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Impact of Anxiety and Depression Symptoms on Scholar Performance in High School and University Students

Blandina Bernal-Morales,
Juan Francisco Rodríguez-Landa and
Frank Pulido-Criollo

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Abstract

Emotional processes are important to survive. The Darwinian adaptive concept of stress refers to natural selection since evolved individuals have acquired effective strategies to adapt to the environment and to unavoidable changes. If demands are abrupt and intense, there might be insufficient time to successful responses. Usually, stress produces a cognitive or perceptual evaluation (emotional memory) which motivates to make a plan, to take a decision and to perform an action to face successfully the demand. Between several kinds of stresses, there are psychosocial and emotional stresses with cultural, social and political influences. The cultural changes have modified the way in which individuals socially interact. Deficits in familiar relationships and social isolation alter physical and mental health in young students, producing reduction of their capacities of facing stressors in school. Adolescence is characterized by significant physiological, anatomical, and psychological changes in boys and girls, who become vulnerable to psychiatric disorders. In particular for young adult students, anxiety and depression symptoms could interfere in their academic performance. In this chapter, we reviewed approaches to the study of anxiety and depression symptoms related with the academic performance in adolescent and graduate students. Results from available published studies in academic journals are reviewed to discuss the importance to detect information about academic performance, which leads to discover in many cases the very commonly subdiagnosed psychiatric disorders in adolescents, that is, anxiety and depression. With the reviewed evidence of how anxiety and depression in young adult students may alter their main activity in life (studying and academic performance), we

discussed data in order to show a way in which professionals involved in schools could support students and establish a routine of intervention in any case.

Keywords: anxiety, depression, scholar performance, students, education, mental health

1. Introduction

Anxiety is a natural emotion characterized by alertness, vegetative autonomous and behavioral responses, accompanied by subjective sensations, all important for surviving. In the long term, an overexposure to adverse stimuli may lead to a depression comorbid to anxiety. Usually, human beings facing a stressor develop a cognitive or perceptual evaluation comparing previous experiences to solve the threat through an action. Consequently to natural anxiety, a state of heightened attention occurs preparing the body to fight or run away from the perceived threat. This fight-or-flight anxiety response follows an inverted U-shape curve; there is an optimum quantity of anxiety that produces the best response to success. A high level of anxiety interferes with concentration and memory, which are critical for academic success. Without any anxiety, however, people would lack the motivation to study for exams, write papers, or do daily homework, among others. In addition, deficits in familiar relationships and social isolation alter physical and mental health in young students, which reduce their capacities at school. Adolescence is characterized by significant physiological, anatomical and psychological changes in boys and girls, who become vulnerable to psychiatric disorders. Disorders such as anxiety and depression affect scholar performance and students might not be appropriately attended. In this chapter we describe anxiety and depression focused on adolescents and reviewed approaches to the study of anxiety and depression symptoms related with the academic performance in adolescents and young guys. The research literature was based on PubMed and Google Advanced Scholar databases. Results from available published studies in academic journals are reviewed to discuss the importance to detect information about anxiety, depression, academic performance and further considerations.

2. Anxiety and depression

2.1. Concept

Anxiety is an adaptive response generated by environmental stressful situations that activate alarm mechanisms in the individual to assure survival. This emotion is a series of biochemical changes in the brain and body, which makes the heart to beat faster due to an increase in adrenaline, and feeling less pain due to a decrease in cerebral dopamine. However, if the state of anxiety is not adequately affronted or it is produced by an inexistent stimulus in the longterm, natural anxiety is now converted in an anxiety disorder. In this way, natural anxiety is beneficial for the individual but if the level of anxiety is exceeded, it deteriorates the habitual activity of the organism; in this case, higher anxiety produces a lower efficiency of the individual [1, 2]. In human beings, anxiety disorders are characterized by excessive fear and

