

# Socioemotional skills and their relationship with stress levels during the COVID-19 contingency in Mexican junior and high school students

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## ABSTRACT

**Introduction.** Due to the worldwide COVID-19 health contingency, school activities in Mexico were suspended, as a result of which students of all educational levels began to carry out their learning activities at home. **Objective.** Adapt a Socioemotional Skills (SES) Survey to the context of COVID-19 and undertake a diagnosis of the emotional state, stress, and learning experiences of Mexican junior and senior high school students. **Method.** A test battery was administered to 205 students from nine states in the country from schools where *Enseña por México* collaborates, and an exploratory factor analysis (EFA) was conducted for the SES survey. In addition, a Pearson's correlation was calculated between SES and stress levels. **Results.** The EFA yielded four components that explain 51.71% of the sample variance. In addition, statistically significant negative correlations were found between SES and stress in the health field ( $r = -.316, p < .01$ ) and SES and school stress ( $r = -.606, p < .01$ ). **Discussion and conclusion.** The results showed that a high level of socio-emotional skills is related to a lower level of stress in students

**Keywords:** COVID-19, emotions, psychometrics, education.

## RESUMEN

**Introducción.** Derivado de la contingencia sanitaria internacional por la COVID-19, en México se suspendieron las actividades escolares, por lo que los estudiantes de todos los niveles educativos comenzaron a desarrollar sus actividades de aprendizaje desde casa. **Objetivo.** Adaptar una encuesta de Habilidades Socioemocionales (HSE) al contexto de la COVID-19 y realizar un diagnóstico sobre el estado emocional, estrés y experiencias de aprendizaje en estudiantes mexicanos de secundaria y bachillerato. **Método.** Se aplicó una batería de evaluación a 205 estudiantes de nueve estados del país de escuelas donde colabora Enseña por México y se realizó un análisis factorial exploratorio para la encuesta de HSE y correlación de Pearson entre HSE y nivel de estrés. **Resultados.** El AFE mostró cuatro componentes que explican el 51.71% de la varianza muestral; además, se encontraron correlaciones negativas y estadísticamente significativa entre las HSE y el estrés en el ámbito de la salud ( $r = -.316, p < .01$ ) y las HSE y el estrés escolar ( $r = -.606, p < .01$ ). **Discusión y conclusión.** Los resultados mostraron que un alto nivel de habilidades socioemocionales se relaciona con un menor nivel de estrés en los estudiantes

**Palabras clave:** COVID-19, emociones, psicometría, educación.

## INTRODUCTION

The year 2020 has seen enormous challenges due to the public health emergency caused by the novel coronavirus known as COVID-19. The health system has focused on providing medical care to the population and reducing the spread of the disease (Ramos, 2020). Due to this international emergency, there have been changes in the forms of interaction among the population. Various activities have been restricted to avoid an increase in the number of infections, such as recreational activities and work in offices and schools, which, in a context such as Mexico's, poses a challenge for institutions and the population in general, since it is necessary to adapt to the new way of working, learn to use technological and communication tools, and develop skills that will allow people to continue interacting and developing as a society.

Lockdown can lead to an array of psychological consequences. According to Álvarez Zarzuelo (2020), specific needs have been detected in boys and girls who have been under lockdown because of the pandemic, including disorders such as anxiety, phobias, and possible difficulties relating to others. Various stressors, avoidance behaviors, frustration, and substance use have also been identified (Lorenzo Ruiz, Díaz Arcaño, & Zaldívar Pérez, 2020). It is therefore essential to have information that describes the emotional state, experiences, and challenges perceived by students to help them cope with them, and which will make it possible to develop interventions within the classroom designed to enhance socio-emotional skills while enriching academic knowledge.

The objective of this paper was to provide preliminary results on the diagnosis of the emotional state of Mexican students during the period of self-isolation and social distancing. Given the emphasis *Enseña por México* has placed on the development of Socio-emotional Skills within the classroom, it is assumed that students with a high level of this variable will experience lower stress levels. This diagnosis will allow the development of an intervention plan in which *Enseña por México* professionals (EMPs) will be able to strengthen the development of socio-emotional Skills within the classroom.

The first part of the study was designed to perform an Exploratory Factor Analysis of the SES survey, since adaptations were made to the scale to inquire about specific situations that may have occurred during the period of social distancing and to determine whether there is a relationship between SES and stress levels reported by students.

## METHOD

### Study design

Instrumental, descriptive, and transversal.

