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# Introductory Chapter: Writing about Health and Academic Achievement

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Blandina Bernal-Morales,  
Cecilia Luz Balderas-Vazquez and  
Juan Francisco Rodríguez-Landa

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## 1. Academic achievement

Academic achievement has become a topic of great interest in recent decades. It arises as the result of a school process and its corresponding evaluation for the fulfillment of the learning objectives. The study of academic achievement has included different variables beyond cognitive aspects, like social and motivational aspects, which together anticipate an adequate academic result [1]. Some of these variables are related to personal aspects of the students within affective dimensions and are also related to the methodological implementations that the teacher uses in scholar settings [2]. Other variables are learning styles and strategies, as well as cognitive preferences (intentions and self-obligations), emotional preferences (desires), and behavioral habits [3]. These parameters are constructs that have been placed in an important way to understand how different conditions influence school learning and academic performance [4]. Thus, good academic performance can be understood as a synonym for academic achievement, since it is defined as the acquisition of knowledge and goals obtained in students, which are evaluated by qualitative and quantitative methods after the implementation of educational strategies [5]. The evaluation of academic performance can include exams, grades, teacher reports, or direct observations of classroom behavior, among others [6]. Only the cognitive potential is considered through the eyes of others most of the time; however, it is essential to consider the self-assessment of academic performance under academic stress [7] or under different levels of support that students perceive and receive from their environment. The family is the main group that contributes to an adequate social, emotional, and economic context for the development of the individual [8]. The adequate level of family support together with an optimum level of school confidence is a significant predictor of the degree of adaptation in which the student faces and resolves problematic situations [9, 10].

There are cases where the students with high intellectual abilities do not reach an acceptable academic performance. This is often the result of a lack of motivation. Motivation is considered an agent both internal and external to the individual, which emerges as the cognitive representation of performance objectives [11] and significantly influences each of the actions taken during the educational training process. Motivation facilitates to achieve goals and increases the probability to reach successful academic results [12]. However, the competitiveness generated in the school environment puts the individual's competences and abilities to be tested, as well as the degree of commitment of the students, which together with the school overload can decrease motivation [13–15]. The responses to school demands and competitiveness presumably depend to a large extent on the environment, the subjective evaluation and the behavior of the individual. So people can increase their effort under situations in their environment that demand competence [16].

## 2. Academic achievement relation with health

Changes in effort and motivation are related to health risk behaviors such as addictions, alcohol consumption, poor eating habits, and violence [17–19]. These behaviors in turn cause physical problems and increase emotional health problems [20, 21]. The association between unhealthy behaviors and the decrease in the productivity of the individual related to academic achievement has been evidenced [22]. Risk behaviors among young people are closely related to low grades and lower educational attainment [23], whereas in a bidirectional model, healthy students reach a better academic achievement, which in turn is beneficial for health. According to the above, the acquisition of knowledge and learning requires a high degree of motivation and an adequate social environment, so that the individual is directed to implement academic actions and healthy personal habits that allow a healthy emotional and physical state, which ensure achievement of their school goals [24].

When talking about health, the reference is not only to the absence of illness but to the state of complete physical, mental, and social well-being as established by the World Health Organization [25]. Therefore, the concept of health makes us to think about the physiological state in equilibrium within family relationships and sociocultural environment, which leads to adaptation and success. It is very important that the individual executes behavior to maintain an optimal state of health, in combination with the educational, social, and economic factors that play an important role [26]. The relationship between health and academic achievement is undoubtedly very close in both basic education and higher education [27]. The diagnosis of a chronic illness affects the dynamics of students in their school environment, produces some degree of disability, demands needs of complex medical attention, daily administration of medicines or the attention in an emergency. Students with chronic illnesses may have lower academic achievement, limited interactions with the work community, and fewer job opportunities as they enter adulthood [28]. Obesity, diabetes, epilepsy, and asthma are the main chronic diseases whose relationship with academic performance has been described [29].