distress in the absence of real danger, that is to say, an excessive preoccupation, fatigue, problems of sleeping or concentrating, irritability, muscle tension, aggressive behavior, vulnerability sensation, surveillance exacerbation, and exaggerated emotional reactions to danger [3]. The anxiety symptoms reflect an excessive autonomic activity caused by the over-release of adrenaline, noradrenaline and cortisol, which in consequence produces perspiration, palpitations, rise in blood pressure, loss of sphincters control, development of gastric ulcers, among others. Anxiety and depressive disorders are classified in the Diagnostic and Statistical Manual of Mental Disorders (DSM-IV-TR and recent DSM-5) and International Classification of Diseases (ICD-10), according to the duration, intensity and origin of symptoms. Anxiety is classified in some types of phobia, separation and social anxiety disorders, among others [3].

Anxiety disorders are influenced by environmental stimuli that are stressful for the individual. Antiquely, it was believed that anxiety disorders were learned, and although the familiar and social context influence in the possibility to develop an anxiety disorder, nowadays, it is known that anxiety disorders have a neurobiological substrate that involves neurochemical changes modifying the correct function of diverse brain structures [4]. In fact, they are the same brain structures involved in the etiology of depressive disorders, which explain the comorbidity among anxiety and depressive disorders, as well as the observation that some antidepressant drugs (i.e., selective serotonin reuptake inhibitors) produce also anxiolytic actions at the clinical level [3,5]

On the other hand, depression is an affective disorder identified from antique cultures around the world [6, 7]. Nowadays, it is considered as a psychiatric disorder classified in the DSM-5 [3]. Its prevalence and incidence have a marked sexual dimorphism; it is estimated that in the general population, it is 10–25% in women and 5–12% in men [8]. The morbidity and mortality associated with depressive disorders are higher and increasing continuously. Depression occupies the fourth place among principal causes of major incapacity around the world, occupying the first place before respiratory affections, perinatal problems, and HIV/AIDS (Human Immunodeficiency Virus/Acquired Immunodeficiency Syndrome) [9]. It is estimated that 17% of the population experiment any depressive episode during their lifespan, and those who suffer a chronic illness have a higher predisposition to develop depressive episodes with an incidence of 30-50% [10]. By 2020, it is estimated that major unipolar depression will be the second cause of incapacity of human beings around the world [11]. Depression is characterized by anhedonia (incapacity to experiment pleasure) as a central symptom but also includes episodes of irritability, anxiety and fear, in addition to alterations in appetite, body weight, sleep and motor efficiency—all accompanied by low self-esteem, guilt and the idea of death that predispose to suicide risk [3].

3. Anxiety and depression in adolescents

3.1. Anxiety

Affective disorders in young people may come from early stress exposition. For example, young adulthood with emotional distress disorders is associated with frequent and recurrent

physical distress during childhood [12]. Human epidemiological and animal studies indicate that stressful experiences in utero or during early life may increase the risk of neurological and psychiatric disorders, arguably via altered epigenetic regulation [13]. In case of anxiety and depression disorders, the symptomatology could be quite different from adults.

Anxiety has been considered as a psychiatric disorder in childhood since the 1980s, and depression since the 1970s, always associated with the psychopathological concepts of the psychiatric adult. During childhood fear and sadness are developed, but it changes progressively since breastfeeding and childhood until adolescence. Frequently, anxiety and depressive disorders are expressed in the same individual at the same time, probably because fear is frequently accompanied by sadness in these pathologies. Anxiety disorders are the most frequently psychiatric disorders in the pediatric period, but most patients might not receive pharmacological or psychological treatment. The social anxiety, the anxiety by separation and generalized anxiety produce high suffering; interfere in educational performance and social relationships. In addition, anxiety in adolescence increases the risk of psychiatric disorders in the adult stage; increase the risk to develop anxiety disorders, major depression, suicide attempts and clinical hospitalization associated with psychiatric illness [14-16]. The aforementioned may negatively impact the educational performance in students.

