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Artículos científicos

Síndrome de burnout en estudiantes de educación superior tecnológica del campus Tierra Blanca en tiempo de covid-19

Burnout syndrome in tech higher education students, from the Tierra Blanca campus, in Covid-19 time

Síndrome de burnout em estudantes do ensino superior tecnológico do campus Tierra Blanca na época de covid-19

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Resumen

Esta investigación tuvo como objetivo describir los efectos del síndrome de *burnout*, en tiempos de pandemia, en estudiantes de educación superior tecnológica. Metodológicamente el estudio tuvo un corte cuantitativo con diseño descriptivo tipo encuesta. Los participantes contestaron el inventario tipo *burnout* para estudiantes de Maslach, dividido en tres componentes que estudian el agotamiento, el cinismo y la eficacia académica, validado por Shaufeili *et al.* (2002). La aplicación del instrumento se realizó en el mes de marzo de 2020. Los resultados obtenidos demuestran un agotamiento severo y una eficacia académica positiva; la dimensión *cinismo* no resultó ser significativa hasta el momento. Las conclusiones se enfocan en sugerir acciones que contribuyan a disminuir el agotamiento en los alumnos, de forma que se pueda mantener la eficacia académica. Asimismo, vale la pena volver a aplicar en el mes de diciembre de 2020 el instrumento para ver la tendencia del *burnout* en los educandos, ya que existen factores que pueden ser detonantes de estrés, como las clases en línea y la posible acumulación de actividades.

Palabras claves: agotamiento, cinismo, covid-19, eficacia académica, pandemia, síndrome de *burnout*.

Abstract

This research aimed to describe the effects of burnout syndrome on students of technological higher education. Methodologically the research had a quantitative cut with descriptive survey-type design, in this context participants answered the burnout inventory for Maslach students divided into 3 components that study exhaustion, cynicism and academic effectiveness validated by Shaufeili *et.* (2002) the implementation of the instrument took place in March 2020. The results obtained demonstrate severe exhaustion, positive academic effectiveness and the cynic dimension is not significant so far, the conclusions that are drawn in this research are to establish actions that contribute to reducing exhaustion in students so that academic effectiveness can be maintained. As a recommendation it is worth reapplying

in december 2020 the instrument to see the trend of burnout in students as there are factors that can be stress triggers to mention online classes and possible accumulation of activities.

Keywords: exhaustion, cynicism, covid-19, academic efficacy, pandemic, burnout syndrome.

Resumo

Esta pesquisa teve como objetivo descrever os efeitos da Síndrome de Burnout, em tempos de pandemia, em estudantes do ensino superior tecnológico. Metodologicamente, o estudo teve um recorte quantitativo com delineamento descritivo do tipo survey. Os participantes responderam ao inventário de burnout de Maslach para alunos, dividido em três componentes que estudam exaustão, cinismo e eficácia acadêmica, validado por Shaufeili et al. (2002). A aplicação do instrumento foi realizada no mês de março de 2020. Os resultados obtidos mostram grande desgaste e eficácia acadêmica positiva; a dimensão do cinismo não se mostrou significativa até agora. As conclusões se concentram em sugerir ações que ajudem a reduzir o desgaste do aluno, para que a eficácia acadêmica possa ser mantida. Da mesma forma, vale a pena reaplicar o instrumento para verificar a tendência de burnout em alunos em dezembro de 2020, uma vez que existem fatores que podem ser desencadeadores de estresse, como as aulas online e o possível acúmulo de atividades.

Palavras-chave: exaustão, cinismo, covid-19, eficácia acadêmica, pandemia, síndrome de burnout.

