PDF version

Eman T. Alslman[1], Nesrin Abu Baker[2] and Heyam Dalky[2]

[illegible]

[illegible]

[illegible]

ABSTRACT Mental disorders in adolescents have negative impacts on aspects of health and life that can be reduced by early detection and referral. This study aimed to estimate the prevalence of mood and anxiety disorders and to investigate their association with gender and other socio-demographic factors among adolescent students. A descriptive cross-sectional design was used in this study. A sample of 1103 adolescent students was recruited from schools who completed the first two sections of Patient Health Questionnaire for Adolescents (PHQ-A). The prevalence of any mental disorders was 28.6%. The prevalence of mood and anxiety disorders was 22.4% and 16.3%, respectively. Significant associations were found between mental disorders and gender, age, living status with parents, or mental health status of parents. Further studies are needed to be conducted in Jordan in order to understand the nature and risk factors of mental disorders among adolescents. School and community-based mental health screening, promotion and prevention programmes are recommended to prevent and reduce the prevalence of mental disorders among adolescents.

Les troubles de stress et d'anxiété chez des élèves adolescents en Jordanie

RÉSUMÉ Les troubles mentaux chez les adolescents ont des impacts négatifs sur des aspects concernant la santé et la vie quotidienne, mais les données relatives à leur prévalence manquent en Jordanie. La présente étude avait pour objectif d'estimer la prévalence des troubles de stress et d'anxiété et d'enquêter sur leur association avec le sexe et d'autres facteurs socio-démographiques chez des élèves adolescents. Une conception transversale descriptive à été utilisée dans cette étude. Un échantillon composé de 1103 élèves adolescents ayant terminé les deux premières sections du questionnaire de santé du patient pour les adolescents a été recruté dans des écoles. La prévalence des troubles mentaux était de 28,6 %. La prévalence des troubles de stress et d'anxiété était respectivement de 22,4 % et 16,3 %. Des associations significatives ont été trouvées entre les troubles mentaux et le sexe, l'âge, le fait d'habiter avec ses parents ou l'état de santé mentale des parents. D'autres études doivent être réalisées en Jordanie pour comprendre la nature et les facteurs de risque des troubles mentaux chez les adolescents. Des programmes de dépistage, de promotion et prévention dans le domaine de la santé mentale en milieu scolaire et communautaire sont recommandés pour prévenir et réduire la prévalence des troubles mentaux chez les adolescents.

[1]University of Jordan, Amman, Jordan. (Correspondence to: Eman T. Alslman: eman.yassen@hotmail.com; Emanyaseen0@gmail.com).

[2]Faculty of Nursing, Jordan University of Science and Technology, Irbid, Jordan.

Received: 04/06/16; accepted: 15/01/17

Introduction

Mental health problems in children and adolescents are a great public concern and important health issue (1). Most mental problems among young people start before the age of 14 yeas (2). In any given year, it has been estimated that at least 20% of adolescents will experience some form of mental disorder (2), the most common being depression (3) and anxiety (4).

Depression in adolescents negatively affects daily functions at school, home and in the community, and relationships with family and peers (5); it can have serious consequences, including suicide (5–7). Depressive disorders are estimated to affect up to 8.9% of adolescents (7). However, the reported prevalence in different countries varies considerably (8–14). In Middle Eastern countries, the prevalence of depression among female adolescents in Saudi Arabia ranged between 13.9% and 41.5% (12,15). On the other hand, only 7% of adolescent males in Egypt and 10.6% in Oman had depression (16), while in Lebanon, 17.6% of children and adolescents were reported to have anxiety or depression (17). In Kuwait, the prevalence of depression was 14.4% among participants aged 6–33 years (18) and the prevalence of depressive disorders in Oman was 17% (19).

Anxiety disorders often develop during adolescence and can range from mild to serious. The lifetime prevalence of anxiety disorders is reported to be 15–20% (4). The prevalence of anxiety disorders in children and adolescents younger than 18 years is about 5–13% (20). Anxiety disorders in adolescents are associated with social and school problems (21), and are a strong predictor of depression disorders (4). The reported prevalence of anxiety disorders among adolescents again varies by country with reported rates ranging from 5.7% to 18.4% (15,22–24). In Kuwait, the reported prevalence of anxiety disorders was 14.9% (18). In Saudi Arabian female adolescents, however, the prevalence of anxiety disorders varied between 14.3% (15) and 66.2% (12).

