The Gendered Role of Anxiety in Delayed ADHD Diagnosis Among Women

Kellen BRIOT

kellenbriot@gmail.com

Centre Hospitalier Charles Perrens

Ophelie Verwaerde

University of Strasbourg

Manuel BOUVARD

Centre Hospitalier Charles Perrens

Anouck AMESTOY

Centre Hospitalier Charles Perrens

Cedric GALERA

University of Bordeaux

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Abstract

Purpose:Although Attention Deficit/Hyperactivity Disorder (ADHD) has historically been described in male children, its clinical presentation varies across age and gender. As a result, ADHD remains under-recognized in adulthood, particularly among women, often leading to delayed diagnosis. This study aimed to examine the association between gender and time to ADHD diagnosis in adulthood, while accounting for established influencing factors, including psychiatric comorbidities.

Methods:Data were collected at a referral adult ADHD center in Bordeaux, France. Adults recently diagnosed with ADHD in adulthood completed a self-report questionnaire. The primary outcome was the duration between first psychiatric consultation and ADHD diagnosis. Associations with self-identified gender (woman, man, non-binary) were examined while adjusting for socio-demographic characteristics, ADHD presentation and treatment, comorbidities, age, and prior childhood mental health care.

Results:The sample included 187 adults with a confirmed ADHD diagnosis. Most participants reported functionally impairing symptoms beginning in childhood. Diagnostic delay was significantly associated with gender and comorbid anxiety disorders. Women and non-binary individuals experienced substantially longer delays compared to men. After adjustment for age and anxiety, women were diagnosed on average four times later than men, while non-binary individuals experienced delays approximately three times longer. Women with comorbid anxiety exhibited the longest delays, with a mean duration exceeding seven years.

Conclusion:These findings highlight a gender-related diagnostic delay in adult ADHD, strongly influenced by anxiety comorbidity. Improving diagnostic accuracy requires gender-sensitive clinical approaches, including systematic exploration of childhood symptoms and consideration of ADHD screening in women presenting with anxiety.

INTRODUCTION

Delayed diagnosis of Attention-Deficit/Hyperactivity Disorder (ADHD) significantly impacts daily functioning and increases the risk of developing psychiatric comorbidities (Sobanski 2006; Choi et al. 2022). Although two-thirds of individuals continue to experience symptoms into adulthood (Faraone et al. 2006), ADHD remains underrecognized in adults, including within the medical community. Indeed, diagnosis in adulthood can be complex, requiring a thorough assessment of current symptoms as well as their expression during childhood (Leffa et al. 2022).

The diagnostic trajectories of individuals with ADHD are frequently marked by the potential for underdiagnosis and research has already identified various factors that influence the diagnosis of children, including ADHD subtypes, socioeconomic status, cultural background, and comorbidities (Tam et al. 2025). These factors likely continue to affect diagnostic timing in adults. Educational level may reflect both access to care and an individual's ability to compensate for symptoms, while socioeconomic status may influence availability of medical or psychological support. Given the evolving clinical

presentation across the lifespan, it is essential to interpret the symptomatology by taking into account both the compensatory strategies that adults with ADHD may deploy and the impact of these adaptations in their functioning (McCarthy et al. 2018; Hutt Vater et al. 2024). Additionally, disparities in diagnostic awareness across generations may be a contributing factor, a heightened recognition of the condition is higher today than it was a decade ago. Finally, persistent stigma and the misconception that ADHD is a childhood-only disorder may discourage many adults from seeking assessment.

Initial misdiagnoses, often attributing symptoms to comorbid mood or anxiety disorders, can significantly delay the accurate identification and treatment of ADHD (Biederman and Faraone 2004). In adults, diagnostic delay is multifactorial; however, co-occurring conditions, particularly anxiety and mood disorders, play a critical role in complicating the diagnostic process. Symptom overlap between ADHD and anxiety disorders (such as restlessness, concentration difficulties, and executive dysfunction) frequently leads to misdiagnosis or diagnostic overshadowing (Koyuncu et al. 2022). Moreover, individuals with anxiety often internalize their distress, masking more overt signs of ADHD and further hindering clinical recognition. This phenomenon is particularly prevalent among women. First, anxiety is much more prevalent in the general female population, nearly twice as prevalent in women compared to men ("Global, Regional, and National Burden of 12 Mental Disorders in 204 Countries and Territories, 1990–2019" 2022). Second, women are frequently engaged in masking behaviors (strategies aimed at concealing or compensating for cognitive and behavioral difficulties to conform to social expectations), a phenomenon that is often shaped by cultural and societal expectations regarding emotional expression and gender roles. Similar to the concept of "camouflaging" in autism, these behaviors in ADHD may include over-preparation, social mimicry, emotional suppression, and heightened self-monitoring (van der Putten et al. 2024). While such strategies can be adaptive in the short term, they may obscure the presence of ADHD and contribute to emotional exhaustion, heightened anxiety, or depressive symptoms (Wicherkiewicz and Gambin 2024), thereby further complicating the diagnostic process.

Consequently, emerging research on sex differences in neurodevelopmental disorders increasingly highlights that ADHD may present differently depending on gender. While the male-to-female diagnostic ratio is approximately 3:1 during childhood, this gap narrows to nearly 1:1 in adulthood (Solberg et al. 2018), suggesting that many girls remain undiagnosed during early developmental stages. Women are more likely to exhibit predominantly inattentive symptoms (such as distractibility or difficulties with organization) which are less overt and therefore less likely to trigger clinical concern or referral (Williamson and Johnston 2015). Despite clear signs of executive dysfunction and inattention, girls and women with ADHD are frequently overlooked for further assessment and may engage, either consciously or unconsciously, in masking behaviors to align with social expectations (Quinn and Madhoo 2014). These compensatory strategies are often psychologically burdensome and delayed diagnosis in women has been associated with elevated psychological vulnerability, including lower self-esteem and a heightened risk of anxiety and depression (Attoe and Climie 2023). A recent meta-analysis reported significantly higher rates of anxiety, depression, bipolar disorder, and substance use among adults with ADHD compared to the general population, with notable sex-specific trends: women were more likely to

experience mood and anxiety disorders, while men exhibited higher rates of substance use (Hartman et al. 2023).

