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Influence of attention deficit hyperactivity disorder symptoms on quality of life and functionality in adults with eating disorders

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Introduction. Eating disorders (ED) have been linked to attention deficit hyperactivity disorder (ADHD) because they present some symptoms in common. The aim of this study was to explore the influence on ED of symptoms suggestive of adult ADHD and how these symptoms affect the clinical presentation of adult patients. A further aim was to assess the impact of ADHD symptoms on quality of life and feelings of disability.

Method. Participants comprised 89 patients diagnosed with ED according to DSM-5 criteria. The ASRS v.1.1 was used to divide them into two groups depending on whether they presented symptoms suggestive of adult ADHD or not, using a cut-off point of 4. Subsequently, we administered the EAT-40, BITE, BIS-11, SDI and Q-LES-Q scales.

Results. Patients diagnosed with ED who also had symptoms suggestive of ADHD presented a higher number and severity of eating disorder symptoms, greater motor and cognitive impulsivity, increased dysfunction and a poorer quality of life.

Conclusions. The results indicate that on average, patients with eating disorders and ADHD symptoms presented more and worse eating disorder symptoms, greater impulsivity, increased dysfunction and a poorer quality of life. It is therefore important to assess the presence of ADHD symptoms in patients with ED due to the implications for prognosis and progression.

Keywords: ADHD, ED, Attention deficit hyperactivity disorder, Eating disorder, Functionality, Quality of life

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Influencia de los síntomas del trastorno por déficit de atención con hiperactividad en adultos en la calidad de vida y funcionalidad de los trastornos de conducta alimentaria

Introducción. Los trastornos de conducta alimentaria (TCA) se han relacionado con el trastorno de déficit de atención e hiperactividad (TDAH), ya que algunos síntomas son comunes. Este estudio tiene como objetivo explorar la influencia de los síntomas sugestivos de TDAH del adulto en los TCA y de cómo estos síntomas influyen en la clínica y presentación de los pacientes en la vida adulta. También se pretende valorar la repercusión de los mismos en la calidad de vida y los sentimientos de discapacidad.

Metodología. Incluimos 89 pacientes diagnosticados de TCA según criterios DSM-5. Se empleó la ASRS v.1.1. para dividirlos en dos grupos en función de si presentaban clínica sugestiva de TDAH del adulto o no, según un punto de corte establecido en 4. Posteriormente se administraron las escalas EAT-40, BITE, BIS-11, SDI y Q-LES-Q.

Resultados. Los pacientes con diagnóstico de TCA y sintomatología sugestiva de TDAH presentan mayor sintomatología alimentaria y más severa, mayor impulsividad motora y cognitiva, mayor disfunción y peor calidad de vida.

Conclusiones. Los resultados permiten comprobar que los pacientes con TCA y sintomatología de TDAH presentan, por término medio, peor sintomatología alimentaria, de mayor severidad, mayor impulsividad, mayor disfunción y peor calidad de vida. Por tanto, se considera importante evaluar la presencia de síntomas TDAH en pacientes con TCA por las implicaciones en el pronóstico y la evolución.

Palabras clave: TDAH, TCA, Trastorno por déficit de atención e hiperactividad, Trastorno de conducta alimentaria, Funcionalidad, Calidad de vida

INTRODUCTION

Attention deficit hyperactivity disorder (ADHD) and eating disorders (ED) share common psychopathological elements[1-4]. This sometimes hinders diagnosis in the early stages of ED, which may affect progression. The common symptoms most characteristic of the two disorders are impulsivity, hyperactivity and attention deficit[1].