Epidemiological studies have reported that anxiety disorders are common in children and adolescents [17] and are comorbid to depressive disorders in 8–17-year-olds [18, 19]. Data of anxiety prevalence from the United States of America reported in DSM-5 showed 0.9% for generalized anxiety in adolescents; prevalence of anxiety separation disorder in children younger than 12 years old is approximately 4% and decreases through adolescence to approximately 1.6%; for specific phobia prevalence rates are approximately 16% in adolescents; social anxiety prevalence of 7% is similar in adolescents and adults decreasing with age; agoraphobia prevalence is 1.7% [20]. Sexual dimorphism is common for anxiety disorders. More female are affected by anxiety disorder than males with 2:1 to 3:1 preponderance in adolescence [21-23] and the age of onset for anxiety symptoms in the United States is 14 years [24].

For adults and adolescents there are challenges in distinguishing “normal” from “pathological” fear and anxiety, and there is some controversy regarding whether anxiety disorders differ from “normal” fears and worries by kind or degree [14]. Practically, transient worries and fears are common in children and adolescents, but are considered pathologic only when associated with significant impairment, distress and persistence. As mentioned, sweating, shaking and blushing are obvious signs of anxiety but some other elusive behavioral signs in young people make it difficult to detect it. For example, somebody may find it difficult to associate increased inflexibility, over-reactivity, emotional intensity, impulsivity, anger, constant arguments, trials to escape or avoid school or exams, for example, to anxiety-related behaviors associated to an underlying cause. In addition, anxiety disorders have a somewhat different age and gender distribution during childhood and adolescence. Excessive worries about past behavior, self-image, competence and socio-sexual acceptance, excessive perfectionism, somatic complaints, onicophagia, nightmares, trichotillomania and internal tension are common in adolescents [25]. Panic disorder and social phobia are more frequent in adolescents [26]. Female adolescents have higher rates of specific phobia, post-traumatic stress disorder and panic disorder [27, 28]. In addition, anxiety disorders in adolescents often co-exist with either another anxiety disorder or another psychiatric disorder [29].

3.2. Depression

Negative cognitive functioning, cognitive distortions, negative attributions, hopelessness and low self-esteem are common in children, adolescents and adults. But the central symptoms of depression such as anhedonia and helplessness could also be a problem for detecting the disorder on time at school. It is important to know that adolescent onset is associated with a more chronic, severe and disabling form of depression, higher rates of family history and more suicide attempts than depression that first emerges in adulthood [30]. Adolescents with major depression disorder have recurrent episodes; and they differ from adults because sadness is not so prominent but they are more likely to present with irritability, anhedonia, suicidality, hypersomnia, cognitive and circadian rest-activity rhythm problems [31-33]. Although the diagnostic criteria are similar for children and adolescents, typical symptomatology differs by age group. Kovacs [34] noted that adolescents report more hypersomnia, fewer appetite and weight changes, and fewer reported delusions than children, and depressed preschool children show typical symptoms of depression, such as mood disturbance and anhedonia, but have less "masked" symptoms (e.g., sleep problems, appetite changes). In severe depression, the incidence of suicide progresses with age in the United States. Rare cases of suicide are observed before 10 years old children and surprisingly expand to 100-fold up to 14 years, being 10 times higher between the ages of 15 and 19. Similar to anxiety disorders, prevalence rates for depression are higher in females than males from adolescence but not before [35]. The age of female depressed adolescents is associated to a hormonal mechanism activated by menarche, in which anxiety, fatigue and sleep/appetite disturbances are observed [36]. For those who experience premenstrual dysphoric disorder in which body image dissatisfaction, feelings of failure, concentration problems and work difficulties are common, there is a hypothesis of withdrawal syndrome of progesterone to explain symptomatology; this observation has been observed in clinical and preclinical studies [37]. In summary, female adolescent are likely to exhibit more cognitive and somatic symptoms and boys experience elevated "boredom" possibly because depressed boys are more anhedonic [38].