The underrecognition of ADHD in adult women, especially in the presence of comorbid conditions, highlights the impact of gender constructs, diagnostic bias, and socially shaped symptom presentation. In this context, the present study aims to investigate the relationship between gender and the time required to obtain an ADHD diagnosis in adulthood, taking into account key influencing factors such as comorbidities.

METHOD

Study Design

Data for this study were drawn from a mixed-methods descriptive study conducted between March 2023 and June 2024 among adults diagnosed with ADHD. Participants were recruited from the specialized ADHD center at Bordeaux Hospital in France. We included individuals who had been diagnosed with ADHD by a psychiatrist specialized in the condition at the center after the age of 18, or who had been referred to the center by another psychiatrist for medication management. All diagnoses were confirmed using the DIVA questionnaire and the DSM-5 criteria. Self-report questionnaires regarding participants' diagnostic pathways were sent via email. These questionnaires were anonymous, and all participants gave informed consent after being briefed by their psychiatrist.

Participants

A total of 368 questionnaires were collected, of which 187 contained sufficient detail to be included in the analysis. For further information regarding sampling, data collection procedures, and questionnaire design, see Verwaeld et al. (in press). A declaration of compliance with the CNIL (Commission Nationale de l'Informatique et des Libertés) was made under reference 2232896 v 0. The study protocol was reviewed by the Comité de Protection des Personnes (CPP), which issued a waiver and confirmed that formal submission through the declaration system was not required.

Variables

Sociodemographic information was self-reported and included gender (categorized as women, men, and non-binary persons), educational attainment, and current employment status. Clinical data included ADHD subtype (predominantly inattentive, hyperactive-impulsive, or combined type) and co-occurring psychiatric conditions (anxiety and depressive disorders, addictions, bipolar disorder, autism spectrum disorder, and personality disorders). These data were communicated to the patient by the psychiatrist at the time of diagnosis. To be considered as a relevant comorbidity, it had to be stable during the diagnosis pathway, validated by the psychiatrists and/or with associated medications. In addition, participants reported the age at which they first perceived their symptoms as impairing, the age of their first psychiatric consultation in adulthood, and the age at ADHD diagnosis. Information regarding any psychological or psychiatric support received during childhood was also collected. Diagnostic delay was

calculated as the time between the first psychiatric consultation in adulthood and the formal ADHD diagnosis.

Statistical Analysis

All statistical analyses were conducted using SPSS version 26.0 (IBM SPSS Statistics, IBM Corporation, Chicago, IL). A significance threshold of $p < 0.05$ was applied throughout.

We first performed a descriptive analysis of the full sample of 187 participants, reporting means (M) and standard deviations (SD) for continuous variables, and counts (N) and percentages (%) for categorical variables (see Table 1). To explore potential covariates involved in the timing of the ADHD diagnostic process, we performed a series of bivariate analyses. We examined the relationship between diagnosis delay (in years) and a range of variables known to influence ADHD presentation or diagnostic challenges (e.g., age at diagnosis, gender, ADHD subtype, comorbidities...). Given unequal group sizes and the non-normal distribution of variables (assessed using the Shapiro-Wilk test and visual inspection of histograms and Q-Q plots), we employed non-parametric statistical tests. Spearman's rank-order correlation and the coefficient of determination (ρ^2) were used for pairs of continuous variables. For associations between categorical and continuous variables, we used the Mann-Whitney U tests or Kruskal-Wallis tests, alongside point-biserial correlation coefficients (r_{pb}). Effect sizes, including the eta squared (η^2) and R^2, were estimated. Post-hoc comparisons between gender groups (women, men and non-binary persons) were performed using Bonferroni-adjusted tests to assess differences in diagnosis delay.

Subsequently, we used a Generalized Linear Model (GLM) with a Gamma distribution and a logarithmic link function to examine the effects of gender and comorbid anxiety disorders on diagnosis delay, while controlling for age at diagnosis to account for potential confounding effects.

To further investigate gender-related differences in ADHD expression and its consequences, we conducted Chi-square or Fisher's exact tests as appropriate, with Bonferroni correction applied for multiple comparisons. Additionally, we created four subgroups based on the intersection of gender and presence of anxiety disorders. A GLM was applied to assess differences in diagnosis delay across these groups, adjusted for age at diagnosis, with post-hoc corrections for multiple comparisons.

RESULTS

The sample comprised 187 adults with a formal ADHD diagnosis. The majority presented with the inattentive subtype (60%), followed by the combined subtype (38%), and a small proportion with the hyperactive-impulsive subtype (2%). The mean age at diagnosis was 32.7 years (SD = 9.5), following a diagnosis delay (the time between the first psychiatric consultation and the formal diagnosis) of approximately 4.3 years (SD = 6.1). Participants identified as 56% women, 38% men, and 6% non-binary. Most had attained a graduate or postgraduate level of education (72%), with 16% currently students, and 68% employed. More than half of the sample reported comorbid conditions, with anxiety and depressive

disorders being the most prevalent, affecting 41% of participants. Additionally, 75% of the sample received methylphenidate treatment following their ADHD diagnosis. The average age at which participants first perceived their symptoms as disabling was approximately 11.9 years. Only 21% reported having received psychiatric or psychological support during childhood.

