

# Influential Factors on the Stress Level Among Students of Bachelor's Degree in Nursing

Norman Uzziel Pérez-Gress<sup>1</sup>, Arianna Maya-Sánchez<sup>2</sup>, Benjamín López-Nolasco<sup>3</sup>, Araceli Cano-Estrada<sup>3</sup>

<sup>1</sup> Nursing Student, <sup>2</sup>M.Sc. Nursing, <sup>3</sup>Lecturer, Academic Area of Nursing, Superior School from Tlahuelilpan, Autonomous University of Hidalgo State, Hidalgo, Mexico

## Abstract

**Background:** Stress is very common among students belonging to the healthcare domain. They are more exposed to stressful factors than the rest of the student community. It is of extreme importance to evaluate the level of stress among the students of the bachelor's degree in Nursing, as well as to know the factors involved. **Method:** Study quantitative, descriptive scope, and cross-sectional. The academic stress level was measured on 332 students from different semesters of the bachelor's degree in Nursing, through of the short version of the "About Stress in University Students questionnaire". **Conclusion:** 218 of nursing students experienced stress levels. The average value of stress was  $34.59 \pm 15.49$ . The main influential factors on the stress level were somatization and anxiety, followed by induced stress by third parties and workload. There were statistically significant differences in somatization and anxiety between women and men ( $p < 0.05$ ). A statistically significant influence of induced stress by third parties and life events with the academic average ( $p < 0.05$ ) was found. It is necessary to consider new didactic strategies to decrease the induced stress by workload, as well as somatization and anxiety.

**Key World:** nursing, Stress, stressful factors, students.

## Introduction

Stress is defined as the set of neuroendocrine, immunological, emotional, behavioral processes and responses to situations that demands a major adaptation than usual for the organism, and they are perceived by the individual as a threat or danger, whether for his/her biological or psychological integrity<sup>1</sup>. Academic stress is a systemic, adaptive, essentially psychological process that happens when a student is going through a series of demands that are stressors; when these

stressors cause a stressful situation showed by a series of symptoms, it presses the student to take actions or confront and recover systemic balance<sup>2</sup>. Stress impacts negatively and positively depending on how effectively the individual experiencing the phenomenon can cope<sup>3</sup>.

Bachelor's degree students usually start their studies with uncertainty and with a certain dose of stress. This situation is, up to a certain point, explainable, as it is a new experience. However, that is not where the problem ends. As the student moves forward with his/her studies, the student faces several demands considered by him/herself (to one extent or another) as stressors. When these demands lead to a permanent stressful situation, it is possible that the student might feel emotionally tired, affecting his/her health<sup>3,4</sup>.

Higher education studies are the turning point of academic stress because of their high workloads and because they coincide with a stage of the student's

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### Corresponding author:

**Araceli Cano-Estrada**

Superior School from Tlahuelilpan. Autonomous University of Hidalgo State. Ex-Hacienda San Servando s/n, Colonia Centro. Tlahuelilpan, Hidalgo, C.P. 42780. México- Tel. 7717172000 ext. 5501, e-mail: edith\_cano@uaeh.edu.mx

life, in which the student must face many life changes<sup>5</sup>. Specifically, getting into college coincides with being separated from the family, their integration to the labor market, and their adaptation to an unusual environment<sup>6</sup>.

It is considered that the levels of stress directly influence the academic performance of the student. They also have negative effects on the student's health and psychological well-being.

The stress also inhibits the immunological system, making the students more prone to sickness<sup>7</sup>.

Stress has always been alive in the perception of all students who have been under situations like exams, economic difficulties, the need to work, pressures on behalf of the family regarding failure or success. Besides all this, nursing students have added stress caused by the amount of potentially stressful situations in the sanitary sector, in their clinical practice like being in touch with the disease, pain, suffering, disability, and death, among others. So, studies have proved that the stress perceived by nursing students is higher than the stress perceived by students of other bachelor's degrees<sup>8</sup>. The main sources of stress in nursing students are the ones related to ignorance, impotence, and uncertainty in a clinical situation<sup>9</sup>; the increase of workload; the lack of time in relation with the clinical and academic areas, without forgetting other areas like the social and interpersonal areas<sup>10, 11</sup>. A study was conducted which compared the contrast levels and sources of stress amongst international simple nursing students from five countries and the results were evaluated. The findings indicate that nursing students' worldwide share much in common while still retaining individual cultural features<sup>12</sup>.

The present study has aim evaluate the influential factors on the stress level among students of bachelor's degree in nursing.

## **Materials and Methods**

This is a quantitative, cross-sectional study with a descriptive approach. The level of academic stress was measured during a specific time among students of the bachelor's degree in Nursing, identifying the

relationship between stress and the different variables associated such as: academic performance, semester completion, age, genre, residence, and work situation, i.e., if the students work or not and how many days in a week they do so. To measure the academic performance, it was considered the general academic average of each student. The work situation was obtained by asking a direct question to each student.