Early detection of mental disorders, especially in school settings, can provide an opportunity to identify students at risk and facilitate their referral for treatment (25). In Jordan, national studies on the prevalence of mental disorders among adolescents are scarce and there is a need to build epidemiological information about mental disorders. Therefore, this study was conducted to estimate the prevalence of mental disorders (mood and anxiety) among adolescent students in Irbid, Jordan. The study also aimed to investigate the sociodemographic factors associated with mental disorders.

Methods

Study design

A descriptive, cross-sectional design was used in this study. It was carried out in November 2011.

Study population and sample

The study population was all adolescent students in the ninth to eleventh grades (ages 13 to 18 years) attending public schools in Irbid. Two-stage stratified random cluster sampling was used to select participants. There are 7 educational directorates in Irbid. In the first stage, 2

secondary schools were randomly selected from each educational directorate from the list supplied by the directorate, 1 for girls and the other for boys. In the second stage, 3 classes (one each from the 9th, 10th and 11th grades) were randomly selected from each of the 14 schools. Thus 42 classes were selected; all students in these classes were eligible to participate.

Screening instrument

The Patient Health Questionnaire for Adolescents (PHQ-A), which is a self-reported questionnaire developed to assess mental disorders among adolescent populations (26), was used. PHQ-A includes 83 items and is divided into 4 sections to assess anxiety, mood, substance use and eating disorders according to the diagnostic criteria in the DSM-IV-TR (26). The PHQ-A has acceptable sensitivity (75%), specificity (92%), diagnostic agreement coefficient (kappa = 0.65) and overall diagnostic accuracy (89%), compared with clinical interview (27). In our study, the Cronbach alpha was 0.92 for all items, and 0.73 and 0.92 for mood and anxiety dimensions respectively.

Because only the prevalence of anxiety and mood disorders was estimated, only the first 2 sections of PHQ-A were used. The first 15 items assess mood disorders (major depressive, dysthymic and minor depressive disorders). Items 16–41 assess anxiety disorders (panic and generalized anxiety disorders). PHQ-A is not based on total scores. Instead, specific conditions or responses must be met to provide a provisional diagnosis. Because Arabic is the native language in Jordan, the PHQ-A was translated into Arabic and adapted based on the World Health Organization guidelines for translation and adaptation of instruments (28). A pilot study was conducted using the questionnaire before the study.

Data analysis

Data were analysed using SPSS, version 21. Descriptive statistical analysis was done to estimate the prevalence of mental disorders. Because PHQ-A is not based on total scores, the existence of each disorder (major depression, dysthymic, minor depression, generalized anxiety and panic attack disorders) was checked separately according to the specific conditions. If the student had at least one of the disorders, he/she was classified as having any mental disorder. Students, who had at least one mood disorder, were classified as having any mood disorder. If the student had at least one anxiety disorder, he/she was classified as having any anxiety disorder. To compare the prevalence of mental disorders between males and females, the chi-squared test of independence was used. Logistic regression analysis was used to investigate the risk factors for mental disorders. Sociodemographic characteristics were the independent variables and the dependent variable was mental disorders; all variables were entered in one step. P

Ethical considerations

Approval was obtained from the institutional review board committee of Jordan University of Science and Technology. The study purpose and procedures were explained to the students and they were assured that they had the right to refuse to participate or withdraw at any time without penalty. Consent forms were signed by the parents of the adolescents at home before data collection. Students whose parents signed the consent form were included in the study. Verbal consent was obtained from the students before data collection, which was confirmed if the participants voluntarily completed the questionnaire. Data were coded for anonymity and the students were assured that all the information obtained would be confidential and that that no one at school or other persons would know or be able to identify them.

Results

A total of 1175 students were eligible for inclusion; 10 students were excluded because their parents refused to allow them to participate and 62 questionnaires were excluded because of missing data. As a result, a total of 1103 students were included in the study.