Diagnosis delay across gender groups was significantly different (Kruskal-Wallis tests ; p = <0.001). The significant difference remained in pairwise comparisons between men and both women (*adjusted p* <0.001) and non-binary individuals (*adjusted p* = 0.01), but not between women and non-binary participants (*adjusted p* = 0.98). In contrast, diagnosis delay did not differ significantly according to ADHD subtype or employment status. No significant associations were found between diagnosis delay and level of education (point-biserial correlation r_{pb} = 0.03, η^2 = 0, p = 0.95), childhood psychological support (r_{pb} = −0.18, η^2 = 0.03, p = 0.17), or methylphenidate treatment (r_{pb} = −0.08, η^2 = 0.01, p = 0.06) (see Table 1). A positive but weak correlation was observed between diagnosis delay and age at diagnosis (Spearman's ρ = 0.18, R^2 = 0.03, p = 0.02), whereas no significant correlation was found with age at first disabling symptoms (ρ = −0.12, R^2 = 0.01, p = 0.09). The relationship between diagnosis delay and the presence of any comorbidity approached but did not reach statistical significance (ρ = 0.19, R^2 = 0.04, p = 0.05). While most individual conditions showed no significant association with diagnosis delay (p > 0.05), a significant difference was detected for anxiety disorders, despite a very low correlation (ρ = 0.20, R^2 = 0.04, p = 0.02).

No significant differences between the three gender groups were found concerning educational level, employment status, ADHD subtype, mean age of first disabling ADHD symptoms or mean age at diagnosis. However, diagnosis delay differed significantly across gender groups (p = 0.001), with men experiencing a significantly shorter delay (mean ≈ 1.6 years) compared to women (≈ 6 years) and non-binary individuals (≈ 5 years), a difference that remained significant after pairwise Bonferroni-adjusted comparisons. Regarding comorbidities, particularly anxiety disorders, these were more frequently reported by women (62% total comorbidities; 53% anxiety) and non-binary participants (73% total comorbidities; 46% anxiety), compared to men (39% total; 24% anxiety), with p = 0.02 for all comorbidities and p = 0.001 specifically for anxiety disorders. No significant gender differences were observed for other comorbidities. However, after Bonferroni correction for multiple comparisons, only the prevalence of co-occurring anxiety disorders remained statistically significant, with women and non-binary participants showing higher rates compared to men (*adjusted p* = 0.02).

To accurately assess the impact of gender on diagnosis delay, other variables identified as covariates via bivariate correlations — namely anxiety disorders, and age at diagnosis — were included in the final model, as they could confound the interpretation of diagnosis delay in adults with ADHD.

Then, a Generalized Linear Model (GLM) with a Gamma distribution and a logarithmic link function was used to assess the effect of gender on diagnostic delay, controlling for anxiety comorbidities and age at diagnosis. The full model explained 50% of the variance (McFadden's pseudo R^2 = 0.50, $\chi^2[4]$ = 60.2, p < 0.001). No significant interactions were found between variables, indicating no multicollinearity. The

main effect of gender was significant (Wald $\chi^2[2] = 29.49$, $p < 0.001$). Post-hoc analyses showed that, controlling for anxiety comorbidities and age at diagnosis, men had a significantly shorter diagnostic delay compared to women and non-binary persons, with an estimated reduction of 63%. This corresponded to a 3.8-year shorter diagnostic delay for men compared to women ($\beta = -0.99$, $p < 0.001$) and 3.2 years shorter compared to non-binary people ($\beta = -0.98$, $p = 0.01$). No significant difference was observed between women and non-binary people ($\beta = 0.01$, $p = 0.98$). Across gender groups, the presence of anxiety disorders was associated with a 30% longer diagnostic delay, corresponding to approximately one year later diagnosis ($\beta = 0.35$, $p = 0.04$). Additionally, each one-year increase in age at diagnosis was associated with a small decrease in diagnostic delay ($\beta = -0.01$, $p < 0.001$). Figure 1 illustrates the mean diagnostic delay stratified by gender and anxiety comorbidity status, adjusted for age at diagnosis.

Given the significant differences in diagnostic delay between men and women, and the association between gender and anxiety disorders, the sample was divided into four groups based on gender and presence of anxiety disorders (AD) (“women with AD,” “women without AD,” “men with AD,” “men without AD”). Controlling for age at diagnosis, diagnostic delay was significantly associated with this combined gender*AD factor (Wald $\chi^2[3] = 41.24$, $p < 0.001$). Notably, women with anxiety disorders experienced a diagnostic delay approximately four times longer than men without AD, corresponding to an average of 5 years more than men ($\beta = 1.39$, $p < 0.001$), and 1.25 times longer than men with AD or 4 years more ($\beta = 0.82$, $p = 0.01$), i. e. 7 years. Women without AD had a diagnostic delay about three times longer than men without AD ($\beta = 1.11$, $p < 0.001$), but with no significant difference compared to men with AD ($\beta = 0.50$, $p = 0.13$).

Age at diagnosis remained significantly associated with diagnostic delay, though with a minimal effect ($\beta = -0.01$, $p < 0.001$). Figure 2 illustrates how anxiety comorbidity differentially influences diagnostic delay between men and women with ADHD.

Figures 3 and 4 show mean diagnostic delay by age at ADHD diagnosis for men and women, with and without anxiety disorders by gender. They illustrate how diagnostic delay remains relatively constant across age for men, while it increases after approximately 25 years of age for women. When accounting for anxiety disorders, the increase in diagnostic delay by age among women appears linked to this associated anxious symptomatology.