Several studies have linked abnormal eating behaviour patterns during childhood to ADHD, compared with controls, but the literature on the relationship between ADHD and ED is still scarce[4]. Although adult ADHD has attracted increasing research attention in recent years, the results obtained are frequently inconsistent[5]. Nevertheless, the evidence increasingly points to a link between ADHD and ED, especially bulimia nervosa (BN)[4]. This connection between ADHD and ED is based on the finding that patients with greater attention deficit, impulsivity and neuropsychological deficits also present more severe eating disorder symptoms, suggesting that attention deficit is responsible for the severity of eating behaviour[4]. Furthermore, it has been argued that inattention and impulsivity play a role in triggering eating disorders, especially binge eating behaviours[4,6]. Nevertheless, the results are inconsistent. For example, in a small sample of women, Stulz[5] found a weak relationship between severity of ADHD symptoms and severity of ED symptoms.

It has been estimated that patients with ADHD[1,2,7-9] have a threefold higher risk[3] of developing ED (mainly BN and binge eating disorder), especially among women[9,10]. In addition, ADHD in women increases the risk of binge eating and purging but not of restrictive behaviours. However, the specific contribution of ADHD to ED symptoms, and its implications as an additional psychopathology, remains unclear[11]. Binge eating and purging could be indicative of impulsive behaviour in patients with BN, since studies have reported higher scores for impulsivity in patients with BN than in healthy controls[5]. Significant differences in attention deficit have also been found between patients with anorexia nervosa (AN) and BN versus healthy controls. Extreme exercise, an important characteristic of AN, may correspond to the restless or hyperactive behaviour present in ADHD. Binge eating disorder is also characterised by binge eating, impulsivity and a high rate of comorbidity with ADHD[4]. In recent years, ADHD has been linked to obesity, which could be explained by the presence of abnormal eating behaviours such as impulsive bingeing, or the possibility that obesity and ADHD express common neurological dysfunctions, at least in a subset of subjects. However, these results were mainly obtained in retrospective studies[6].

It has been shown that patients with clinical ADHD are more likely to present ED with bingeing, purging and restrictive behaviours, whereas individuals diagnosed with subclinical ADHD (whether the inattentive or hyperactive subtype) are more likely to present subclinical bingeing and purging but not restrictive behaviours[12]. Several studies have indicated that adults with ADHD have a higher prevalence of other comorbid mental disorders compared with the general population[3-5,7,13]. It has also been observed that psychiatric comorbidity may be a marker of more severe ADHD, especially in the combined subtype[5,14]. The presence of comorbid ADHD in patients diagnosed with ED may affect the course of the disease, and therefore the therapeutic approach adopted is of particular importance. It has been suggested that it is crucial to consider a diagnosis of ADHD in initial treatment of ED[15].

Numerous studies have shown that patients with ED have a poorer quality of life than those with other psychiatric disorders or the general population[16,20]. Similarly, many studies have noted the impact of ADHD on patients' quality of life and functionality[21-23]. Bingeing and purging behaviours have been suggested as possible determinants of deterioration in these patients' quality of life[18], in addition to possible psychiatric comorbidities[20] such as major depression, substance use disorders or borderline personality disorder. Various areas of psychosocial functioning also appear to be affected[7,13].

In the present study, we explored the influence on ED of symptoms suggestive of adult ADHD and how these symptoms affect the clinical presentation of patients in adult life. Similarly, we aimed to assess the impact of ADHD symptoms on quality of life and feelings of disability in patients with ED.

METHODOLOGY

Participants

We recruited a sample of outpatients attending an eating disorder outpatient clinic serving an adult population diagnosed with ED and resident in different health areas in the Community of Madrid (Spain). A total of 168 adults attending the outpatient clinic over a period of 4 months were invited to participate in the study and initially gave their consent. Of these, 50 were subsequently excluded because the severity of their symptoms prevented proper assessment, and 29 refused to participate. Thus, the final sample consisted of 89 patients who were receiving treatment and follow-up in line with standard clinical practice for ED. Most patients were female (95.5%), with a mean time from onset of 10.85 years (SD=8.2). Administration of the ASRS v1.1, using a cut-off point of 4 responses with criterion scores suggestive of the existence of adult ADHD,

identified 46 of the 89 participants as presenting significant symptoms suggestive of this disorder and these were therefore included in the group with symptoms of adult ADHD (ADHD group), while the remaining 43 patients without significant symptoms of adult ADHD formed the non-ADHD group. The mean age of subjects in the ADHD group was 32.76 years (SD=9.89) and in the non-ADHD group it was 30.84 years (SD=9.75). Other sociodemographic data defining our sample are listed in Table 1 in the results section.