The students' ages ranged between 13 and 18 years with a mean of 15.27 (SD 0.937) years. More than half of the students were females (605, 54.9%). Of the 1175 students, 316 (28.6%) had any mental disorder; 247 (22.4%) had mood disorders and 180 (16.3%) had anxiety disorders (Table 1). The prevalence of mental disorders was higher among females than males (Table 2), a statistically significant difference ($\chi 2 = 39.85$, P

In the logistic regression analysis, girls were 2.4 times more likely to have mental disorders than males (OR = 2.4; 95% CI: 1.77–3.25, P Table 3).

No statistically significant associations were found between mental disorders and parents' marital status, school performance, number of family members, adolescent birth order, household income, parents' educational level or job status, and student or parents health status.

Discussion

The prevalence of mood and anxiety disorders in our study was 28.6%. This indicates that mental disorders are a serious public health problem among adolescent students in Irbid.

The prevalence of any mood disorder was 22.4%. This figure is similar to that found in the United States of America (USA) (21%) and Australia (22%) (13,14). In addition, the prevalence is comparable to that found in Oman (17%) (19) and Poland (26.7%) (9). However, the

prevalence in our study was higher than that in Kuwait (14.4%) (18), Egypt (15.3%) (29) and Saudi Arabia (13.9%) (15). On the other hand, a higher prevalence (54.7%) was reported in Turkey (10). As we could not find studies that used the same instrument, same setting (school) and same age group, this variation in the prevalence of depressive disorders could be related to different screening instruments, age groups, samples or lifestyles and cultures. For instance, in Kuwait, the participants, were aged between 6 and 33 years, were from military families and were screened using the Child Behavior Inventory. In Egypt and Saudi Arabia, the studies were conducted on female adolescents rather than in both genders and they were screened using the Arabic version of the symptom-revised checklist 90 (SCL 90-R) in Saudi Arabia (12) and the Children Depression Inventory in Egypt (29). In contrast, another study was carried out in Saudi Arabia on the same sample of female adolescents (n = 545, aged 14–19 years) but using a different instrument (the Arabic version of the Depression, Anxiety and Stress Scale), and the result showed a higher prevalence (41.5%) (15). Although both studies in Saudi Arabia were carried out with the same sample and study design, the prevalence of depression varied considerably according to the screening instrument. In addition, in Turkey, the adolescents were screened by the Children Depression Inventory (10).

Different symptoms of mental disorders might be reported or experienced by different cultures. Symptoms of depression, for example, may be reported as a somatic form rather than sadness in some cultures, while in other cultures, depression might be expressed as “being heartbroken”. In addition, other cultures, such as Latino and Mediterranean cultures, may experience nervousness and headaches. In Asian cultures, in contrast, weakness and tiredness may be experienced (6). The seriousness of reported symptoms can be influenced by cultural judgement or beliefs. For instance, some cultures may have more concerns about irritability rather than sadness or withdrawal (6).

We found a prevalence of 16.3% for any anxiety disorder, which is consistent with the findings in Australia (17%) (14), Kuwait (14.9%) (18), Saudi Arabia (14.3%) (12) and the USA (18.4%) (22). On the other hand, our result is higher than that found in Denmark (5.7%) (24), Italy (5.8%) (23) and China (6.9%) (11). Again the difference in prevalence of anxiety disorders might be due to different samples, age groups, screening methods, and lifestyle and culture. In Denmark, for example, the participants were children and adolescents between 0 and 19 years who were referred for psychiatric evaluation and treatment. In addition, they were screened by psychiatrists based on the International Statistical Classification of Diseases and Related Health Problems, 10th revision (ICD-10). In our study, in contrast, the self-reported questionnaire was based on DSM-IV criteria. In Italy, the participants were 10–14 years old and the response rate was low (61%), which may mean that more adolescents with mental disorders were not screened. Another possible explanation might be that in the Italian study the participants were screened by both self-reported and clinical interview methods, and the diagnosis was made by 5 experienced psychiatrists (23). In China, however, adolescents and their parents completed the youth and parent versions of the Diagnostic Interview Schedule for Children-Version (DISC-IV). Furthermore, the sample represented adolescents in 7th to 9th grades (11).

