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The study of adult attention deficit hyperactivity disorder symptoms as the main predictor of college student's lifestyle

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General Note

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ABSTRACT

Background: One of the factors affecting the person's lifestyle is their psychiatric disorders state. Therefore, this study has been conducted with the aim of investigating the effect of ADHD on the college student lifestyle. *Method:* The present cross-sectional study was conducted of 388 College students on 2018. The data were collected through online with demographic information, CAARS and Student Lifestyle Questionnaire. All data were analyzed using linear and logistic regression models with Stata V. 14.2 software. *Results:* the mean lifestyle score (out of 100) was equal to 58.15 and its standard deviation was 12.65. Bivariate analysis revealed a significant relationship between ADHD subscales and lifestyle (p=0.05). A one-point increase in the H-index score increases the chance of one falling into the lower lifestyle group by 1.3 times . In other words, the chance of having a bad lifestyle for people with a high H-score increases by 30%. *Conclusion:* the state of mental health in college student is very important, and if neglected it, can result in difficult. Given the high prevalence of self-reported ADHD symptoms by the students, screening for early-stage challenges should be done among teenagers before starting the university.

Keywords: Adult ADHD, College student, Lifestyle, Prediction

1. INTRODUCTION

Attention deficit hyperactivity disorder (ADHD) is a behavioral and neurodevelopmental disorder that is common mainly in children. It is characterized by developmentally inappropriate levels of inattention, impulsivity, and hyperactivity (American Psychiatric Association, 2010, Ron de Graaf et al., 2008). Among psychiatric disorders, ADHD has been neglected and it has been identified merely as a childhood disorder (Faraone SV et al., 2006, Sadoch BJ et al., 2009, Adler L and Cohen J, 2004) but epidemiologic studies show that more than 60% of children with ADHD continue to have the symptoms in adulthood (Faraone SV et al., 2006).

Longitudinal studies have shown that ADHD has many negative effects on adulthood in people who had this disorder in childhood (Weyandt and DuPaul, 2006, Lefler et al., 2016). Adults with ADHD have difficulty in organizing, fulfilling assignments on time, completing work tasks on schedule, listening to others, concentrating while reading, and making thoughtful decisions (George J et al., 2009). Findings suggest that the disorder affects boys and girls nearly equally, but boys tend to display more symptoms of ADHD (George J et al., 2009).

Lifestyle is the most important factor on which each person adjusts his/her life (Fuchino Y et al., 2003). Moreover, the lifestyle of each individual is influenced by two major factors of personality and environmental characteristics. These factors affect people's lifestyle in many ways and shape their quality of life (Nola IA et al., 2010). Lifestyle is one of the most important factors in one's mental and physical health. It includes factors such as nutrition, exercise, sleep, stress management, social support, and medication use. Overall, we can evaluate an individual's social success through assessing his/her lifestyle (Cockerham WC, 2005, Cockerham WC et al., 2004). Lifestyle behaviors experienced during university are also influenced by various(Nola IA et al., 2010). Conditions specific to this period, such as the age, being away from family, getting involved in a large and stressful community, economic problems and insufficient income force the students to have their own lifestyle, and this makes them more susceptible to mental disorders (Sadeghian E and Heidarian Pour A, 2009). Approximately, 2–8% of students have significant symptoms of ADHD (George J et al., 2009). Therefore, any lifestyle such as the diet, physical activity, and smoking chosen due to mental disorders can affect the future life of students and their success or failure. Students, as intellectuals, preserve the morality and humanity of the society (Mosalanejad L and Amini M, 2004).

Accordingly, the present study aimed to investigate the role of ADHD and other predictors in student lifestyle and suggest interventions to solve the potential problems caused by this disorder.

2. METHOD

The population of this cross-sectional study included all students of Tabriz University of Medical Sciences (TUOMS) and Tabriz University (TU). A total of 388 volunteers entered the electronic student screening system out of which 244 students (138 women

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(58.3%) and 106 men (41.7%)) answered both the Conners' scale for assessing ADHD and lifestyle questionnaire. 73% of participants were under 25 and 27% were over 25 years old (mean age=24.38 and SD= 5.32).