The work has been done with 332 students from different semesters of the bachelor's degree in Nursing.

The study used the short version questionnaire titled "About Stress in University Students questionnaire" formed of 35 questions that were divided into 6 dimensions: somatization and anxiety, induced stress by third parties, induced stress by workload, lack of motivation, collateral effects, and life events<sup>13</sup> with an internal consistency of 0.93. The instrument was administered collectively into the classroom, where students take classes.

The research protocol followed the Helsinki Statement guidelines about biomedical research for humans at the international level and General Law of Health at the national level. Local ethics committee approved the study, and written informed consent was provided by all participants.

The data obtained through the instrument were put in a database using the SPSS statistical program version 22 for Windows. Frequencies, percentages, and means were obtained to analyze the socio-demographic data of students. The relationship between the stress level and the different socio-demographic factors were analyzed through t-student. On the other hand, Pearson's correlation was performed to analyze the relationship among the 6 dimensions of the instrument, the stress level, and the academic average. Finally, linear regression was performed to analyze the contribution of induced stress by third parties and life event on the academic average of the students of the bachelor's degree in nursing. For every test, the level of significance was <0.05.

## Results and Discussion

The average number of students per semester was of  $41.5 \pm 15.45$ . The third semester had the least number of students (5.7%), and the fourth semester was the semester with the most (18.7%).

More women (84.6%) than men (15.4%) participated in the study. A significant difference in the presence of stress was obtained in women due to somatization and anxiety when compared with the stress reported in men by the same stressor. That is, women tend to be more anxious than men. (Table 1).

Commonly, it has been considered that genre is a predisposing factor in experiencing some level of stress. Women students are more prone to stress than men<sup>14</sup>. However, in this study, there is no significant difference between women and men. Still, it is important to consider that the female population was 5.5 times higher than the male population. Studies performed on students of the bachelor's degree in health science, as psychology or nurse; show that it is common among the male population to be way lower in contrast to the female population<sup>15, 16</sup>.

Regarding Marital Status, students who are single (94%) and those who do not have children (93.4%) predominate. However, the students having children have showed a significantly increased level of stress in the nursing students due to the stressor life events (Table 1).

On the other hand, there are significant differences in the level of stress presented by students who work (31.33%) compared to those who do not work (68.67%) where the stressor responsible is the life event (Table 1). Finally, the residence of the students does not seem to have significant differences in the level of stress presented in students who live nearby compared to students who live far away.

Regarding the socio-demographic data reported in this study: the semester completed, the workdays, the academic performance, the number of children, and the marital status have not been related to the presence

of stress among the bachelors' students belonging to Nursing. Studies reveal that sex, marital status, and social work have no significant statistical relation within bachelor's degrees in nursing and nutrition<sup>17</sup>.

The mean of stress presented in nursing students was  $34.59 \pm 15.49$ , which indicates a low stress level. The factor contributing the most to the level of stress is somatization and anxiety, followed by stress induced by third parties and stress induced by workload (Table 2). The results of other studies have described that the main factors of academic stress in students are: exams, homework overload, and academic assignments, as well as the limited time they have to do the work<sup>18, 19</sup>.

On the other hand, the academic average obtained by nursing students was  $8.6 \pm 0.37$ , which represents a good academic average. The lowest grade was 7.4, and the higher grade was 9.6. In the present study, academic performance seems not to be significantly affected by the level of global stress. However, the stress factor induced by third parties and life events were found to have a low but statistically significant correlation in their scores obtained (Table 2). A model was performed using linear regression to predict to what extent the stress factor induced by third parties can affect the grades that nursing students will obtain (Table 3). The induced stress by the third parties' model is  $y=8.683-0.017x$ , and the event of life's model is  $y=8.664-0.020x$ .

Although the stress level has been considered an important factor for low academic performance, in this research, It has not been found that stress significantly affects students' academic performance. Similarly, some other authors do not report a relationship between these variables<sup>20</sup>.

It is of great interest to study the students' stress level in the health area as they are more exposed to stressful factors than the rest of the student community. Different studies have been carried out with nursing students where it was reported that stress levels vary from moderate to high level, where besides homework and workload, other stressful factors are associated with clinical practice, including taking care of patients

and negative relations with the staff<sup>21,22</sup>. The stress level detected in this study was low probably because the students were not in a period of clinical practice or exams. It has been shown that the stress level increases under these circumstances, even though no differences were found in stress experienced between academic and clinical elements of the nursing course by students from four countries<sup>12</sup>. However, it is recommended to include groups of students who perform clinical practices for future research to make the comparison.

The stress level in students has been positively associated with depression and anxiety. Therefore, it is important to consider strategies that help students face stressful situations to control and decrease their stress levels<sup>23, 24</sup>. So, identifying students with high stress levels and determining the factor responsible is extremely important to decrease academic stress levels and contribute to the student’s good health.

