OPEN ACCESS
Freely Available Online

JOURNAL OF COGNITIVE BEHAVIORAL THERAPY
ISSN NO: COMING SOON

Research

DOI : COMING SOON

Stress in High School Students: A Descriptive Study

María Guadalupe Acosta-Gómez[1], José María De la Roca-Chiapas[2,*], Alicia Zavala-Bervena[2], Antonio Eugenio Rivera Cisneros[3], Verónica Reyes Pérez[2], Charles Da Silva Rodrigues[2], Keneth Novack[4]

[1]Preparatoria de Salamanca, Universidad de Guanajuato, León, Guanajuato, México

[2]Departamento de Psicología, División de Ciencias de la Salud, Universidad de Guanajuato, León, Guanajuato, México

[3]Comisión Municipal del Deporte del Municipio de León Guanajuato

[4]Envisia Learning, Inc. Santa Monica

Abstract

School is a competitive place where people have many duties and responsibilities. This requires coping abilities to manage academic stress efficiently.

Objectives: a) Determine the general level of stress among high school students; b) identify the students' main sources of stress; c) identify the students' main responses to stress; d) determine if students have protections against or risk factors for stress.

Materials & method: The stress levels and the main responses to stress of 335 high school students, aged 15–19 years, were surveyed using Nowack's Stress Profile.

Results and discussion: Most of the students reported normal (54%) or lower (39%) stress levels, but women reported significantly higher stress levels than men ($p < 0.05$). The main sources of stress were examinations, choosing a career path, and family troubles. The students' main responses to stress were listening to music, talking with someone about the problem, and exercise.

Corresponding Author: José María De la Roca-Chiapas, Departamento de Psicología, División de Ciencias de la Salud, Universidad de Guanajuato, León, Guanajuato, México, Tel +52 477 2674 900 ext 3664

Running title: Stress in High School Students

Keywords: Stress, Profile stress, high school student, coping strategies, gender, México

Received: Feb 01, 2018 **Accepted:** Feb 15, 2018 **Published:** Mar 01, 2018

Editor: Rabiul Ahasan, Associate Professor, Universiti Sultan Zainal Abidin (UniSZA), 21300 Kuala Terengganu, Malaysia.

Introduction

Everyone is exposed to stress at some time in their lives1, that uncomfortable situation that affects our sense of well-being and quality of life 2 According to the cognitive-transactional model of stress, stress is the dynamic relationship between an individual and the environment in which a stimulus (whatever it is) disturbs an individual's homeostasis, causing him/her to respond to the situation with all available resources 3 When this occurs, we evaluate the demand relative to our available resources, and the amount of stress we experience is governed by the following rule: the more resources we have, the less stress we will experience [4].

Many criteria are used to categorize stress, and this leads to many terms for different types of stress. One of these criteria focuses on the causes of stress, and it generates such terms as marital stress, familial stress, work-related stress and academic stress[5].

In this article, we focus on academic stress, and we are particularly interested in understanding the scholarly context and the situations in which students live [6.] Academic stress can be defined as any stress associated with school [7]. In particular, stress that occurs in an academic environment can affect students as much as teachers, at any educational level [8].

Academic environments can be highly competitive, and students must rely on their coping abilities to handle school-related stress successfully[9] . High school students experience stress in many situations [10]. Adolescence is a critical period full of changes, and it must be carefully managed if teenagers are to develop properly [11,12]. Although some of the problems of adolescence do not originate in the school environment, they may still impact students' academic performance [13]. Williams [14]maintains that we must attend to the social, physical, and psychological needs of teenagers to prevent the possible negative effects of adolescent stress on health and academic performance [15].

Researchers have found that the main sources of stress in the academic environment are exams [16], homework and work outside of school[17], giving presentations, competition with classmates, and academic overload [18] and animal models [19]. However, not all sources of stress are academic[20], as family problems [21], anxiety about upcoming school terms, and difficulty adapting to change [22] and body image perception [23] have also been identified as important stressors.

To prevent negative outcomes associated with stress, such as suicide [24] or more commonly among students, depression and anxiety [25] we must measure students' stress to help those in need improve their coping strategies so they can manage stress and thereby improve their quality of life [26] . In this study, we examined high school students at the "Escuela de Nivel Medio Superior Salamanca" (ENMS).