Standard tests and lifestyle questionnaire

The Adult ADHD Rating Scales–Self Report (CAARS-S) was used for assessing ADHD and a researcher-made questionnaire, lifestyle assessment tool for university students (LATUS), was used for evaluating the lifestyle. CAARS-S is used for screening and follow-up of therapeutic results and is an auxiliary tool for diagnosis. This questionnaire has already been translated in Tabriz by Amiri et al., (2014) and its reliability and validity have been (Amiri SH et al., 2014). The Student Lifestyle Questionnaire consisted of 19 questions on two factors, with a five-point Likert scale whose validity and reliability were already confirmed in a study (Table 5 is an appendix to this article). The questionnaire includes 13 items related to discipline and organizing, and 6 items related to interpersonal relationships. The questions attempt to assess the following issues: organizing work tasks and study assignments, observing university rules and regulations, classroom attendance, study skills, time management problems, balanced diet, the ways to make friends, connect and interact with friends, and maintain these relationships. A higher score indicates a better student lifestyle and a lower score indicates a worse one. To evaluate the standardized rating scales of lifestyle and ADHD, the scores related to each of the factors were used as follows:

$$N(ADHD) = \frac{100(ADHD - 0)}{(90 - 0)}$$

In order to examine the individuals with a higher susceptibility to developing ADHD, The cut-off point of ADHD score was used to create a binary variable (people with and without ADHD symptoms). In addition, quartiles and deciles of lifestyle scores (particularly the first decile) were used to determine the 10% of the lowest scores. All data were analyzed using frequency tables and linear and logistic regression models using Stata V. 14.2 software. Correlation between variables was also significant at the level of less than 0.05.

3. RESULTS

In this study, 388 students of two leading universities in Tabriz ((TUOMS and TU)) entered the online screening system, out of which 244 participated in the study through completing the questionnaire.

The mean score of the ADHD subscale for participants is based on variables such as age, sex, educational level, and university as shown in Figure 1.

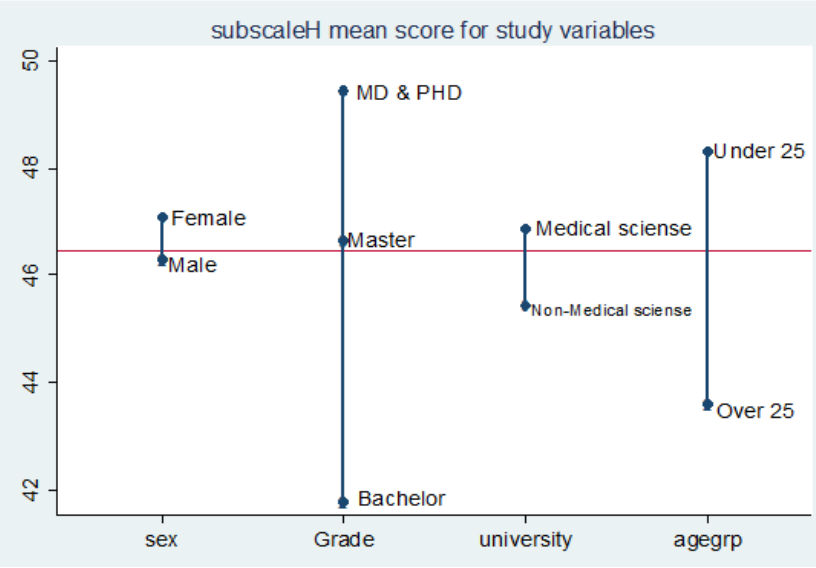

Figure 1 Subscale H mean score for study variables

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The mean lifestyle score (out of 100) was equal to 58.15 and its standard deviation was 12.65. The first quartile of total lifestyle score was 57, meaning that 25% of students had a score below 57 for lifestyle. The mean and standard deviation of subscales A, B, and H in the two groups with and without ADHD symptoms are shown in Table 1; the results show a significant difference between the two groups (p-value = 0.001).

