

Instrument To Determine Anxiety And Stress Due To ICT Among High School Students

Victor del Carmen Avendaño Porras¹, Iris Alfonso Albores²

¹Universidad de Boyacá, vcavendano@uniboyaca.edu.co, <https://orcid.org/0000-0003-1962-3892>

²Regional Teacher Training and Educational Research Center, iris.alfonzo@cresur.edu.mx, <https://orcid.org/0000-0002-1714-5965>

Abstract

The study proposes an instrument to determine the emotional state of high school students, originated by the confinement of the COVID-19 pandemic. The objective is to design a questionnaire to analyze the state of emotional health originated by the use of ICT of high school students, which will reflect the levels of stress and anxiety they show. For this purpose, the instrumental methodology was used, applying the validation of 10 experts, through a focus group composed of 5 psychologists and 5 physicians, from whom a value of .86, considering the instrument to have a good degree of validity. In addition, reliability was obtained through Cronbach's Alpha, with a value of .84, so it is considered an instrument with excellent reliability. The questionnaire is composed of 69 items, 59 of which are structured by means of a 5-level Likert scale. With the design of this instrument, it will be possible to know the levels of stress and anxiety that the use of ICT causes in young high school students.

Keywords: Anxiety, stress, information and communication technologies, public health, high school education.

Introduction

The outbreak of coronavirus disease COVID-19 reported by Wuhan, China, in December 2019, generates a major health problem, is declared a pandemic by the World Health Organization (2020) on March 11, as it spreads through several countries around the world, affecting large scale and causes a large number of deaths that, to date, continues to rise.

The population was not prepared for this situation, because the impact was not only on physical and emotional health, but also in educational centers around the world, which closed their doors, "affecting 1,570 million students in 191 countries" (OEI-IESALC, 2020: p. 5), where the immediate solution was distance education, a situation that meant a great challenge not only for most teachers but

also for students, who changed the frequent use of cell phones, going from calls, games, messages, music and web browsing, to consider it as the first tool in the list of didactic supports.

The prevalence of several symptoms related to anxiety and depression, an expected finding and congruent with the majority of contemporary studies in this same line of research by Prieto et al. (2020), is shared by Huarcaya-Victoria (2020) and Brooks et al. (2020), mentioning that the most prevalent anxiety indicators are representative characteristics of agoraphobia; for example, discomfort when being in a crowded place or even fear of leaving home. It is important to evaluate the emotional and physiological impacts of social distancing during the

COVID-19 pandemic, as mentioned by Silva, Santos, Souza and Ferreira (2021).

The main difference between social network and social support, according to Uribe (2010), is that the term social network is made up of the people who surround the individual, including family members, friends, neighbors, co-workers and community acquaintances. These people provide great social support to the individual, allowing them to generate the necessary tools within their context, leading to better psychological and physical conditions, unlike people who isolate themselves or have little integration, making this support a key aspect for the development of interventions with the adolescent population.

The problem does not lie in the abrupt change of cell phone use, but rather in all the aspects that lead to this change, such as: the need for a space at home transformed into an environment where the now called student receives his class, develops his activities, has the necessary materials for the achievement of the objective and has a favorable internet network, which allows him to enter his school schedule without any connection problems, so all these aspects must be considered. In addition to this, not only the need to be an autonomous and/or self-taught student is considered, but also the time they have been in confinement to date; the student begins to present stress, anxiety and great social affectation, being these elements typical of their age.

The psychological effects of the COVID-19 pandemic are considered “an emerging public mental health problem, which is why the implementation of programs for its attention is recommended” (Galindo et al., 2020: p.304). Based on this, the interest of this research is based on the high school student population, which ranges between 15 and 18 years old, being that for them, one of the most important aspects is to feel socially supported.

They are esteemed, valued, and that they can communicate, so it is a matter of support received or interaction with family, friends, neighbors and members of social organizations, considering social support as “the exchange of resources that occurs when one person relates to another, in which one individual is perceived as a provider and another as a receiver” (Aron et al., 1995), and thus broadly possess psychosocial well-being, which, among other things, implies “the possibility of experiencing pleasure, frustration, affection, motivation and proactivity involved in the genuine discoveries and learning of childhood and adolescence” (Barboza, 2020: p.5).