The inclusion criteria for participation in the study were: confirmed diagnosis of any ED according to the DSM-5[24]; clinical stability at the time of evaluation (absence of symptomatic relapse in the previous 6 months); written informed consent; and aged over 18 years old. The exclusion criteria were: pregnancy; intellectual disability; and a serious medical condition unrelated to ED. This study was approved by the Ethics Committee of the hospital to which the eating disorders clinic was attached.

Assessment tools

We made consecutive use of the following assessment tools validated for use in the Spanish population (information about the psychometric properties of these instruments in the present study is available upon request to the principal author):

- **ASRS-V1.1** (ADHD Self-Report Scale). This is an 18-item self-report questionnaire that screens for adult ADHD. Four criterion score responses were considered suggestive of the existence of adult ADHD. Reliability: the 6-item short-form scale has obtained an internal consistency of 0.68 (0.92 for the full version of 18 items), measured by Cronbach's alpha coefficient. If only the first four items are considered, the alpha increases to 0.75: items 5 and 6 present a very low correlation with the test once excluded from it (0.36 and 0.16, respectively). The test-retest reliability of the reduced version is r=0.74 in a retest at 21 days[25].

- **EAT-40** (Eating Attitudes Test). This is a self-report questionnaire designed to assess common ED symptoms and behaviours which also provides an index of severity of the disorder. It consists of 40 items scored using a 6-point Likert scale. The total score discriminates between people with anorexia and the normal population and between people with bulimia and the normal population, but does not distinguish between people with anorexic or bulimic symptoms[26]. The internal consistency of this instrument is 0.97 and test-retest reliability is 0.96.

- **BITE** (Bulimic Investigatory Test Edinburgh). This is a self-report questionnaire designed to identify subjects who present bulimic symptoms. It consists of 33 items with different response formats depending on the symptoms evaluated. A study by Fonseca-Pedrero et al. (2011) demonstrated that the questionnaire has an invariant structure as regards variables such as age and sex. The internal consistency of the test was 0.95 for the symptom scale and 0.70 for the severity scale[27].

- **BIS-11** (Barratt Impulsiveness Scale, v11). This is a self-report instrument designed to assess cognitive, motor and unplanned impulsivity. It consists of 34 items scored using a 4-point Likert scale. The Spanish validation study obtained a test-retest reliability after two months of 0.89 and an internal consistency of 0.87. A two-dimensional solution was obtained in the factor analysis[28,29].

- **SDI** (Sheehan Disability Inventory). This is a tool to assess psychiatric patients' level of disability. It consists of 5 items on 3 scales: disability, based on the first 3 items that assess the extent to which symptoms interfere with 3 domains of patients' lives; perceived stress, 1 item that assesses the degree to which stressful events and personal problems have interfered with patients' lives since the last visit; and perceived social support, 1 item that assesses the support patients have received with respect to what they needed in the past week. The first 4 items are scored using a 0-10 point Likert scale. Item 5 is scored using a percentage scale where 100% indicates that the patient has received all the support required. The time-frame is the present. The psychometric properties of this instrument support the one-dimensional structure of the test and internal consistency reliability is 0.83[30].

- **Q-LES-Q** (Quality of Life Enjoyment and Satisfaction Questionnaire). This instrument assesses patients' satisfaction and pleasure with their daily lives and is applicable to all types of patient regardless of diagnosis or treatment. It consists of 93 items scored using a 5-point Likert scale, and explores health, mood, work, household activities, class/course assignments, leisure activities, social relationships, general activities, satisfaction with medication and overall satisfaction. The time-frame is the previous week[31]. With regard to reliability, studies have shown that the internal consistency is higher than 0.70[32].