Table 1 Mean and standard deviation of lifestyle scores

Item	Subscale A Mean (SD)	Subscale B Mean (SD)	Subscale H Mean (SD)
Non-ADHD	67.96(7.75)	67.46(9.36)	70.03(7.19)
ADHD	56.9(8.41)	59.20(8.35)	58.40(8.43)
p-value	<0.001	<0.001	<0.001

As illustrated in Table 2, the mean lifestyle score was higher in the group of students aged 25-30 years, female students, master's students, and non-medical students.

Table 2 Mean and standard deviation of lifestyle score based on variables

Variable		Discipline and Planning (fac1)	Interpersonal relationships (fac2)	Total Life style
		Mean (SD)	Mean (SD)	Mean (SD)
Age	< 20	41.95(8.47)	19.3(5.28)	61.12(11.06)
	20-25	42.14(7.41)	19.7(4.84)	61.89(9.20)
	25-30	43.48(7.66)	22.47(3.48)	65.86(8.98)
	>30	42.65(7.65)	20.31(4.79)	62.9(9.55)
Sex	Female	43.46(7.76)	20.06(4.83)	63.55(9.73)
	Male	41.83(7.38)	20.89(4.82)	62.57(9.45)
Grade	Bachelor	44.22(7.55)	19.97(5.10)	64.21(9.50)
	Master	44.57(6.65)	21.10(3.86)	65.55(8.27)
	MD or PHD	41.07(7.85)	20.45(5.03)	61.48(10.06)
University	Medical	42.45(7.76)	20.50(4.88)	62.85(9.75)
	Non-medical	45.11(7.76)	20(4.73)	65.06(9.57)
ADHD Category	ADHD	39.46(6.06)	19.09(4.7)	58.4(8.43)
	Non-ADHD	47.28(7.21)	22.48(4.28)	70.03(7.19)

Bivariate analysis revealed a significant relationship between ADHD subscales and lifestyle (p=0.05). Details of the relationship between these variables and the overall condition of lifestyle and its factors are shown in Figure 2.

The multiple linear regression model was used to study and identify the independent predictors of student lifestyle. Variables of age, educational level and ADHD symptoms played a decisive role in student lifestyle scores.

As shown in table 3, these variables can predict about 47% of the variance of lifestyle score. A comparison of the coefficients of standardized regression showed that screening score of ADHD symptoms accounts for 44% of the variance, which indicates a more significant role than other variables. In other words, adding one point to H-index score reduces the lifestyle score to 0.94 times (p<0.001).

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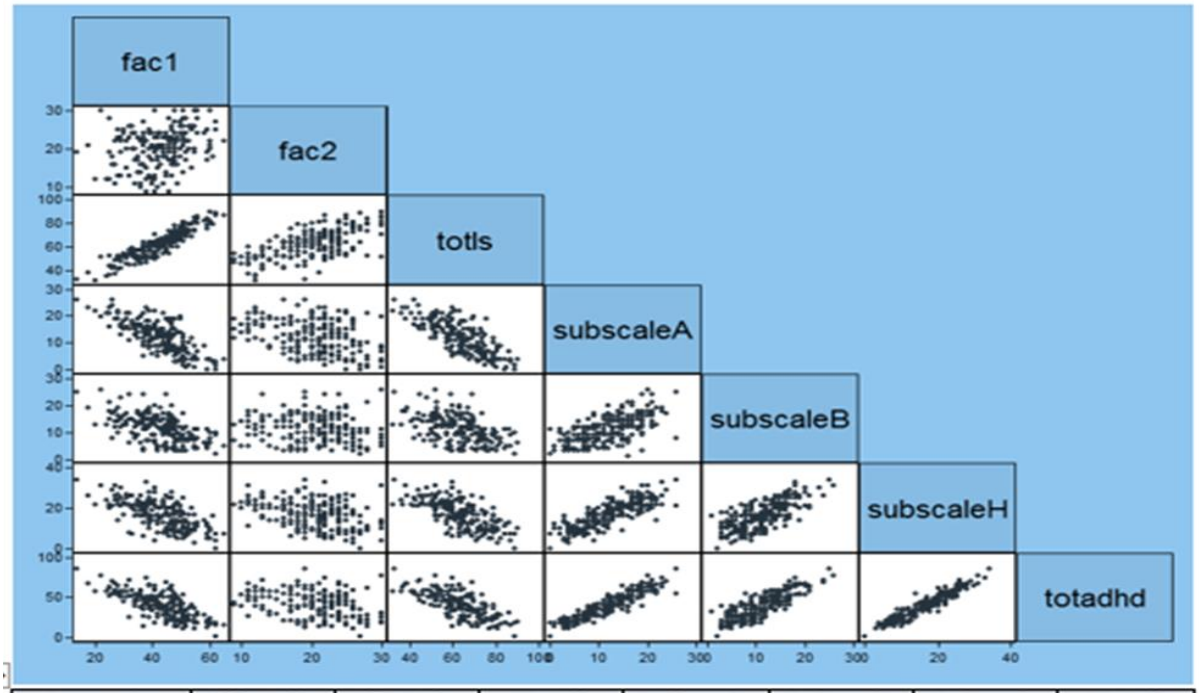