Table 1 : Description of the sample and bivariate correlations between diagnosis delay and the different variables

	N (%)	r_{pb}	*p*	η^2
Gender			**<0.001****	
Male	72 (38 %)			
Female	104 (56 %)			
Non binary persons	11 (6 %)			
Level of education : graduate and postgraduate	134 (72 %)	0.03	0.95	0
Employment			0.26	
Unemployed	29 (16 %)			
Students	30 (16 %)			
Employed	128 (68 %)			
ADHD type			0.66	
Inattentive	113 (60 %)			
Hyperactive-Impulsive	2 (2 %)			
Combination	72 (38 %)			
Comorbidity	102 (55 %)	0.19	0.05	0.04
Anxiety disorders	77 (41 %)	0.20	**0.02***	0.04
Depressive disorders	40 (23 %)	0.22	0.14	0.02
Addictions	7 (4 %)	0.05	0.89	0
Bipolar disorders	10 (5 %)	0.08	0.96	0.01
Personality disorders	5 (2.7%)	0.01	0.62	0
ASD	10 (5 %)	0.14	0.12	0.02
Childhood support	40 (21 %)	-0.18	0.17	0.03
Methylphenidate traitement	140 (75 %)	-0.08	0.06	0.01
	M (SD)	*ρ*	*p*	R^2
Age at first disabling symptoms	11.88 (8.47)	-0.12	0.09	0.01
Age at diagnosis	32.71 (9.55)	0.18	**0.02***	0.03

N : count, % : percentage, M : mean, SD : standard deviation, p : p value, rpb : punctual biserial correlation coefficient, η2 : ratio correlation coefficient, *ρ* : coefficient of correlation of Spearman, R^2 : coefficient of determination. * = p < 0,05, ** = p < 0,01

Table 2 : Post-hoc Paired Comparisons with the Bonferroni correction between diagnosis delay and the gender groups

Adjusted p	Male	Female	Non binary
Male	-	**<0.001****	**0.02***
Female	-	-	1
Non binary	-	-	-

* = p < 0,05, ** = p < 0,01

Table 3 : Comparisons between gender groups and the different variables

	Male	Female	Non binary	
	N (%)	N (%)	N (%)	*p*
Total	72 (38.5 %)	104 (55.6 %)	11 (5.9%)	
Level of education : graduate and postgraduate	49 (68.1 %)	79 (76 %)	6 (54.5 %)	0.08
Employment				0.06
Unemployed	12 (16 %)	12 (11 %)	5 (45.5 %)	
Students	12 (16 %)	16 (15 %)	2 (18 %)	
Employed	48 (67 %)	76 (73 %)	4 (36 %)	
ADHD type				0.07
Inattentive	47 (65 %)	57 (55 %)	9 (82 %)	
Hyperactive-Impulsive	2 (2.8 %)	0	0	
Combination	23 (32 %)	47 (45 %)	2 (18 %)	
Comorbidity	28 (38.9 %)	64 (61.5 %)	8 (72.7 %)	**0.02***
Anxiety	17 (23.6 %)	55 (52.9 %)	5 (45.5 %)	**0.001****
Depression	12 (16 %)	28 (27 %)	3 (27 %)	0.27
Personnality disorders	2 (2.8 %)	4 (3.8 %)	1 (9 %)	0.51
Addictions	5 (7 %)	4 (3.8 %)	1 (9 %)	0.39
Bipolar disorders	5 (7 %)	6 (5.8 %)	1 (9 %)	0.50
ASD	1 (1.4 %)	6 (5.8 %)	3 (27 %)	0.11
Childhood support	12 (16.7 %)	26 (25.1 %)	2 (18.2 %)	0.75

	M (SD)	M (SD)	M (SD)	*p*
Age at first disabling symptoms	12.04 (8.47)	12 (8.63)	9.82 (7.37)	0.52
Age of diagnosis	32.07 (9.08)	33.51 (9.90)	29.27 (9.02)	0.34
Delay of diagnosis	1.64 (2.13)	6 (7.35)	5.09 (5.77)	**<0.001****

N : count, % : percentage, M : mean, SD : standard deviation, p : p value, * = p < 0,05, ** = p < 0,01

Table 4 : p values adjusted for multiple comparisons using the Bonferroni correction

	Male/Female	Male/Non binary	Female/Non binary
Comorbidity	0.07	0.19	0.69
Anxiety disorders	**0.02***	0.06	0.84
Delay of diagnosis	**<0.001****	**0.02***	1

* = p < 0,05, ** = p < 0,01

Table 5 : Associations between diagnosis delay and gender and anxiety disorders, adjusted on age at diagnosis

	β Coefficients for Delay at ADHD Diagnosis	IC 95% β	1-exp (β)	p
Male vs Female	-0.99	[-1.71 ; -0.24]	0.63	**<0.001****
Male vs Non binary	-0.98	[- 1.71 ; -0.25]	0.63	**0.01****
Female vs Non binary	0.01	[-0.71 ; 0.73]	-0.01	0.98
Anxiety disorders	-0.35	[-0.70 ; -0.01]	0.30	**0.04***
Age at diagnosis	0.01	[-0.01 ; 0.03]	0.01	**<0.001****

Adjusted for Gender, Anxiety disorders and Age at diagnosis, * = p < 0,05, ** = p < 0,01

Table 6 : Associations between diagnosis delay and Gender*Anxiety disorders groups

	Women without anxiety disorders		Women with anxiety disorders		Men without anxiety disorders		Men with anxiety disorders	
	β ; exp (β)	p	β ; exp (β)	p	β ; exp (β)	p	β ; exp (β)	p
Women without anxiety disorders	-		-0.31 ; 0.73	0.19	1.11 ; 3.04	**<0.001****	0.50 ; 1.65	0.13
Women with anxiety disorders	-	-	-		1.39 ; 4.01	**<0.001****	0.82 ; 2.27	**0.01***
Men without anxiety disorders	-	-	-	-	-		-0.62 ; 0.54	0.06
Men with anxiety disorders	-	-	-	-	-	-	-	