PROCEDURE

We conducted an *ex post facto* cross-sectional study to assess the presence of symptoms suggestive of adult ADHD

in a sample of patients diagnosed with ED, and to determine the impact of these symptoms on their functionality, quality of life and severity of ED. Study participants were assessed by three trained researchers, starting with the collection of sociodemographic and clinical data. Then, we administered the ASRS v1.1 scale to determine the presence of symptoms suggestive of adult ADHD, defining two groups according to the psychometric properties of the test[33]. The sample was thus dichotomised into patients with symptoms suggestive of adult ADHD (ADHD group) and those without such symptoms (non-ADHD group). In addition, all participants were assessed using the EAT-40, BITE, BIS-11, SDI and Q-LES-Qantes scales described above, in order to identify differences between the two groups.

Data analysis

Data were analysed using the "*Statistical Package for the Social Sciences*" (SPSS v.23 for Windows). To study the homogeneity of the two groups as regards sociodemographic and clinical variables, we conducted t tests for independent samples when the dependent variable was quantitative, and χ^2 tests to determine associations between qualitative variables, obtaining Cramer's V for significant results. To study the predictive power of ADHD symptoms for the variables under study, we conducted a simple linear regression analysis, obtaining the coefficient of determination as a measure of the predictive power of the model. The level of statistical significance was α=0.05.

RESULTS

Homogeneity of the two groups

Table 1 gives the results for homogeneity of the groups as regards sociodemographic variables and clinical history.

As can be seen, we found no evidence of differences between the two groups for most of the variables considered in this study. However, there was a significant difference in educational level, with a significantly lower percentage of university students in the ADHD group (χ^2_1 =6.010, p<0.05; V=26). In addition, patients in the ADHD group had a longer history of psychological health care (χ^2_1 =5.233, p<0.05; V=25).

The influence of ADHD symptoms on the clinical severity of ED

Table 2 shows the simple linear regression analysis results obtained using the variable generated after applying the ASRS scale cut-off point for the presence of symptoms suggestive of adult ADHD as an independent variable (details of the test statistics and standard error values are available upon request to the principal author). Considered one by one, the dependent variables were the EAT-40 scores and the BITE and BIS-11 dimensions.

Patients in the non-ADHD group obtained an estimated mean score on the EAT-40 scale of between 28.95 and 44.12 points, whereas those in the ADHD group the score is increased significantly of between 9.19 and 30.30 points. The predictive power of ADHD symptoms was 14%.

Meanwhile, for the BITE scale dimensions, patients in the ADHD group obtained significantly higher scores on both the symptomatology scale and the disorder severity scale. This increment varied between 0.75 and 6.26 points for the dimension of symptoms and between 1.81 and 7.20 points for the severity dimension. The coefficient of determination for these variables was 0.07 and 0.11, respectively.

The presence of symptoms suggestive of adult ADHD also exerted an effect on the dimensions of cognitive and motor impulsivity, whereby patients in the ADHD group generally obtained scores for cognitive impulsivity of between 1.04 and 5.01 points higher than those of patients in the non-ADHD group. The same was the case for motor impulsivity, where the increment ranged between 1.55 and 7.89 points, although there was no evidence of differences in unplanned impulsivity between the two groups. When we examined overall impulsivity, we found that 8% of the variance in scores for the BIS-11 scale was associated with the presence of symptoms suggestive of adult ADHD.

ADHD symptoms and quality of life in patients with ED

Table 3 gives the results of the simple linear regression analysis regarding the influence of ADHD symptoms on the quality of life of patients diagnosed with ED. As with the previous results table, we used the dichotomisation explained earlier as a predictor variable of the ASRS scale score. The dependent variables analysed individually in this case were each of the dimensions in the Q-LES-Q and SDI scales.