Comorbidity of 30–75% of anxiety disorders and depression is reported in adolescents, which is associated with severe anxiety symptoms [39-41] and greater suicidality [42].

4. Diagnosis

There is a concern that many children and adolescent with anxiety and depression may not be receiving appropriate diagnosis and treatment. Diagnosis of affective disorders in adolescents and young adults could be difficult for many reasons, impossibility to reach mental health facilities, lack of professional training and scarcity of child and adolescent psychiatrists. Maybe it takes longer to diagnose an affective disorder in young than adults due to the common symptoms shared by other comorbid disorders [43, 44]. Diagnosis of anxiety and depression in adolescents requires clinical interviews of the adolescent and parent separately, using both open-ended questions and specific symptom review as well as with children. In addition to assessing for symptoms, the evaluation will also include the assessment of comorbid condi-

tions (both general medical conditions and psychiatric illnesses), and the assessment of contextual factors (i.e., peer and family relationships, school/work, stressors). To Arrivillaga and collaborators [45], the family history of affective disorders with conditions, experiences of negative events, such as parental loss in childhood, the absence of a confident, living in a chaotic family environment and physical or psychological abuse are vulnerabilities to suffer depressive symptoms.

The first step in the differential diagnosis of a given symptom or complaint is typically a search for unrecognized physical disease. Although most adolescents with cognitive and physical symptoms consistent with an anxiety disorder will not be found to suffer from causal physical disease, clinicians should entertain the hypothesis that anxiety might be caused, exacerbated or perpetuated by an unrecognized general medical condition. This is important to emphasize because behavioral health professionals, although having little difficulty accepting that mental disorders are commonly underdiagnosed and undertreated in general medical settings, are vulnerable to overlooking the often important relationship between anxiety and physical disease in traditional mental health settings. The onset and duration of specific cognitive and somatic symptoms of anxiety should be examined and an attempt made to identify a temporal relationship between symptoms of anxiety and the course of the comorbid general medical condition. Inquiry should be made regarding recent and past stressors and traumas, including medical traumas as well as academic problems, family issues, maltreatment and difficulties with peers such as bullying. There is no substitute for a comprehensive psychiatric and medical history, as well as review of the medical record, medication list, laboratory and other diagnostic tests and procedures, and a directed physical examination when appropriate. Children with chronic physical illness are at increased risk to develop anxiety disorders. So anxiety can predispose to physical health problems and negatively impact the course of comorbid physical disease [46]. In addition, anxiety and depression must be differentially diagnosed from attention-deficit/hyperactivity disorder (ADHD) because they share some symptoms such as inattention; the difference is that anxiety inattention is due to worry and rumination, and depressive youths present poor concentration only during depressive episodes, which is distinguished from inattention due to the attraction to external stimuli, new and enjoyable activities observed in ADHD disorder [3].

Diagnosis criteria for anxiety and depression are found in the DSM-5 or ICD-10 among other documents for diagnosis. In students a sudden fall in grades may be a sign of lack of concentration associated to mood or anxiety disorder. Underdiagnosis and undertreatment of anxiety and depression in children and adolescents are not only a matter of mental health services; members of the family, friends and teachers can provide useful information to an early detection of these disorders, and the problem, for example, is the lack of acceptance in some families, the lack of awareness to identify depression symptoms because parents are also depressive, the atypical presentation of symptoms that may be confused or unclear for relatives, and the scarce communication of negative emotions and thoughts that may lead to somatization (general aches and pains, headaches or stomachaches) in children and adolescents [3]. Older age must be easier to diagnose because of the capacity of communication between individuals, but it is not so simplistic. Depressive symptoms in adolescence will have continuity to depression in adulthood; this has been observed in homeless adolescent victims