### Participants

Two hundred and five students from the nine states where *Enseña por México* professionals (EMPs) collaborate (Baja California Sur, Mexico City, Coahuila, Estado de México, Jalisco, Morelos, Nuevo León, Puebla and Yucatán) with an age range of 12 to 19 years ( $M = 15.05$ ;  $SD = 1.83$ ).

The inclusion criteria for students were to have had an EMPs as a teacher in at least one subject for six months prior to the start of the health contingency and to be enrolled in a junior or senior high school. Sampling data were drawn from a census conducted between December 2019 and January 2020, using a random sample stratified by region with a 95% confidence level and a margin of error of 5%. Table 1 shows the students surveyed, the number selected for the study sample (expected responses), and the number of responses obtained. Questionnaires that were not fully answered were excluded.

### Sites

To collect the data, students from the nine states where *Enseña por México* professionals collaborate with public schools at the junior and senior high school level were considered, although the battery was administered virtually through the QuestionPro® platform, and sent to them via email.

Table 1  
Sample data and answers obtained for the study

Region	# students		Answers obtained
	previously surveyed	chosen for the study	
Center-Bajío (CDMX, Estado de México, Morelos, Jalisco and Puebla)	1,080	46 (12.4%)	28 (60.9%)
Northwest (BCS)	2,365	100 (27%)	62 (62%)
Northeast (Coahuila and Nuevo León)	2,315	98 (26.4%)	67 (68.4%)
Southeast (Yucatán)	3,001	127 (34.2%)	51 (40.2%)
Total numbers	8,761	371 (100%)	208 (56.1%)

Note: The regions have been determined for the operative and logistical aims of the activities undertaken by *Enseña por México*.

## Measurements

For data collection, a battery of tests was administered consisting of a questionnaire on sociodemographic data (age, sex, and place of residence), a section with questions directly related to the COVID-19 pandemic (whether students had self-isolated, how they obtained information on the situation and what their family situation was like), the Spanish version of the CORE Districts Social Emotional Learning Surveys, the Socio-Emotional Skills Survey (SES), (Chacón & Peña, 2017), which was adapted to use language in keeping with the virtual conditions in which students performed their activities and the Children's Daily Stress Inventory (CDSI) validated for children and adolescents with a Cronbach's alpha coefficient of .80 (Hernández, 2018).

## Procedure

Based on official attendance lists, a representative sample of each group was randomly chosen, and an invitation sent to students through the EMPs who had been assigned to them for the school year. Students were sent the objective of the study and an informed consent form in writing together with a link to answer the battery if they decided to participate, which was open during the second and third week of June. The average time they took to answer all the questions was 18 minutes.

## Statistical analyses

Frequencies and percentages were obtained for the sociodemographic data and means and standard deviations for the continuous variables. An Exploratory Factor Analysis was conducted to verify the relevance of the adaptations made to the SES survey, for which Bartlett's sphericity test and the KMO sample adequacy measure were calculated. In the analysis, an extraction was made by principal axes and Promax rotation. In addition, Pearson's correlation coefficient was calculated to determine whether there is a relationship between coping with stress and Socio-emotional Skills. The SPSS V.23 statistical package was used to perform these analyses.

## Ethical considerations

This study was conducted in accordance with the ethical norms of psychological research (Sociedad Mexicana de Psicología, 2010), and the protocols and agreements established with the educational authorities with which *Enseña por México* collaborates were also observed (Acta ordinaria ExMCE001-2020). Subjects were informed about the objectives and implications of the study, voluntary participation, and the confidentiality of the information.

## RESULTS

Of the 205 students who participated, 53.2% were male and 46.8% female. The state with the highest representation of participants was Baja California Sur with 28.8%, followed by Nuevo León with 26.8% and Yucatán with 20.5%.

A total of 60.5% of students reported only leaving home for essential activities, while 6.8% continued to carry out their normal activities and routines. The remainder (32.7%) did not go out at all.

A total of 84.9% of the participants reported that they were able to continue with their school activities remotely, while 15.1% had connection problems, did not have access to the Internet or their own electronic equipment to do the activities or found it difficult to do the activities more independently. Those who did continue with their activities communicated through WhatsApp®, Facebook® groups, and video calls through Zoom®.

In the Exploratory Factor Analysis of the SES survey, the KMO index = .855 and in the Bartlett's test of sphericity (1122.880,  $gl = 105$ ,  $p = .000$ ), which were significant results. Through the extraction of the principal axes, items with less than .32 saturation were eliminated, resulting in 15 items distributed among four components that explain 51.71% of the sample variance.