Other studies in the Arab world, such as Gaza and Saudi Arabia, showed that the prevalence of anxiety disorders was much higher than our finding (15,30,31). In Gaza, for example, the prevalence of severe anxiety was around 95%. A possible explanation for this result is the long and ongoing conflict in Gaza, and the majority of the participants reported that they had witnessed traumatic events such as killing, shooting and destruction (31). Two studies conducted in Saudi Arabia found a prevalence of anxiety disorders of 66.2% among female adolescents and 48.9% among male adolescents using the Arabic version of the Depression, Anxiety, and Stress Scale (DASS-42) in both studies (15,30). This high prevalence may be related to the social and cultural changes and challenges in Saudi society. Looking for independence and recognition during adolescence, study problems and stressors during secondary school, as well as choosing a career might be other reasons for the high prevalence of anxiety. Again, it might be attributed to different screening instruments.

Female adolescents were significantly more likely to have mental disorders than males. This finding is consistent with the findings in western countries (10,32), and Arab countries (16,17,19). Female adolescents are more likely to have internalized disorders such as anxiety and depressive disorders than male adolescents (33). The higher prevalence among females might be due to the effect of puberty; it has been suggested that female adolescents are more negatively affected by puberty than males (33). This negative effect during puberty could result from biological and hormonal changes which have a greater effect on females. In addition, female adolescents have lower self-esteem and a poorer body image than males, which might lead to a higher prevalence of depression as well as other disorders (33).

Our results showed a statistically significant association between age and mental disorders. Older adolescents were more likely to have mental disorders than younger adolescents. This concurs with findings in the USA (34), Italy (23) and Egypt (16). This may be due to more worries, difficulties in concentration and social concerns which affect older adolescents more than younger adolescents, such as concerns about their careers, future, and responsibilities (33).

Surprisingly, adolescents who were living with both parents were significantly more likely to have mental disorders than those living with one parent or other people. This is in contrast to other studies which found that adolescents who lived with one parent or others were significantly more likely to have mental disorders (23). In our sample, only 6.9% of the adolescents reported living with one parent or others; therefore the comparison between the 2 groups might not be valid due to small number in in this subgroup. Another explanation might be that when both parents are present, any conflict between them might affect the mental health and anxiety levels of their adolescent offspring.

Our study also showed that adolescents whose parents (one or both) had mental disorders were significantly more likely to have mental disorders than other adolescents. This result is consistent with the results reported in the literature (29,32). Furthermore, many studies have shown that parental or family history of depression puts adolescents at risk of depression (9,16), and this is possibly due to the link between genetic factors and mental disorders (29).

Our study did not find significant associations between parents' marital status, student's school performance, number of family members, adolescent's birth order, total household income, father's and mother's educational level or job status, and student or parents' health status, and mental disorders. This might be because our sample of students has broadly similar characteristics in regard to these variables. Our results are in agreement with the results of other studies in Saudi Arabia (12,15). In Egypt, in contrast, female adolescents with lower school performance and socioeconomic status were found to be more likely to have depression (29). However, this study only involved adolescent females. In the USA, a significant association was found between mental disorders and lower family income, lower caregiver level of education (35), poor health status and poor school performance (35). Similarly, in Italy, a significant association was found between poor school performance, parents' educational level, and income (23). These variations between our study and others might be attributed to the cultural effect, sample characteristics and variability.

The generalizability of our findings is limited to public school adolescents in Irbid rather than all Jordanian cities. Adolescents were recruited from schools which may have led to an underestimation of the prevalence of mental disorders because many adolescents drop out of or do not attend school. Additionally, the diagnosis of mental disorders was based on a self-reported questionnaire without any clinical interview to confirm the diagnosis.

Conclusions

Our result indicate that mental disorders are a serious public health problem among adolescents in Irbid. Females were more likely to have mental disorders than males. Being an older adolescent, living with both parents and parental mental disorders were significantly associated with mental disorders among adolescents.