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Introduction

Currently, the world population is affected by the pandemic generated by covid-19, a disease that has claimed millions of lives and, due to continuous confinement, has reduced the mental and emotional health of all, which is evidenced in high rates of anxiety, depression and stress. In this context, the World Health Organization (WHO) - cited by González and Sandoval (2019) - has equated mental health with subjective well-being, and has characterized it as a feeling of self-realization of each of the emotional capacities and intellectual, essential aspects to face the tensions that life is presenting. Its counterpart is job exhaustion or burnout syndrome, a concept that "gained relevance as an object of study from

the 1970s, particularly from the discipline of psychology" (Aguilar, Arvizu & Flores, 2020, p. 4). This "is characterized by a loss of enthusiasm for work, mental wear and tear and indolence and occurs when the demands of the work environment exceed the ability of the person to face them" (Gallardo, López and Gallardo, 2019, p. 3). This usually manifests itself in a constant emotional fatigue and in an intense way correlated with work, as well as in negative attitudes towards the environment and the people with whom one interacts. In this regard, Vicente and Gabari (2019) mention:

The scientific literature describes burnout as the advanced phase of professional stress, which basically results from the worker's interaction with the work environment, or also the product of the worker's interpersonal relationships with the people they work with. (p. 456).

According to Camacho (2019), "theories related to stress have gained momentum in the integral management of the XXI century, which is stimulated by distressing contexts that produce psychological and psychosomatic disturbances that are harmful to human beings" (p. 42). In other words, a person who lives constantly stressed tends to confront external environments that can be threatening, thereby reducing his stability by disturbing his emotional balance, which affects his work performance and interpersonal relationships. Therefore, León and Monzón (2017) point out that "stress and burnout syndrome are the main occupational risks" (p. 322).

Along these lines, Rodríguez, Benavídez, Ornelas and Jurado (2019) mention that "the concept of burnout has been extended to other areas, since it has been found that it can occur in any circumstance, that is, that it transcends other contexts" (p. 24), as is the case with the education sector. For this reason, investigations such as those by Menghi, Rodríguez and Oñate (2019) focus on pointing out that the educational institution is essential to intervene in a timely manner in the event of possible alterations in students and teachers.

Bedoya and Vázquez (2019) agree that stress is a risk factor that can cause problems in the cognitive part; in fact, "daily overload, daily tasks and reduced time for recreation in university students can generate emotional exhaustion" (Castro, Valenzuela, Hinojosa and Piscohe, 2019, pp. 151-152). To this idea, Usán and Salavera (2019) add that "numerous contextual and personal situations can occur that can significantly affect students in their training process" (p. 2). For this reason, Torres (2020) explains that "the reaction that arises

in socio-labor and personal situations [is] indicative of a condition that exceeds the person who suffers it” (p. 2).

Reyes, Palomino and Aponte (2019), for their part, affirm that "the syndrome not only affects the quality of teaching, but also damages the health of teachers" (p. 538). In accordance with this, Macías and Báez (2019) found that “76.3% of their participants present the condition of stress at some level of intensity” (p. 3). Likewise, Bresó, Pedraza and Pérez (2019) found alarming levels of anxiety and stress in each of their participants in their study. In addition to this, Villamar, Juárez, González and Osnaya (2019) warn that "the burnout syndrome can manifest itself in a lack of motivation, interest and irresponsibility in people" (p. 114).

Method

The objective of this research was to describe the effects of burnout syndrome in students of higher technological education. For this, a quantitative, descriptive and cross-sectional survey-type study was developed. The investigation was carried out at the National Technological Institute of Mexico, Tierra Blanca campus. The population consisted of an enrollment of 4,700 students who correspond to the schooled and semi-schooled system. A simple random probability sample was used with a confidence level of 97% and a margin of error of 3%, which yielded a total of 1023 students.

The instrument used (validated by Shaufeli, Martínez, Márquez, Salanova & Bakker, 2002) is made up of 15 items grouped in three dimensions: exhaustion (which measures fatigue), cynicism (which reflects the attitude they take towards studies) and efficacy academic. It is worth mentioning that if the exhaustion and cynicism dimensions reach high values and academic effectiveness is low, it is indicative of greater burnout.

Due to covid-19, the survey was applied through classroom to avoid endangering the student population. Data treatment was performed using RStudio software (version 1.3). Descriptive analyzes (means and standard deviation) were determined and the data behavior was graphed for better interpretation.

Results

After applying the survey, the results were obtained in the statistical program RStudio (version 1.3). The test consisted of 15 items on a Likert scale (never, occasionally, rarely, almost always and always) distributed in the following dimensions:

- Exhaustion: 1, 2, 3, 4 y 5.
- Cynicism: 6, 7, 8 y 9.
- Academic effectiveness: 10, 11, 12, 13, 14 y 15.

