Psychiatria Danubina, 2019; Vol. 29, Suppl. 3, pp 331-337 *Conference paper*
© Medicinska naklada - Zagreb, Croatia

PERCEIVED ACADEMIC AND PSYCHOLOGICAL STRESS AMONG ADOLESCENTS IN UNITED ARAB EMIRATES: ROLE OF GENDER, AGE, DEPRESSION, AND HIGH EXPECTATION OF PARENTS

Noor Mahir Ali[1], Nowfala Arakkal Nowshad[1], Khadeeja Mohammed Mansoor[1], Rayan Ahmed Ibnouf[1], Rofida Moustafa Albehiery[1], Frederick Robert Carrick[2,3,4,5] & Mahera Abdulrahman[1,6]

[1]Department of Public Health, Dubai Medical College, Dubai, United Arab Emirates
[2]Centre for Mental Health Research in association with University of Cambridge, Cambridge, UK
[3]Department of Neurology, Carrick Institute, Cape Canaveral, FL, USA
[4]University of Central Florida College of Medicine, Orlando, FL, USA
[5]MGH Institute for Health Professions, Boston, MA, USA
[6]Health Policies and Standard Department, Health Regulation Sector, Dubai Health Authority, Dubai, United Arab Emirates

SUMMARY

Introduction: *Academic learning is the most important source of stress among young students worldwide and appears to be quite severe in eastern countries. We aimed to examine the relationship between academic stress and depression among adolescents.*

Methods: *A cross-sectional study was conducted among adolescents in United Arab Emirates using the Perceived Stress Scale – 14 (PSS-14) and Educational Stress Scale (ESS) for Adolescents (English and Arabic versions).*

Results: *The overall PSS was high in 186 (20%) of the respondents, and moderate in 695 (76%). A multiple regression model of predictors of the PSS showed statistically significant correlations between the total PSS-14 scores and age ($p<0.0004$), gender ($p<0.0001$), and grade ($p<0.001$). A multiple regression model of the PSS-14 questionnaire as predictors of the ESSA revealed that Four variables on PSS-14 were statistically significant predictors of the ESSA: history of depression ($p<0.0001$), content with academic achievement ($p<0.0001$), high academic expectation of parents ($p<0.003$), and a believe capable of meeting parental expectations ($p<0.0001$).*

Conclusions: *Adolescents with severe academic stress need to be identified early. We suggest that an interdisciplinary team in the schools including student advisors and counselors be developed to further address stressors. In addition, students should be taught different stress management techniques such as cognitive behavioral skills to improve their ability to cope with school demands. The identification of stressors may lead to strategies that might address the quality of teaching and mental health evaluation among adolescents.*

Key words: *academic stress - psychological stress - adolescence - United Arab Emirates*

* * * * *

INTRODUCTION

Recent reports demonstrate that academic learning is the most important source of stress among young students worldwide and this appears to be quite severe in eastern countries (Brown et al. 2006, Park 2018). Eastern students usually have a high academic burden, low satisfaction regarding their academic performance, high expectations and may suffer more academic stress than their counterparts in English speaking countries (Ang et al. 2016). Academic stress is a significant contributor to a variety of mental and behavioral disorders, such as depression, anxiety, and suicidal behavior (Fawzy 2017, Latiff et al. 2016).

Therefore, the impact of stress on adolescent students and possible stress management interventions are of growing interest to educators throughout the world. Students' stress has been shown not only to adversely influence their academic performance but also to contribute towards psychiatric morbidity and substance abuse and may lead to the tragic consequence of suicide (Dyrbye et al. 2008). Suicide is considered to be the second most common cause of death in adolescents in industrialized countries (Aaron et al. 2004, Rey et al. 1997). Some of the coping strategies used by students to deal with stress include using alcohol, tobacco, and other drugs (Ashton & Kamali 1995) or over sleeping and going into isolation (Shaikh et al. 2004). In recent years, studies have revealed a strong relationship between academic stress and depression, anxiety, low self-esteem, and suicidal ideation among students in secondary and high schools (Crystal et al. 1994, Page et al. 2011). Similar to psychological stress in general, academic or educational stress is a subjective state associated with an individual's perception of possible future outcomes or consequences related to academic performance and in reaction to external stressors, including the burden imposed by people and school systems.

