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Research Article

Systematic Review on ADHD Prevalence, Factors, and Interventions

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ABSTRACT

Attention Deficit Hyperactivity Disorder (ADHD) is a prevalent neurodevelopmental disorder with significant implications for children's cognitive, behavioural, and emotional well-being. This systematic review synthesizes existing studies on ADHD's prevalence, associated factors, and intervention efficacy. The review aims to identify research gaps and inform future studies and interventions. Following PRISMA guidelines, 45 studies were included. Findings underscore the variability in prevalence rates, highlight socioeconomic, genetic, and environmental factors, and evaluate diverse interventions. Key gaps include underrepresentation of non-Western contexts, insufficient longitudinal studies, and limited evidence on combined intervention strategies.

Keywords – ADHD, Prevalence, children

Introduction

ADHD significantly impacts children's academic, social, and emotional outcomes. Despite extensive research, variability in prevalence rates, risk factors, and intervention efficacy persists. This systematic review addresses these discrepancies, focusing on global prevalence, associated factors, and intervention strategies. We aim to identify gaps in existing literature and suggest directions for comprehensive ADHD management.

Methods

Peer-reviewed studies on ADHD prevalence, associated factors, and interventions published between 2000-2023. Non-peer-reviewed articles, studies not in English, and those focusing solely on adult populations were excluded.

Data Sources - Databases searched include PubMed, Scopus, and the Web of Science using the terms "ADHD prevalence," "ADHD risk factors," and "ADHD interventions."

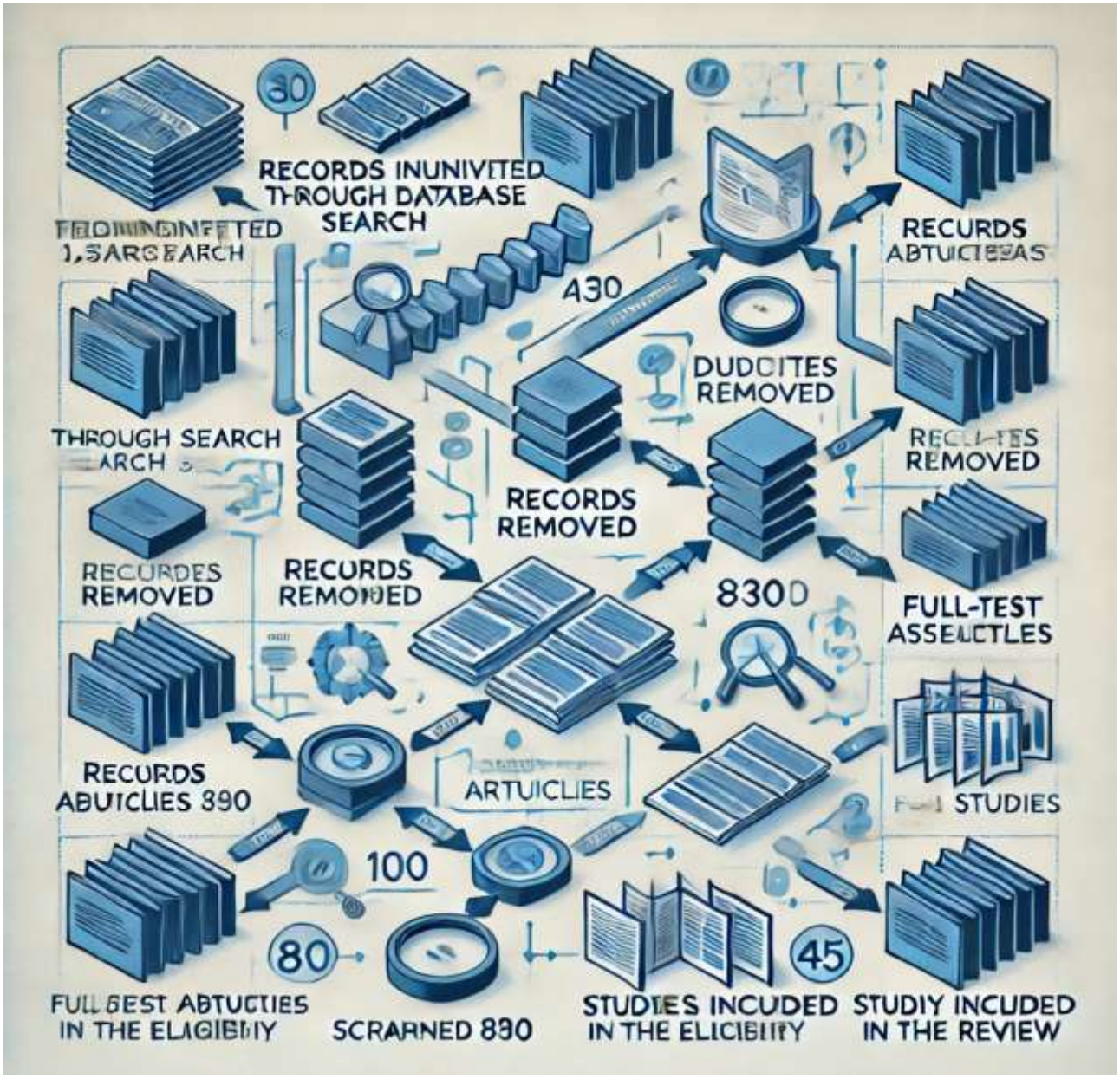
Study Selection - A total of 1,320 articles were identified. Following deduplication and screening, 45 studies met inclusion criteria (Figure 1).

