Prevalencia de síntomas de ansiedad en una muestra de estudiantes universitarios en una facultad de ciencias de la salud en México

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Prevalence of anxiety symptoms in a sample of college students at a faculty of health sciences in Mexico

ABSTRACT

Background: Anxiety symptoms are one of the more frequent mental health related issues prevalent on the Mexican population. College students are at risk of developing anxiety symptoms because of the challenges related to starting college studies and pursuing a college degree. Objective: Levels of anxiety symptoms in a sample of college students were assessed to examine their prevalence among the different university school programs. Participants: 270 college students at the National Autonomus University of Mexico, FES Iztacala, Faculty of Health Sciences. Method: Beck Anxiety Inventory was completed by the balanced sample at University campus. Results: Almost one quarter of the population has symptoms of anxiety above the cut point. Female students showed to be more anxious than male students. Younger students showed higher prevalence of anxiety symptoms. Conclusions: Findings provide evidence that females may be at a higher risk of developing anxiety symptoms, which could impact their academic performance. Likewise, the youngest students are an area of opportunity to be detected and channeled to specialized services on campus.

Keywords: Anxiety, college students, anxiety symptoms.

RESUMEN

Antecedentes: Los síntomas de ansiedad son uno de los problemas de salud mental más frecuentes en la población mexicana. Los estudiantes universitarios están en riesgo de desarrollar síntomas de ansiedad debido a los desafíos relacionados con el inicio de estudios universitarios y la búsqueda de un título universitario. Objetivo: se evaluaron síntomas de ansiedad en una muestra de estudiantes universitarios para conocer la prevalencia de los mismos dentro de las diferentes carreras. Participantes: 270 estudiantes universitarios de la Universidad Nacional Autónoma de México, FES Iztacala, que incluye carreras relacionadas con la Salud. Método: el Inventario de Ansiedad de Beck fue completado por una muestra balanceada en el campus de la universidad. Resultados: casi un cuarto de la población tiene síntomas de ansiedad por encima del punto de corte. Las estudiantes mostraron estar más ansiosas que los estudiantes varones. Los estudiantes más jóvenes presentan mayor sintomatología ansiosa. Conclusiones: los hallazgos proporcionan evidencia de que las mujeres pueden estar en mayor riesgo de desarrollar síntomas de ansiedad, lo que podría afectar su desempeño académico. Así mismo los estudiantes más jóvenes son un área de oportunidad para ser detectados y canalizados a servicios especializados dentro del campus.

Palabras clave: Ansiedad, estudiantes universitarios, síntomas de ansiedad.

Introduction

Anxiety can be understood as the presence of self-reported symptoms of increased fear when a person responds to signals indicating a present or past threat, but also responding to signals that not necessarily represent an actual threat (Craske, Rauch, Ursano, Prenoveau, Zinbarg & Pine, 2009).

According to the most recent National Comorbidity Survey, in Mexico (2003), anxiety disorders are the most common conditions that 14.4% of Mexican adults have ever suffered. Although it has been documented that there are anxiety disorders that are more frequent depending on the developmental stage (phobias, for example, are more frequent during childhood), the survey indicates that social phobia followed by PTSD are more frequent in adult life. It is known that anxiety disorders produce avoidance behaviors and important symptoms that cause a significant deterioration in the lives of individuals. Based on the information processing approach, people who exhibit chronically anxious symptoms keep certain biases characterized by interpreting the world as a dangerous place and underestimating their personal ability to cope (Clark & Beck, 1985).

In the United States, rates of mental health problems among college students have increased steadily over the past 10 to 15 years (American College Health Association, 2013; Hunt & Eisenberg, 2010). In Mexico, there are relatively few studies focused on anxiety symptoms in college students. One of these studies (Villaseñor, 2010) found that students just enrolling in college had low anxiety levels, with a distribution that is even close to normal levels. However, Robles, Espinosa, Padilla, Alvarez and Paez (2008) published a study conducted among a college sample which showed that 3.9% of the sample filled the criteria for an anxiety disorder, which, as mentioned before, is one of the most prevalent conditions among the Mexican population. On the other hand, González and Celis (2009) described the quality of life and the prevalence of anxiety in college students (n=214) compared with the ones from a group of older adults (n=176); both variables were lower in the group of students. Moreover, unlike older adults, the surveyed students reported school, family and money issues among their major concerns.

Another study by Hernández, Coronado, Araujo and Cerezo (2008), shows how anxiety can affect the academic performance of students. The authors took a sample of Mexican college students and used 25 academic assessments and a behavioral assessment of anxiety using the emotional Stroop paradigm and found an inverse relationship between anxiety and academic performance. The authors further evidenced that anxiety levels are associated with low academic performance, just as other authors have shown.