United Arab Emirates (UAE) is a young country with multicultural and multinational environment. The schools in UAE are divided to governmental (exclusively for UAE nationals) and private, that is for both

UAE nationals and expatriates. However, the majority of UAE nationals prefer to have their children study in private schools. This contributes to more psychological stress on the students because most of the private schools are in English and the students who are native Arabic speakers have to be bilingual to participate. Over the past four decades, the UAE has gone through a profound and rapid socioeconomic transition leading to fundamental changes in the population's lifestyle, dietary habits and patterns of physical activity (Trainer 2010), similar to the modernization processes that occurred in the western world, but in a much shorter time. Currently, adolescents in UAE are under high pressure due to their academic settings. They spend almost the entire day studying at school and they have to deal with excessive homework and study in order to achieve a higher GPA. Only those who attain high scores can enter one of UAE`s prestigious universities that traditionally are believed to guarantee jobs with higher salaries at prominent companies. Thus, Parents have high academic expectations for their children that might affect the psychological wellbeing of the child. Yet, no study has analyzed this important topic in this part of the world (e.g. Arab countries and Middle East). The present study was planned to determine levels of stress in adolescent school children, the psychological health, prevalence of educational stress among adolescents, and any correlation between these variables. We aimed to contribute to the scientific and sociological understanding of these dynamics at the regional and national level.

METHODS

Study Design

This descriptive cross-sectional survey was conducted among adolescents (aged 10-19) of all nationalities; attending the common schools in the emirate of Dubai; from September 2018 until February 2019.

Study participants and Procedure

The study was conducted in the form of an electronic survey available in both English and Arabic languages. Participants for the study were recruited by a simple random sampling method. The participants were between 10-19 years, UAE citizens (nationals) and expatriates, living in UAE. Students were accepted into the study that were able to read and understand English or Arabic, and consented to participate in the study. The participants were assured of the confidentiality of the information provided and protection of their rights to privacy. The sample size was calculated using epidemiological information for a population of 820,387 (population of total adolescents living in UAE), with an alpha of 5% and a 95% confidence level. We needed a minimum required sample size of 384 (Bagiella & Chang 2019).

Survey Design (Evaluation tools)

A structured questionnaire was designed and developed by a multidisciplinary team after a thorough review of the literature from relevant studies (Moksnes et al. 2010, Latiff et al. 2016, Anderman 2002, Ang & Huan 2006, Ang et al. 2016). The evaluation tool was then pre-tested among 20 adolescents to assess the ease of understanding and time required for completion. The survey instrument consisted of 47 items and was designed to incorporate the sociodemographic variables and potential academic stressors of the particiants. The sociodemographic data included age, nationality, parental marital status, educational level of both parents, type of school attended, the grade attended, and whether they are a single child or if they have siblings. The second part of the questionnaire contained five questions on the adolescents' perception on his/her academic achievements, parent's expectations, if he/she is meeting the parent's expectation, any history of depression, and whether the family is emotionally supportive. For each potential stressor, the frequency of occurrence was classified as never, rarely, sometimes, often, and always. The severity of each stressor was rated using a Likert scale (1–5) ranging from not severe to very severe.

The remaining sections of the questionnaire focused on the Perceived Stress Scale – 14 (PSS-14) and the Educational Stress Scale for Adolescents (ESSA). The students with a perceived stress score ≥38 were labeled as highly stressed, those with a perceived stress score 19-37 were labeled as moderately stressed, and scores <18 were labelled as low stress.

Data analysis and statistics

All collected data were entered into STATA 14.2 (StataCorp, College Station) for statistical analysis. Descriptive statistics were computed for all sociodemographic variables and the overall responses to each item of the survey were recorded as a percentage of the total. The percentage differences in the total responses were determined using the Chi-square test and ANOVA and statistical significance recorded for non-parametric data. For all analyses, alpha (α) was set at 0.05.