Our objectives were to: 1) measure students' stress levels; 2) identify their main sources of stress; 3) discover their prestress behaviors; and 4) determine whether they have any mitigating or risk factors for stress.

Material and Methods

We conducted a cross-sectional study using cluster sampling. The sample was 335 high school students between the ages of 15 and 19 years at ENMS in Guanajuato, Mexico. Necessary permissions were obtained from the high school (ENMS Salamanca), and the study was carried out in accordance with the ethical principles of the American Psychological Association (American Psychological Association) [33]. Participation in the study was voluntary. When recruited, participants were informed that all data collected would be confidential, but that they could access their own results if they desired. Data for 18 of the 335 participants were discarded because the students did not fill out their questionnaires completely.

The instruments used were Stress Profile and a questionnaire that asked students about their main sources of stress and how they respond to stress. The Stress Profile identifies characteristics and behaviors that protect against or contribute to stress-related illnesses [27] . This test is based on Lazarus' Cognitive-Transactional Theory, which has been used on several tests [28,29,30] and produces T scores for 15 content areas.

These 15 areas or scales describe the characteristics of a healthy adult person, and the T scores for these scales can indicate protection against or risk for stress. Generally, a high scale score (T score above 60) indicates protection and a low score (T score

of 40) indicates risk, but for some of the scales the interpretation is reversed. These scales are Stress, ARC (Alcohol, Recreational drugs, and Cigarettes) Cluster, Type A Personality Behavior, and Negative Appraisal. The rest of the scales, including Health Habits, Exercise, Rest/Sleep, Diet/Nutrition, Prevention, Social Support, Cognitive Strength, Positive Appraisal, Threat Minimization, Problem Focus, and Psychological Well-being, can be interpreted directly.

The Stress Profile was developed and normalized for the general population, and which was adapted and translated into Spanish. The psychometric properties of the instrument report that the estimate of the test-retest reliability was found in a range of 0.51 to 0.92 from Cronbach's alpha. The dimensions are independent for their interpretation separately, which explain 57% of the variance [45,46].

The questionnaire about the students' main sources of and responses to stress was based on previous research with Guanajuato University students [17]who reported that their main sources of stress were: 1) exams[18] , 2) homework and work outside of school, and 3) personal problems. Their main responses to stress were: 1) eating; 2) going out with friends; and 3) sleeping [21]. We developed two items based on these results, each with twelve options from which participants chose the most significant and frequent source of (item 1[31]) and response to (item 2 [32]) stress.

Results

We used SPSS Statistics Data Editor Version 17.0 for the statistical analyses.

The mean T score on the Stress Profile Scale for this sample of students was 43.06 (SD = 9.39), which is within normal limits (T score = 40 to T score = 60). Specifically, 58% percent of the students were within normal limits, 39% reported lower than average stress, and only 3% indicated high stress. Men reported significantly less stress than women (T scores = 41.98 and 44.07, respectively, with the –2.198 Z score on the Mann–Whitney *U* Test for two independent samples significant at the 0.028 alpha level). We also examined Stress Scale scores by year, and found that second year students (T score = 45.08) had higher stress levels than first (T score = 42.38) and third (T score = 42.29) year students (Kruskal–Wallis Test for K independent samples, $c^2 = 7.172$, $p = 0.028$).

The students reported that their sources of stress were: 1) exams, 49%; 2) choosing a career, 12.83%; 3) family problems, 9.54%; 4) economic difficulties, 11.86%; 5) problems with boyfriend/ girlfriend, 4.93%; 6) having a relative or a friend with an illness, 4.28%; 7) personal health problems, 3.62%; 8) homework, 3.29%; 9) teachers, 2.96%; and 10) other, 1.97 %. There were no great sex differences here, as the first five sources of stress were the same for men and women.

The main responses to stress were: 1) listening to music, 2) talking about the problem with a friend, 3) physical exercise, 4) going out with friends, 5) talking to a relative, 6) sleeping more than usual, 7) watching TV, 8) eating more than usual, 9) smoking, and 10) drinking some alcohol. The first three responses were the same for men and women, listening to music, talking about the problem with a friend, and exercising.

These data indicate that the students in our sample are well protected against stress, because most of them reported normal stress levels, the T score for the Prevention subscale was above 60, and no risk factors were observed. However, there are some significant differences between men and women, as indicated in Table 1.