Ultimately, there is evidence that different university courses generate different levels of anxiety in their students. Roman, Ortiz and Rodriguez (2008) point out that Medical Sciences have been reported as one of the branches where students show higher levels of stress.

There is a substantial body of literature that has shown that there is a set of factors that operate as predictors of academic success. Among these factors, are those mainly related to sociodemographic variables. This study aims to explore other factors in the life of college students that could be associated with academic performance: mental health issues. Aragón, Contreras and Tron (2011) argue that success in school depends on both economic and personal factors and on psychological and emotional ones. Borges, Medina, Benjet, Lee, Lane and Breslau

(2011) argue that based on their data, mental disorders could be being diminished or masked by the much greater effect of economic hardship and low cultural expectations for educational achievement. They also state that future research should inquire deeper into possible reasons for the better performance of students with anxiety symptoms in developing countries.

As reported by Riveros, Rubio, Candelario, and Mangin (2013), in Mexico, the main reasons for college dropout are money-related; however, psychologists in the development and education field also point to evidence of the impact of some mental health issues as an influencing factor in the improvement college students academic performance. Saleh, Camart and Romo (2017) call attention on this matter when they comment how university students often face different stressful situations and preoccupations. At particular risk are college students of health sciences who, as data reported by Melese, Bayu, Wondwossen, Tilahun, Lema, Ayehu and Loha (2016), results are indicative of the current status of mental distress among medical students attending institutions of similar setups. Finally, data show that among college students, the first year at college represents major risks that could be targeted to prevent anxiety associated behaviors such as substance abuse (Cho, Llaneza, Adkins, Cooke, Kendler, Clarck & Dick, 2014), depression, and suicide ideation (Mackenzie, et al., 2011).

Under this scenario, and upon the need for early detection of mental health issues in order to prevent low academic achievement or drop out, the authors of this study started research on the variables. We decided to perform a preliminary investigation to estimate the prevalence of anxiety symptoms in a sample of college students of health-related programs at one of the campuses of the National Autonomous University of Mexico. We proceeded to address the following research question: What are the levels of anxiety of college students at a health-related Faculty?

Method

Levels of anxiety symptoms were explored in a sample of 270 undergraduate students between 17 and 34 years of age from six different programs at the FES Iztacala Campus, i.e., Psychology, Dentistry, Biology, Optometry, Nursing, and Medicine. For the purposes of this study, the variables sex (Male – Female), age, student's school (Psychology, Dentistry, Biology, Nursing, Optometry, and Medicine), current semester (1 – 10) and anxiety were taken into account. Anxiety was conceptualized according to Beck and Clark (1997) as a model including a three-stage schema-based information processing that involves: the initial registration of a threat stimulus, the activation of a primal threat mode, and the secondary activation of more elaborative and reflective modes of thinking.

This exploratory study is part of a larger project that aims to identify some predictors of academic success in college students. The study design was cross-sectional, quantitative and of prevalence. The sample was chosen by convenience. Enrollment criteria included being a student from the campus, and willing to participate.

Procedure

Three of the authors of this paper administered the questionnaire directly to students, following a sampling quota at the university corridors, patios, and common areas at the campus. Participants were informed about the purpose of the research and data confidentiality. Participants completed a paper and pencil survey including demographic questions regarding

age, sex, school, current semester, marital status, with whom do they lived, number of children, in any, and employment situation if any.

Instruments

The inventory used has shown to be a reliable and valid tool for Mexican population (Tafoya, Gomez, Ortega, and Ruiz, 2006). Cronbach Alfa $\alpha = 0.86$, the correlation between BAI and Hamilton Anxiety Rating Scale, HAM-A, total score (as the gold standard) was significant (r = 0.82, p ≤ 0.001). BAI has 21 items which measure the intensity of anxiety symptoms throughout a Likert scale, focusing on two factors: somatic and subjective anxiety and panic symptoms of anxiety based on the DSM-IV manual. The answers range from 0 (little or nothing) to 3 (severely).

Statistical Analysis

Statistical analyses were performed with the SPSS software (version 19). First, descriptive analyses (such as percentages, means and standard deviations) were produced. Then, analyses of variance ANOVA were performed in order to investigate the difference between BAI scores among schools and age groups. Student *t* test was used to identify differences among BAI scores on independent groups (male and female; younger and older students). Pearson correlation was run to test the link between age and BAI scores. The significance limit was set at $p < 0.05$.