Ethics statement

The study was approved by the institutional review boards of Dubai Health Authority, Dubai (Approval # DSREC-SR-09/2018-01) and conforms to the provisions of the Declaration of Helsinki in 1995 (as revised in Edinburgh 2000). All subjects gave informed consent and assured that patient anonymity would be preserved. Aggregate reporting of data assured to enhance confidentiality and accurate reporting by the respondents. A code linking respondents to their surveys was kept isolated from the investigators.

RESULTS

Out of 980 individuals approached, 914 agreed to participate in the study (response rate of 93%). The majority of our respondents were 14-16 years of age, female, Non-UAE national, attending secondary school (grades 7-9), attending private schools, residing in the capital of Abu Dhabi, with parents married and living together, and their parents had at least a bachelor's degree. The majority (407, 45%) of the adolescents described their academic level as being very good and their family to be emotionally supportive (724, 79%). Yet, most of the respondents mentioned that their parents have high expectations from them (770, 84) and they thought that they were capable of meeting these expectations (668, 73%). Two out of five of our respondents (382, 42%) reported experiencing depression at least once (Table 1).

Findings of Perceived Stress Scale – 14

The overall perceived stress scale was high in 186 (20%) of the respondents, moderate in 695 (76%), and low in 32 (4%). A multiple regression model of predictors of the Perceived Stress Scale (PSS) – 14 was calculated with predictors. Statistically significant correlations were found between the Total PSS-14 scores and age (p<0.0004), gender (p<0.0001), and grade (p<0.001) (Figure 1).

Educational Stress Scale for Adolescents

Bivariate correlations were calculated between the Educational Stress Scales for adolescents (ESSA) and sociodemographic variables of the adolescents. To evaluate the correlations (|r|= 0.1 is weak, |r|= 0.3 is moderate

Table 1. Descriptive demographic characteristics of participants (n =914)

Variable, n (%)				
Gender	Male 170 (19)	Female 744 (81)		
Age (Years)	10-13 10 (1)	14-16 468 (51)	17-19 436 (48)	
Nationality	UAE 201 (22)	Non-UAE 713 (78)		
Which grade do you attend	Secondary school (grades 7-9) 111 (12)	Secondary school (grades 7-9) 803 (88)		
Type of your school	Private 701 (77)	Governmental 213 (23)		
Emirate you are residing in	Dubai 229 (25)	Abu Dhabi 334 (36.5)	Sharjah 218 (24)	Northern Emirates 133 (14.5)
Your parent's marital status	Married and living together 842 (92)	Married not living together 22 (2)	Divorced/ widowed 50 (6)	
Father level of education	high school or less 283 (31)	bachelor 350 (38)	postgraduate 281 (31)	
Mother level of education	high school or less 359 (39)	bachelor 363 (40)	postgraduate 192 (21)	
Are you a single child	Yes 33 (4)	No 881 (96)		
If you're not a single child, specify your rank?	Eldest 364 (40)	Middle 333 (36)	Youngest 217 (24)	
What is your academic level	Excellent 209 (23)	Very good 407 (45)	Good 251 (27)	Fair 47 (5)
Would you describe your family as being supportive emotionally?	Yes 724 (79)	No 190 (21)		
Have you ever suffered from depression	Once 382 (42)	More than once 256 (28)	Never 276 (30)	
Are you content with your academic achievements/ level?	Yes 402 (44)	No 512 (56)		
Do your parents have high expectations from you?	Yes 770 (84)	No 57 (6)	Not sure 87 (10)	
Do you believe you're capable of meeting their expectations?	Yes I do 668 (73)	No I don't 246 (27)		