The study is based on this context, which seeks to analyze the state of emotional health of students in the face of the COVID-19 pandemic, according to the level of anxiety and stress of the student population, between 15 and 18 years of age, at high school level.

Facing a spontaneous situation of changes, especially isolation, where there is little interaction with some people, unlike others who live, enjoy and even provoke the coexistence with other people; the fact of studying the population of high school adolescents, becomes relevant, because they are a generation that is very closely related to the digital generation. For them it is very easy to navigate in social networks, digital platforms, instant messaging and electronic. Psychological well-being has been studied both in the area of health and education, as mentioned by Arias et al. (2020). On the other hand, in their article, Lovón and Chegne (2021) refer that the population in Peru presents mental health problems, such as stress, anxiety, depression, insomnia, denial, anger, fear, adaptation reactions, agitation, psychotic symptoms, delirium and even a greater tendency to suicide.

Confinement has resulted in stress levels in many people, generating anxiety, depression and other mental health consequences, according to Ochoa et al. (2020).

Being informed about their interests in entertainment and shopping online, and now that they are in the digital environment, including their academic education, where it is not only for them to attend a classroom and receive the teacher's lecture, but also to meet people, socialize, nourish themselves with human warmth and learn from that society, are situations that favor the mental health of adolescents.

In this research, it is of great interest to analyze the emotional state of high school students, who abruptly had to enter an almost completely digital world, in which they cannot feel the embrace of a friend, a sincere smile from those around them and from those who can feed their souls. The confinement, as mentioned by Tamayo et al. (2020), causes emotional disorders such as: sleep problems, depressive feelings and hopelessness. Parrado and León (2020) comment that it is important to use different simple linear regression models and to analyze the relationship of the study variables with the psychological impact of the pandemic.

The role of the family is very important, but if there are problems of violence, lack of attention in time, disinterest in the common good, and especially economic situations, which do not allow school activities to be carried out fully, then the intention to know how the adolescent is based on their mental health, is a guideline to stop and review some points that allow a student to continue to be interested in continuing to learn, and if the news received through the media and at home, dictate day by day that this same environment will continue and that face-to-face education will not return, when they already long to meet

with friends in classrooms, in socialization environments and that they will continue to communicate and learn only through digital screens.

Social support is very important for every human being, such is the case in the psychology journal, Garcia and Herrero (2006), comment on the three levels of analysis of the social environment that is related to social support, which are linked to the macro level, referring to social integration and participation; macro, which is about social networks and micro in terms of intimate relationships.

The perception of Orejuela, Castaño, Quintero, Reyes, Patiño, Moncayo and Loaiza (2020) is very different from that reviewed in the variety of information that has emerged in this situation, visualizing this as a panorama for the not-too-distant future, where education is of great importance and as well as the people who are in charge of it.

Stress is an essentially adaptive phenomenon, refers Arturo Barraza (2020), who has been very attentive since its origins, specifying three relevant moments in its life, such as the perception of danger or threat, the alarm reaction and the action generated as a response. There may be the presence of several stressors, such as: academic stress, work stress, family stress, acculturation stress, surgical stress, teaching stress, stress from raising children with disabilities, etc.; this term is also adopted according to the type of activity that the person performs and sometimes limited time, which can be one of its triggers. And in this instrument, which addresses the stress and anxiety caused by the excessive use of ICT in a pandemic situation, Barraza (2020) comments that an environment is created, which he calls pandemic stress, since society is immersed in activities of social distancing and suspension of economic activities, being exposed to a series of demands or demands for

action that can potentially become stressors and thus trigger pandemic stress. Likewise, it identified that the younger population and with chronic diseases have referred a higher level of symptomatology than the rest of the population, words of Ozamiz-Etxebarria et al. (2020, cited in Barraza, 2020).