Adjusted for Gender*Anxiety disorders and Age at diagnosis. β = β Coefficients for Delay at ADHD Diagnosis, p = p-value, * = p < 0,05, ** = p < 0,01

DISCUSSION

This study aimed to identify factors influencing the time to ADHD diagnosis in adults, focusing on gender, socio-demographic variables, and comorbidities. Gender emerged as a significant independent predictor, with women and non-binary individuals experiencing significantly longer delays in diagnosis compared to men. This finding aligns with previous research indicating that ADHD in females is often underdiagnosed or misdiagnosed (Hinshaw et al. 2022). Such delays may stem from gender-specific symptom presentations, as women frequently exhibit less overt disruptive behaviors, increasing the risk of missed or incorrect diagnoses. Research suggests that hormonal factors may be key to understanding the manifestation of ADHD in females (Nussbaum 2012). It is also plausible that societal expectations regarding gender roles may further influence symptom interpretation, with women more commonly diagnosed with internalizing disorders such as anxiety or depression rather than ADHD. Camouflaging, particularly among women, seem to be an essential consideration in the recognition and support of neurodevelopmental conditions, including ADHD.

In examining comorbidities, anxiety disorders were associated with longer diagnostic delays across gender groups. Notably, the interaction between gender and anxiety disorders revealed a significant effect: women with comorbid anxiety experienced markedly longer delays compared to men. This supports the notion that comorbid anxiety complicates the diagnostic process, with ADHD symptoms often overshadowed by those of anxiety. Such symptom overlap may hinder accurate identification of ADHD, particularly in women (Hinshaw et al. 2022). The lack of significant associations for other

comorbidities suggests that their symptom profiles may differentially impact diagnostic delays and merit closer examination.

Age at diagnosis was positively, though weakly, correlated with diagnostic delay, indicating that older individuals tend to experience longer timelines before receiving an ADHD diagnosis. This finding aligns with previous research suggesting that many adults with ADHD develop coping strategies over time that mask core symptoms, or misattribute them to conditions such as anxiety or depression, contributing to delayed recognition (Faraone et al. 2006). Additionally, improvements in medical knowledge and public awareness of ADHD in recent years may partly explain why younger cohorts are more likely to receive earlier diagnoses.

Implications for Clinical Practice

Gender differences in time to diagnosis highlight the need for gender-sensitive diagnostic practices. Clinicians should be aware that ADHD may manifest differently in women and non-binary individuals compared to men. Notably, they must move beyond the outdated behavioural classification of ADHD and recognise the more nuanced and internalised presentations commonly seen in females. As misdiagnosis with internalizing disorders, such as anxiety or depression, can contribute to diagnostic delays due to overlapping symptomatology, clinicians must be trained to consider ADHD in patients with comorbid psychiatric conditions, particularly those with a history of mood or anxiety disorders. Given the diagnostic complexity in adults with comorbidities, a multidisciplinary approach—including psychological assessment and a detailed history of symptom onset—may help reduce delays. Training programs should emphasize the importance of considering ADHD in adults presenting with attentional or executive difficulties, rather than attributing these symptoms solely to comorbid conditions.

These findings underscore the importance of early recognition of ADHD symptoms, particularly because adults who may develop coping mechanisms that can mask core symptoms. Clinicians should be encouraged to screen for ADHD in adults with longstanding mood or anxiety disorders, especialy when there is evidence of early-life difficulties. Systematic screening for neurodevelopmental disorders is essential to better understand patient functioning and to distinguish the impact of ADHD from that of frequently co-occurring traumatic experiences.

Consequently, appropriate pharmacological and psychological interventions are likely to enhance long-term outcomes in women with ADHD by enhancing daily functioning and reducing comorbidities as well as the broader negative impact on quality of life (Young et al. 2011).

Limitations of the Study

This study relied on retrospective self-report data, which introduces potential biases. Notably, representation bias may affect the reported timing of comorbidity onset. For example, participants with current depression might retrospectively attribute symptoms to earlier periods, including initial consultations, despite later actual onset. Additionally, self-reported diagnoses and treatments are

declarative and prone to inaccuracies and memory bias. Likewise, recalled childhood symptoms may not accurately reflect childhood experiences. While longitudinal studies could mitigate these biases, they are challenging to implement, especially in research on delayed diagnoses.

The sample was limited to individuals who had accessed clinical care, specifically those able to consult the specialist department at Bordeaux hospital. Similar to our sample, most studies focus on college students, who may be higher functioning and not fully representative of age-matched peers with ADHD outside academic settings (Fedele et al. 2012). Although education level and employment status were included as variables, they did not significantly influence time to diagnosis in this study. This unexpected finding may reflect recruitment bias inherent in specialized urban hospital consultations, where individuals with lower education or unemployment may have reduced healthcare access and less likelihood to seek screening. Such selection bias limits the generalizability of the results to those with more complex presentations or requiring medication. For instance, in France, Methylphenidate prescriptions for adults are restricted to cases with significant functional impairment despite environmental and psychotherapeutic interventions (Haute Autorité de Santé, n.d.). Although a diverse socio-economic representation was present in the sample, the economical status and the rural or urban living were not interpretable with our questionnaire and future studies should aim to include a broader, more diverse sample to improve the generalizability of the findings across different demographics. Moreover, the sample size was relatively small and consequently limits generalizability.