As we can see, men scored higher than women on the Health Habits Scale (Mann–Whitney *U* Test for two independent samples, $p = 0.006$), indicating that the men in our sample reported better health habits than did the women. Specifically, the Health Habits Exercise subscale indicated that men tend to do more physical exercise than women (Mann–Whitney *U* Test, $p < 0.001$. Also, the Rest/Sleep subscale suggests that men sleep better than women, but this difference was not significant ($p = 0.188$), nor was the difference between men and women on the Eating Nutrition subscale ($p = 0.286$). Both men and women had T scores above 60 on the Prevention subscale, indicating that their health habits provide above average protection against stress-related illnesses. Finally, women were significantly more satisfied than men with their social support networks (Mann–Whitney *U* Test on the Social Support Scale, $p = 0.003$).

Table 1. Protective factors against stress: results by sex

Protective Factors Against Stress	SEX			
	Female		Male	
	Mean score T	Percentile± Standard Deviation(SD)	Mean score T	Percentile±SD
Health habits	52.73	57±8.95	55.52	69±10.58
Excercise	48.54	42±10.70	53.26	61±10.24
Rest/sleep	47.10	38±8.94	48.76	42±10.63
Eating/nutrition	49.95	49±9.47	51.06	53±9.24
prevention	77.94*	99±5.74	76.22*	99±10.05
Social support network	61.70*	86±16.02	56.24	72±17.28
Cognitive hardiness	48.29	42±9.14	48.08	42±9.86
Positive appraisal	54.38	65±13.95	53.88	61±14.40
Problem focus	46.65	36±12.72	48.78	42±14.14

* Indicates stress protection.

There are four scores on the Stress Profile that can be interpreted as stress risk factors, the Stress Scale, the ARC Item Cluster, the Type A Personality Behavior Scale, and Negative Appraisal subscale (one of four Coping Style subscales). The T scores for these risk factors were between 40 and 60 (within normal limits), indicating that our sample was not experiencing excessive stress. However, there were significant sex differences on these factors, as shown in Table 2.

First, on the ARC Item Cluster, even though men (T score = 49.01) and women (T score = 45.02) were within normal limits on these items (alcohol consumption, recreational drug use, smoking cigarettes), men reported engaging in these behaviors significantly more often than women (p = 0.001). Second, on the Type A Personality Behavior Scale, which measures characteristics such as competitiveness, distrust, irritation, hostility, and vulnerability to coronary diseases, men scored significantly higher than women (T scores = 43.59 and 40.54, respectively, p = 0.027).

We also compared students with respect to their year in high school and found that most of their T scores were in the 40 to 60 range (within normal limits), with the exception of the Health Habits Prevention subscale (T score above 60), which is an indicator of protection against stress. These results are shown in Table 3.

We used the Kruskal–Wallis Test for K independent samples to examine between groups differences on the Protection Scales. On the Exercise subscale, the first and third year students reported doing more exercise than the second year students (p = 0.050). Also, for Health Habits Scale, we can say first and third year students are in better health than second year students.

On the Social Support Scale, which measures satisfaction with the size and quality of one's social support network, we found that scores increased with the students' year in high school. First and second year students had T scores of 55.27 and 60.22, respectively (within normal limits), but the T score for the third year students was significantly higher (64.07, p < 0.001), indicating that by the time students reach the third year of high school, their support networks lend them additional protection against stress-related illnesses. The results for the Cognitive Strength, Positive Appraisal, and Problem Focus Scales were similar. T scores on these scales with the students' year in high school. On the Cognitive Strength Scale, the T scores for the first, second, and third year students were 45.74, 49.86, and 50.58, respectively (p < 0.001). Two measures of positive coping style, Positive Appraisal (first year, T = 51.72; second year, T = 55.94; third year, T = 56.34; p = 0.024) and Problem Focus (first year, T = 45.58; second year, T = 48.43; third year, T = 50.32; p = 0.025) followed the same pattern.

The results for two other coping style subscales were consistent with these findings of increasingly better stress management with progress through high school. T scores increased across the three years on the Threat Minimization subscale, which measures the tendency to minimize the negative aspects of problems (p = 0.012), and they decreased on the Negative Appraisal subscale, which measures the tendency to dwell on the negative aspect of problems.