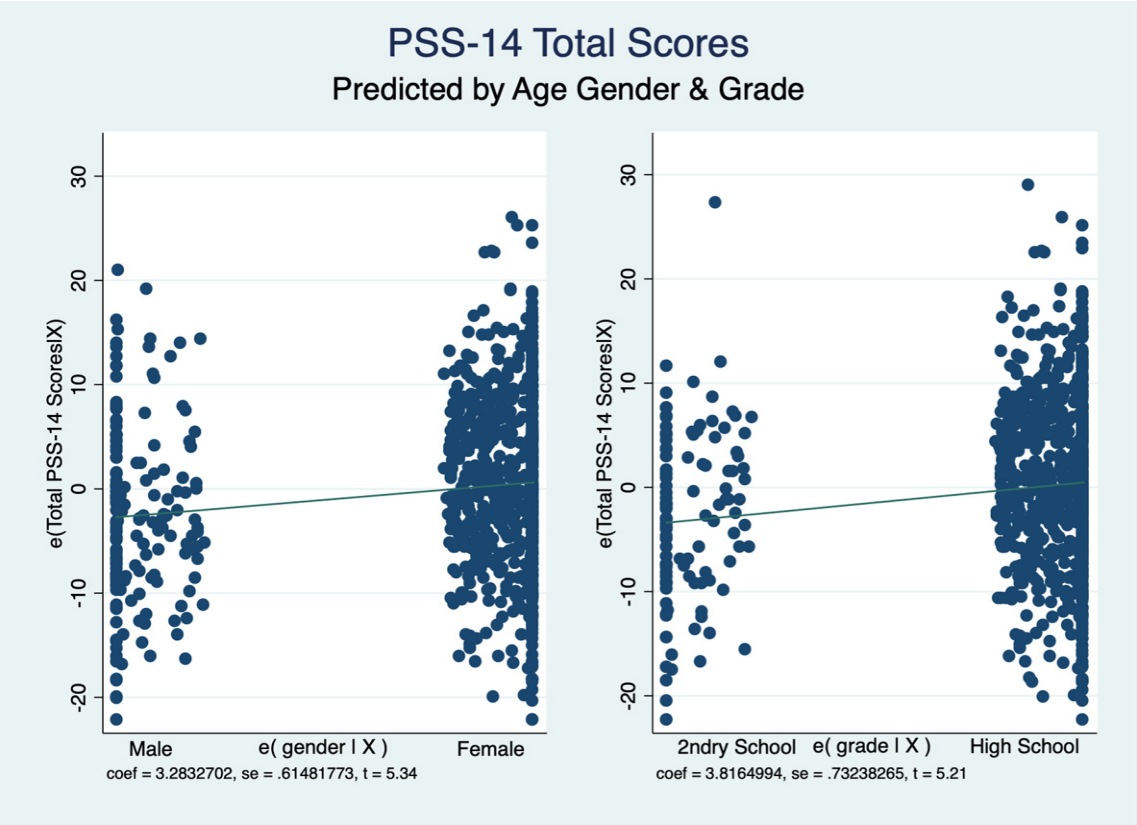

Figure 1. PSS-14 Total Scores Predicted by Age, Gender and Age

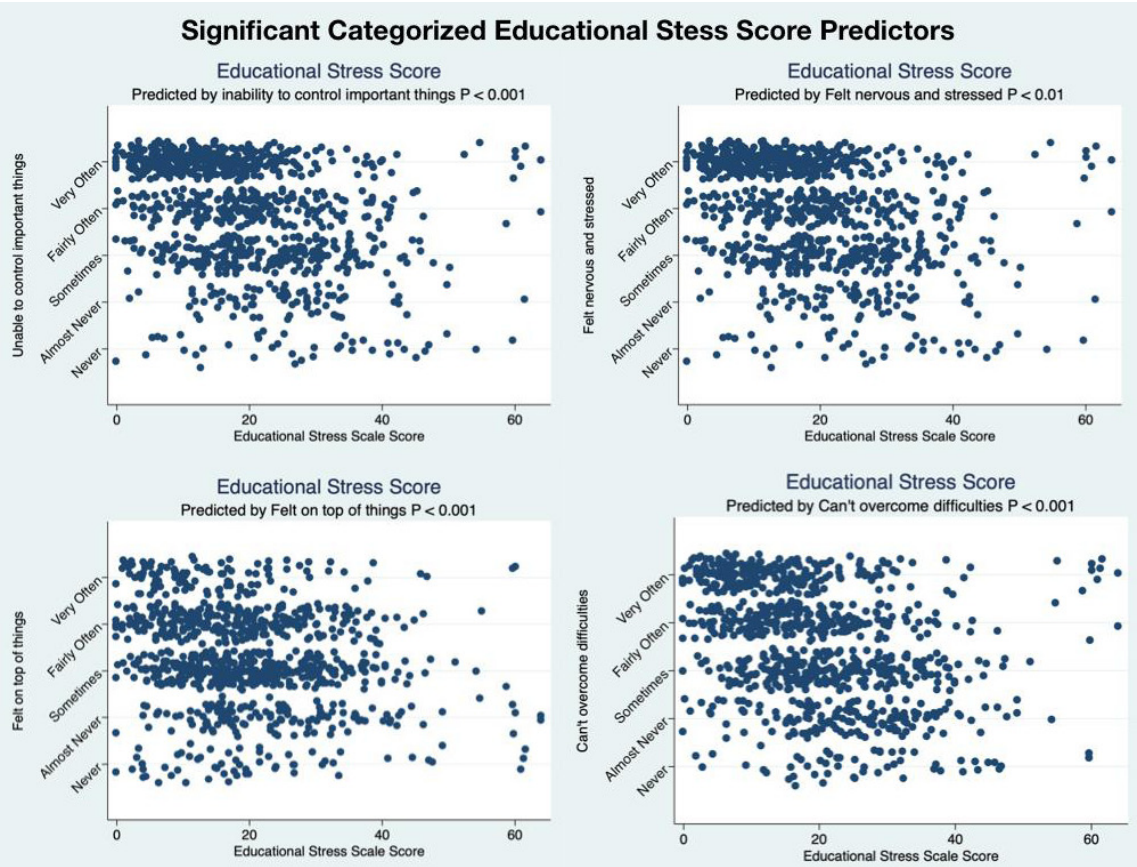

Figure 2. Educational Stress Score Predictors

and |r|= 0.5 is a strong relationship) the relationships between ESSA and adolescent responses were obtained. The grade of the adolescent was negatively correlated with the ESSA (|r=|-0.0876) (p<0.008) revealing that when the grade of the adolescent went up, the ESSA went down. The same trend was found for the adolescent's academic level which also correlated with the ESSA (|r=|-0.0955) (p<0.003) revealing that when the academic level of the adolescent went up, the ESSA went down. Similar correlations were observed between the ESSA and the adolescent having an emotionally supportive family (|r=|-0.1291, p<0.0001), content with academic achievement (|r=|-0.2832, p<0.0001) and a belief capable of meeting parental expectations (|r=|-0.2829, p<0.0001) demonstrating that as the ESSA went up these variable numbers went down. However a history of depression (|r=|0.2692, p<0.0001) was positively correlated with the ESSA, demonstrating that as the ESSA went up so did the number of individuals that reported a history of depression. The same phenomenon was found for adolescents whose parents had a high academic expectation of them (|r=|0.0915, p<0.005) such that the higher the expectations the higher was the ESSA. The Educational Stress Score was statistically significantly predicted by 4 categorized questions on a scale from Never to Very often.

PSS-14 questionnaire as predictors of the ESS

A multiple regression model of the PSS-14 questionnaire as predictors of the ESSA revealed that the model was statistically significant F(14, 898)=20.53, p<0.0001 demonstrating that we can explain 24% (R2=0.2424) of the variance in the ESSA using all predictors. However only Four variables on PSS-14 were statistically significant predictors of the ESSA: being unable to control the important things life (p<0.001), feeling nervous and "stressed" (p<0.01), feeling on top of things (p<0.001) and can't overcome difficulties (p<0.001) (Figure 2).