A global analysis of the Q-LES-Q scale dimensions indicated that the presence of ADHD symptoms in patients with ED was associated with a lower score for each of the dimensions in this scale, except for the dimensions of household activities, academic assignments and satisfaction with medication, for which we found no evidence of statistically significant differences between the two groups. The dimensions with the steepest drop in scores according to the presence of ADHD symptoms were mood, work and

Table 1 Clinical and demographic characteristics of participants with / without symptoms suggestive of adult ADHD

	ADHD	Non-ADHD	TS	df	p
Age	32.76 (SD=9.89)	30.84 (SD= 9.75)	-0.94	87	0.351
Sex			1.194	1	0.274
Male	1(25%)	3(75%)			
Female	45(52.9%)	40(47.1%)			
Marital status			1.179	2	0.555
Single	26(47.3%)	29(52.7%)			
Married/cohabiting	15(57.7%)	11(42.3%)			
Separated/divorced	5(62.57%)	3(37.5%)			
Educational Level			6.010	1	**0.014**(V=0.26)
University education	18(39.1%)	28(60.9%)			
No university education	28(65.1%)	15(34.9%)			
Employment status			5.505	3	0.138
Student	10(45.5%)	12(54.5%)			
Unemployed	11(64.7%)	6(35.3%)			
Employed	16(42.1%)	22(57.9%)			
Retired/pensioner	9(75%)	3(25%)			
Family history					
Psychological	27(57.4%)	20(42.6%)	0.858	1	0.354
Psychiatric	23(59.0%)	16(41%)	1.265	1	0.261
Personal history					
Psychological	31(62%)	19(38%)	5.233	1	**0.022**(V=.25)
Psychiatric	25(62.5%)	15(37.5%)	3.403	1	0.065
Clinical diagnosis			5.066	4	0.281
Purgative/compulsive anorexia nervosa	7(53.8%)	6(46.2%)			
Restrictive anorexia nervosa	2(22.2%)	7(77.8%)			
Bulimia nerviosa	18(58.1%)	13(54.2%)			
Binge eating disorder	8(66.7%)	4(33.3%)			
Unspecified ED	11(45.8%)	13(54.2%)			
Psychopharmacological treatment	27(57.4%)	20(42.6%)	1.638	1	0.201
Years of treatment	6.02 (SD=6.24)	4.85 (SD=4.16)	-0.918	68	0.362
Years since onset	12.01 (SD=8.40)	9.79 (SD=7.98)	-1.171	73	0.245

df: degrees of freedom. TS: test statistic. Significant p values are shown in bold

Table 2 Linear regression: ASRS (symptoms suggestive of adult ADHD yes/no) and symptoms, severity and impulsivity

	β_0	*p*	β_1	*p*	*CI 95%* β_0	*CI 95%* β_1	R^2
EAT-40	36.54	**<0.0001**	19.75	**<0.0001**	[28.95-44.12]	[9.19-30.30]	**0.14**
BITE							
Symptom scale	17.56	**<0.0001**	3.51	**0.013**	[15.58-19.54]	[0.75-6.26]	**0.07**
Severity scale	6.88	**<0.0001**	4.51	**0.001**	[4.95-8.82]	[1.81-7.20]	**0.11**
BIS-11							
Cognitive impulsivity	16.58	**<.0001**	3.03	**0.003**	[15.16-18.01]	[1.04-5.01]	**0.10**
Motor impulsivity	18.61	**<.0001**	4.72	**0.004**	[16.33-20.88]	[1.55-7.89]	**0.09**
Unplanned impulsivity	18.74	**<.0001**	1.89	0.215	[16.59-20.90]	[-1.11-4.89]	0.02
Total	53.70	**<.0001**	9.69	**0.008**	[48.59-58.81]	[2.59-16.80]	**0.08**

β_0: intercept; β_1: slope. CI: confidence interval.

general activities, where the percentage of variance explained by the predictor variable was around 10%.

In the case of the SDI scale dimensions, we observed greater dysfunction in patients with ADHD symptoms. This was particularly pronounced in the social life scale, where 14% of variance in dimension scores was associated with the presence of symptoms suggestive of adult ADHD. Patients in the ADHD group also obtained scores that were on average 1.63 points to 27.14 lower for perceived social support. Note that a higher score for the dimension of perceived social support implies that the patient perceives a greater level of support.

