

## State-trait anxiety in university students of the Nursing course


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**Objective:** to assess the level of trait and state anxiety in university students attending the Nursing course. **Method:** a cross-sectional, quantitative and descriptive study was carried out. For data collection, a sociodemographic questionnaire was applied to characterize the sample, as well as the State-Trait Anxiety Inventory to assess the anxiety level among the students. Data was analyzed using descriptive and inferential statistics, with a 5% significance level. **Results:** there was a high level of anxiety in students for both STAI-S and STAI-T. The high level of state and trait anxiety (STAI-S and STAI-T) was more frequent in the “number of subjects”, “doing psychotherapy”, “previous stressor” and “mental diagnosis” variables. Trait anxiety is significantly related to individuals with a mental diagnosis who sought psychotherapeutic assistance. **Conclusion:** the participants showed high trait and state anxiety associated with academic situations and the consequences of this routine, and it is necessary to deeply investigate these variables in order to build actions that can enhance the resilience and resignification of everyday problems in this population.

**Descriptors:** Anxiety; Nursing; Mental Health; Students; Psychological Distress.

### How to cite this article

Oliveira TCR, Leal CQAM, Pontes IEA, Medeiros TPG, Nóbrega IS. State-trait anxiety in university students of the Nursing course. SMAD, Rev Eletrônica Saúde Mental Álcool Drog. 2022 Jan.-Mar.; 18(1):77-86. doi: <https://dx.doi.org/10.11606/issn.1806-6976.smad.2022.180906>

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## **Ansiedade traço-estado em estudantes universitários do curso de enfermagem**

**Objetivo:** mensurar o nível de ansiedade-traço e ansiedade-estado em estudantes universitários do curso de enfermagem. **Método:** foi realizado um estudo transversal, quantitativo e descritivo. Para a coleta dos dados, foram aplicados um questionário sociodemográfico, para caracterização da amostra, e o Inventário de Ansiedade Traço-Estado para avaliar o nível de ansiedade dos estudantes. Os dados foram analisados através de estatística descritiva e inferencial, sendo considerado o nível de significância de 5%. **Resultados:** verificou-se alto nível de ansiedade nos estudantes no contexto analisado para ansiedade-estado e traço (IDATE-E e IDATE-T) que tornou-se mais frequente nas variáveis "número de disciplinas", "fazer psicoterapia", "estressor prévio" e "diagnóstico mental", sendo a ansiedade-traço relacionada significativamente a indivíduos com diagnóstico mental que buscaram auxílio psicoterápico. **Conclusão:** os participantes apresentaram alta ansiedade- traço e estado associadas às situações acadêmicas e às consequências dessa rotina, sendo necessário investigar estas variáveis profundamente para construção de ações que possam potencializar a resiliência e a resignificação dos problemas do cotidiano nesta população.

**Descritores:** Ansiedade; Enfermagem; Saúde Mental; Estudantes; Angústia Psicológica.

## **Ansiedad estado-rasgo en estudiantes universitarios de la carrera de Enfermería**

**Objetivo:** calcular la ansiedad estado-rasgo en estudiantes universitarios de la carrera de Enfermería. **Método:** estudio transversal, cuantitativo y descriptivo. Para la recolección de datos se aplicó un cuestionario sociodemográfico a fin de caracterizar la muestra y se utilizó el Inventario de Ansiedad Estado-Rasgo para evaluar el nivel de ansiedad entre los estudiantes. Los datos se analizaron mediante estadística descriptiva e inferencial, con un nivel de significancia del 5%. **Resultados:** se detectó un alto nivel de ansiedad en los estudiantes tanto para IDARE-E como IDARE-R. El alto nivel de ansiedad en las dimensiones estado y rasgo (IDARE-E e IDARE-R) fue más frecuente en las variables "cantidad de materias", "realizar psicoterapia", "estresores previos" y "diagnóstico mental". La ansiedad rasgo se relacionó de manera significativa con las personas que presentaban diagnóstico mental y buscaron asistencia psicoterapéutica. **Conclusión:** los participantes mostraron elevados niveles de ansiedad rasgo y estado asociados a situaciones académicas y a las consecuencias de esa rutina, con lo cual se considera necesario investigar estas variables en profundidad para llevar a cabo acciones que puedan potenciar la resiliencia y resignificación de los problemas cotidianos en esta población.