Peer wiss correlation	Lifestyle fac1	Lifestyle fac2	Total Lifestyle	Subscale A	Subscale B	Subscale H	Total ADHD
Lifestyle fac1	1						
Lifestyle fac2	0.14 0.04	1					
Total Lifestyle	0.86* 0.000	0.62* 0.000	1				
Subscale A	-0.64* 0.000	-0.37* 0.000	-0.70* 0.000	1			
Subscale B	-0.53* 0.000	-0.07 0.27	-0.47* 0.000	0.64* 0.000	1		
Subscale H	-0.58* 0.000	-0.38* 0.000	-0.66* 0.000	0.83 0.000	0.7* 0.000	1	
Total ADHD	-0.65* 0.000	-0.31* 0.000	-0.68* 0.000	0.92* 0.000	0.84* 0.000	0.95* 0.000	1

Figure 2 Bivariate analysis for relationship between ADHD subscales and lifestyle

Table 3 Results of stepwise regression analysis in predicting lifestyle score

Step	Variable	Coef	Standard coef	t	P<	R2
1	Subscale H	-0.9494	-0.6638	-12.27	0.000	0.44
2	Subscale H	-0.9177	-0.6358	-11.59	0.000	0.4501
	age	0.3146	0.1695	3.09	0.002	
3	Subscale H	-0.9179	-0.6359	-11.46	0.000	0.4666
	age	0.2818	0.1518	2.55	0.012	
	Grade	-3.20	-0.1651	-2.30	0.021	

The analysis was done based on the cut-off point of ADHD; namely, people who have a higher chance of developing the disorder were assessed to determine how much the lifestyle score changes based on the binary variable of ADHD and non-ADHD symptoms, and how much it predicts the lifestyle score compared to the original model.

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In logistic regression analysis, it is important to determine the predictive factors of one's placement in the first quarter of life style (low score of relative to the other three quarters of the other students). In measuring the lifestyle score for the H-index, a one-point increase in the H-index score increases the chance of one falling into the lower lifestyle group by 1.3 times. Put it another way, the chance of having a bad lifestyle for individuals with a high H-index score is increased by 30%.

There is a significant relationship between the PhD and the MSc students, in a way that the PhD students' lifestyle score is 3.95 times worse than that of the MSc students. This means that PhD students are 3.95 times more likely to have a lower lifestyle (Table 4).

Table 4 The role of different variables in the first quartile of lifestyle score

q 1ls	Odds Ratio	Std.Err	p>|x|	(95% Conf. Interval)	
H-index	1.2796	0.054	0.000	1.1776	1.3901
age	0.9553	0.0473	0.357	0.8670	1.0527
PHD & MD	3.9525	2.5147	0.031	1.1358	13.754

4. DISCUSSION

Admission to the university is a challenge for students since it is like entering a new environment that affects their career and lives. Physical and mental disorders, as individual and environmental factors, also affect the condition and quality of lifestyle in people, especially among students (Quesada et al., 2018). Most adults with ADHD have difficulty in executive function, attention, and working memory and organizing their daily routines (Adler L and Cohen J, 2004, Adler LA et al., 2017). Deficits in motivation also challenge them to adopt appropriate lifestyles (Quesada et al., 2018).