CONCLUSIONS

The main objective of this study was to determine whether symptoms suggestive of ADHD in patients with ED influenced the intensity and severity of ED symptoms, impulsivity and variables related to quality of life and functionality in these same patients. The results indicate that on average, patients with ED and symptoms suggestive of adult ADHD present more clinical symptoms, increased severity of the condition, greater impulsivity, a poorer quality of life and feelings of disability. The results are discussed below, followed by an analysis of study limitations, future research directions and the clinical and research implications of these results.

Symptoms, severity and impulsivity

We found that the presence of ADHD symptoms in patients with ED significantly predicted greater overall severity of ED symptoms and increased the risk of more severe purging behaviour. Recent research[34] using the same instrument has confirmed these findings, linking the onset of ED to neuropsychiatric disorders such as ADHD and autism[9,12] and demonstrating the predictive power of ADHD symptoms in purging but not restrictive behaviour.

Various reasons have been proposed to explain this association between ADHD and purging-type ED[35]: 1) impulsive behaviour in ADHD patients leads to disordered eating behaviour; 2) other psychiatric comorbidities in ADHD trigger ED; 3) poor eating habits and the consequent nutritional deficits predispose to ADHD symptoms; and 4) other common risk factors for ADHD and ED contribute to the simultaneous presentation of both diseases. There is a clear relationship between ADHD impulsivity and ED impulsivity, as indicated by the numerous studies on the subject[1,4,36-38], specifically in BN and purgative anorexia nervosa (PNA)[7,39]. In our sample, we found that high scores

Table 3 Linear regression: ASRS (symptoms suggestive of adult ADHD yes/no) and measure of quality of life and disability

	β_0	*p*	β_1	*p*	*CI 95%* β_0	*CI 95%*β_1	R^2
Q-LES-Q							
Health status	41.44	**<0.0001**	-6.96	**0.004**	[38.07-44.81]	[-11.65--2.28]	**0.09**
Mood	45.05	**<0.0001**	-8.44	**0.003**	[41.17-48.92]	[-13.83--3.05]	**0.10**
Work	52.15	**<0.0001**	-5.99	**0.024**	[48.57-55.73]	[-11.15--0.83]	**0.10**
Household activities	35.57	**<0.0001**	-3.41	0.105	[32.48-38.67]	[-7.56-0.74]	**0.03**
Class/course assignments	38.13	**<0.0001**	-4.08	0.236	[33.60-42.66]	[-10.92-2.77]	0.04
Leisure activities	20.88	**<0.0001**	-2.91	**0.020**	[19.13-22.64]	[-5.35--0.46]	**0.06**
Social relationships	41.56	**<0.0001**	-4.52	**0.022**	[38.79-44.33]	[-8.37-0-.66]	**0.06**
General activities	54.48	**<0.0001**	-7.84	**0.006**	[50.54-58.41]	[-13.37--2.32]	**0.09**
Satisfaction with medication	3.58	**<0.0001**	-0.26	0.251	[3.23-3.92]	[-0.71-0.19]	0.02
Overall satisfaction	3.30	**<0.0001**	-0.67	**0.005**	[2.97-3.63]	[-1.13--0.21]	**0.09**
SDI							
Work	4.02	**<0.0001**	1.93	**0.009**	[2.99-5.06]	[0.50-3.37]	**0.08**
Social life	5.05	**<0.0001**	2.21	**<0.0001**	[4.20-5.89]	[1.04-3.39]	**0.14**
Family life	5.28	**<0.0001**	2.03	**0.002**	[4.38-6.18]	[0.77-3.28]	**0.11**
Perceived stress	5.54	**<0.0001**	1.77	**0.002**	[4.76-6.31]	[0.69-2.85]	**0.11**
Perceived social support	67.21	**<0.0001**	-14.38	**0.028**	[58.04-76.38]	[-27.14--1.63]	**0.06**
Work + social life + family life	14.21	**<0.0001**	6.31	**<0.0001**	[11.79-16.64]	[2.95-9.66]	**0.14**

β_0: intercept; β_1: slope. CI: confidence interval.

for purgative symptoms in the ADHD group tended to be associated with greater cognitive and motor impulsivity, which could indicate a risk factor with a possible impact on the onset and progression of ED[36].