**Descriptores:** Ansiedad; Enfermería; Salud Mental; Estudiantes; Distrés Psicológico.

## Introduction

Mental disorders are among the conditions that most cause disabilities in the contemporary world, and may affect mental functions such as mood, behavior, perception and cognition, in addition to social aspects, showing diverse and complex characteristics and etiologies<sup>(1)</sup>. Among the many factors that impact on mental health, the following stand out: predispositions, social context, culture, spirituality and economic situation<sup>(2)</sup>. Additionally, the university context is inserted as a possible influence on the development and maintenance of mental disorders among the individuals, especially students<sup>(3-4)</sup>.

The growing number of mental disorders among this population is already considered a public health problem. Entering higher education significantly impacts on the individual's life, resulting in an overload of anxiety, fears and challenges, which can trigger various psychiatric disorders, with anxiety disorder being one of the most common<sup>(5)</sup>.

In general, the symptoms of anxiety disorders can often include unpleasant, excessive and persistent sensations, such as palpitation, suffocation, tremor, muscle tension and sweating when facing one or more social or performance situations<sup>(6)</sup>.

On the other hand, anxiety can be considered normal, when it is characterized mainly by fear or concern, a multifaceted trait that, at low levels, can be useful to the individual<sup>(7)</sup>.

It is also possible to classify anxiety into state-anxiety and trait-anxiety. An individual with state-anxiety expresses it about a certain event, which can be triggered by external and temporary stimuli nature. Trait-anxiety is an intrinsic characteristic of the personality<sup>(8)</sup>.

It is in this perspective that young people entering higher education often demonstrate anxiety states and traits in the face of academic reality, which hinder their adaptation to this education system, revealing a weakness in mental health care, both institutionally and personally, since these individuals are subjected to countless demanding situations, internal and/or external, capable of causing psychological distress and, consequently, emotional imbalance<sup>(9-10)</sup>.

The literature points to the existence of low rates of mental health in higher education students, with emphasis on health students, specifically in Nursing, in which the stressful factors, attributed to the context of patient care, expose them even more to illness<sup>(11)</sup>.

Health professionals are especially more susceptible to impairments in their psychological well-being and mental health, due to exposure to a variety of stressful factors, intrinsic to their academic training and to the specificity of their work. Therefore, the concern with Nursing students is important for better understanding

the determinants of the mental health impairment of these future professionals, also with a view to more effective procedures for its prevention<sup>(12)</sup>.

Inserted in the academic reality with maladaptive management, students may come to manifest signs and symptoms that reveal that emotional distress or difficult life situations are experienced as physical symptoms<sup>(13)</sup>. When these maladaptive responses are installed, a situation of vulnerability is identified, pointing to the need for attention from the educational institutions and instigating scientific research on the problem<sup>(11)</sup>.

Paying attention to the mental health situation and considering possible referrals to specialized professionals can be useful strategies to minimize probable serious physical and mental disorders<sup>(13)</sup>.

Given the above, the following guiding question was defined: At what level of trait-state anxiety are university students in the Nursing course? Thus, this study aimed to assess the level of trait-state anxiety in university students attending the Nursing course.

It is believed that Nursing students, considering the university context, the characteristic of the profession, and the fragile network management, show psychological distress with high levels of trait-anxiety and state-anxiety.

## Method

This is a cross-sectional and descriptive study with a quantitative approach, which set out to assess trait and state anxiety scores in Nursing students.

The study was carried out in a public university located in the city of Campina Grande - Paraíba, in the spaces for student circulation within the institution, namely: classrooms, corridors, libraries and living areas, without interrupting the class schedule and/or the students' studies.

The studied sample consisted of 71 students. Sample calculation was carried out taking into account a 95% confidence level and a 10% error margin, based on the number of students enrolled in the ten periods of the institution's Nursing course, which total 200 students. The following inclusion criteria were considered: individuals of both genders (female and male), aged over 18 years old, graduating in Nursing, and who agreed to participate in the research. As for the exclusion criterion, the adopted one was Nursing students who had an irregular enrollment during the collection period or who were absent for any reason.

To perform data collection, a sociodemographic data form was used to characterize the sample, as well as the State-Trait Anxiety Inventory (STAI), to assess the students' anxiety level.