For this reason, it is of great importance to study this topic, in the context of a new normality, where young people will be the ones who tomorrow will be immersed in the labor field and it will depend on how they close this stage of their lives to be productive or not, even if they manage to settle in a work space. Therefore, through the revised reading, the option of applying collection instruments is considered to obtain real data on the feelings of high school adolescent students and determine the level of stress and anxiety in which they currently find themselves in relation to virtual education in the face of this

Method

The type of study is instrumental, its objective is to design and validate an instrument to identify and describe the state of emotional health of high school students in the face of the COVID-19 pandemic, according to the level of

pandemic and to obtain real and concrete data through observation, theory, but more clearly through the direct opinion of the population.

Thinking about this situation and considering the time that has elapsed from the confinement, from its beginnings to date, the population has not adapted to this new lifestyle, but it has generated abysmal changes in terms of the activities they perform on a daily basis and the use of technology, although a worrying aspect is that of health, since it has caused strong affectations, both in physical and emotional health, where moods and emotions have been altered by the presence of depression, stress and anxiety in women, children and adolescents, aspects that are addressed in this project according to the construction of the instrument to determine the levels present mainly in young people between 15 and 18 years of age.

anxiety and stress. In developing this study, the instrument was subjected to the content validity proposed by Hernández (2011) and Cronbach's Alpha coefficient to obtain reliability. The study was conducted during the months of October and November 2021.

Table 1 Authors who have designed instruments with respect to the knowledge of emotions

Instruments	Author	Dimension
The Mental Health Literacy Scale (MHLS)	Jorm (1997)	Knowledge about your emotions
State-Trait Anxiety Inventory IDARE, Spanish version of the State-Trait Anxiety Inventory (STAI).	Spielberger (1975)	Knowledge about your emotions
Goldberg General Health Questionnaire (GHQ-12)	Goldberg and Williams (1988)	Knowledge about your health

Note: A review of previous literature and similar instruments applied on the analysis of emotions in adolescents was carried out in

order to build a proposal based on an applied instrument, as presented in the Table 1. In addition, primary sources referring to stress

and anxiety such as Barraza (2020), Orcasita (2010) and Lovón and Chegne (2021), to mention a few, were analyzed.

A first version of the instrument was designed with 135 items, which were intended to measure the level of stress and anxiety of the actors; the questionnaire was analyzed through

a judging technique. The criteria for the selection of the experts were that they had experience in making judgments and assessments on the aspects of identifying the levels of stress and anxiety in adolescents, from a psychological and emotional health perspective.

Table 2 Experts who analyzed the first version of the instrument for its validation

Professional profile	Schooling	Professional Experience
Clinical psychologists (1,2 and 3)	Master's Degree in Education	Teacher and therapist
Educational psychologists (1 and 2)	Doctorate in Education	Teachers
Physicians - General (1,2 and 3) - Specialists (4 and 5)	Bachelor of Medicine Specialty	Teachers and physicians

Note: this table specifies that those who analyzed the instrument consisted of a group of experts, made up of 3 clinical psychologists, 2 educational psychologists and 5 physicians with a specialty, who have profiles in common of teachers and doctors in education, as well as broad and varied professional experience, so they have the theoretical and practical knowledge to validate an instrument of this nature.

To issue the critical analysis, the group of experts validated the instrument considering the following indicators: clarity, coherence, scale and relevance for each of the proposed dimensions: personal, academic, emotions and health; taking into consideration a Likert-type scale of values from 1 to 5, where 1) unacceptable, 2) deficient, 3) fair, 4) good, and 5) excellent.

Table 3 Dimensions in relation to the number of items in the instrument.

Dimensions	Item	Number of items
Personal information		
Academic information	1 - 10	
Knowledge about your emotions	11 - 51	
Knowledge about your health	52 - 69	
TOTAL ITEMS		

Note: this table shows the dimensions considered in the construction of this instrument: personal information 6 items for obtaining personal data; academic information with 10 items on data referring to the institution where the students come from; knowledge about emotions, with 41 items, and the fourth dimension referring to knowledge about health, made up of 18 items, thus obtaining a total of

As a result of this procedure, 66 items were eliminated, with the 10 experts agreeing that a large number of items should be eliminated because they were considered unnecessary, so that some items, although they had a good result, were rejected in their entirety by the judges, leaving an instrument with 69 clear, specific and functional items.