The finding that the ADHD group in our study had a history of needing more psychological health care might in some cases be explained by the presence of undiagnosed and untreated ADHD since childhood. It is important to note that the most common subtype of ADHD in girls is the inattentive type, which would be masked by the clinical problem of ED, thus creating a greater tendency to chronicity due to this comorbidity[40]. On the other hand, some studies[41] have proposed that substance abuse in patients with ADHD symptoms aggravates and sometimes masks ED in adolescence. Although our conclusion is drawn from a sample in which purgative forms predominated, some evidence suggests that it is the restrictive forms that have a history of psychiatric comorbidity and previous psychopharmacological treatment[42].

Functionality and quality of life

As demonstrated in a review by Aght al.[43], eating disorders exert a strong impact on quality of life and health care costs. However, most studies on the quality of life in ED patients with ADHD have focused on obesity surgery[44] or

stimulant treatment for ADHD symptoms[45]. Nevertheless, other studies have reported the impact of adult ADHD on quality of life and how specific treatment can improve both this and patient functionality[21-23]. In our sample, we found that having ADHD symptoms was associated with a greater impact on quality of life at various levels, such as health status, work, leisure, social relationships and general activities, and also implied worse mood and lower overall satisfaction. Subjects in the ADHD group also presented greater disability, with worse assessments of their social and family situation and a higher perception of stress. It seems that ADHD symptoms directly affect these areas and therefore early diagnosis and treatment is crucial[15]. In conclusion, presenting ADHD symptoms is an unfavourable diagnostic comorbidity for adult women with an ED.

Limitations and future research

This study was not without limitations. One of these was the inability to assess significant differences between ED due to the small percentage of patients with each ED diagnosis. In addition, some patients refused to participate and others could not be assessed due to their unstable clinical situation, which may have led to an underdiagnosis of patients with a poorer prognosis and consequently an underestimation of the possible diagnosis of symptoms suggestive of ADHD. Another limitation was the use of the ASRS scale to differentiate groups with and without symptoms suggestive of adult ADHD, since this is a screening rather than a diagnostic tool. Consequently, future studies should use more accurate diagnostic assessment tools such as specific adult ADHD diagnostic interviews, besides studying different comorbidities that people with ED often present, such as anxiety, obsessive or personality disorders and depression. These limitations should be taken as starting points for further research, because few studies to date have focused on the relationship between ED and ADHD. The lack of research on this comorbidity could be due to several factors, including higher ADHD prevalence rates in men than in women; the increasing prevalence of ED in women; the fact that most studies on this topic focus on child and adolescent populations; and the use of small samples and disparate methodologies[10]. Since the present study included adult patients, most of whom were women (95.5%), the data provide an interesting insight into the progression of an ED in adulthood.

Identification of this patient profile, with more severe ED, a longer history and a strong impulsive component, which could include comorbid ADHD hindering recovery, has important clinical implications given the impact on the patient's psychosocial adjustment, quality of life, functionality and subjective feeling of disability. Therefore, given the possibility of comorbidity and its impact on subsequent treatment and outcomes, it is important to assess the presence of ADHD symptoms in patients with ED. Bearing in mind the effect exerted by these variables on patient treatment and outcomes, another objective of this study was to determine the influence of ADHD symptoms on psychopathological aspects such as impulsivity and on parameters such as quality of life and disability.

This study highlights the need for further research in this field in order to ensure accurate and early diagnosis of ADHD in patients with ED and to provide early treatment for these patients aimed at improving symptom control and preventing chronicity.

In light of the above and despite the study limitations, our results indicate the need for further research on the association between ED and ADHD due to the implications for ED treatment and prognosis.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

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