Results

270 students from the FES Iztacala Campus (*n* = 270) participated on this study. 145 of the students were females (53.7%), and 125 of them were males (46.3%). The participants

were enrolled in one of the six programs offered by this campus by the spring of 2014. From the School of Psychology 49 students (18.1%) were included, 57 (21.1%) from the Dentistry school, 48 (17.8%) from the Biology school, 47 (17.4%) from the Nursing school, and 37 (13.7%) from the Medicine school. The rest were students from Optometry school. Likewise, students were mostly from two subgroups. First-semester students (n=145), which accounted for 53.7% of the sample, while more advanced semester students from the seventh semester onwards, represented 45.1% of the sample. In most of the cases, the younger the student, the lower the current semester in which he was enrolled.

Among the socio demographic characteristics of the sample, participants were between 17 and 34 years of age (M = 20.69, S.D. = 2.798), being the largest age group the participants between 17 to 25 years, which represented 95.2% of the sample. 45.1% of the participants were already in advanced semesters (in the seventh semester and onwards) while 95.2% reported being not married and childless. Most participants reported living with their families (93.3%), and 73.7% revealed not being employed.

The Cronbach alpha obtained was $\alpha = .91$ for the total BAI scale and for the BAI one and two factors (somatic and subjective anxiety and panic symptoms), developed by Beck, Epstein, Brown and Steer (1988) was $\alpha = .857$ and $\alpha = .82$, respectively. Participants in this sample showed a mean of 15.44 points on the Beck Anxiety Scale (D.E. of 11.747). The mean total scale score for female students was 18.48, while for males, it was 11.92; this difference was statistically significant (*t* = 4.752, *p* = .001).

	Mean	Men (n=125)	Women (n=125)	SD	t	p
BAI Total Score	15.44	11.92	18.48	11.747	4.752	.001**
Factor 1 Total	8.27	6.45	9.85	6.861	4.183	.001**
Factor 2 Total	7.17	5.47	8.63	5.491	4.907	.001**

*p < .05;

**p < .01

Fuente: Authors

Table 1 presents the means of the two BAI factors, which were significantly different between males and females. A score higher than 23 points was obtained by 67 participants. From the subset of participants who scored above the cut point, 73.1% were females, of which 53.7% of them were in the first semester of college. The average for the total scale score was 16.79 for Nursing School students, 16.63 for Psychology School students, 16.59 for Optometry, 15.89 for Medicine, 14.61 Dentistry and 12.77 for Biology, respectively. The one-way analysis of variance (ANOVA) revealed no statistically significant differences between groups (F=.747, p = .589). No statistical differences were found either when separating participants between young and older (t = 1.435, p =.152). Based on the ANOVA test, the groups did not have statistically different total scores (F = .269, p = .898), depending on the semester in which they were enrolled.

The most frequent symptoms mentioned by participants were: unable to relax, of which 78.5% of them reported it in a moderate to a severe degree, followed by nervousness (75.6%), fear of the worst happening (58.1%), and insecurity (57.4%).

However, when analyzing the information by age, it was found that mean anxiety scores tended to be higher among younger students. Table 2 shows the results of statistical ANOVA for four age groups and the mean for each group. The difference of means between Group 1 and Group 4 is statistically significant, both with the total BAI score (F = 1.149; p =.018) and with Factor 1, symptoms (F = .731; p = .034) and Factor 2 cognitions (F = 1.151; p =.014).

	Media	Group 1 17 - 18 years old (n=73)	Group 2 19 - 20 years old (n=65)	Group 3 21 - 25 years old (n=119)	Group 4 26 - 34 years old (n=13)	F	p
Factor 1 Total	8.27	9.12	8.69	7.94	4.46	.731	.034*
Factor 2 Total	7.17	7.84	7.17	7.14	3.62	1.151	.014**
Total Score	**15.44**	**16.96**	**15.86**	**15.08**	**8.08**	**1.149**	**.018****

Age showed statistically significant correlations with both the Total Scale BAI score (r =-.142*), and with both BAI factors (Factor 1: r = -.143*. y Factor 2: r = .126).

Fuente: Authors

Discussion

This research is part of a broader study including mental health issues and their connection with academic performance. The data presented here aimed to explore the prevalence of anxiety symptoms in college students. The specific objectives were to investigate the prevalence and distribution of anxiety symptoms among college students in a suburban area of Mexico City. The outcome of this research shows that a large number of students exhibited anxiety symptoms, and 24.8% of students met the diagnostic criteria for an anxiety disorder, most of which were female students. There were no significant differences between exhibiting anxious symptoms and a specific academic program or health-related school, even though the Nursing school and Psychology school students scored higher than those in the Biology school. Our findings contrast with Heinen, Bullinger and Kocalevent's work (2017), who found that medical students reported higher levels of perceived stress and higher levels of anxiety and depression than reference samples. Younger students (17-18 years) and those enrolled in early semesters showed greater anxiety symptoms than older students (26-34 years), and these were significantly different. It was also found that, although it is not high, there is a negative correlation between the age group of the participants and the total score of the BAI; this means that the younger the student, the more anxiety symptoms he/she exhibits. Literature reflects that first-year college students face more challenges in their effort to adapt to their new lives, being away from their old friends and families, and sometimes the stressful environment of certain schools, like Medical School (Roy, Sai & Doshi, 2015).