Subsequently, a pilot test was conducted with 17 high school students to test the reliability of the instrument, so the Cronbach's Alpha coefficient was calculated, a measure of internal consistency, where a value

75 items: The fourth dimension refers to knowledge about health and is made up of 18 items, thus obtaining a total of 75 items.

At the end of the experts' evaluation, the data were entered into a results matrix and the result was .864, so the instrument is considered to have good validity.

of $\alpha = .849$ was obtained, showing a high reliability.

Results

Analyzing the results obtained through the validation and reliability of the instrument, the relevant tables are presented with the scores collected by the experts and students participating in the sampling, classified in 4 dimensions that make up the instrument, thus obtaining the average and the verification of the validity at first.

Table 4 Validated items of the dimension: Personal and academic information

Academic information						
N. Item	Sum	Mx	Vc	P	Validity	Result
		8.85	0.885	1E-10	0.885	Good
		8.9	0.89	1E-10	0.89	Good
5		8.85	0.885	1E-10	0.885	Good
		8.7	0.87	1E-10	0.87	Good
	183	9.15	0.915	1E-10	0.915	Very good
		8.85	0.885	1E-10	0.885	Good
	173	8.65	0.865	1E-10	0.865	Good
		9.25	0.925	1E-10	0.925	Very good
	182	9.1	0.91	1E-10	0.91	Very good
	173	8.65	0.865	1E-10	0.865	Good

Note: the validated items of the dimension - academic information- can be observed, specifying the number of items and the validity they had when evaluated by the experts, with most of the items obtaining a good validity,

since they achieved a score higher than .80; therefore, they are considered to be adequate. This dimension allows obtaining data regarding the devices used by the students during the virtual classes, times and

characteristics of the spaces used to receive their classes, as well as the general description of a face-to-face class adapted to a virtual one.

Emotions have played a very important role during the pandemic, due to the high number of students who had to confine themselves to their homes and take classes from home, adapting spaces to receive their classes, although in the presence of

uncertainty, fear and anguish, feelings of responsibility and care in the face of this situation of confinement are united.

As will be seen in the following table, a dimension that addresses emotions is extremely important, since it will allow to gather vital information to know the age group to be studied, contemplating the feelings of the students in the face of this new reality.

Table 5 Validated items of the dimension: Knowledge about your emotions - anxiety, comfort, upset, insecurity, well-being, joy, satisfaction-

Knowledge of your emotions (53 to 72, from Idare)						
N. Item	Sum	Mx	Vc	P	Validity	Result
			0.9	1E-10	0.9	Very good
		8.8	0.88	1E-10	0.88	Good
		8.8	0.88	1E-10	0.88	Good
		8.8	0.88	1E-10	0.88	Good
	170	8.5	0.85	1E-10	0.85	Good
		8.6	0.86	1E-10	0.86	Good
		9.5	0.95	1E-10	0.95	Very good
	183	9.15	0.915	1E-10	0.915	Very good
		8.95	0.895	1E-10	0.895	Good
	195	9.75	0.975	1E-10	0.975	Very good
58		8.75	0.875	1E-10	0.875	Good
	187	9.35	0.935	1E-10	0.935	Very good
	183	9.15	0.915	1E-10	0.915	Very good
	187	9.35	0.935	1E-10	0.935	Very good
	187	9.35	0.935	1E-10	0.935	Very good
		8.75	0.875	1E-10	0.875	Good
		8.55	0.855	1E-10	0.855	Good
		8.75	0.875	1E-10	0.875	Good
	187	9.35	0.935	1E-10	0.935	Very good
	183	9.15	0.915	1E-10	0.915	Very good
	191	9.55	0.955	1E-10	0.955	Very good
		8.9	0.89	1E-10	0.89	Good

Note: this table shows the validated items of the dimension -knowledge about emotions: anxiety, comfort, alteration, insecurity, well-being, joy, satisfaction-, specifying the number of items and validity, which when

evaluated by the experts, most of them obtained a good validity, with a score higher than .80, so they are considered adequate. This dimension is made up of 22 items, 16 of which were taken from the "Idare Scale", although

they were contextualized, since it is thought that they will allow obtaining data referring to the students' feelings, such as: anxiety, comfort, alteration, insecurity, well-being, joy, satisfaction, among others.

