

A systematic review to examine the extent of teachers' referral bias of girls with ADHD

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INTRODUCTION

There is growing evidence that a lack of recognition and/or a referral bias of girls with ADHD contributes to the large discrepancy in gender ratios in young people with ADHD. Teachers play a vital role in problem recognition and referral to clinical services. We conducted a systematic review to examine whether teachers, when presented with individuals with identical ADHD symptom profiles, are more likely to recognise, refer or suggest interventional management (i.e. medication) of boys compared to girls.

METHODS

We searched MEDLINE, PSYCHInfo and ERIC in January 2019. We also performed manual searches and consulted experts in the field to uncover further studies. PRISMA protocol was used. A quality assessment tool was developed to critically appraise all papers meeting the inclusion criteria.

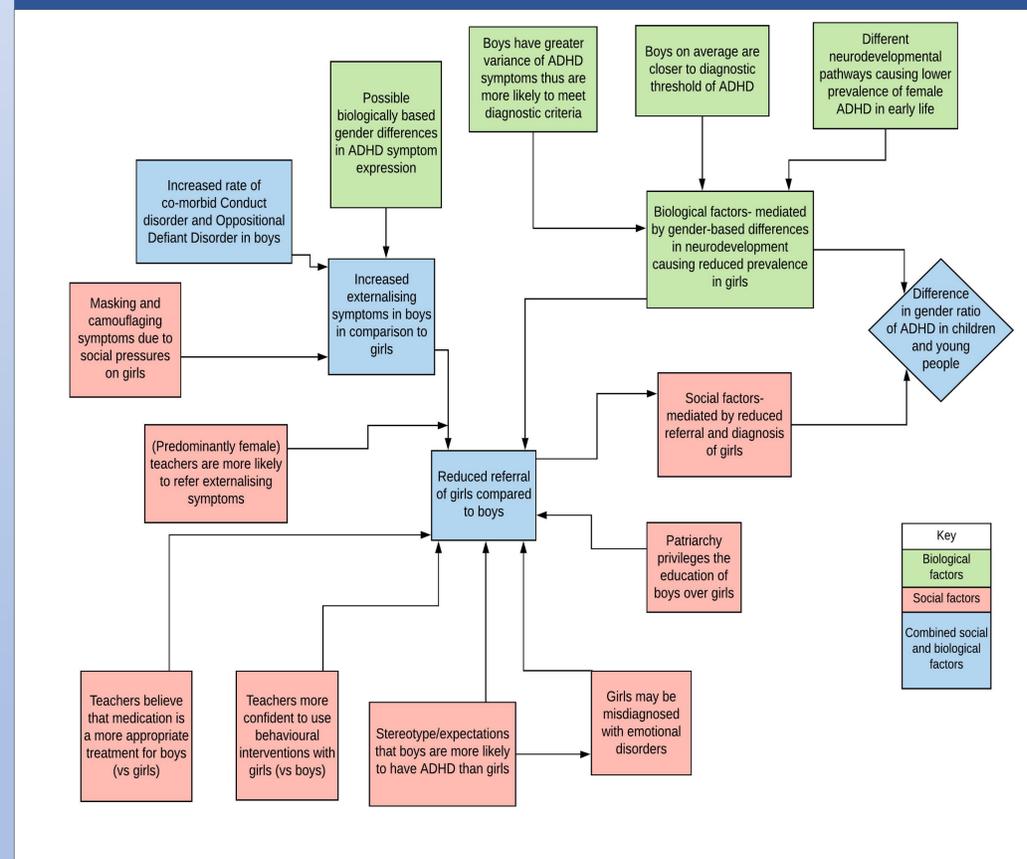
RESULTS

Thirteen papers were found that met the inclusion criteria; primarily vignette and analogue studies. Following quality analysis, the data from these papers was extracted and then used to test three hypotheses; that teachers were less likely to recognise ADHD symptoms in girls, refer girls with ADHD to services, or suggest interventional management (i.e. medication) of girls with ADHD (compared to boys with identical symptom profiles).

TABLE OF RESULTS

Hypothesis	Summary of findings	Can hypothesis be supported?
Teachers are less likely to recognise ADHD symptoms in girls	8 studies interrogated this hypothesis. 1 medium study and 1 strong study contradicted hypothesis. 1 strong study and 1 medium study partly supported hypothesis. 4 studies (1 strong, 2 medium, 1 weak) had no significant findings.	Contradictory evidence with few significant findings; the hypothesis cannot be supported.
Teachers are less likely to refer girls with ADHD symptoms	6 studies interrogated this hypothesis. 1 strong paper fully supported the hypothesis and 1 medium and 1 weak paper gave partial support. 3 further studies; (2 medium and 1 strong) found no significant differences between referral of boys and girls with ADHD.	Several significant findings and no contradictory evidence; hypothesis can be supported.
Teachers are less likely to suggest interventional management (i.e. medication) of girls with ADHD	7 studies interrogated this hypothesis. 2 strong papers supported the hypothesis, 1 medium paper partially supported the hypothesis (significant only for the combined subtype). 4 papers, 1 strong, 1 medium and 2 weak found no significant evidence to support the hypothesis.	Several significant findings and no contradictory evidence; hypothesis can be supported.

WHY DO FEWER GIRLS GET DIAGNOSED WITH ADHD?



DISCUSSION

- As displayed, the gender difference in ADHD prevalence is complex and multifactorial. This review was designed specifically to elicit whether a referral bias (rather than neurobiological or phenotypic differences in ADHD presentation) may result in inadequate identification, diagnosis and ADHD treatment of girls.
- Most of the studies included in this review were analogue studies, which benefit from high internal validity but low ecological validity. In addition some of the studies were over 10 years old; reducing their relevance to current teaching practises. Several of the studies were small; increasing the risk of type 2 errors. The heterogeneity of the studies precluded a quantitative analysis.
- Potential confounders included age of the child, co-occurring conditions, and subtype of ADHD, and these could be further examined in future studies.

CONCLUSIONS AND RECOMMENDATIONS

- There are significant gender differences in the prevalence and treatment of ADHD. These differences diminish in adulthood, suggesting that girls are underdiagnosed and undertreated.
- Teachers play a key role in identifying children at risk of ADHD and referring them to services.
- This review finds evidence that teachers are less likely to refer or seek interventional management (i.e. medication) for girls with ADHD symptoms compared to boys with identical symptom profiles.
- Referral bias by teachers is likely to contribute to delayed identification and treatment of girls with ADHD. Teachers are likely to benefit from more training about the different presentations of ADHD and the long-term outcomes of multimodal treatment.