Based on the results of the present study, developing ADHD symptoms has a significant and inverse relationship with student lifestyle. So, having ADHD symptoms leads to a low-quality lifestyle. The importance of this issue is evident because ADHD symptoms are the most important predictors of lifestyle score along with other variables such as age, sex, and education.

In a qualitative study, Kim et al., 2018 identified four areas of difficulty in students with ADHD, including organizing and managing daily tasks, academic performance and achievements, interpersonal relationships, and anxiety (Yoonjung Kim et al., 2018). In their study, Egmond et al., 2012 found that low-quality dietary patterns, higher calorie intake, and higher exposure to television are associated with symptoms of ADHD disorder (Egmond AWA van et al., 2012). Different studies have shown the relationship between obesity and ADHD.

Bjork et al., 2018 showed in a self-report study on the Swedish population that adults with ADHD experience lower health and living conditions. Although most people do not have much physical activity, this cannot be directly related to ADHD because other Factors such as low education and job problems can also play a role (Björk A et al., 2018). An examination of the association between ADHD symptoms and health behaviors revealed that children with ADHD symptoms spend more time using their computer or smartphone and eating junk food during school days (Tong L et al., 2016), which is consistent with the findings of this study.

The results of this study showed that the first factor of lifestyle had a significant relationship with the ADHD subscales, while the second factor showed a weaker relationship. The first factor is related to individual characteristics, the second factor deals with interpersonal relationships. Adults with ADHD have a low-quality lifestyle compared to normal people (Agarwal et al., 2012). Low-quality life has also been reported among students (Pinho TD et al., 2017).

Spacer Weissenberger et al., 2017 believe that comorbidities in people with ADHD are related to their lifestyle and that they have difficulty in choosing a suitable lifestyle (Weissenberger S et al., 2017). ADHD is associated with adverse health outcomes and higher mortality and morbidity. The variables of age, educational level, and ADHD symptoms have a decisive role in student lifestyle score. These variables could predict about 47% of the variance in lifestyle score. A comparison of the coefficients of standardized regression showed that screening score of ADHD symptoms alone explains 44% of the variance which makes it has a more significant role than other variables. In measuring the lifestyle score for the H-index, a one-point increase in the H-index score the chance of having a low-quality lifestyle for individuals with high H-index score is increased by 30%.

Meanwhile, a different study showed that a healthy lifestyle and good habits can dramatically improve the symptoms of ADHD in children with low-quality lifestyle (kathleen FH and Joel T N, 2016). Ptacek *et al.,* 2016 found that many symptoms of ADHD were associated with a low-quality lifestyle that may be associated with drug use, unhealthy diet, and inadequate physical activity (Ptacek et al., 2016). Individuals with ADHD have specific behavioral characteristics that are evident in their lifestyle habits. Those who have

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higher Adult ADHD Self-Report Scale scores (ASRS) experience a higher level of unhealthy lifestyle and bad diets. The results generally indicate that symptoms of high ADHD measured by ASRS V1.1, such as impulsivity and inattention, are associated with a particular lifestyle. Participants with ADHD symptoms are more likely to have an unpleasant lifestyle (Takahashi K et al.., 2016). These findings suggest that health promotion programs aimed at improving children's diets and active lifestyles can reduce the depression in ADHD patients (Wu X et al., 2016).

5. CONCLUSION

Given the high prevalence of self-reported ADHD symptoms by the students, it seems that screening for early-stage challenges should be done among teenagers before starting the university. Moreover, further measurements need to be taken to diagnose the young people with ADHD.

Limitations

Since the self-report ADHD questionnaire is related to the symptomology of this disorder, the evaluation of ADHD symptoms in students should also include clinical and psychiatric interviews which were not performed in this study. Although this can be regarded as a limitation, identifying students with high symptom scores can predict ADHD disorder. The low sample size and the lack of diagnostic and psychiatric interviews for the cases identified through screening are the limitations of the present study. It is hoped these limitations be dealt with in subsequent follow-up studies.