The form applied to characterize the sample contained sociodemographic, personal and academic data: age, gender, period of the course in which they

are enrolled, number of subjects they are taking, if any stressful event occurred previously, if they have a previous diagnosis of any mental disorder, and if psychotherapy is carried out.

The STAI consists of two different self-report scales, with 20 items each, to assess two different anxiety concepts: trait-anxiety (STAI-T) and state-anxiety (STAI-S). Although originally developed as a research tool to investigate anxiety phenomena in "typical adults" (without psychiatric disorders), the STAI also proved to be of great use in assessing anxiety in students, and in neuropsychiatric, surgical and medical patients, in addition to having been validated for Portuguese<sup>(14)</sup>.

The answer options follow the Likert model, with scores from 1 to 4 (in sequence: absolutely not, a little, quite, and a lot). The scores can vary from 20 to 80 for both scales, with no right or wrong answers, as they refer to the way each individual personally feels the situations experienced. The results are obtained through specific scores for each question, considering that they are related to positive and negative situations.

The higher scores reflect higher anxiety levels on both scales. In this study, the following classifications were assigned: < 33 refers to the absence of anxious symptoms or to mild anxiety; between 33 and 49, to medium anxiety; and > 49, to high anxiety level.

Data collection took place between the months of September and October 2019, after institutional release and approval by the Ethics and Research Committee (*Comitê de Ética e Pesquisa*, CEP). As for the volunteers, they were summoned through a brief presentation of the research by the researcher and collector in the classrooms and common environments of the university, with a previous contact being made, briefly presenting the intention and assignments of the research with the course coordinator and professors to start collection; after that, the researcher introduced himself in the classrooms, after the professor's permission, and explained the research and consequently requested participation. The volunteers signed the consent form and answered the self-administered research questionnaires. In addition to the classroom, the students were also approached in common areas of the university, using the same proposal, all being provided pleasant time and distance to fill in the instruments without intervention by the researcher.

The volunteers were asked to participate, in addition to being clarified on the objectives and processes of the research development through the Free and Informed Consent Form (FICF). After signing this

form, the participants filled out the sociodemographic questionnaire and, subsequently, the STAI in a self-administered manner.

The data were tabulated and analyzed by means of the *Statistical Package for the Social Sciences* (SPSS), version 21.0, using descriptive (absolute and relative frequency and measures of central tendency and dispersion) and inferential (Fisher's Exact Test) statistics. Fisher's Exact Test was used because cells below 5 presented a frequency greater than 20%. In all the analyses, a significance level of 5% ( $p\text{-value} < 0.05$ ) was established.

To show the results, the data were described using tables that best describe the findings. Initially, sociodemographic and academic variables were used. Then, the findings of STAI-S and STAI-T were disclosed and, finally, the relationship between the investigated variables was described.

The students were only included in the study after meeting the eligibility criteria, if they agreed to participate and to sign the FICF. In accordance with Resolution No. 466/12 of the National Health Council, the study was submitted to the CEP of the Center for Higher Education and Development (*Centro de Ensino Superior e Desenvolvimento*, CESED) through *Plataforma Brasil* and approved on September 7<sup>th</sup>, 2019 under opinion No. 3,563,746 and CAAE: 19641019.0.0000.5175, conducted in accordance with the ethical standards required.

## Results

A total of 71 Nursing students were included. The distribution of the sociodemographic variables is detailed in Table 1, in which it was possible to observe predominance of women (80.3%;  $n=57$ ) when compared to men (19.7%;  $n=14$ ), single individuals (97.2%;  $n=69$ ) differently from married people (2.8%;  $n=2$ ), with those with no paid activity prevailing (90.1%;  $n=64$ ), compared to those who had some paid activity (9.9%,  $n=7$ ), and prevalence of students with a family income of more than one minimum wage (51.5%;  $n=34$ ) if a parameter is made of those who have incomes of one minimum wage (48.5%;  $n=34$ ). Regarding the age groups of up to 20 years old (62.0%;  $n=44$ ) and more than 20 years old (38.0%;  $n=27$ ), the mean age was 20.49 years old, with a standard deviation of 3.17. When dichotomizing the variable according to the median, it was possible to observe predominance of individuals up to 20 years old (62.0%;  $n=44$ ).