Factor 1 corresponds to the socio-emotional ability of Self-control, factor 2 to Involvement with the community, and factor 3 to Growth mentality while factor 4 corresponds to Self-efficacy (Table 2).

The CDSI results indicated a medium level of stress experienced ( $M = 65.44$ ;  $SD = 9.23$ ). The inventory has three dimensions: stress in the health sphere ( $M = 17.22$ ;  $SD = 5.03$ ), school stress ( $M = 11.76$ ;  $SD = 3.82$ ), and family stress ( $M = 17.56$ ;  $SD = 5.60$ ).

The results of the correlation between SES and stress indicate that there is a statistically significant negative relationship between SES and stress in the health field ( $r = -.316$ ,  $p < .01$ ) and SES and school stress ( $r = -.606$ ,  $p < .01$ ). There was no correlation between SES and family stress. Table 3 details the correlations found between the two instruments.

## DISCUSSION AND CONCLUSION

The results made it possible to know the type of situations students faced due to the suspension of face-to-face activities at schools. One of the most frequently reported problems was the lack of access to Internet services and/or digital media, as a result of which many of them were unable to carry out their activities on a regular basis. In some cases, due to the suspension of in-person activities, they had no further contact with either the EMPs or any other teacher.

It is important to mention that, of the sample initially contemplated ( $n = 371$ ), 43.9% were unable to participate

Table 2  
Matrix of rotated components of SES survey

Item	Factor 1	Factor 2	Factor 3	Factor 4
I paid attention, even though there were distractions.	.837			
I did the homework and assignments immediately instead of waiting until the last moment.	.812			
I worked in a focused, independent way.	.645			
I let others speak without interrupting them.	.358			
I felt prepared for the virtual session.	.341		.335	
I think I should help make a difference in my community.		.840		
I think it is important to be aware of the problems in my community.		.672		
How much do you care about other people's feelings?		.612		
I feel responsible for my community.		.485		
Virtual classes challenged me to be more intelligent.			.777	
I can also learn new things in virtual classes.			.757	
I can learn anything, either virtually or in person.			.623	
I can master the most difficult topics in my classes.				.909
I can do well in exams even if they are difficult.				.656
I can achieve all the learning goals I set my mind to.				.526

Note: Extraction method: principal axis factoring. Rotation method: Promax with Kaiser normalization.

in the study because they could not be contacted directly by the EMPs (38%) while others, when contacted, said that they were unable to answer the survey (5.9%).

The correlation results coincide with those of other authors (Edel Navarro, 2003; Estévez López, Martínez Ferrer, & Jiménez Gutiérrez, 2009) on the relationship between skilled social behaviors and lower stress levels. In this study, the results showed that those who scored higher on the SES scale had lower levels of school and health stressors. According to the scale, subjects did not experience difficulty concentrating or carrying out their academic activities and, in terms of their health, there were no stressors due to physical ailments or discomfort and their eating and sleeping habits had not altered.

Limitations of the study include the fact that little contact was found with the students with whom the EMPs collaborate (less than half of those normally taught by *Enseña por México* professionals). It is therefore necessary to expand the sample so that the intervention can be designed to meet the main needs of students and more information is available for the beginning of the next school year.

Since this is the first part of the study, interviews are currently being carried out with students and parents to learn more about the level of information on COVID-19, the dynamics between their family members and which aspects of online classes and activities were emphasized. At the same time, qualitative data will also be collected from *Enseña por México* professionals so that through their experience as teachers, they will be able to retrieve and give greater structure to the teaching-learning strategies they implemented during this period. Finally, all this information will be comprehensively analyzed to redesign the training programs for our professionals and enhance the emotional support and the development of SES for students.

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#### Conflict of interest

The authors declare they have no conflicts of interest.

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Table 3  
Correlations between Socioemotional Skills and Children's Scale of Daily Stressors

	Self-control	Growth mentality	Self-efficacy	Interest in the community	Total
Health stress	-.272**	-.389**	-.286**	-.185**	-.316**
School stress	-.583**	-.404**	-.515**	-.335**	-.606**
Family stress	.104	.076	.022	.153*	.127
Total	-.326**	-.333**	-.356**	-.147*	-.376**

Notes: \* $p < .05$ ; \*\* $p < .01$

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