From the 332 nursing students who participated in this study, 218 experienced some stress level. A study conducted with nursing students in Saudi Arabia showed that “assignments and workload” as well as “teachers and nursing staff” were the highest sources of stress in clinical training<sup>11</sup>.

It has been recommended to implement support strategies such as stress management counseling, counseling programs, establishing peer and family support systems, and formulating hospital policies for strengthening nursing student’s positive coping skills<sup>25</sup>. However, these strategies are not carried out in countries where human and infrastructure resources in the health-sectional area are limited, so it is important to know the data and the factors of the problems to decrease the level of stress with the corresponding strategies.

**Table 1. Data socio-demographic and influential factor on the stress of students of bachelor’s degree in Nursing**

		stress	SA	ISTP	ISW	LM	CE	LE
	%	<b>Means (SD)</b>						
Gender								
Female	84.6	35.14 (15.21)	10.27 (5.31)*	4.90 (4.18)	11.60 (4.21)	2.38 (1.95)	2.86 (1.79)	3.14 (2.22)
Male	15.4	31.61 (16.78)	7.92 (5.99)*	4.33 (3.94)	11.00 (4.84)	2.06 (1.97)	3.04 (2.29)	3.25 (2.22)
Marital Status								
Single	94.6	34.5 (15.40)	9.89 (5.48)	4.82 (4.13)	11.48 (4.32)	2.31 (1.96)	2.89 (1.87)	3.10 (2.2)
Married	5.4	36.28 (17.37)	10.22 (5.53)	4.61 (4.54)	11.89 (4.3)	2.72 (1.74)	2.78 (2.02)	4.06 (2.41)

**Cont... Table 1. Data socio-demographic and influential factor on the stress of students of bachelor's degree in**

<b>Childrens</b>								
Yes	6.6	34.64 (17)	9.36 (5.47)	4.36 (3.91)	11.23 (4.09)	2.45 (2.52)	3.00 (1.90)	4.23 (2.31)**
No	93.4	34.59 (14.40)	9.95 (5.49)	4.85 (4.17)	11.53 (4.33)	2.32 (1.91)	2.88 (1.88)	3.08 (2.20)**
<b>Job</b>								
Yes	31.33	35.57 (14.32)	9.99 (5.16)	4.78 (2.26)	11.66 (3.84)	2.18 (1.85)	3.03 (1.83)	3.92 (2.05)**
No	68.67	34.15 (16.01)	9.87 (5.62)	4.83 (4.10)	11.43 (4.51)	2.39 (1.99)	2.82 (1.9)	2.8 (2.21)**
<b>Home</b>								
Near	37.65	34.23 (15.43)	9.74 (5.41)	4.79 (4.23)	11.41 (4.35)	2.35 (1.94)	2.82 (1.83)	3.12 (2.18)
Far	62.35	35.19 (15.63)	10.18 (5.61)	4.86 (4.04)	11.66 (4.24)	2.29 (1.98)	2.99 (1.95)	3.22 (2.30)

SA= somatization and anxiety, ISTP= Induced stress by third parties, ISW= Induced stress by workload, LM= Lack of motivation, CE= Collateral effects, LE= Life events.

\*p<0.05, \*\*p<0.01

**Table 2. Correlation between stress level, academic average obtained and the different stressors.**

	<b>stress</b>	<b>SA</b>	<b>ISTP</b>	<b>ISW</b>	<b>LM</b>	<b>CE</b>	<b>LE</b>
Academic average	-0.063	0.005	-0.184*	0.016	-0.005	-0.026	-0.115*
stress	1	0.892**	0.811**	0.802**	0.660**	0.646**	0.578**

SA= somatization and anxiety, ISTP= Induced stress by third parties, ISW= Induced stress by workload, LM= Lack of motivation, CE= Collateral effects, LE= Life events.

\*p<0.05, \*\*p<0.01

**Table 3. Linear Regression Analysis Values Between Third-Party Induced Stress, life events, and Student academic Average**

	<b>Correlation</b>	<b>P value of correlation</b>	<b>R2</b>	<b>Non-standardized regression coefficient</b>	<b>constant</b>	<b>P value of regression coefficient</b>
ISTP	0.184	0.000	0.034	-0.017	8.683	0.001
LE	0.115	0.038	0.013	-0.020	8.664	0.038

ISTP= Induced stress by third parties. LE= Life events

## Conclusion

Due to their professional characteristics, the students in the health area are more prone to stress during their bachelor's degree studies. The workload must be more severe since its jobs involves the approach with human beings. Therefore, they have a longer study day than the rest of the areas. In the present study, the workload was one of the most stressful factors in students of bachelor's degree nursing. The longer workday brings somatization and anxiety, which was the second most prevalent factor for the presence of stress in this research. It is necessary to consider new didactic strategies that allow for shorter days and moments of relaxation in nursing students to have good physical and mental health.

**Ethical Clearance:** This research has obtained the approval of Superior School of Tlahuelilpan Ethics Committee of Autonomous University from Hidalgo.

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