Future Directions

The delayed diagnosis of ADHD in women, particularly in the context of frequent comorbid conditions, raises critical questions at the intersection of mental health, gender construct, and diagnostic bias. Historically viewed as a predominantly male and childhood disorder, ADHD in adult women remains significantly underrecognized, particularly when anxiety coexists and obscures or mimics core symptoms. This diagnostic invisibility prompts a broader reflection on how social and medical norms shape the identification of cognitive disorders in women. It also calls into question whether current diagnostic criteria adequately account for gender-specific and internalized presentations of ADHD. Ensuring earlier and more accurate diagnosis requires a critical reassessment of current diagnostic frameworks and their ability to capture the full spectrum of adult ADHD presentations, particularly in anxious women. These challenges underscore the need for more inclusive, nuanced, and gender-sensitive clinical approaches.

Research on women diagnosed with ADHD as adults is limited but the impact of biological sex differences versus the impact of socially constructed gender differences needs further investigation. Future research should explore the underlying mechanisms that drive gender differences in diagnosis time, such as the role of clinician biases, cultural expectations, and gendered symptom expression. Longitudinal studies that track the diagnostic process over time in different age groups could provide further insight into how age impacts ADHD diagnosis in adults by gender. It could be necessary to explore whether these gender differences persist across different cultural contexts, as gender norms

and societal expectations may influence the recognition and diagnosis of ADHD. Examining how gender bias in clinicians' diagnostic practices contributes to these delays could provide valuable insights.

Finally, anxiety may paradoxically act as a compensatory mechanism by temporarily enhancing executive functioning. Moderate anxiety levels can foster adaptive behaviors such as increased vigilance, improved task planning, and urgency-driven action, while also inhibiting impulsivity through greater anticipation of consequences. Although this mechanism supports short-term functioning, it poses risks for long-term mental health. Understanding how anxiety modulates ADHD functioning, particularly over time, remains an important area for future research. Furthermore, focusing on camouflaging in adults with ADHD, including potential consequences for late diagnoses and mental health seems a promising direction. While these compensatory strategies may be functionally adaptive, they often carry significant psychological costs.

CONCLUSION

Gender significantly influenced the time to ADHD diagnosis, with women and non-binary individuals experiencing respectively four and three times longer delays than men, regardless of comorbidities. When accounting for the interaction between gender and comorbid anxiety, women with anxiety experienced particularly pronounced diagnostic delays compared to men.

To reduce diagnostic delays, clinicians should assess the early developmental trajectory of ADHD symptoms and consider using ADHD-specific screening tools in women presenting with attentional or executive difficulties, even when anxiety is prominent. Developing tools to detect symptom masking may further improve diagnostic accuracy. These strategies could help reduce the risk of missed or delayed diagnoses in populations especially vulnerable to diagnostic oversight. Ultimately, systemic changes are needed—not only to ensure timely and accurate diagnosis—but also to promote better long-term outcomes, improved quality of life, and equitable access to care.

Declarations

Conflict of interest statement

Declarations. Consent to participate: written informed consent were derived from participants using the online questionnaire. Clinical trial number: not applicable. Ethics declaration : The research was conducted in accordance with the Declaration of Helsinki. Ethics approval: The study protocol was approved by the french research ethics committee CPP Ouest IV. Competing interests: All authors declared no competing interests. Funding Declaration : The authors reported no funding.

Author Contribution

Kellen BRIOT wrote the main manuscript text, Ophelie Verwaerde collected the clinical data, Cedric Galera supervised. All authors reviewed the manuscript.

Data Availability

The data from this study are available upon authorization from the Bordeaux ADHD Reference Center and can be obtained upon request.

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Figures

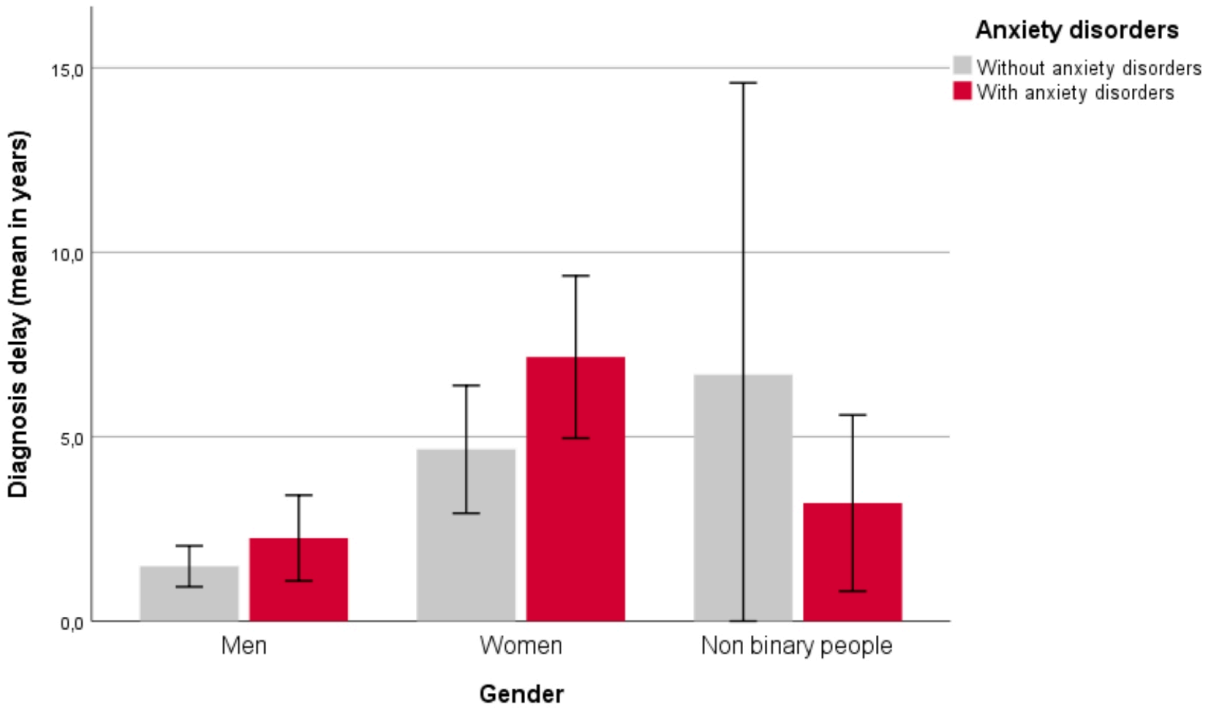

Figure 1

Mean age of diagnosis delay stratified by gender, with or without anxiety comorbidity. Adjusted on age at diagnosis. CI 95 %.