The data indicate that there were no missing values and that the minimum (1) and maximum (5) values were respected in the items, which were previously configured on the Likert scale used for burnout syndrome. The questions with a longer variance with respect to the mean located in the answers almost always and always were the following: 1, 2 and 3, which confirms a depletion in this dimension.

Regarding the cynicism dimension, most are found within the factors never, occasionally and rarely (questions 7, 8 and 9), while only question 6 had a variance of 9.05, oriented to the answer always and almost always with respect to the mean. Interpreting the data, it is confirmed that in this dimension the issue of cynicism is not significant.

Finally, in the academic efficacy dimension, questions 10, 11, 12 and 13 show greater variance, which indicates that their answers are directed to almost always and always with respect to the mean. In fact, only questions 14 and 15 have less variance, which is why it is concluded that there is academic efficacy (figure 1).

Figura 1. Estadística descriptiva de las dimensiones estudiadas en el inventario de *bournot* utilizando Rstudio (versión 1.3)

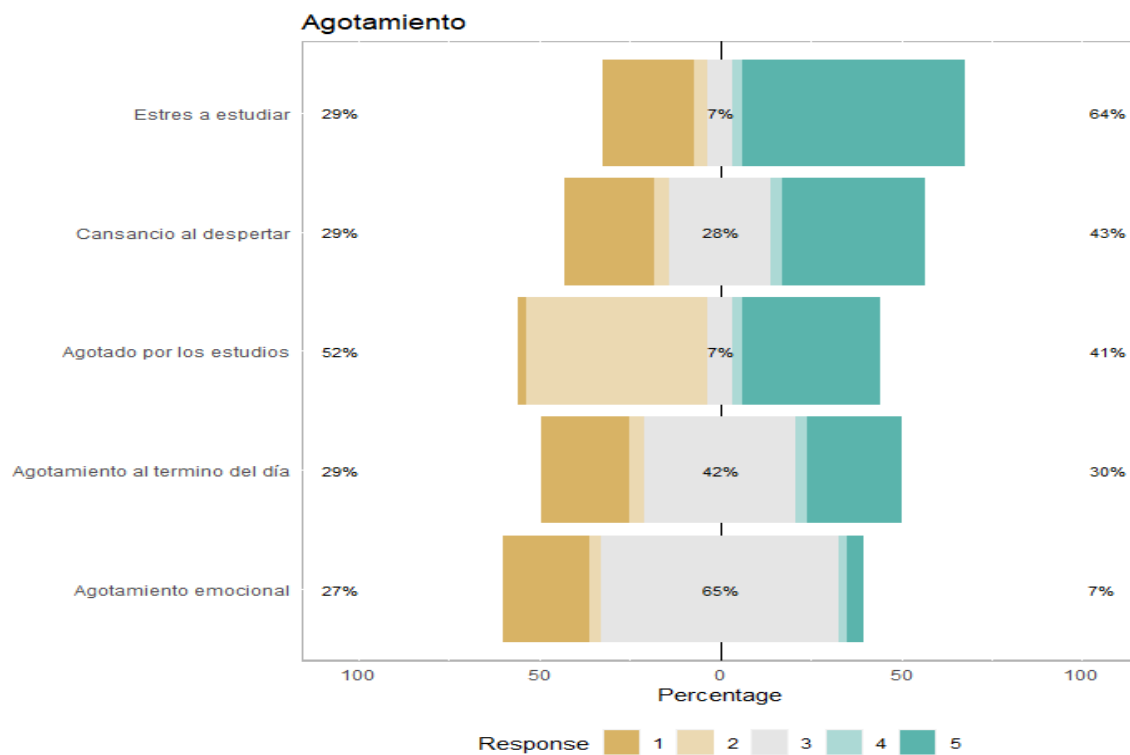
Dimensión <i>agotamiento</i>						Dimensión <i>cinismo</i>			
	Pregunta.1	Pregunta.2	Pregunta.3	Pregunta.4	Pregunta.5	Pregunta.6	Pregunta.7	Pregunta.8	Pregunta.9
nbr. val	1.023000e+03	1.023000e+03	1.023000e+03	1.023000e+03	1.023000e+03	1.023000e+03	1.023000e+03	1.023000e+03	1.023000e+03
nbr. null	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
nbr. na	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
min	1.000000e+00	1.000000e+00	1.000000e+00	1.000000e+00	1.000000e+00	1.000000e+00	1.000000e+00	1.000000e+00	1.000000e+00
max	5.000000e+00	5.000000e+00	5.000000e+00	5.000000e+00	5.000000e+00	5.000000e+00	5.000000e+00	5.000000e+00	5.000000e+00
range	4.000000e+00	4.000000e+00	4.000000e+00	4.000000e+00	4.000000e+00	4.000000e+00	4.000000e+00	4.000000e+00	4.000000e+00
sum	2.640000e+03	2.857000e+03	2.982000e+03	3.199000e+03	3.295400e+03	4.235000e+03	2.679000e+03	3.322000e+03	2.285000e+03
median	3.000000e+00	3.000000e+00	3.000000e+00	4.000000e+00	2.000000e+00	4.000000e+00	2.000000e+00	3.000000e+00	2.000000e+00
mean	2.580645e+00	2.792766e+00	2.914956e+00	3.127077e+00	2.887586e+00	4.139785e+00	2.618768e+00	2.269795e+00	2.233627e+00
SE. mean	3.085101e-02	3.651560e-02	3.913938e-02	4.160194e-02	3.205188e-02	2.974474e-02	3.168040e-02	3.495614e-02	3.085204e-02
CI. mean. 0.95	6.053856e-02	7.165413e-02	7.680273e-02	8.163499e-02	6.289502e-02	5.836774e-02	6.216606e-02	6.859400e-02	6.054059e-02
var	9.736759e-01	1.364057e+00	1.567124e+00	1.770528e+00	1.050951e+00	9.050986e-01	1.026732e+00	1.250036e+00	9.737409e-01
std. dev	9.867502e-01	1.167929e+00	1.251848e+00	1.330612e+00	1.025159e+00	9.513667e-01	1.013278e+00	1.118050e+00	9.867831e-01
coef. var	3.823657e-01	4.181977e-01	4.294570e-01	4.255130e-01	3.550230e-01	2.298107e-01	3.869291e-01	4.925776e-01	4.417852e-01