DISCUSSION

Adolescence represents a time of change for all people and is associated with unique individuality and experiences. The physical, emotional, cognitive, and social changes central to a transition from childhood to adulthood are inimitable from person to person. We realize that fluctuations of the internal environment begins at puberty and is associated with biological changes at a time of external change in both social and academic realization. We realize that adolescents are individuals and that their development is unique. This distinctive development represents a transformation from child to adult that is considered to be a unique vulnerability period associated with personal stress based upon an infinite probability of personal and environmental challenges (Moksnes et al. 2010). Stress is commonly defined as the feeling experienced when a person perceives the demands of the environment to exceed the personal resources available for coping with them. We wanted to formulate an understanding of the relationship of a variety of stressors as predictors of mental health concerns in adolescents. Other investigations have identified that a students' perceived stress over school demands and worries over school achievement is correlated with self-reported psychosomatic, psychological and emotional symptoms (Gustafsson et al. 2009, Aanesen et al. 2017). Further, greater self-reported stress may be associated with demands of high performance in school resulting in a student embracing a greater commitment to schoolwork over other activities (Kouzma & Kennedy 2004).

Our investigation demonstrates that one out of four of our respondent adolescents (256/914, 28%) reported an experience of depression at least once while the overall perceived stress scale was moderate in 76% (695/914) and high in 20% (186/914) of our respondents. It appears that the most dramatic mental health problems during adolescence are symptoms of being sad, feelings of worthlessness and withdrawal from friends or social activities (Thapar 2012). These findings are found throughout the world and are not unique to any individual environment. For instance, the frequency of self-reported mental ill health among young people in Sweden, has increased since the 1980s. The increase in depressive illness in Swedish adolescents is particularly pronounced in grade 9, but also in grade 7, especially among girls (Giota & Gustafsson 2017). We examined the relationship of depressive illness in UAE adolescents in our investigation using a global understanding of adolescent mental health. We used the PSS-14 and found several statistically significant correlations between the total PSS-14 scores and age (p<0.0004), gender (p<0.0001), and grade (p<0.001). Unfortunately, we were not able to identify anything else that might specifically be associated with the predictability of depression in our respondents. We understand that there is a gender difference in depressive illness reported by several studies with females found to be more prone to stress in response to school demands, coping resources, and increased likelihood of recurrent pain (Östberg et al. 2018).

We did note that there are three variables that were significantly correlated with ESSA among adolescents in this study. Similarly to the PSS-14 we identified the grade of the adolescent as a significant predictor and their academic level, but also noted the significance of a history of depression (p<0.008, p<0.003, p<0.0001). We found that when the grade/adolescent`s academic level went up that there was a negative correlation with the ESSA and the ESSA score went down. Interestingly, a history of depression was positively correlated with the ESS, demonstrating that as the ESSA went up so did the number of individuals that reported a history of depression. The same phenomenon was found in adolescents

whose parents had high academic expectations of them (p<0.005) such that the higher the expectations of the parent the higher was the ESS. These findings are similar to that of other reports that show a positive link between depression and ESSA (Jayanthi et al. 2015, Sun et al. 2011).

We also confirmed statistically significant correlations between the ESSA and the adolescent having an emotionally supportive family (p<0.0001). Those students that were content with their academic achievement were significantly correlated with the ESSA (p<0.0001), and a belief that students that were capable of meeting parental expectations (p<0.0001) also demonstrated a negative correlation such that when these variable numbers went up, the ESSA went down.

Although the PSS-14 and ESSA are objective assessment tools that can quantify the degree to which situations in one's life are appraised as stressful (Cohen et al. 1983) they also might determine the stressors that can assist educators in obtaining a baseline for comparing educational interventions in future.

The results of our investigation strongly suggests a need to revisit the demands placed upon students in UAE schools that might contribute to student stress. Other investigators have identified that an overloaded curriculum and teaching quality have been reported to be positively correlated with increased academic stress, depression, and personal stress among adolescents (Liu & Lu 2012, Moksnes et al. 2010).

CONCLUSIONS

The mental health concerns of adolescents that experience severe academic stress should be identified as early as possible so that prompt interventions to treat depression might be developed. We suggest that students might benefit from counselling for stress factors that might be identified by school counsellors or school health nurses. The predictors we have identified that might be associated with depressive illness should be understood by teachers who should in turn identify them as part of a team approach to defeat depression. We suggest that an interdisciplinary team to address stressors should also include student advisors, peer education, and counselors. In addition, students should be taught different stress management techniques such as cognitive behavioral skills, particularly cognitive restructuring adapted from a treatment program for child anxiety to improve their ability to cope with school demands. The identification of stressors must lead to strategies that might address the quality of teaching and mental health evaluation. These strategies should include the family unit as it is essential for adolescents to maintain a stable attachment to their parents in addition to acquiring independence and autonomy (Kim et al. 2007). We suggest that training of all parents addressing the mental health concerns of their adolescent children should also have a major impact on adolescents' development and social adaptation (Kang et al. 2008).