of adverse experiences early in life [47]. Monteiros and collaborators [48] explain that traumatic experiences among young men and women can be a predictor of depressive symptoms and moderate the effect on the emotional reactions of gender. The diagnosis of primary depressive mood disorders requires that physicians also rule out depression from physiological effects of other medical conditions, that is, endocrinopathies, malignancies, chronic and infectious diseases, anemia and vitamin deficiency [3], and from medications such as Isotretinoin, which is used for acne problems [49]. The *DSM-IV-TR* and recent *DSM-5* criteria for diagnosing major depressive disorder in children and adolescents are similar to those for adults [3, 50-53]. If substance abuse is present, an independent diagnosis of major depression requires the presence of depression before substance abuse or during periods of remission. Concurrent treatment of substance use disorder and depression is needed to improve outcomes for both [54]. Although less common, bipolar disorder is an important differential diagnosis. In 40% of children and adolescents with bipolar disorder, the illness begins with a major depressive episode [55]. Physicians should maintain a higher level of surveillance in patients at greater risk of bipolar disorder.

Other concerns are psychiatric emergencies. In developing countries, staff in schools and hospitals have little knowledge about psychiatric emergencies in young people, which is worsened by the fact that sometimes saturation in primary attention, the lack of mental services, medical insurance or health facilities make difficult the communication with emergency services and vice versa [56] and could interfere with the appropriate diagnosis leading to a subdiagnosis or misdiagnosis in youth.

5. Treatment

Safe and effective treatment for anxiety and depression requires accurate diagnosis, a detailed family history, suicide risk assessment and the use of evidence-based therapies [57]. Despite increasing evidence of effective treatments in the pediatric age group, adolescents with depression (major depressive disorder, dysthymia, depression not otherwise specified or "minor depression," and adjustment disorder with depressed mood) receive inadequate treatment [57]. Furthermore, physicians uncomfortable with prescribing complex therapies should consider referral to a child psychiatrist, especially for patients with multiple comorbidities [58]. Sometimes there is a lack of sufficiently informative comparative studies of different treatments (i.e., for depressive and anxiety disorders in childhood and adolescence) in health-care systems [21, 59].

Cognitive-behavioral combined with interpersonal approaches may help in prevention and mild depression. A mild depressive disorder without comorbidity or significant risk factors can be initially managed with support in coping with everyday tasks and counseling or psychoeducation about the manifestations of the disorder, its causes, the expected course and the options for treatment for six to eight weeks. Psychotherapy interventions of all kinds have been found to lessen depression more effectively over the short term (mean, 12 weeks) in children and adolescents (age 6–18) than various alternative management strategies. Cognitive-behavioral therapy, interpersonal psychotherapy or other kinds of psychological inter-

ventions are recommended for depression in adolescents [59]. When needed, pharmacotherapy is applied to young people. Fluoxetine is the only one drug approved for the treatment of depressive disorders in children and adolescents and sometimes fluoxetine can be combined with psychotherapy for better results. However, the adverse effects of selective serotonin reuptake inhibitors (i.e., headache, vomiting, sleep disturbance, fatigue and loss of appetite at the start of treatment) and their controversial tendency to reinforce suicidal ideation make psychotherapy the first choice to start treatment. Afterward, if needed, the fluoxetine or almost any drug should be given at lower doses than for adults increasing them progressively to be near the adult dose [60, 61].

Modern information technologies offer new opportunities to deliver mental health interventions via computer-based or mobile phone-based internet, which include online self-help with therapist support via email, SMS and/or phone call, family support, school-based group support and teacher support. A meta-analysis showed that this kind of treatment was apparently effective in reducing anxiety symptom severity compared to no intervention, and this effect may be equal to that of face-to-face interventions. The meta-analysis found a larger effect size for anxiety than for depression but the interpretation of the findings analysis needs to consider several factors and has methodological limitations. However, given the rapid adoption of mobile devices among children, youth and young adults, it is also important to develop and evaluate mobile device-based interventions [62].