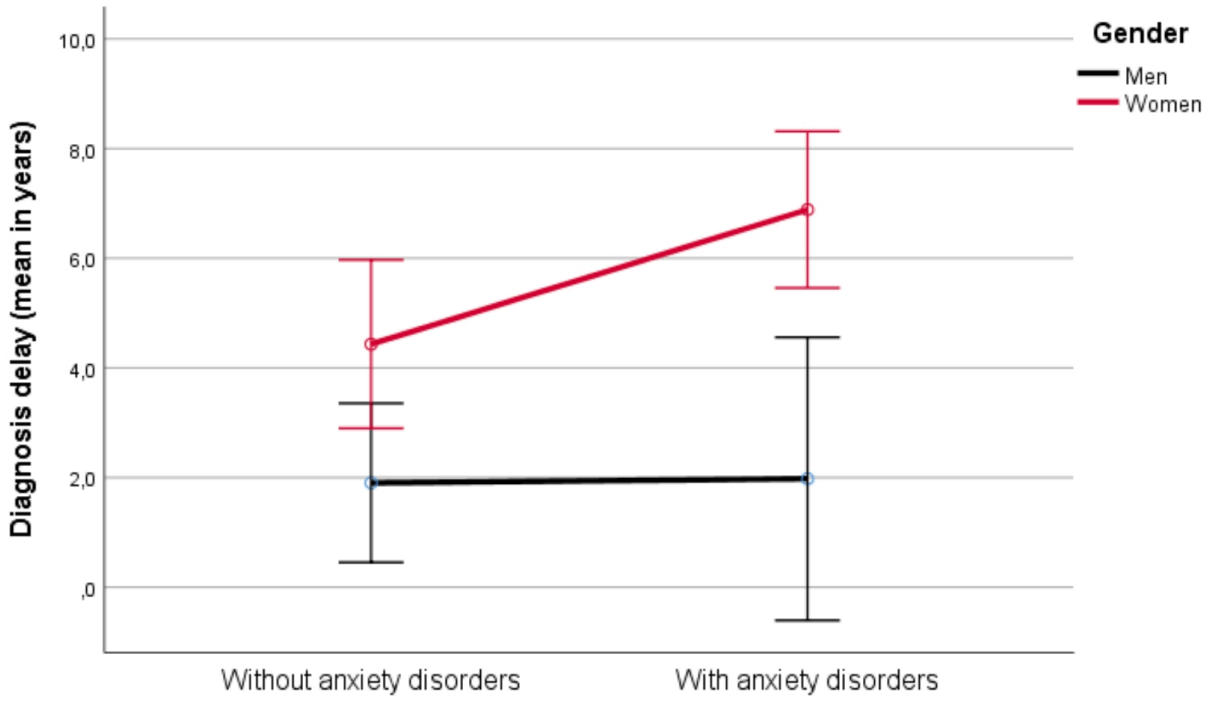

Figure 2

Mean diagnosis delay of ADHD by anxiety disorder's diagnosis for male (black line) and women (red line), adjusted on age at diagnosis. CI 95 %.