Limitation of study

The study has several limitations. Generalization about the total population is not warranted due to the random sampling approach and the heterogeneity of our sample. Since the information was collected on self-administered questionnaires, there remains the possibility of information bias. The cross-sectional design of the study precludes evaluation of temporal associations. Prospective studies are necessary to study the associations between the occurrence of stressors and incidence of stress. Finally, there might be other potential academic stressor factors, which were not included in the questionnaire. Yet, the sample was quite large, with a high response rate. Furthermore, the study investigated the factor of adolescents' psychological wellbeing for the first time in the region applying two of the most common used tools (PSS and ESSA). Moreover, this study was the first to evaluate these two tools in an Arabic country.

Acknowledgements:

Appreciation is expressed to all adolescents in UAE who participated in this study.

Conflict of interest: None to declare.

Contribution of individual authors:

All authors (Noor Mahir Ali, Nowfala Arakkal Nowshad, Khadeeja Mohammed Mansoor, Rayan Ahmed Ibnouf, Rofida Moustafa Albehiery, Frederick Robert Carrick & Mahera Abdulrahman) were equally involved in the conception of the idea of the study, contributed to the literature review, statistical analysis and revision of the manuscript.

References

1. *Aanesen F, Meland E & Torp S: Gender differences in subjective health complaints in adolescence: The roles of self-esteem, stress from schoolwork and body dissatisfaction. Scandinavian Journal of Public Health 2017; 45:389-396*
2. *Aaron R, Joseph A, Abraham S, Abraham VJ, Muliyil J, George K, Prasad J, Minz S & Bose A: Suicides in young people in rural southern India, The Lancet 2004; 363:1117-1118*
3. *Anderman EM: School effects on psychological outcomes during adolescence. Journal of Educational Psychology 2002; 94:795-809*
4. *Ang R & Huan V: Relationship between Academic Stress and Suicidal Ideation: Testing for Depression as a Mediator Using Multiple Regression. Child Psychiatry and Human Development 2006; 37:133-143*