6. Social problems associated with anxiety and depression

Anxiety and depression in youth result in functional impairment, increased difficulties with schoolwork, peer and family relationships. There are a range of predictors of anxiety and depression disorders in children and adolescents. These include various indices of social disadvantage such as increased family size, overcrowding, low socioeconomic status, family disruptions, parental non-employment, father's criminality and school disadvantage [63]. Anxiety and depression and other mental disorders have impact on several aspects of personal and social functioning. Patients may not complete even secondary school because the early onset of a mental disorder prevents attainment of goals at school, and even more, they tend to get married before the age of 18 and divorce later [64]. Depression is considered disabling, even more than physical illness, in a social context in daily activities or otherwise productive task [65]; and sometimes depressed people tend to use more health services than other diseases; therefore health costs are also significant. Wagner and collaborators [65] mention that people with anxiety or depression disorders have higher rates of utilization of health services, with a higher cost of care. Ritakallio and collaborators [66] found that depression and antisocial behavior among adolescents had considerable continuity, and concurrent comorbidity between these disorders was high. In relation to suicide, Aradilla and collaborators [67] found in a sample of nursing students that emotional care, self-esteem and depression are risk factors for suicidal thoughts, in which women were found to have a high significance of correlation. Also depressive symptoms were associated with other risk behaviors such as alcohol and snuff, besides violence. In other study [68], depression showed to be a risk factor of suicidal behavior

in adolescents: suicide ideation was present in male (75%) and female (83.2%) adolescents with depressive symptomatology, and 77.3% of male and 64.8% of female depressive adolescents had attempted suicide. In the study by Vázquez and Blanco [69], suicidal ideation also correlates with poor subjective and negative self-judgment, pessimism and low self-esteem, which is compounded by the stress of academic life, the kind of experiences in early life and personality.

7. Academic achievement

Academic achievement has been identified as a high prevalence of anxiety in the population of college students, even above the prevalence of depression, which is dependent on the age and gender of the study population. Anxiety in adolescents depends on the concept of the student about school demands related to comprehension and auto-control. He or she frequently faces academic situations whose demands must compare with his or her own resources. When evaluation of school tasks lead to conclude that they are more than he or she can do then threat and humiliation are experienced and justify rejection to school. Teachers face many challenges mainly when new policies in education indicate the evaluations of teaching and learning in a standardized form without understanding particular needs in each environment. Hence, an intense anxiety in evaluations reduces scholar performance, affecting self-esteem and social relationships [70]. A study with Mexican male and female 21–26 years old at university showed that students with the lowest academic performance had highest levels of negative interference in Stroop paradigm about school failure; also there was a direct relation between the academic auto-concept and performance in exams; students who had been systematically located in the lower levels of the study index showed the highest levels of anxiety [71]. The finding of an inverse relation in anxiety to examinations and grades had also been observed in university students in the United States [72].

Also, there is a negative relationship between adolescent depression and educational achievement, being that depression affects academic achievement and not the other way around [64, 73]. Humensky and collaborators [74] showed an association between the self-perception of depressive symptoms in adolescents and difficulties to concentrate and complete school tasks making a detrimental cycle. Furthermore, adolescent depression and its consequences might be particularly destructive to subsequent higher education in males [75].

Depressive episodes in the education of students affect learning ability, academic performance and adaptation to college life as well as performance of future professionals. Frojd and collaborators [76] also found association between severity of depression with concentration difficulties, social relationships, self-learning, academic performance, and reading and writing in 13–17-year-old youth.

In other study it was found that the prevalence of depressive symptoms in college students affects almost one-third of the population [77]. Other studies have suggested that the incidence of depression in college students decreases if there are positive adjustments to academic life and adequate social support to cushion stressful scholar stimuli. In this sense, it has been found

that when increase women education depression decreases compared to men [78]. Perhaps it is because education increases the levels of creativity in women compared to men.

Parent, child and teacher reports of emotional and behavioral problems to recognize the existence of a situation in school might be limited. Mason et al. suggest the need of studying the course of the emotional and violent behavioral problems from childhood to adolescence reported at school, because more readily identifiable symptoms of depression and anxiety may emerge later in adolescence [79].