Health professionals, especially public health nurses, should regularly screen for mental health disorders among adolescents in collaboration with school staff. Public health nurses should conduct school- and community-based mental health promotion programmes directed toward adolescents, their families, educational staff and others who have direct contact with

adolescents in collaboration with other health providers and school staff. Such mental health promotion and prevention programmes are needed in order to increase awareness about mental disorders during adolescence, identify adolescents with or at risk of mental disorders and facilitate access to counselling and referral for adolescents with mental disorders. Further studies are needed in Jordan in order to understand the nature and risk factors of mental disorders among adolescents.

Funding: Department of Scientific Research in Jordan University of Science and Technology provided some funding for this study.

Competing interests: None declared.

References

1. Holling H, Kurth B, Rothenberger A, Becker A, Schlack R. Assessing psychopathological problems of children and adolescents from 3 to 17 years in a nationwide representative sample: results of the German health interview and examination survey for children and adolescents (KiGGS). Eur Child Adolesc Psychiatry. 2008;17:34–41.
2. World Health Organization. Mental health: a state of well-being 2014 [web page] (http://www.who.int/features/factfiles/mental_health/en/, accessed 20 June 2017).
3. World Health Organization. Adolescents: health risks and solutions. Fact sheet, updated May 2017 (http://www.who.int/mediacentre/factsheets/fs345/en/index.html, accessed 20 June 2017).
4. Beesdo K, Knappe S, Pine DS. Anxiety and Anxiety Disorders in Children and Adolescents: Developmental Issues and Implications for DSM-V. Psychiatr Clin North Am. 2009;32(3):483–524.
5. Perera H. Depression in children and adolescents. Ceylon Med J. 2008;53(2):65–7.
6. Diagnostic and statistical manual of mental disorders. 4th ed. Washington, DC: American Psychiatric Association; 2000.
7. Mehler-Wex C, Kolch M. Depression in children and adolescents. Dtsch Arztebl Int. 2008;105(9):149–55.
8. Essau CA. Comorbidity of depressive disorders among adolescents in community and clinical settings. Psychiatry Res. 2008;158(1):35–42.
9. Modrzejewska R, Bomba J. Mental disorders and psychoactive substance use in metropolitan late adolescent population: assessment of prevalence with self-report scales. Arch Psychiatry Psychother. 2010;12(3):11–9.
10. Odaci H. Are adolescent girls more depressive than adolescent boys in Turkey? : Int J Soc Behav, Educ, Econ, Bus and Ind Eng. 2011;6(1) 2011;5(9):1183–6.
11. Leung PWL, Hung S, Ho T, Lee C, Liu W, Tang C, et al. Prevalence of DSM-IV disorders in Chinese adolescents and the effects of an impairment criterion. Eur Child Adolesc Psychiatry. 2008;17(7):452–61.
12. Al Gelban KS. Prevalence of psychological symptoms in Saudi secondary school girls in

Abha, Saudi Arabia. Ann Saudi Med. 2009;29(4):275–9.

13. Van Voorhees BW, Melkonian S, Marko M, Humensky J, Fogel J. Adolescents in primary care with sub-threshold depressed mood screened for participation in a depression prevention study: co-morbidity and factors associated with depressive symptoms. Open Psychiatry J. 2010;4:10–8.

14. Wiggins A, Oakley Browne M, Bearsley-Smith C, Villanueva E. Depressive disorders among adolescents managed in a child and adolescent mental health service. Australas Psychiatry. 2010;18(2):134–41.

15. Al Gelban KS, Al-Amri HS, Mostafa OA. Prevalence of depression, anxiety and stress as measured by the Depression, Anxiety, and Stress Scale (DASS-42) among secondary school girls in Abha, Saudi Arabia. Sultan Qaboos Univ Med J. 2009;9(2):140–7.

16. Afifi M. Depression in adolescents: gender differences in Oman and Egypt. East Mediterr Health J. 2006;12(1/2):61–71.

17. Mahfoud Z, Abdulrahim S, Taha MB, Harpham T, El Hajj T, Makhoul J, et al. Validation of the Arab Youth Mental Health scale as a screening tool for depression/anxiety in Lebanese children. Child Adolesc Psychiatry Ment Health. 2011;5(1):9. doi: 10.1186/1753-2000-5-9.