The fact that stress risk factors as measured on all the scales were within normal limits (T scores from 40 to 60) indicates that this sample of students is protected against stress. However, the between group differences we observed indicate that some of them are more vulnerable to stress than others. For instance, students in the second and third years scored significantly higher (p = 0.010) on the Type A Personality Behavior Scale (T scores = 43.52 and 43.86, respectively) than the first year students (T = 39.99).

The final scale we examined was a measure of Psychological Well-being. This scale indicated that the students' well-being improves with the time (first year, T = 53; second year, T = 55; third year, T = 59; p = 0.005), which is consistent with the increasingly better management of stress noted for the Cognitive Strength, Positive Appraisal, Problem Focus, Threat Minimization, and Negative Appraisal scales. (Table 4)

Discussion

With respect to the first objective of this research, in general, the stress levels of the students in our sample were normal to low however [34] found normal to high stress levels in college students, but he focused

Table 2. Risk factors to stress: Results by sex.

Risk Factors to Stress	SEX			
	Female		Male	
	T-score	Percentile±SD	T-score	Percentile±SD
ARC item cluster	45.02	31±7.89	49.01	46±10.71
Type A behavior	40.54	17±11.45	43.59	25±12.83
Negative appraisal	47.79	41±13.92	48.30	42±12.64
Threat minimization	54.73	67±13.51	56.12	72±14.07

Table 3. Protective factors against stress: Results per semester.

Subscales Nowack stress profile	2do Semester		4to Semester		6to Semester	
	t-score	Percentile± SD	t-score	Percentile± SD	t-score	Percentile± SD
Health habits	54.33	65±10.48	53.46	61±7.77	54.26	65±10.59
Excercise	50.76	50±10.57	48.82	42±10.84	52.76	57±10.66
Rest/sleep	49.32	46±10.36	46.47	34±9.10	46.96	34±9.31
Eating/nutrition	50.92	50±9.08	50.83	50±9.50	49.47	46±9.70
prevention	76.30*	99±9.69	78.93*	99±3.60	76.73*	99±8.27
Social support network	55.27	69±17.71	60.22*	84±15.11	64.07*	91±15.58
Cognitive hardiness	45.74	31±9.20	49.86	46±8.44	50.58	50±9.96
Positive appraisal	51.72	53±14.76	55.94	69±13.49	56.34	72±13.27
Problem focus	45.58	31±14.41	48.43	42±12.07	50.32	50±12.61

* Indicates stress protection.

Table 4. Risk factors to stress: Results per semester.

Subscales Nowack stress profile	2to Semester		4to Semester		6to Semester	
	T-score	percentile± SD	T-score	percentile± SD	T-score	percentile± SD
ARC item cluster	47.16	38±10.06	45.52±	31±8.08	47.93	38±9.91
Type A behavior	39.99*	16±12.24	43.52±	24±12.59	43.86	24±11.45
Negative appraisal	48.10	42±13.01	48.28±	42±14.04	47.72	38±13.19
Threat minimization	53.22	61±14.02	55.99±	72±12.60	58.33	78±13.98

* Indicates stress protection.

specifically on "academic stress," whereas we evaluated stress more generally.

We found sex differences on the Stress Scale indicating that women experience more stress than men in high school, which is consistent with research indicating that women tend to express higher levels of stress and anxiety than men[32] , as well as more happiness, which may mean that women tend to feel and express feelings with more intensity than men [35].

We also found that stress levels varied by year, with first and third year students reporting significantly less stress than the second year students. This may be attributable to the heavier course load and more difficult subjects (such as math, chemistry, and physics) that second year students take, but it may also reflect the career-oriented choices second year students must make at the end of the school year, including decisions about which subjects they will take the next year. Psychologists who work with these boys and girls say that the second year students spend more time seeking vocational guidance and career advice than the other students.

The students in this study reported that exams were their greatest source of stress, which may indicate that students need help to improve their study skills [8] and they may also need additional vocational guidance, as making career choices was the second greatest source of stress in this study [36]. Finally, the finding that family problems were the third most important source of stress for our students raises concerns about the social context of their home lives [11]. This is of concern because children from families that are in conflict, aggressive, negligent, or simply cold toward one another have a greater risk of developing nervous system disorders, cardiovascular disease, and emotional dysfunctions in establishing new social relationships[37].