Depression and anxiety are serious problems for students in both developed and developing countries. In a study with 139 male Mexican adolescents 18 years old who finished high school, it was observed that mild depression evaluated by mean of the Zung Self-Rating Scale was frequent in students with very low grades; a higher score in depression was observed in those guys who fail to approve the college entrance examination [80]. This suggests that depressed students are shown to have problems with academic work and motivation, and report receiving lower grades than non-depressed students. The problem is that in the future depression symptoms are related to work absences and impaired work performance, and results partly confirmed that work stressors add to this impact [81]. A study of 145 university students at Mexico evaluated the score of the Zung Self-Rating Scale for depression in 21-year-old male guys and showed 55% of students with mild depression and 9% with moderate depression. The latter reported to live with dysfunctional family, to have a self-perception of poor mental health and augmented body weight, as well as to fail more subject written exams [82]. Brain alterations in depression affect the affective behavior as well as cognitive and intellectual aspects in university students [83].

Studies about scholar performance vary in sample age and multifactorial aspects of low grades and individual dysfunction; however, there is an agreement in ensuring attention as soon as possible to give an appropriate treatment to young people.

8. Conclusion

To ensure the scholar success of anxious and depressive students is necessary to clinically manage the disorders. Teachers must consider anxiety and depression as illnesses. It is more difficult for adolescent patients to practice the usual methods of studying. The intensity of emotional tension experimented depends on the cognitive auto-concept of examinations and the capacity to face them. Sometimes, the relationship between anxiety and school performance is indirect because of the valuation of auto efficacy, which means that people with low perception of auto efficacy generate high levels of anxiety. For a diagnosed anxiety or depressive disorder in adolescents and university students, school staff should communicate the problem to allow medical attendance on time.

It is notable that both chronic and acute psychosocial stressors are significant predictors of anxiety disorders and depression. Solutions to low school performance related to anxiety and depression in young people are complex but most of the times depend on family commitment and integration of health promotion services into medical care and school settings. Nowadays,

adolescence is strongly related to anxiety and depression disorders, more than any other time of life, and both disorders are related to other psychiatric disorders and substance abuse that negatively impact the academic performance. In addition, the environment plays an important role in the formation of personality and psychiatric illness. There are different types of environments, social, natural, built and virtual, each of which has different effects on human behavior, but few studies about the effects of different types of environment on mental health are available. The social environment, comprising the interactions, networks and social support, for example, social crisis, economic, social mobilization and public policy, can be stressors in which adolescent are involved. Similarly, the virtual environment, such as using the Internet or any other media, where ideal bodies are broadcasting or offering beautiful bodies, can also be stressors. The fact is that adolescence is a vulnerable period in development because of physical, biochemical and social changes that are experienced during this time in spite of the differences in culture, gender, socioeconomic status and education level that lead to cope with external demands and stress. The aforementioned show the importance of identity anxiety and depressive symptoms in this particular population of students, to improve the mental health and academic performance in high school and university students.

Acknowledgements

Present chapter was partially supported by Consejo Nacional de Ciencia y Tecnología, México (CONACyT: Proyecto 1840), Cuerpos Académicos UVE-CA-25, UNPA-CA-26 and Programa de Fortalecimiento Académico del Posgrado de Alta Calidad I010/152/2014C-133/2014.

Author details

Blandina Bernal-Morales^{1*}, Juan Francisco Rodríguez-Landa¹ and Frank Pulido-Criollo²

*Address all correspondence to: bbernal10@hotmail.com

1 Laboratorio de Neurofarmacología, Instituto de Neuroetología, Universidad Veracruzana, Xalapa, Veracruz, México

2 Licenciatura en Enfermería, Universidad del Papaloapan, campus Tuxtepec, Sistema de Universidades Estatales de Oaxaca, Tuxtepec, Oaxaca, México

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