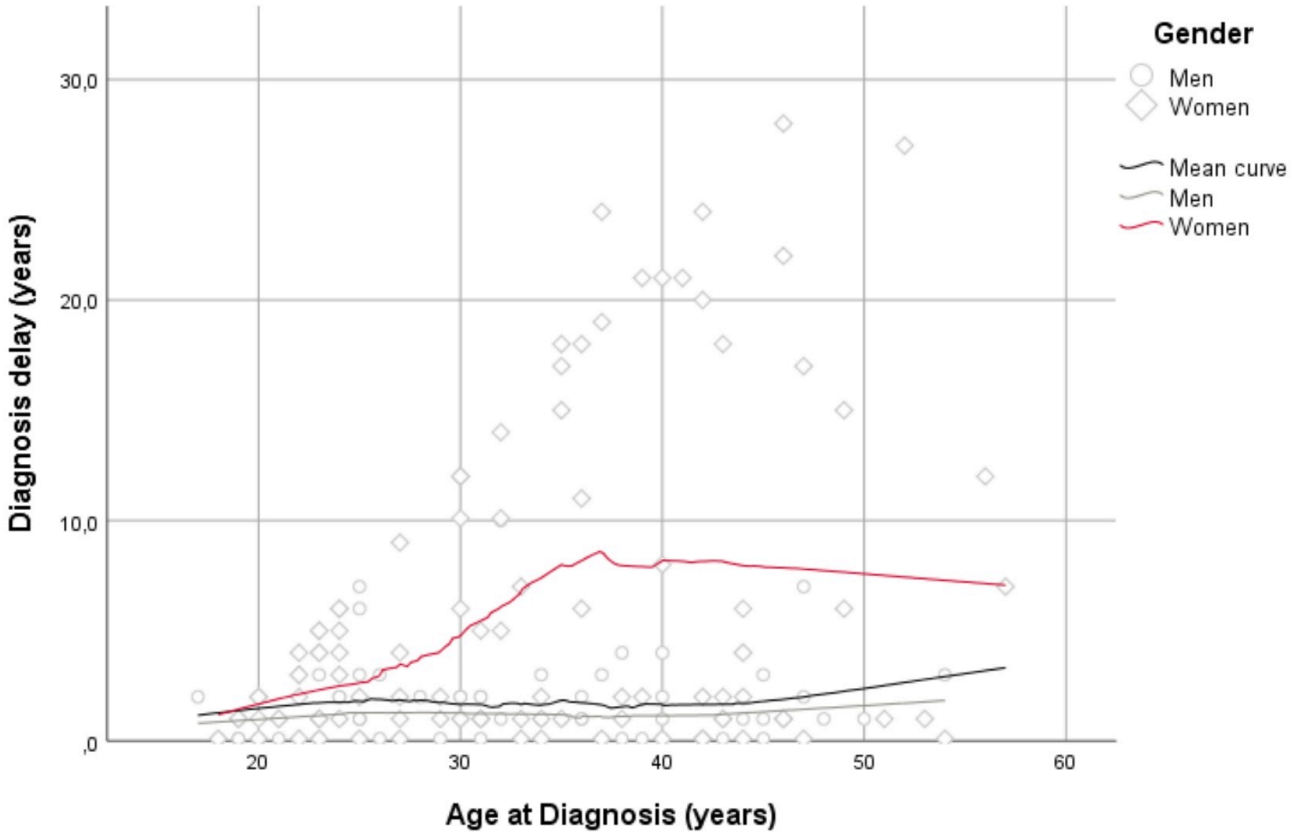

Figure 3

Mean diagnosis delay by age at ADHD diagnosis for men and women.

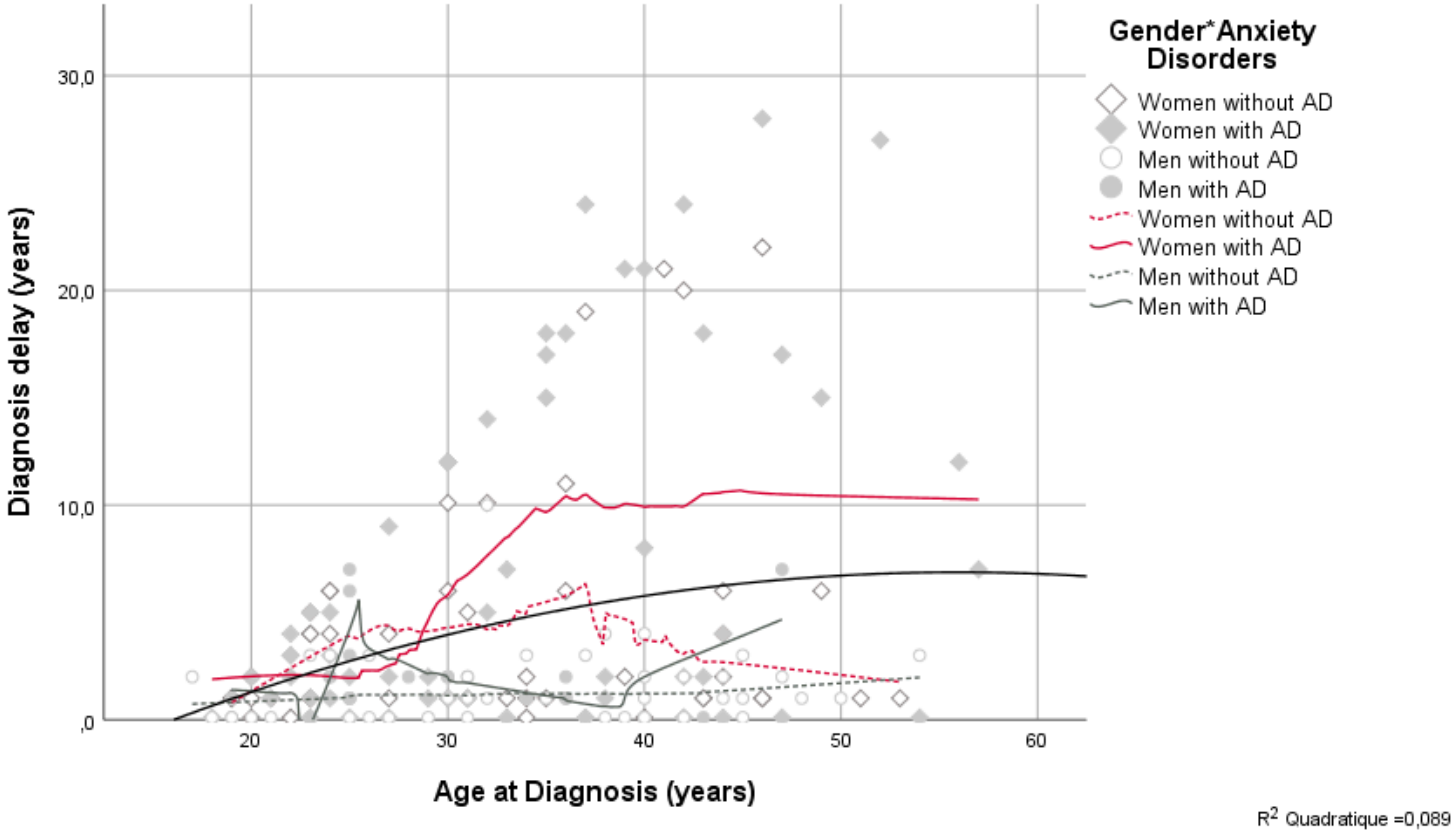

Figure 4

Mean diagnosis delay by age at ADHD diagnosis for men and women, with or without anxiety disorders.

Supplementary Files

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