With respect to our third objective, we found that negative coping styles were used more frequently than positive styles [38]. The three principal responses to stress were 1) listening to music, 2) talking with a friend about the problem, and 3) exercising. Although the students in our study did not report excessive risky behaviors, such as smoking or drinking alcohol, their responses to stress cannot be considered positive, because they did not tend to look for solutions to their stressors, with the exception of "Talking with a friend about the problem" [38] .

These results are consistent with a principal coping style of Threat Minimization. People who cope with stress by minimizing the threat tend to avoid the stressful situation rather than trying to find a solution to it, which just postpones the ultimate resolution of the situation. Thus, Threat Minimization is considered a negative coping style [34] . On the other hand, it is not so

unusual for teenagers to respond to stress in this manner. Massone and González [39] reported that coping with stress through avoidance and recreational activities (having fun or relaxing) was typical of high school students, but not college students. College students were more likely to use logical analysis and problem solving to confront stressful situations, and in the present study, we found that the use of positive coping styles increased with the students' age and year in high school[40] .

Finally, our fourth objective was to determine whether the students had protection against or risk factors for stress. The results indicated that these students are protected against stress, as they have good health habits, social support, and healthy psychological well-being scores. The men in our study reported better health habits than the women, especially with respect to physical exercise, and this latter difference may reflect the fact that high school tend to promote sports tournaments more for boys than for girls.

On the other hand, women reported better social support and greater satisfaction with it, whereas men were more likely to report ARC behaviors. This pattern is consistent with gender roles in Mexican culture [41], whereby men are expected to be more aggressive, flaunt their strength or hostility, and even drink, smoke, and use drugs [42], whereas women are expected to express more affection and provide social support [43].

Our examination of the results by year revealed an increase in social support as students progressed in their studies. This increase was positively correlated with Cognitive Strength and Psychological Well-being, and it indicates that support becomes more important for students as they grow up and move forward with their studies [44] . It seems that, in keeping with students' growth and age, they start to value social support more at the same time that they perceive their schoolwork in a more positive light: they start to see changes in their lives as challenges or opportunities rather than obstacles, and they are more satisfied with themselves, which is good for their psychological well-being.

In conclusion, the results reported here indicate that the students in our sample are well developed psychologically, but the previously mentioned risk factors for stress must be addressed to prevent future negative consequences.

Based on these results, we have several recommendations for improving student quality of life: 1) offer training programs to teach students how to manage stress and anxiety before examinations, which can be conducted as brief workshops; 2) offer students courses on how to prepare for examinations, including the development of study skills and memory strategies so they can improve their academic performance in difficult subjects; 3) evaluate the vocational guidance and career advice that students get with the aim of reducing the stress associated with career choices; and 4) develop a program to identify students with family problems or problems adapting to school so they can be given psychological support.

References

1. Santiago, L.M., Neto, M.G., Miranda, P., Rosendo, I., Constantino, L, Matias, C, Francisco, M.P. (2010). [Medicines, anxiety and depression]. *Acta Médica Portuguesa, 23*, 983–992.
2. Jennings, M.L. (2009). Medical student burnout: interdisciplinary exploration and analysis. *The Journal of Medical Humanities, 30,* 253–269.
3. Folkman, S. (1984). A theoretical analysis. *Journal of Personality and Social Psychology, 46,* 839–852.
4. Turcotte, P. (2004). *Calidad de vida en el trabajo: Antiestrés y creatividad*. Mexico: Trillas.
5. Orlandini, A. (1996). El estrés: Qué es y cómo evitarlo. Mexico, Mexico City: Fondo de Cultura Económica.
6. Seiffge-Krenke, I. (2008). [Stress in German schools: Frequencies, causes and international comparison]. *Praxis der Kinderpsychologie und Kinderpsychiatrie, 57*, 3–19.
7. Polo, A., Hernández, J.M., & Pozo, C. (1996). Evaluación del estrés académico en estudiantes universitarios. *Revista Ansiedad y Estrés, 2*, 159–172.
8. Álvarez, R. (2000). *Propuestas del profesorado bien evaluado para potenciar el aprendizaje de los estudiantes*. Seville: Instituto de Ciencias de la Educación.