Table 1 - Distribution of the participants' sociodemographic data (n=71). Campina Grande, PB, Brazil, 2019

Variables	Absolute frequency (n)	Relative frequency (%)	Valid/ Missing sample
<b>Gender</b>			
Female	57	80.3	71/0
Male	14	19.7	
<b>Marital status</b>			
Single	69	97.2	71/0
Married	2	2.8	
<b>Age</b>			
Up to 20 years old	44	62.0	71/0
Over 20 years old	27	38.0	
<b>Paid work</b>			
Yes	7	9.9	71/0
No	64	90.1	
<b>Economic level</b>			
One minimum wage	32	48.5	66/5
More than one minimum wage	34	51.5	

Table 2 shows the professional training data, where it is possible to notice that the majority did not take any other higher education course and, at the time of

collection, attended more than five subjects. In relation to the period, the mean was 3.55, with a standard deviation of 2.07 and a maximum of eight.

Table 2 - Distribution of the data about the interviewee's professional training (n=71). Campina Grande, PB, Brazil, 2019

Variables	Absolute frequency (n)	Relative frequency (%)	Valid/ Missing sample
<b>Took another course</b>			
Yes	20	28.6	70/1
No	50	71.4	
<b>Number of subjects</b>			
Zero to five subjects	18	25.4	71/0
More than five disciplines	53	74.6	

Regarding the frequency of the interviewees' mental health assessment data, it was identified that nine (12.9%) do psychotherapy and 61 (87.1%) do not; 43 (62.3%) stated the presence of a previous stressor while 26 (37.7%) did not; and seven (9.9%) reported

having been diagnosed with a mental disorder while 64 (90.1%) did not.

Regarding the scale that evaluates anxiety (Table 3), it was verified that, for STAI-S and STAI-T, high anxiety level was more frequent.

Table 3 - Distribution of the anxiety assessment using the STAI\* scale (n=71). Campina Grande, PB, Brazil, 2019

Variables	Absolute frequency (n)	Relative frequency (%)	Valid/ Missing sample
<b>STAI-S*</b>			
Absence of anxious symptoms or mild anxiety	2	2.8	71/0
Medium anxiety	26	36.6	
High anxiety level	43	60.6	
<b>STAI-T†</b>			
Absence of anxious symptoms or mild anxiety	2	2.8	71/0
Medium anxiety	26	36.6	
High anxiety level	43	60.6	

\*STAI-S = State-Trait Anxiety Inventory - State; †STAI-T = State-Trait Anxiety Inventory - Trait

There was an association between some variables referring to the training of the interviewees and the assessment of their mental health with the anxiety level by STAI-S (Table 4). These data allow us to identify that high anxiety level prevailed in individuals who attend from zero to five subjects (83.3%; n=15), do psychotherapy (88.9%;

n=8), had a previous stressor (67.4%; n=29) and have a mental diagnosis (71.4%; n=5). In relation to taking another course, the two categories showed the same percentage. The "number of subjects" variable showed statistical significance with the STAI-S scores (p-value=0.01).

Table 4 - Association between the training and mental health assessment variables with anxiety level by STAI-S\*(n=71). Campina Grande, PB, Brazil, 2019

Variables	STAI-S*			p-value†	Valid/ Missing sample
	High level n (%)	Medium anxiety n (%)	Mild anxiety n (%)		
<b>Number of subjects</b>					
Zero to five	15 (83.3)	2 (11.1)	1 (5.6)	0.01	71/0
More than five	28 (52.8)	24 (45.3)	1 (1.9)		
<b>Took another course</b>					
Yes	12 (60.0)	8 (40.0)	0 (0.0)	1.00	70/1
No	30 (60.0)	18 (36.0)	2 (4.0)		
<b>Does psychotherapy</b>					
Yes	8 (88.9)	1 (11.1)	0 (0.0)	0.22	70/1
No	35 (57.4)	24 (39.3)	2 (3.3)		
<b>Previous stressor</b>					
Yes	29 (67.4)	13 (30.2)	1 (2.3)	0.31	69/2
No	13 (50.0)	12 (46.2)	1 (3.8)		
<b>Has a medical diagnosis</b>					
Yes	5 (71.4)	2 (28.6)	0 (0.0)	0.75	71/0
No	38 (59.4)	24 (37.5)	2 (3.1)		

\*STAI-S = State-Trait Anxiety Inventory – State; †Fisher's Exact Test

When assessing the association between training and mental health data with the anxiety level by STAI-T, it was identified that high anxiety level was higher in individuals attending from zero to five subjects (61.1%; n=11), who took another course (70.0%; n=14), who

do psychotherapy (100.0%, n=9), who have a previous stressor (69.8%; n=30), and who have a mental diagnosis (100.0%; n=7). Statistical significance was obtained between doing psychotherapy (p=0.04) and having a mental diagnosis (p=0.07), with the anxiety classifications.