Regarding gender, there is cumulative empirical evidence in support of women having higher anxiety scores compared to men. Our findings are consistent, for example, with those of Balanza, Morales, and Guerrero (2009) as far as females who display an increased risk of anxiety. These authors, motivated by the high number of pupils attending counseling hours and tutoring, performed a study that included 700 students from a multistage random cluster sample at the *Universidad Católica San Antonio de Murcia* (Saint Anthony Catholic University) and measured anxiety and depression symptoms using the Goldberg scale. Likewise, the study conducted in 2004 by Weitzman, who surveyed 27,409 college students found that 4.8% of them showed poor mental health and depression, and again it was women who showed higher levels of this mental health deterioration. Also, Eisenberg, Gollust, Golberstein, and Hefner (2007) discovered that compared to men, women were more likely to exhibit higher rates of anxiety symptoms. Studies evaluating more specific issues about anxiety also report higher predominance rates of anxiety symptoms in women. An example of this is the work by Caballo, Salazar, Arias, Irurtia, Calderero, and Spain's CISO-A Research team, who in 2010 published the results of the validation of a questionnaire on social anxiety. Within the results, they found higher rates of anxiety among women as far as "speaking in public/interaction with authority figures" and regarding the global aspects of social anxiety. Furthermore, when Pitoni and Rovella (2013) assessed anxiety and perfectionism, they found a high correlation between these variables and more frequent anxiety symptoms in women. It is worth mentioning Dyrbye, Thomas, and Shanafelt's (2006) systematic review of depression, anxiety and other indicators of psychological distress among U.S. and Canadian Medical students. After reviewing forty articles on the matter, the authors conclude that compared to the open population, medical students exhibit a higher prevalence of depression, with higher psychological distress. The authors can say that

even though the learning stages should be a time of personal growth and well-being, they can also have an inadvertent negative effect on the mental health of students, especially on women. The authors also agree that there is very limited data available on the impact of distress on academic performance, dropout rate and professional development of students.

The findings reported in this study draw attention to the high prevalence of anxiety symptoms in a significant proportion of students who are pursuing health-related undergraduate degrees and who are probably in need of professional help. The stress of college students could be approached by identifying this vulnerable population and offering specific, evidence-based support programs so that students could be better prepared to meet these challenges. We subscribe to Kunwar, Risal and Koirala (2016) in terms that the high prevalence of psychiatric conditions warrants needs for strategic plans to alleviate this issues right from the time when students join college and have to be continued until they finish their courses. Also, we agree with Dvořáková, Kishida, Elavsky, Broderick, Agrusti, and Greenberg (2017) on that given the importance of developmental transitions in young adults' lives and the high rates of mental health issues among college students, first-year college students can be particularly vulnerable to stress and adversity. They could find useful having stress management training that includes mindfulness approaches or works at the improvement of students' coping strategies (Coiro, Bettis & Compas, 2016). Future research will be done by the authors, specifically assessing first year college students, as Mortier et al. (2017) point out that screening at college entrance is a promising strategy to identify those students at highest prospective risk, enabling the cost-efficient clinical assessment of young adults in college.

This study has several limitations. The first one is that we cannot know if there is a relationship between academic performance and anxiety symptoms since the first variable was not measured; it would be necessary to determine what would be the academic performance indicator to be selected so that a new measurement could be performed in the future. Second, there are very few studies on anxiety and academic performance other than the literature written by English-speaking authors, and the Latin American research that has been published is not a sufficiently representative sample with which we could compare our results it is worth noting that there are very few Mexican studies comparing the prevalence of anxiety symptoms conducted with undergraduate program students. In Mexico, there is certain research conducted at a college dissertation level, but it doesn't get to be published in indexed journals. Third, the participants of this study were chosen by a convenience criteria; randomized representative samples could help us generalize the results mentioned above. Fourth, follow-up of the participants could not be done, because we did not ask for contact information; in the future, this could help to refer college students in high risk to the available services at the campus.

The authors hope that the results presented in here could raise the concern of our authorities and foster the creation of mental health policies to generate financing of counseling and research areas in colleges that are in great need.

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