Original Article

Relationship between attention deficit hyperactive disorders with life satisfaction among medical students in city of Hail, KSA

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Abstract:

BACKGROUND: Attention deficit hyperactive disorder (ADHD) begins in childhood, and its symptoms persist into adulthood. Students with ADHD symptoms will be at increased risk of antisocial behavior, depression, and loss of inhibition. This study determines the relationship between ADHD and life satisfaction level among medical students in the city of Hail, KSA.

MATERIALS AND METHODS: This is a cross-sectional study that was conducted in a public-sector medical college. A total of 200 students were recruited through stratified cluster sampling. Validated, structured scales of ADHD and life satisfaction were used, and known psychiatric disorders among students were excluded from the study. Correlation and linear regression analyses were used to determine the relationship between ADHD and life satisfaction and identify the determinants of ADHD. P value < 0.05 was considered statistically significant.

RESULT: The prevalence rate of ADHD among medical students was 33.3%. Female gender, third-year academic year student, and 21–26-year-old age group were the high-risk groups of ADHD. Inattention (r = -0.263, P value-0.000) and hyperactivity (r = -0.260, P value 0.000) were significantly correlated with life satisfaction level, with 92% of the variability in life satisfaction determined by inattention and hyperactivity.

CONCLUSION: The burden of ADHD is high among medical students, and it negatively correlates with life satisfaction level. Students' academic and social functioning was affected due to ADHD. There is a need to address this issue with early diagnosis and management of this disorder.

Keywords:

ADHD symptoms, hyperactivity, inattention, life satisfaction, medical students

Introduction

Attention deficit hyperactive disorder (ADHD) is one of the most prevalent psychiatric disorders among students, and it places a heavy strain on society.[1] Generalized anxiety disorder, panic disorder, and social phobia are just a few of the illnesses that go under the umbrella term "ADHD." Excessive dread, anxiety, and behavioral abnormalities are all hallmarks of these diseases.[2] The negative effects of ADHD may cause low life satisfaction levels[3] and a loss in productivity for society.[4] The US National Comorbidity Survey Replication (NCS-R) stated at the start of the twenty-first century that 28% of people with ADHD would live with the disease for the rest of their lives.[5] According to the previous study, the prevalence of ADHD ranged from 5.6 to 18.1%.[6]

College students have a high burden of ADHD due to the intense pressure of their

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studies.[7] The prevalence rate of ADHD was high among medical students globally.[8-10] High academic pressure in medical schools and prolonged contact with patients may have an impact on medical students' mental health.[11] However, there haven't been much research done to look at the prevalence of ADHD symptoms among medical students. Contrary to popular belief, ADHD was found to be the most frequently self-reported disability among all types of disabilities. According to the results of a recent large survey conducted in 145 U.S. medical schools, it was found that medical students' ADHD symptoms have a detrimental impact on the performance of students when caring for patients, such as making them less enthusiastic and compassionate.[12] Therefore, research on ADHD among medical students is important from a clinical standpoint because it may produce results that help students succeed in the workplace, academically and socially.

ADHD patients have impairments in quality of life, including social stigma, low academic performance, disability, and relationships with family.[13,14] Another study found that AHDH students have cognitive disabilities and poor academic performance, which lead to depression in 85% of cases.[15] Additionally, prevalent psychological issues among medical students are anxiety and sadness.[16,17] According to a cross-sectional study from an Ethiopian medical school, it was found that 30.1% and 51.3% of medical students had ADHD and 21.2% of students also experienced interpersonal and life satisfaction impairments with ADHD.[18] Few studies were conducted to determine the association between ADHD and lifestyle satisfaction. A study conducted in the china among medical students, ADHD lead to low life satisfaction among students.[19] There are numerous hypotheses that contend ADHD raises the chance of suicide due to low life satisfaction.[20,21] There is still debate over whether having ADHD symptoms increases the risk of suicide. After accounting for a wide range of mental disorders, a longitudinal analysis of data from the Netherlands Mental Health Survey reveals that co-occurring ADHD and low life satisfaction enhanced the probability of suicidal ideation.[22] Other studies[23,24] highlighted the fact that ADHD was one of the risk factor for suicide acts in the general population.

The literature was very scant on topics related to ADHD and life satisfaction level, and relatively few studies have looked at the overlap between anxiety and ADHD in adults. ADHD is a self-reported disability, and very few articles related to medical students for this disorder were underrepresented. Therefore, the objectives of this study were to determine the relationship between attention deficit disorder and lifestyle satisfaction among medical students in the city of Hail, Saudi Arabia.