Attending to the emotions present in people, mainly in young people, is with the idea of avoiding later problems such as learning, family and social problems. In order to do so, feelings should be explored and alarm

signals should be analyzed in the activities they carry out on a daily basis.

As will be seen in the following table, a dimension that allows to know the emotions that define young people's expectations generated by confinement, in the development of school, family and social activities within the same space permanently and through the use of electronic devices.

Table 6 Validated items of the dimension: Knowledge about your emotions -decision, tiredness, security, tension, happiness-.

Knowledge about your emotions (73 to 101 of the Appraisal Inventory)						
N. Item	Sum	Mx	Vc	P	Validity	Result
		8.75	0.875	1E-10	0.875	Good
		8.75	0.875	1E-10	0.875	Good
		8.95	0.895	1E-10	0.895	Good
		9.25	0.925	1E-10	0.925	Very good
	187	9.35	0.935	1E-10	0.935	Very good
		8.7	0.87	1E-10	0.87	Good
	187	9.35	0.935	1E-10	0.935	Very good
82		8.55	0.855	1E-10	0.855	Good
		8.95	0.895	1E-10	0.895	Good
	187	9.35	0.935	1E-10	0.935	Very good
		8.75	0.875	1E-10	0.875	Good
	183	9.15	0.915	1E-10	0.915	Very good
91		8.75	0.875	1E-10	0.875	Good
92		8.75	0.875	1E-10	0.875	Good
	183	9.15	0.915	1E-10	0.915	Very good
	187	9.35	0.935	1E-10	0.935	Very good
	182	9.1	0.91	1E-10	0.91	Very good
		8.55	0.855	1E-10	0.855	Good
	186	9.3	0.93	1E-10	0.93	Very good
		8.55	0.855	1E-10	0.855	Good
101	188	9.4	0.94	1E-10	0.94	Very good

Note: this table shows the validated items belonging to the dimension -knowledge about your emotions: decision, tiredness, security, tension, happiness-, specifying number of

items and validity that when evaluated by the experts, obtained a good validity, with a score higher than .80. This dimension is made up of 21 items taken from the "Appraisal Inventory

Scale”, and they were contextualized, since it is believed that they will allow to obtain relevant information, which will help describe the emotions felt by the students at the time of application, such as decision, tiredness, security, tension, happiness, among others.

In every human being is of vital importance to maintain a favorable state of health, so in the case of young people who play a very important role in society, should strengthen the development of good health,

and this is achieved through physical care that maintain, food, hygiene and care of their mental health, allowing them to reach adulthood with more skills and general welfare.

As will be seen in the following table, a dimension that allows to know the level of concentration that the subject is presenting, moods in decision making, as well as their sleep levels, will allow to determine the emotional state in which they are.

Table 7 Validated items of the dimension: Knowledge about your health and GPA

Knowledge of your health (Goldberg general health questionnaire (GHQ-12))						
N. Item	Sum	Mx	Vc	P	Validity	Result
		8.8	0.88	1E-10	0.88	Good
	192	9.6	0.96	1E-10	0.96	Very good
		8.7	0.87	1E-10	0.87	Good
114		8.8	0.88	1E-10	0.88	Good
	192	9.6	0.96	1E-10	0.96	Very good
	188	9.4	0.94	1E-10	0.94	Very good
		8.8	0.88	1E-10	0.88	Good
			0.9	1E-10	0.9	Very good
		8.75	0.875	1E-10	0.875	Good
		8.8	0.88	1E-10	0.88	Good
	184	9.2	0.92	1E-10	0.92	Very good
			0.9	1E-10	0.9	Very good
			0.9	1E-10	0.9	Very good
	187	9.35	0.935	1E-10	0.935	Very good
	183	9.15	0.915	1E-10	0.915	Very good
	187	9.35	0.935	1E-10	0.935	Very good
	184	9.2	0.92	1E-10	0.92	Very good
		8.95	0.895	1E-10	0.895	Good
				OVERALL AVERAGE	0.86409091	Good

