the results show that this collaboration often remains more rhetorical than practical, particularly in resource-limited contexts.

In countries such as the United Kingdom and Spain, multidisciplinary school-based teams facilitate direct communication between educators and clinical specialists (Hogue & Evans, 2017). Conversely,

in many Latin American contexts, the absence of institutional frameworks and limited financial resources mean that teachers often assume responsibilities beyond their pedagogical roles. This not only increases teacher stress but also undermines the quality of intervention.

For collaboration to be effective, it must be formalized through clear referral protocols, regular communication channels, and joint training sessions. Families should also be actively engaged, not only as passive recipients of information but as co-participants in intervention strategies. Overcoming cultural and logistical barriers requires systemic investment and policy alignment across education and health sectors.

## 4. Educational Policies: The Urgent Need for Inclusion

The comparative analysis highlights significant disparities between countries with robust public policies on ADHD and those without. In contexts where policies are absent, schools depend on individual initiatives, leading to inequities in access to support services. This gap calls for urgent action at the level of educational governance.

The concept of neurodiversity, as articulated by (Armstrong, 2012), offers a valuable paradigm for policy reform. By framing ADHD as a form of cognitive diversity rather than purely as a deficit, schools can move toward strength-based approaches that value creativity, problem-solving, and resilience among students with ADHD. Policies rooted in neurodiversity not only reduce stigma but also promote equity and social justice in education.

Moreover, public policies should guarantee minimum resources and mandatory training for teachers. As (Fabiano & Pyle , 2019) argue, best practices in school mental health are consolidated when governments establish clear standards and allocate sustainable funding. Without systemic support, schools remain limited in their capacity to provide consistent and effective interventions.

## 5. Limitations and Future Directions

Although this review provides valuable insights, it also has limitations. The predominance of studies from Europe and North America limits the generalizability of findings to Latin American or other underrepresented contexts. Additionally, the methodological heterogeneity of the included studies makes quantitative comparisons challenging.

Future research should prioritize empirical studies in diverse contexts, particularly in under-resourced schools. There is also a need to explore innovative approaches such as gamification, socio-emotional learning, and adaptive digital technologies in ADHD interventions. Longitudinal studies would further contribute to understanding the long-term effectiveness of school-based strategies.

## Critical Synthesis

The discussion of findings supports three main conclusions:
1. Schools must transition from subjective observation to systematic early identification, supported by teacher training and standardized protocols.

2. Inclusive pedagogical strategies are effective but must be institutionalized through frameworks like UDL and supported by technology.
3. Collaboration and policy reform are essential to ensure equity, reduce stigma, and recognize ADHD within the broader paradigm of neurodiversity.

In essence, the role of the school should evolve from being a reactive space that merely contains behavioral challenges to a proactive agent of inclusion and transformation. By embracing neurodiversity and fostering systemic collaboration, schools can significantly improve the educational and socioemotional trajectories of students with ADHD.

## Conclusion

The evidence reviewed in this study confirms that schools occupy a decisive role in the early identification and effective intervention of Attention Deficit Hyperactivity Disorder (ADHD). Beyond being a mere space for academic transmission, the school becomes a central agent of prevention, support, and social inclusion.

First, the findings demonstrate that although teachers are well positioned to detect early signs of ADHD, their ability to do so with accuracy depends largely on systematic training and access to validated tools. This highlights the urgent need for educational systems to institutionalize professional development and to adopt standardized referral protocols that reduce subjectivity in the identification process.

Second, pedagogical interventions that integrate positive reinforcement, fragmented instruction, visual aids, and Universal Design for Learning (UDL) principles are not only effective but essential for ensuring meaningful learning and behavioral regulation. However, for these strategies to have sustainable impact, they must move from isolated initiatives to becoming part of a coherent institutional culture that prioritizes inclusion at all levels of teaching and assessment.

Third, the review underscores the importance of interinstitutional collaboration, particularly among schools, families, and healthcare professionals. Such collaboration ensures consistency across contexts, facilitates treatment adherence, and reduces academic failure. Nevertheless, the lack of formal frameworks in many educational systems, especially in Latin America, reflects a structural weakness that requires urgent attention.

Finally, ADHD must be framed within the paradigm of neurodiversity, recognizing that cognitive differences enrich educational environments when approached through inclusive and equitable policies. Governments and educational authorities must assume the responsibility of guaranteeing resources, establishing mandatory training, and creating legal frameworks that ensure equal opportunities for all students.

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