Materials and Methods

Study design and setting

The design of this study was cross-sectional, and it was conducted in the medical school, which is in the public sector and located in the city of Hail, Saudi Arabia. Both male and female students were included in the study. Sample size was calculated from the Lameshow and Lawanga calculator of sample size for health studies software.[20] Around 5% margin of error with a 95% confidence interval and assuming a 11% prevalence of ADHD,[21] with a 4% bond-on error and a 5% non-response rate, the required sample size is 200.

Study participants and sampling

Study participants of this study were medical students, recruited through stratified cluster sampling. In the total of five academic years in the medical school, each academic year was considered a strata, and from each strata, the students were selected through simple random sampling.

Data collection tool and technique

Validated and structured questionnaire was used. It comprised of four sections: the first section is the socio-demographic characteristics of study participants; the second section is the measurement of current ADHD symptoms using a validated self-report scale of ADHD.[25] This scale's reliability and validity were determined through different studies,[26,27] and Cronbach's alpha coefficients for inattention and hyperactivity were 0.78 and 0.85, respectively. It consists of two subscales, inattention and hyperactivity, each having nine questions, and the participants are asked to rate each question on a five-point Likert scale ranging from 0 to 4 based on their experience over the past six months. Scores of 24 or greater were considered highly likely to have ADHD; scores between 17 and 23 were classified as likely; and scores from 0 to 16 were classified as unlikely to have ADHD.[28] ADHD symptoms in children are determined by the Wender Utah rating scale (WURS).[29] This 25-item questionnaire was rated on a five-point rating scale from 0 to 4. The Cronbach's alpha was 0.94. We divided the participants according to current and childhood ADHS symptoms, and participants who had a WURS score greater than 46 and an ADHD scale score >17 were classified as symptomatic groups, with the remaining group labeled as non-symptomatic groups.

Life satisfaction is determined by the satisfaction with life scale.[30] The scale consists of five items, each scored on a seven-point rating scale from 1 to 7. The higher the score, the higher the level of life satisfaction. The Cronbach's alpha on this scale was 0.91.[31]

Data entry was done in Epi-data software, and data analysis was done in Statistical Package of Social Science Software Program (SPSS) version 26.0 software (IBM SPSS Statistics for Windows, Version 26.0. Armonk, NY: IBM Corp.). Descriptive statistics in the form of mean, standard deviation, frequency, and percentage are used for data summarization. Inferential statistical analysis is used by correlation and linear regression models to test the association between ADHD symptoms and life satisfaction and identify the determinants of ADHD. P value of < 0.05 is considered statistically significant.

After getting permission from the ethical review committee (H-2022-382) of the university and permission from the dean of colleges, consent forms were distributed among students. Those students agreed to participate in the study, and questionnaires were distributed and requested to be returned from within a week. Data were screened on a weekly basis for omissions or errors and stored in a safe place.

Ethical consideration

All the ethical considerations were observed while seeking the legal permission of the concerned authorities of the college to assess the data. All the research misconducts were avoided, and the rights and well-being of research participants were protected. The study was approved by the Institutional Review Board, University of Hail (reference number H-2022-382).

Results

The mean age of study participants was 21.08 (SD ± 1.08) years. Most (69%) of participants were male students, and 36% of students were in their third academic year. Only 9% of students had ever smoked, 86% of students' father's occupation was (white and blue) color job, and 41.5% of students were married. Life satisfaction means a value that is statistically significant between male and female students [Table 1].

ADHD symptoms (inattention and hyperactivity) were negatively correlated with life satisfaction levels. Inattention correlation ($r = -0.263$, P value 0.000) and hyperactivity correlation ($r = 0.260$, P value 0.000) with life satisfaction level [Table 2].

In regression analysis, it was found that 92% of the variability in life satisfaction level was determined by ADHD symptoms of inattention and hyperactivity. After adjustment in regression analysis, both ADHD symptoms were negatively related to life satisfaction levels. Every 1% increase in inattention and hyperactivity symptoms among study participants decreased the life satisfaction level by 14% and 15%, respectively [Table 3].