9. Chrzanowska, D., Wdowiak, L., & Bojar, I. (2004). The origin of stress, its causes, symptoms and frequency of appearance among the students of Medical University of Lublin. *Annales Universitatis Mariae Curie-Skłodowska, 59,* 438–443.
10. Juszczak, L., Melinkovich, P., & Kaplan, D. (2006). Uso de servicios de salud y salud mental por adolescentes. *Revista de Salud en la Adolescencia*, *32,* 108–118.
11. Rueger, S.Y., & Malecki, C.K. (2011). Effects of stress, attributional style and perceived parental support on depressive symptoms in early adolescence: a prospective analysis. *Journal of Clinical Child and Adolescent Psychology, 40*, 347–359.
12. De la Roca Chiapas JM, Psicoanálisis y epidemiología del suicidio en Guanajuato en el periodo 1997-2001, Revista Salud Pública de México 2008, 50(1),5:6.
13. Chou, P.C., Chao, Y.M., Yang, H.J., Yeh, G.L., & Lee, T.S. (2011). Relationships between stress, coping and depressive symptoms among overseas university preparatory Chinese students: a cross-sectional study. *BMC Public Health, 11*, 352.
14. Williams, J.H. (2006). Addressing incarcerated adolescents' psychological and physical health service needs. *The Journal of Adolescent Health, 38*, 638–640.
15. De la Roca-Chiapas, J.M., Solís-Ortiz, S., Fajardo-Araujo, M., Sosa, M., Córdova-Fraga, T., & Rosa-Zarate, A. (2010). Stress profile, coping style, anxiety, depression and gastric emptying as predictors of functional dyspepsia: a case control study. *Journal of Psychosomatic Research, 68,* 73–81.
16. Saipanish, R. (2003). Stress among medical students in a Thai school. *Medical Teacher, 25*, 502–506.
17. Celis, J., Bustamante, M., Cabrera, D., Cabrera, M., Alarcón, W., & Monge, E. (2001). Ansiedad y estrés académico en estudiantes de medicina humana del primer y sexto año. *Anales de la Facultad de Medicina, Universidad Nacional Mayor de San Marcos, 62*, 1.p 25-30.
18. Kogan, L.R., McConnell, S.L., & Schoenfeld-Tacher, R. (2005). Veterinary students and non-academic stressors. *Journal of Veterinary Medical Education, 32,* 193–200.
19. José María De la Roca Chiapas, Gloria Barbosa Sabanero, Jorge Antonio Martínez-García, Joel Martínes Soto, Victor Manuel Ramos Frausto, Ken Novack. Impact of stress and levels of corticosterone on the development of breast cáncer, Psychology Research and Behavior Managment; 2016:9 1-6
20. Acosta-Gómez, M.G., & Rivera-Cisneros, A.E. (2008). *Respuestas fisiológicas en el manejo del estrés en estudiantes universitarios".*[Physiological responses in stress management by university students]. Mexico, Guanajuato: DINPO. 14º Verano de la Investigación Científica UG.
21. Wei, M., Ku, T.Y., & Liao, K.Y. (2011). Minority stress and college persistence attitudes among African American, Asian American, and Latino students: Perception of university environment as a mediator. *Cultural Diversity & Ethnic Minority Psychology, 17*, 195–203.
22. Marqueza, C.M. (2005). Preocupaciones vitales en estudiantes universitarios relacionados con bienestar psicológico y modalidades de afrontamiento. *Fundamentos en Humanidades,* 6, 143–153.
23. Cecilia Colunga-Rodríguez, Mercedes Gabriela Orozco-Solis,, María Elena Flores-Villavicencio, José María de la Roca-Chiapas, Ricardo Gómez-Martínez, Alfonso Mercado, Julio César Vázquez-Colunga, Juan Carlos Barrera de León, Claudia Liliana Vázquez-Juárez, Mario Ángel-González. Body Image Perception and Internalization Problems Indicators in Mexican Adolescents. Psychology Journal. 2016: 7. 1671-1681
24. Nath, Y., Paris, J., Thombs, B., & Kirmayer, L. (2012). Prevalence and social determinants of suicidal behaviours among college youth in India. *The International Journal of Social Psychiatry, 58*, 393–399.
25. Supe, A.N. (1998). A study of stress in medical students at Seth G.S. Medical College. *Journal of Postgraduate Medicine, 44*, 1–6.