Note: the validated items of the dimension - knowledge about your health and general average- can be observed, specifying the number of items, and the validity they had when evaluated by the experts, obtaining most of them a good validity, with a score higher

than .80. This dimension is made up of 18 items extracted from the “Goldberg General Health Questionnaire (GHQ-12)”, which were contextualized, since it is believed that they will allow obtaining data regarding the physical feelings of the students during the

pandemic, considering some variables, such as concentration, sleep levels, decision capacity, stress or tension, tranquility, mood and happiness, among others. On the other hand, the general average of the instrument was .864, considered as a good validity.

Initially, an instrument was drawn up with 135 items, which, when submitted to the experts for evaluation, had to be eliminated 61, with the 10 experts agreeing that they were unnecessary, since they did not evaluate the aspects considered in the research, such as the

degree of anxiety and stress present in the adolescent, so that some items had a good result but were rejected in their entirety by the judges, thus leaving an instrument with 69 clear, specific and functional items. Once the procedure for measuring the reliability of the instrument's internal consistency, which allows the magnitude of the correlation of the items to be evaluated at a given moment and thus give validity to the instrument, we proceeded to find Cronbach's Alpha coefficient.

Table 8 Rating of items to validate reliability.

Dimensions	Item	Number of items
Knowledge about your emotions	11 - 15	5
- Idare (Trait-State Anxiety Inventory)	16 - 31	
- Appraisal inventory (decision, tiredness, security, tension, happiness)	32 - 51	
Knowledge about your health	52 - 69	
Total		

Note: only items with a 5-level Likert-type scale (1: very often; 5: never) were considered as a form of data collection; of the 69 items contained in the instrument in general, 59 met this condition: 5 that obtain information regarding the student's emotions and feelings, in terms of personal security; 16 regarding fear, security, anxiety, satisfaction, joy and well-being that the subject of study is experiencing, 20 that obtain information regarding tiredness, desire to cry, indecision, serenity, happiness, security, lack of confidence, alteration and nervousness, among others, and 18, focused on obtaining information regarding concentration, lack of sleep, decision making, tension or overwhelm, ability to face difficulties, depression and satisfaction with what is being done.

To obtain the reliability of the instrument Cronbach's Alpha coefficient (Cronbach, 1951) was calculated, a measure of internal consistency; an index that allows to evaluate the degree to which the items of an instrument are correlated with each other, although the coefficient has been subject to different debates as to its validity for interpreting Likert-type scales (Gliem and Gliem, 2003), it continues to be an element that allows to achieve a reliability that strengthens the instrument presented.

Cronbach himself (Cronbach and Shavelson, 2004) considers that the coefficient really covers only one perspective within the broader problem of reliability analysis. The internal consistency of a scale is an approximation to the validation of the construct and consists of the quantification of

the correlation that exists between the items that compose it, so the measurement of reliability by means of Cronbach's Alpha

assumes that the items measured through a Likert scale measure the same construct and are highly related (Welch and Comer, 1988).

Table 9 Variance of the dimensions: Knowledge of your emotions, Trait-State Anxiety Inventory, Rating Scale, Knowledge of your emotions. And reliability statistics.

Dimen sions	Variance (piloting comprising 16 students between 15 and 18 years old)																	
	ite ms																	
Knowl edge of your emotio ns (anxiet y, comfo rt, upset, insecu rity, well- being, joy, satisfa ction).		1.65	3.33	2.21	1.33	1.5												
Trait- State Anxiet y Invent ory		1.05	1.58	1.49	1.48	1.02	0.48	1.33	0.90	1.73	0.93	0.85	0.85	0.68	1.33	0.99	1.25	
Knowl edge	ite ms										4			4				
											2			5				