18. Al-Turkait FA, Ohaeri JU. Psychopathological status, behavior problems, and family adjustment of Kuwaiti children whose fathers were involved in the first gulf war. Child Adolesc Psychiatry Ment Health. 2008;2(12):12. doi:10.1186/1753-2000-2-12.

19. Afifi M, Riyami AA, Morsi M, Kharusil HA. Depressive symptoms among high school adolescents in Oman. East Mediterr Health J. 2006;12 Suppl 2:S126–37.

20. Moreno MA, Furtner F, Rivara FP. Anxiety disorders in children and adolescents. Archives Of Pediatrics & Adolescent Medicine. 2010;164(10):984. doi 10.1001/archpediatrics.2010.179.

21. Hammerness P, Harpold T, Petty C, Menard C, Zar-Kessler C, Biederman J. Characterizing non-OCD anxiety disorders in psychiatrically referred children and adolescents. J Affect Disord. 2008;105(1-3):213–9.

22. Wu P, Goodwin RD, Fuller C, Liu X, Comer JS, Cohen P, et al. The relationship between anxiety disorders and substance use among adolescents in the community: specificity and gender differences. J Youth Adolesc. 2010;39(2):177–88.

23. Frigerio A, Rucci P, Goodman R, Ammaniti M, Carlet O, Cavolina P, et al. Prevalence and correlates of mental disorders among adolescents in Italy: the PrISMA study. Eur Child Adolesc Psychiatry. 2009;18(4):217–26.

24. Esbjørn BH. Hoeyer M, Dyrborg Jr, Leth I, Kendall PC. Prevalence and co-morbidity among anxiety disorders in a national cohort of psychiatrically referred children and adolescents. J Anxiety Disord. 2010;24(8):866–72.

25. Allison VL, Nativio DG, Mitchell AM, Ren D, Yuhasz J. Identifying symptoms of depression and anxiety in students in the school setting. J Sch Nurs. 2014;30(3):165–72.

26. Johnson JG, Spitzer RL, Kroenke K, Williams JBW. Manual and scoring instructions for the Patient Health Questionnaire for Adolescents (PHQ-A). New York (NY): Biometrics Research Department, New York State Psychiatric Institute; 2005.

27. Johnson JG, Harris ES, Spitzer RL, Williams JBW. The patient health questionnaire for adolescents: Validation of an instrument for the assessment of mental disorders among adolescent primary care patients. J Adolesc Health. 2002;30(3):196–204.

28. World Health Organization. Management of substance abuse. Process of translation and adaptation of instruments (http://www.who.int/substance_abuse/research_tools/translation/en/, accessed 20 June 2017).

29. El-Missiry A, Soltan M, Hadi MA, Sabry W. Screening for depression in a sample of Egyptian secondary school female students. J Affect Disord. 2012;136(1–2):e61–e68.

30. Al Gelban KS. Depression, anxiety and stress among Saudi adolescent school boys. The J R Soc Promot Health. 2007;127(1):33–7.

31. Elbedour S, Onwuegbuzie AJ, Ghannam J, Whitcome JA, Hein FA. Post-traumatic stress disorder, depression, and anxiety among Gaza Strip adolescents in the wake of the second uprising (Intifada). Child Abuse Negl. 2007;31(7):719–29.

32. Ravens Sieberer U, Erhart M, Gosch A, Wille N. Mental health of children and adolescents in 12 European countries—results from the European KIDSCREEN study. Clin Psychol Psychother. 2008;15(3):154–63.

33. Oldehinkel AJ, Verhulst FC, Ormel J. Mental health problems during puberty: Tanner stage-related differences in specific symptoms. The TRAILS study. J Adolesc. 2010;34(1):73–85.

34. Roberts RE, Roberts CR, Chan W. One-year incidence of psychiatric disorders and associated risk factors among adolescents in the community. J Child Psychol Psychiatry. 2009;50(4):405–15.

35. Van Voorhees BW, Paunesku D, Kuwabara SA, Basu A, Gollan J, Hankin BL, et al. Protective and vulnerability factors predicting new-onset depressive episode in a representative of US adolescents. J Adolesc Health. 2008;42(6):605–16.

Thursday 11th of July 2024 08:18:20 AM