26. Perales, A., Sogi, C., & Morales, R. (2003). Estudio comparativo de salud mental en estudiantes de medicina de dos universidades estatales peruanas. *Anales de la Facultad de Medicina, 64,* 239–246.
27. Nowack, K. (2002). *Perfil de estrés.* Mexico, Mexico City: Manual Moderno.
28. Haynes, S.G., Feinleib, M., & Kannel, W.B. (1980). The relation of psychosocial factors to coronary heart disease in the Framingham study: III. Eight-year incidence of coronary heart disease. *American Journal of Epidemiology, 1,* 37–58.
29. Jenkins, C.D., Zyzanski, S.J., & Roseman, R.H. (1971). Progress toward validation of a computer-scored test for the type A coronary-prone pattern. *Psychosomatic Medicine, 33,* 198–202.
30. Maslach, C., & Jackson, S. (1981). *Maslach burnout inventory (Research edition)*. Palo Alto, CA: Consulting Psychologists Press.
31. Román, C., Órtiz, F., & Hernández, Y. (2008). El estrés académico en estudiantes latinoamericanos de la carrera de medicina. *Revista Iberoamericana de Educación, 46*, 7–25.
32. Muñoz, F. (2003). *El estrés académico. Problemas y soluciones desde una perspectiva psicosocial.* España: Publicaciones Universidad de Huelva.
33. American Psychological Association (2003). *Ethical principles of psychologists and code of conduct*. USA: APA.
34. Barraza, A. (2010). *El estrés académico en los alumnos de postgrado de la Universidad Pedagógica de Durango. Psicología Científica [internet serie].* Retrieved from www.psicologiacientifica.com/ publicaciones/biblioteca/articulos/ar-barraza01.htm.
35. Sánchez, M.P., Aparicio, M.E., & Dresch, V. (2006). Ansiedad, autoestima y autosatisfacción percibida como predictores de la salud: diferencias entre hombres y mujeres. *Psicothema, 18*, 584–590.
36. Pérez, M., Martín, A., Borda, M., & Del Río, C. (2003). Estrés y rendimiento académico en estudiantes universitarios. *Cuadernos de Medicina Psicosomatica y Psiquiatria de Enlace, 67*, 26–33.
37. Valencia, C.E., Feria, A., Luquín, S., Díaz, Y., & García, J. (2004). Efectos cerebrales del medio ambiente social.[The effects of the social environment on the brain]. *Revista de Neurología, 38*, 869–878.
38. Sandín, B., & Chorot, P. (2003). Cuestionario de afrontamiento del estrés (CAE): Desarrollo y validación preliminar. *Revista de Psicopatología y Psicología Clínica, 8*, 39–54.
39. Massone, A., & Gonzalez, G. (2003). Estrategias de afrontamiento (coping) y su relación con el logro académico en matemática y lengua en adolescentes de noveno año de educación General Básica. *Revista Iberoamericana de Educación*, 1, 1–7.
40. Fernández, M., Contini de González, N., Ongarato, P., Saavedra, E., & de la Iglesia, G. (2007). Estrategias de afrontamiento frente a problemas académicos en estudiantes medios y universitarios. *Universitas Psicológica, 1,* 2–26.
41. Dimaría, F., & Dinuovo, S. (1990). Gender differences in social and test anxiety. *Personality and Individual Differences, 11,* 525–530.
42. González, A., & Reidl, L.M. (2008). Motivos para asistir a los escenarios de consumo de alcohol alrededor de la universidad. *La Psicología Social en México, 12,* 89–94.
43. Díaz, R., & Rocha, T.E. (2008). La masculinidad y la feminidad a través del ciclo vital: un estudio comparativo. *La Psicología Social en México, 12,* 215–220.
44. Soria, R., & Sosa, D. (2003). *Estresores académicos y formas de afrontamiento en estudiantes universitarios*. Tesis, Universidad Nacional Autónoma de México, Mexico City, Mexico.
45. Pozos-Radillo, B. E., Aguilera-Velasco, M., Acosta-Fernández, M., y Pando-Moreno, M. (2014). Perfil de estrés y estrés crónico en migrantes mexicanos en Canadá. *Revista de Salud Pública, 16* (1), 63-75.
46. Preciado-Serrano, M., y Vázquez-Goñi, J. (2010). Perfil de estrés y síndrome de burnout en estudiantes mexicanos de odontología de una universidad pública. *Revista Chilena de Neuropsiquiatría, 48*(1), 11-19.