about your emotions (decision, tiredness, security, tension, happiness).																			2.10	1.75	0.71	0.15	1.77	2.65	1.73	1.85	2.81	0.35	2.24	1.74	1.83	2.5	2.43	2.48	1.43	1.98	1.87	2.12			
Knowledge about your health	items																																								
		1.02	1.33	1.18	0.85	0.98	1.49	0.98	0.96	1.12	1.77	1.21	0.87	1.15	2.10	1.73	2.30	2.10	1.25																						
$\alpha:$		Questionnaire reliability coefficient																	.849																						
		$\alpha = \frac{K}{K-1} \left[1 - \frac{\sum S_i^2}{S_T^2} \right]$																																							
K:		Number of instrument items																																							
$\sum_i^k = 1S_i^2 :$		Sum of item variances																	89.175																						
S_T^2		Total variance of the instrument																	540.37																						

Note: Table 8 shows the variances of the dimension, knowledge of your emotions, considering the items of the Idare scale applied to 16 subjects that made up the pilot; dimension rating scale, knowledge about your health, applied to the 16 students, including the sum of scores of all items answered by the respondents,

including the Cronbach's Alpha values between 0.70 and 0.90 indicate a good internal consistency, showing the results for the questionnaire under validation, where the Cronbach's Alpha coefficient yielded a value of $\alpha=.849$, which demonstrates excellent reliability.

This internal consistency index can be calculated manually or in Excel in two ways:

- 1) By means of the variance of the items, or
- 2) By means of the correlation matrix.

SPSS version 21 software was used for this research.

Discussion and conclusions.

Stress and anxiety are a very topical and worrying issue in the academic field, so its approach must be consistent, since it is a natural reaction understood as a response that the human body expresses before a health hazard, so that everyone must be alert and focused in order to face this threat. In the school environment, stress is shown as a short-term challenge, since it has been observed the impact it has on school results, as it is represented by irritability or anger, loneliness, dizziness, nausea, anxious thoughts, general unhappiness and a certain feeling of overwhelm, among others, which can be easily observed among the student community (Barrell, 2021).

Unlike anxiety, which can be a permanent state where the subject shows restlessness, tension, sweating, nervousness and fear, in the school environment, a student who is not detected with anxiety problems, could present severe health conditions represented in a general way with an intense heart rate, as well as agitated breathing and physical discomfort Barrell (2021). The term anxiety is recognized as a feeling of stress Barrell (2021), which is why the objective of the design of this instrument was to address both categories in a single measurement scale.

The proposed instrument will be able to measure the aforementioned categories of students between 15 and 18 years of age. It is considered that the data obtained when it is applied will allow us to have an approach to the subject in a particular educational environment, such as that of school adolescents and the management of their emotions in the face of the COVID-19 pandemic; which will allow to know the emotional health conditions under which high school students find themselves in the face of the virtualization of teaching due to

confinement and its relationship with stress and anxiety.

A large body of literature related to emotional health due to COVID-19 confinement, employs data collection instruments, using the questionnaire technique as a survey or interview, considering some existing instruments and readapting them to the needs of the chosen population. This study goes further, as it proposes the design of its own instrument, adapted to the context that allows a real approach with the subjects of study. To achieve this, several scales were reconstructed, thus forming various dimensions, with the central idea of knowing in a general way the emotional state in which the student is, from the space he/she occupies to receive classes, the time in front of the screen, the family support, the results and learning obtained but above all achieved during the confinement.

In addition, the instrument will make it possible to find out which technological devices are used, as well as the time allotted for their use in general and the conditions in which they receive their classes. Thirdly, to ascertain the state of health through the degree of concentration, level of sleep, fatigue and mood in the face of the pandemic circumstances.

This is an instrument constructed with a Likert scale, allowing the application to be faster and less laborious compared to instruments with open-ended questions. There are several scales that can obtain some of these data, so this is not the first study to propose this instrument to obtain information on emotions in the face of the COVID-19 pandemic; however, this instrument proposes clearly defined categories, which will make it possible to know precisely the emotions present in the adolescent, which he or she is going through at this time of confinement. And this is the

contribution of the study, namely that this instrument will be useful for the emotional assessment of young adolescents.

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