Poor eating habits, physical inactivity, and overweight increase the likelihood of serious health complications, affecting equally individuals of all ages. According to WHO reports, in 2016, the

number of children and adolescents (5–19 years) who were overweight and obese increased significantly. The highest rates for this population group were registered in Polynesia and Micronesia, with prevalence close to 23%, followed by the United States, Canada, Australia, New Zealand, Ireland, and the United Kingdom. Among the countries of Latin America with high rates of obesity are Bahamas (17.3%), Argentina (16.9%), Chile (15.2%), Dominican Republic (15%), and Mexico with 4.8% of the obese population under 19 years [30]. In this regard, it has been shown that physical activity and practicing sports in students facilitate capacities to be able to respond appropriately to tasks [31], improve cognitive functioning [32], and predict better scores on standardized tests for mathematics or sciences [33, 34]. Although, proper eating and sleeping habits are desirable [35], it has been found that students living in vulnerable households with low income have a poor quality of diet, which reduces the chances of having a good performance in school due to an inadequate contribution of energy, fatigue, and lack of attention [36, 37]. Among other factors attributed to school dropout, social detrimental scenarios involve students into problematic situations and encourage them to display inappropriate behaviors as the consumption of substances that generate addiction, crime, or violence [38]. According to the National Institute on Drug Abuse [39], alcohol is the psychoactive substance that shows the highest consumption in young people worldwide (18.1 million), followed by marijuana (4.2 million), which generates the main health problems related to abuse substances. The consumption of these substances begins at early age (12–20 years), mainly in men [39–41] and brings with it the decrease of the executive functions related to attention and memory [40, 42], reduced goals, lower grades and school dropout as a measure of failed academic achievement [38]. The consumption of substances of abuse can be related to the lack of identity, reduced self-confidence, insecurity, and the degree to which the individual is self-considered a capable person [43]. Thus, an optimal level of self-esteem serves as a mediating element in stressful and negative situations [44], increasing the probability of adaptive responses [45] being a protective factor for avoiding unhealthy habits [41] and negative thoughts such as fear or sadness. When the feelings of fear and sadness are persistent and superior to moderate intensity, students could suffer anxiety or depression. The presence of symptoms of emotional distress, anxiety, and depression is negatively associated with the academic performance of students [46, 47] and increases suicidal ideation [48]. If suicide is the leading cause of death in young people between 10 and 24 years old [29], then more attention should be paid to attend mental health in school settings, moreover, when students often refer that psychological support in psycho-pedagogical department as inadequate or unnecessary to their situation [49].

Other elements that represent challenges for the student population are the academic demands coupled with work overload, as well as economic issues and health concerns, which generate a state of stress and trigger depressive and anxiety symptoms and to a lesser extent, situations of school and family abuse and mistreatment mainly in medical students [50–54]. Similar to the above, exposure to violence in the community negatively impacts effective learning and increases acts of delinquency in young people [55].

### 3. Concluding remarks

So far, we have mentioned some of many evidences of the relation of physical and psychological health with performance in students. All these topics that have been addressed in a brief

and general way above can be found in this book “Health and Academic Achievement” with the contributions that the authors present in a masterful way. School is the place where children and young people invest a great part of their lifetime; therefore, it is important to understand the relationship between physical and psychological health conditions that deteriorate the academic performance of the individual. It should be noted that the early identification and adequate management of acute or chronic situations that compromise health will lead to better academic results, but above all, to improve the quality of life of students. Therefore, the commitment does not only fall on the policies or strategies that the educational institutions can implement, but also requires a commitment, effective orientation, and action leading the active participation of everybody to promote a state of complete well-being in the students.

## Author details

Blandina Bernal-Morales<sup>1\*</sup>, Cecilia Luz Balderas-Vazquez<sup>2</sup> and Juan Francisco Rodríguez-Landa<sup>1</sup>

\*Address all correspondence to: bbernal@uv.mx

1 Laboratory of Neuropharmacology, Institute of Neuroethology, Universidad Veracruzana, Xalapa, Veracruz, Mexico

2 Institute of Neuroethology, Universidad Veracruzana, Xalapa, Veracruz, Mexico

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