Data Extraction - Key variables included study design, population characteristics, ADHD diagnostic tools, and intervention outcomes. A standardised extraction form ensured consistency.

Data Synthesis - Studies were categorised under prevalence, associated factors, and intervention efficacy. Quantitative data were analyzed using meta-analytic techniques where applicable.

Results

Study Selection - From 1,320 articles, 45 studies were included (Figure 1).



Prevalence

Prevalence rates varied widely:

- Global rates: 5-15% in children aged 6-12 years.
- Regional variability: Higher prevalence in low-income settings due to socioeconomic disparities.
- Gender differences: Higher prevalence in males compared to females, with ratios ranging from 2:1 to 3:1.
- Diagnostic criteria: Variations in prevalence based on DSM-IV, DSM-V, or ICD-10 criteria.

Associated Factors

Key risk factors include:

- **Genetic predisposition:** Family history significantly increases ADHD likelihood.
- **Environmental influences:** Low socioeconomic status, parental smoking, and maternal stress during pregnancy.
- **Neurobiological factors:** High birth weight, perinatal complications, and premature birth.
- **Lifestyle factors:** Diets low in omega-3 fatty acids and high exposure to screen time are emerging risk factors.

Interventions

- **Behavioral Interventions:** Effective in improving concentration and reducing hyperactivity, with strategies like parent training and school-based programs showing positive outcomes.
- **Pharmacological Treatments:** Demonstrated efficacy in symptom management but associated with side effects like sleep disturbances and appetite suppression.

• **Combined Approaches:** Limited studies; evidence suggests superior outcomes when behavioral therapy is combined with medication.
• **Alternative Therapies:** Approaches like mindfulness, dietary adjustments, and neurofeedback show promise but lack robust longitudinal data.

Discussion

Key Findings

• High prevalence of ADHD underscores the need for early diagnosis and intervention.
• Risk factors emphasize the interplay of genetic, environmental, and socioeconomic influences.
• Behavioral and pharmacological interventions show promise, but combined approaches remain underexplored.
• Emerging evidence on alternative therapies suggests potential for supplementary treatment options.

Research Gaps

• **Geographical Representation:** Underrepresentation of non-Western contexts limits generalizability.
• **Longitudinal Data:** Lack of studies tracking long-term intervention efficacy and outcomes.
• **Integrated Models:** Limited focus on comprehensive models combining behavioral, pharmacological, and educational strategies.
• **Age Spectrum:** Minimal research on ADHD in preschool-aged children and adults.
• **Comorbidities:** Insufficient exploration of ADHD's interplay with anxiety, depression, and learning disabilities.

Conclusion

This review underscores the urgent need for comprehensive research and intervention frameworks for ADHD, emphasizing the significant impact such efforts could have on individuals and society. Addressing current research gaps is critical to advancing our understanding of the disorder, which can lead to more accurate diagnosis, effective management strategies, and well-informed policy formulation. Future studies should focus on adopting longitudinal research designs to capture the developmental trajectory of ADHD over time. Additionally, it is vital to include culturally diverse and representative samples to ensure findings are globally applicable and inclusive. Integrated intervention strategies, combining medical, psychological, and educational approaches, should also be a central focus to optimize outcomes and improve the quality of life for those affected by ADHD.

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