5. Ang R, Huan V, Li X & Chan W: Factor Structure and Invariance of the Reactive and Proactive Aggression Questionnaire in a Large Sample of Young Adolescents in Singapore. Child Psychiatry & Human Development 2016; 47:883-889
6. Shaikh B, Kahloon A, Kazmi M, Khalid H, Nawaz K, Khan N & Khan S: Students, Stress and Coping Strategies: A Case of Pakistani Medical School. Education for Health: Change in Learning & Practice 2004; 17:346-353
7. Bagiella E & Chang H: Power analysis and sample size calculation. Journal of Molecular and Cellular Cardiology, 2019
8. Brown SL, Teufel JA, Birch DA & Kancherla V: Gender, Age, and Behavior Differences in Early Adolescent Worry. Journal of School Health 2006; 76:430-437
9. Ashton CH & Kamali F: Personality, lifestyles, alcohol and drug consumption in a sample of British medical students. Medical education 1995; 29:187-192
10. Crystal DS, Chen C, Fuligni AJ, Stevenson HW, Hsu C-C, Ko H-J, Kitamura S & Kimura S: Psychological Maladjustment and Academic Achievement: A Cross-Cultural Study of Japanese, Chinese, and American High School Students. Child Development 1994; 65:738-753
11. Kim DH, Kang IS, Lee S: Social Support, Self-concept and Self-efficacy as Correlates of Adolescents' Physical Activity and Eating Habits. Journal of the Korean Academy of Family Medicine 2007; 28:292-301
12. Fawzy M, Sherifa A: Prevalence of psychological stress, depression and anxiety among medical students in Egypt. Psychiatry Research 2017; 255:186-194
13. Giota J & Gustafsson J: Perceived Demands of Schooling. Stress and Mental Health: Changes from Grade 6 to Grade 9 as a Function of Gender and Cognitive Ability. Stress and Health 2017; 33:253-266
14. Gustafsson SA, Edlund B, Davén J, Kjellin L & Norring C: Perceived Expectations in Daily Life Among Adolescent Girls Suffering From an Eating Disorder: A Phenomenographic Study. Eating Disorders 2009; 18:25-42
15. Jayanthi P, Thirunavukarasu M & Rajkumar R: Academic stress and depression among adolescents: A cross-sectional study. Indian Pediatrics 2015; 52:217-219
16. Kang SG, Shin JH, Hwang YN, Lee EJ, Song SW: Relations between worry, attachment styles and perceived parental rearing in primary school adolescence. J Korean Acad Fam Med 2008; 29:854-66
17. Kim DH, Kang IS, Lee S: Social support, self-concept and self-efficacy as correlates of adolescents' physical activity and eating habits. J Korean Acad Fam Med 2007; 28:292-301
18. Kouzma NM & Kennedy GA: Self-Reported Sources of Stress in Senior High School Students. Psychological Reports 2004; 94:314-316
19. Latiffah AL, Esra T, Normala I, Azrin SA & Shirin Shameema BAA: Depression and its associated factors among secondary school students in Malaysia. Southeast Asian Journal of Tropical Medicine and Public Health 2016; 47:131
20. Dyrbye LN, Thomas MR, MF Stanford, Power DV, Eacker A, Harper W, Durning S, Moutier C, Szydlo DW, Novotny PJ, Sloan JA & Shanafelt TD: Burnout and Suicidal Ideation among U.S. Medical Students. Annals of Internal Medicine 2008; 149:334
21. Liu Y & Lu Z: Chinese High School Students' Academic Stress and Depressive Symptoms: Gender and School Climate as Moderators Stress and Health 2012; 28:340-346
22. Moksnes UK, Moljord IEO, Espnes GA & Byrne DG: The association between stress and emotional states in adolescents: The role of gender and self-esteem. Personality and Individual Differences 2010; 49:430-435
23. Moksnes UK, Byrne DG, Mazanov J & Espnes GA: Adolescent stress: Evaluation of the factor structure of the Adolescent Stress Questionnaire (ASQ-N). Scandinavian journal of psychology 2010; 51:203
24. Östberg V, Plenty S, Låftman SB, Modin B & Lindfors P: School Demands and Coping Resources-Associations with Multiple Measures of Stress in Mid-Adolescent Girls and Boys", International journal of environmental research and public health 2018; 15:10:2143
25. Page RM, West JH & Hall PC: Psychosocial Distress and Suicide Ideation in Chinese and Philippine Adolescents. Asia-Pacific Journal of Public Health 2011; 23:774-791
26. Park S & Kim Y: Ways of coping with excessive academic stress among Korean adolescents during leisure time. International journal of qualitative studies on health and well-being 2018; 13:1505397-9
27. Rey C, Michaud PA, Narring F & Ferron C: Suicidal behavior in adolescents in Switzerland: role of physicians. Archives de pediatrie: organe officiel de la Societe francaise de pediatrie 1997; 4:784
28. Cohen S, Kamarck T & Mermelstein A: Global Measure of Perceived Stress. Journal of Health and Social Behavior 1983; 4:385-396
29. Sun J, Dunne MP, Hou X & XuA: Educational Stress Scale for Adolescents. Journal of Psychoeducational Assessment 2011; 29:534-546
30. Thapar A, Collishaw S, Pine DS, Thapar AK: Depression in adolescence, Lancet 2012; 379:1056-1067
31. Trainer SS: Body image, health, and modernity: women's perspectives and experiences in the United Arab Emirates, Asia-Pacific journal of public health 2010; 22(Suppl)60S

Correspondence:

Mahera Abdulrahman, MD
Health Policies and Standard Department, Health Regulation Sector,
Dubai Health Authority
Dubai, United Arab Emirates
E-mail: marad@dha.gov.ae