Suggestions

Given the results of the study, it is recommended that this study be conducted in other student communities. The comorbidity of ADHD with other symptoms and disorders in students should be considered. Special attention should be paid to students who have ADHD symptoms because it affects their quality of life. A psychiatric diagnosis should be done to follow up the identified cases. Also, the positive effect of counseling should be considered.

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Authors' contributions

All the authors contributed generally in all aspects of development, conduct and drafting/reviewing the manuscript. Manuscript translation to English was done by HMA, Editing of the introduction and discussion was carried out by MF, The Statistical Consultation and editing of the result by HSB and MKI.

Conflict of Interest

The authors declare that they have no Conflict of Interest with respect to this manuscript.

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Ethics approval

The study was approved by the ethics committee of TUOMS with approval number of IR.TBZMED.REC.1396.692 and all participants voluntarily participated in the study or responded the online screening questionnaire.

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Appendix

Table 5 CVI values and modified Kappa for the final items of questionnaire (LATUS)

ITEM	Appropriateness and relevance		Necessity	
Fac1	CVI	Modified Kappa (Modified CVI)	CVI	Modified Kappa (Modified CVI)
1- Accurate and disciplined in the opinion of the people	0.76	0.82	1	1
2-Planning for your work and study tasks	1	0.82	0.83	0.82
3-Having balanced diet	0.8	0.76	0.8	0.76
4-Following the rules of home, dormitory and university	0.83	1	1	1
5-Not interested in classroom notes	1	1	1	1
6-Having the necessary equipment in the classroom	0.76	0.82	0.76	0.82
7- Dressing up a personal room	0.83	0.82	0.83	0.82
8- The usefulness of classroom notes for your own use and for others	0.83	0.57	0.76	0.57
9-Forgetting daily activities	0.83	1	1	1
10-Implementing work and education programs	1	1	1	1
11-Discipline in personal matters	0.7	0.57	0.7	0.57
12- Losing focus in class after half an hour	0.83	0.82	0.83	0.82
13- Feeling responsible for attending classes on time	0.83	0.82	0.83	0.82
fac2	CVI	Modified Kappa (Modified CVI)	CVI	Modified Kappa (Modified CVI)
14-Intimate and satisfying relationship with others	0.83	1	0.76	1
15-Create an intimate and close relationship with others	0.83	1	1	1
16-problem to Finding a new friend	1	0.82	0.83	0.82
17-problem in expressing our inner feelings and emotions to friends	1	1	1	1
18- Problem in communicating with classmates and friends	0.83	0.82	0.83	0.82
19-To overcome problems through dialogue and agreement with others	0.67	0.57	0.67	0.57
total	0.84	0.84	0.87	0.85