Table 5 - Association between the training and mental health assessment variables with anxiety level by STAI-T\* (n=71). Campina Grande, Paraíba, Brazil, 2019

Variables	STAI-T*			p-value†	Valid/ Missing sample
	High level n (%)	Medium anxiety n (%)	Mild anxiety n (%)		
<b>Number of subjects</b>					
Zero to five	11 (61.1)	7 (38.9)	0 (0.0)	1.0	71/0
More than five	32 (60.4)	19 (35.8)	2 (3.8)		
<b>Took another course</b>					
Yes	14 (70.0)	5 (25.0)	1 (5.0)	0.28	70/1
No	28 (56.0)	21 (42.0)	1 (2.0)		

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Variables	STAI-T*			p-value†	Valid/ Missing sample
	High level n (%)	Medium anxiety n (%)	Mild anxiety n (%)		
<b>Does psychotherapy</b>					
Yes	9 (100.0)	0 (0.0)	0 (0.0)	0.04	70/1
No	34 (55.7)	25 (41.0)	2 (3.3)		
<b>Previous stressor</b>					
Yes	30 (69.8)	12 (27.9)	1 (2.3)	0.31	69/2
No	12 (46.2)	13 (50.0)	1 (3.8)		
<b>Has a medical diagnosis</b>					
Yes	7 (100.0)	0 (0.0)	0 (0.0)	0.07	71/0
No	36 (56.3)	26 (40.6)	(3.1)		

\*STAI-T=State-Trait Anxiety Inventory – Trait; †Fisher's Exact Test

## Discussion

The survey on the profile of the students who participated in the research found predominance of women, single marital status and mean age of 20 years old in the analyzed sample. Nursing is a predominantly female profession. Despite greater entry of male individuals, this profession still remains, mostly, filled by women<sup>(15)</sup>. Single marital status also prevailed and is probably associated with the age group of young people who are starting their qualification.

The characteristics evidenced in the participants who show anxiety and other mental health problems that have an impact on health and academic performance are probably due to the reality experienced, habits, university demands and self-demand, among other factors<sup>(13,15-16)</sup>.

Routinely, these students are inserted in an accelerated reality and, sometimes, do not seek professional support to manage mental health issues, being necessary to pay attention to this situation, observing the particularities of this population to act with attractive and effective interventions that seek to make the university an environment of learning and not of psychological distress<sup>(10-11,17)</sup>.

In this study, doing psychotherapy was associated with high anxiety level in STAI-S and STAI-T, as well as lower number of subjects, previous stressor, and having a diagnosis of mental distress. This data reflects how much the situations are capable of destabilizing the individuals, impact on the way they react to certain situations, and how the creation of coping strategies is sought in the act of seeking psychotherapy, even though there is intense contact with stressors.

Policies aimed at the treatment and well-being of the students are guided by the need to welcome and provide guidance to them, improving their mental health and enabling lower dropout rates, so that professional training

is combined with the fact that the university needs to promote care to those who are in training. In the case of students attending health courses, it is fundamental to return to a commonplace when discussing care: caring for those who care. Thus, caring for those who care is no longer a possible or desirable strategy and becomes an institutional policy<sup>(15,18)</sup>.

Literature is scarce in the relationship between the number of subjects attended and anxiety. However, in this association, both state and trait can refer to the relevance that individuals give to the situations they face. In this study, it can be related to the subject attended, its hour load or its teaching requirements. According to a survey carried out in 2017, this feeling was detected from the pre-university entrance exam, in which the issue of professional choice also seems to interfere in the well-being of young people. The choice can motivate the adolescent to follow a plan, or it can become an anxiogenic factor due to the need for knowledge about the job market, salary and all the accompanying factors of professional life<sup>(19)</sup>.