Table 1: Socio-demographic characteristics of study participants (*n*=200)

Characteristics	Frequency (%)	Life satisfaction (Mean±SD)	P
Age (Years) (Mean±SD)	21.08±1.49		
18-20	76 (38)	25.62±6.27	0.104
21-26	124 (62)	23.65±7.51	
Gender			
Male	138 (69)	25.48±6.34	0.002
Female	62 (31)	21.75±7.90	
Marital status			
Single	117 (58.5)	23.19±7.32	0.009
Married	83 (41.5)	25.80±6.47	
Academic year of study			
First year	58 (29)	25.50±6.64	0.690
Second year	26 (13)	23.92±6.85	
Third year	72 (36)	24.12±7.25	
Fourth year	38 (19)	23.05±7.22	
Fifth year	6 (3)	23.66±10.42	
Father occupation			
Business	28 (14)	24.21±6.82	0.967
Job	172 (86)	24.27±7.15	
Smoking			
Ever	18 (9)	25.05±7.83	0.656
Never	182 (91)	24.18±7.03	

Most ADHD and CADHD symptoms were present in the 21–26 age group, female gender, never smokers, and second and third-year students [Figure 1].

Discussion

This is the first study in a Middle East country to determine the association between ADHD symptoms and life satisfaction levels among medical students. The study results found that 33.5% of students have ADHD symptoms. This result is higher than previous studies[32,33] which were conducted in different countries. The reason for the higher prevalence is that the symptoms of ADHD were not screened because doctors focused only on depression and anxiety symptoms. It is necessary to diagnose it early and start treatment. If symptoms of ADHD persist for a long term, it will affect the person's social life. It will also lead to low self-esteem, poor performance in education, and the person being most likely to suffer from a major psychiatric disease like schizophrenia.[34] Most likely, patients with ADHD indulge in substance use, which also leads to depression and anxiety.[35,36]

The results of the study found that ADHD symptoms (inattention and hyperactivity) were negatively associated with life satisfaction levels. These results were consistent with other study results, which found that inattention was the major determinant of life satisfaction level among school students.[37] Another study found that hyperactivity was a predictor of

Table 2: Correlation of ADHD symptoms with life satisfaction level among study participants

Characteristics	Mean	SD	Intentions r (P)	Hyperactivity r (P)	Life satisfaction r (P)
Inattention	14.23	6.75	1		
Hyperactivity	13.65	5.71	0.714 (0.000)	1	
Life Satisfaction	24.26	7.01	-0.263 (0.000)	-0.260 (0.000)	1

Table 3: Association between ADHD symptoms with life satisfaction among study participants

Characteristics	β (95% confidence interval)	R^2 change
Age	-0.110 (-1.157-0.120)	0.92
Inattention	-0.143 (-0.353-0.052)	0.92
Hyperactivity	-0.155 (-0.431-0.045)	0.92

life satisfaction levels among adults.[38] People with ADHD symptoms were socially isolated, and their life satisfaction level was low because social determinants are important for life satisfaction.

The results of the study found that the age group 21–26 years and female gender suffered more from ADHD symptoms. This result is consistent with other study results.[39,40] The main reason for this result is that as age increased, the workload in the workplace also increased, which led to depression and anxiety.

This study is based on positive psychology structure and the association of ADHD symptoms with life satisfaction level, with a good response rate. There are several limitations to this study. First, it's a cross-sectional study, which did not reveal the temporal effect of causal association. A second clinical examination was not done, which may lead to overestimating the results. The third is the small sample size, which affects the external validity of the study. The fourth is the response bias because of the self-reported ADHD symptoms.

Conclusion

The study found a high prevalence rate of ADHD symptoms among medical students and an association between ADHD symptoms and life satisfaction level. It is recommended that early diagnosis and prompt treatment of ADHD symptoms be sought among medical students.

Acknowledgment

Conflicts of interest
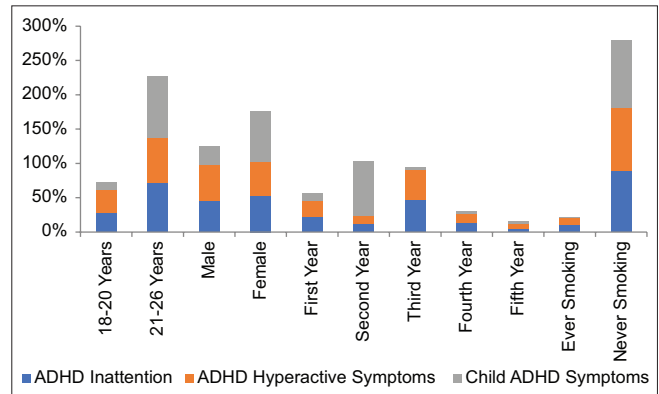There are no conflicts of interest.

Figure 1: Prevalence of ADHD (inattention, hyperactive) and CADHD symptoms among study participants

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