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REFERENCE

1. Adler LA, Faraone SV, Spencer T J et al. The structure of adult ADHD. Int J Methods Psychiatr Res 2017; 26:e1555.
2. Adler L, Cohen J. Diagnosis and evaluation of adult with attention deficit/hyperactivity disorder. Psychiatric clinics of North America 2004; 27: 187-201.
3. Agarwal R, Goldenberg M, Perry R, IsHak ww. The Quality of Life of Adults with Attention Deficit Hyperactivity Disorder: A Systematic Review. Innov Clin Neurosci 2012; 9: 10-21.
4. American Psychiatric Association. Diagnostic and Statistical Manual of Mental Disorders: DSM-V-TR. 5th edition text revision 2010.
5. Amiri SH , Sadeghi-Bazargani H, Hamraz S et al. Validity and Reliability of the Persian Version of Conner's Adult ADHD Rating Scales Observer and Self-report Screening Versions. Journal of Clinical Research & Governance 2014; 3:103.
6. Björk A, Rönngren Y, Selander J et al. Health, lifestyle habits, and physical fitness among adults with ADHD compared with a random sample of a Swedish general population. Society Health & Vulnerability. 2018; 9:1553916.
7. Cockerham W C. Health Lifestyle Theory and the Convergence of Agency and Structure. J health soc behav 2005; 46:51-67.
8. Cockerham W, Hinote B, Abbott P, Haerpfer C. Health lifestyles in central Asia: the case of Kazakhstan and Kyrgyzstan. Soc Sci Med 2004; 59:1409-21.
9. Egmond AWA van, Widhalm K, Zwaan M de. Association of symptoms of attention-dificit/hyperactivity disorder with childhood overweight adjusted for confounding parental variables. Int J Obesity. 2012; 963-8.
10. Faraone SV, Biederman J, Mick E. The age-dependent decline of attention deficit hyperactivity disorder: a meta-analysis of follow-up studies. Psychol med 2006; 36:159-65.
11. Fuchino Y, Mizoue T, Tokui N et al. Health-related lifestyle and mental health among inhabitants of a city in Japan. (Nihon Koshu Eisei Zasshi) Japanese Journal of Public Health 2003; 303-13.
12. George J, Dupaul G, Weyandt LL. college students with ADHD:current status and future directions. J Atten Disord 2009; 13:234-50.
13. Graaf RDe, Kessler RC, Fayyad J et al. The prevalence and effects of adult attention-deficit/hyperactivity disorder (ADHD) on the performance of workers: results from the WHO World Mental Health Survey. Occup Environ Med 2008.
14. Holton KF, Nigg JT. The Association of Lifestyle Factors and ADHD in Children. J Atten Disord 2016.
15. Kim Y, Kwon SJ, Kwak Y. Difficulties faced by university students with self-reported symptoms of attention-deficit hyperactivity disorder: a qualitative study. Child Adolesc Ment Health 2018; 12.
16. Lefler EK, Sacchetti GM, Del Carlo DI. ADHD in college: A qualitative analysis. Atten Defic Hyperact Disord 2016; 8:79-93.
17. Mosalanejad L, Amini M. A study of the relationship between education and mental health in two groups of freshmen and seniors of Jahrom College of medical sciences. The quartery journal of fundamentals of mental health 2004; 71-6.
18. Nola IA, Doko Jelinic J, Matanic D et al. Differences in eating and lifestyle habits between first- and sixth-year medical students from Zagreb. Collegium antropologicum 2010; 34:1289-94.
19. Pinho TD, Manz PH, DuPaul GJ, Anastopoulos AD, weyandt LL. Predictors and moderators of quality of life among college students with ADHD. J Atten Disord 2017.
20. Ptacek R, Stefano GB, Weissenberger S et al. Attention deficit hyperactivity disorder and disordered eating behaviors: Links, risks, and challenges faced. Neuropsychiatr Dise Treat 2016; 12:571–9.
21. Quesada D, Ahmed NU, Fennie KP et al. A review: Associations between attention-deficit/hyperactivity disorder, physical activity, medication use, eating behaviors and obesity in children and adolescents. Arch Psychiatr Nurs 2018; 32:495–504.
22. Sadeghian E, Heidarian Pour A. Stressors and mental health status among students of Hamadan University of medical sciences. Journal of hayat 2009; 71-80.
23. Sadoch BJ, Sadoch VA, Ruiz P. Comprehensive textbook of psychiatry. 9th ed 2009.
24. Takahashi K, Miyatake N, Kurato R, Takahashi N. Prevalence of attention deficit hyperactivity disorder and/or autism spectrum disorder and its relation to lifestyle in female college students. Environ Health Prev Med 2016; 21:455-9.
25. Tong L, Xiong X, H Tan. Attention-Deficit/Hyperactivity Disorder and Lifestyle-Related Behaviors in Children. PLoS ONE 2016; 11: e0163434.
26. Weissenberger S, Ptacek R, Klicperova-Baker M et al. ADHD, lifestyles and comorbidities: A call for a holistic perspective - from medical to societal intervening factors. Front Psychol 2017; 00454.
27. Weyandt LL, DuPaul G. ADHD in college students developmental Findings. J Atten Disord 2006; 10:9-19.
28. Wu X, Ohinmaa A, Veugelers PJ. The Influence of Health Behaviours in Childhood on Attention Deficit and Hyperactivity Disorder in Adolescence. Nutrients 2016; 8: 788.

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