Both the relationship between the number of subjects attended and anxiety and the relationship between trait-anxiety and psychotherapy are associated with the personal perceptions of the individuals with regard to their personality and way of experiencing life problems. In a research study conducted with students of various courses in general, a similar finding was observed in relation to mental health issues, where the students reported that personal characteristics influence the maintenance of instability and act as limiting factors for the achievement of balance in the face of challenges<sup>(20)</sup>.

Mild levels of anxiety can be useful, acting positively on academic performance. In contrast, in cases of high levels, the students can experience a drop in this indicator. Thus, it is assumed that the harms are proportional to the anxiety level, and can negatively interfere in the cognitive

aspects, such as attention, memory, concentration and reasoning. This situation has been a trend in the university population<sup>(4,10-11,15)</sup>.

Some studies cite probable variables that contribute to the emergence of emotional instability in the university context, punctuating the high academic, personal and economic demands, doubts about their aptitude at the end of their undergraduate studies, the need to build new social relationships, adaptation to a new environment, the need to get away from family life and to manage time<sup>(9,21)</sup>.

The implications of such exposure can be translated into emotional changes and psychological illnesses<sup>(6)</sup>. The sequence of identifications and anxious reactions can generate the installation of diagnosed mental distress, as found in the sample studied, which confirms the difficulty in dealing with adversities in the current generation<sup>(22)</sup>.

To minimize this impact and enhance resilient capacity, it is necessary to review the way in which teaching and learning is currently implemented in higher education institutions, so that professional and personal competences and abilities are developed, without significant psychological harms<sup>(23)</sup>.

The presence of emotional distress and vulnerability points to the need to create and invest in health promotion and prevention programs in the university environment. It is essential to increase the number of professionals devoted to the care of the students' health, providing broader care to their physical and emotional health. Programs and projects aimed at student care and support are indispensable and can act to expand the help spaces and resilient capacity<sup>(20,23)</sup>.

Extension programs that focus on university students and create spaces for leisure, art, therapeutic groups, pedagogical and career guidance, as well as welcoming and counseling teams for maintaining or improving the health and quality of life of this population are examples of strategies that can be stimulated and oriented to the students<sup>(23)</sup>.

Emotional support plans represent the trend of the clinical, business and educational practice, as they enable individuals to achieve their goals while respecting their own limits. From the perspective of the Nursing student and future professional in the field, working on these issues prevents psychological distress and assists in possible future emotional exhaustions that exercising the profession may bring<sup>(24)</sup>.

Such findings point to the need to develop mental health care strategies for the academic population, as well as scientific research to identify both the variables that cause distress and the mental health protection factors. The academic experience impacts the individual, the community and the professional future, so it is important to consider that it goes in a healthy and conducive way for

increasingly sustainable mental health in the university and in the job market.

## Conclusion

The results of this study indicate that the participants presented high trait and state anxiety associated with academic situations and the repercussions of this routine. There was predominance of female individuals, single and belonging to a mean group of 20 years old.

As for state-anxiety, high level prevailed in the students who attend from zero to five subjects, do psychotherapy, had a previous stressor and have a mental diagnosis. As far as the high level of trait-anxiety is concerned, in addition to being found in individuals with the aforementioned variables, it was present in those who have also taken another course.

This study had limitations related to the sample size and to the research being conducted in the reality of a public university. Further and more comprehensive and multicenter studies are needed to better understand the analyzed phenomenon and its implications. In addition to that, the difficulty of approach and adherence of the students to the research stands out, which may be related to the high number of existing attributions within the academic scope and/or to possible resistance with regard to the discussion of the researched topic.

Furthermore, it is understood that the identification of distress must produce an alert in the academic community and stimulate new research studies and projects aimed at promoting mental health in higher education institutions. For the health courses, specifically Nursing, mental health covers the entire care trajectory with the patient and, therefore, personal and institutional care since the university enables a sustainable phenomenon to deal with adverse situations that impact on the psyche of this student and the future professional.

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**All authors approved the final version of the text.**

**Conflict of interest: the authors have declared that there is no conflict of interest.**

Received: Jan 15<sup>th</sup> 2021

Accepted: Mar 2<sup>nd</sup> 2021

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