Dimensión <i>eficacia académica</i>						
	Pregunta.10	Pregunta.11	Pregunta.12	Pregunta.13	Pregunta.14	Pregunta.15
nbr. val	1.023000e+03	1.023000e+03	1.023000e+03	1.023000e+03	1.023000e+03	1.023000e+03
nbr. null	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
nbr. na	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00	0.000000e+00
min	1.000000e+00	1.000000e+00	1.000000e+00	1.000000e+00	1.000000e+00	1.000000e+00
max	5.000000e+00	5.000000e+00	5.000000e+00	5.000000e+00	5.000000e+00	5.000000e+00
range	4.000000e+00	4.000000e+00	4.000000e+00	4.000000e+00	4.000000e+00	4.000000e+00
sum	2.615000e+03	3.380000e+03	4.156000e+03	3.305000e+03	3.081000e+03	3.970000e+03
median	3.000000e+00	4.000000e+00	5.000000e+00	3.000000e+00	3.000000e+00	4.000000e+00
mean	2.556207e+00	3.304008e+00	4.062561e+00	3.230694e+00	3.011730e+00	3.880743e+00
SE. mean	2.980107e-02	4.765611e-02	3.089592e-02	4.580481e-02	4.458049e-02	3.503695e-02
CI. mean. 0.95	5.847829e-02	9.351500e-02	6.062669e-02	8.988223e-02	8.747975e-02	6.875259e-02
var	9.085304e-01	2.323340e+00	9.765128e-01	2.146337e+00	2.033130e+00	1.255823e+00
std. dev	9.531686e-01	1.524251e+00	9.881866e-01	1.465038e+00	1.425879e+00	1.120635e+00
coef. var	3.728839e-01	4.613339e-01	2.432423e-01	4.534747e-01	4.734417e-01	2.887681e-01

Fuente: Elaboración propia

It is shown that 64% of the participants feel emotionally exhausted from their studies, 43% feel exhausted at the end of the day in their university chores, 41% feel tired when they wake up in the morning and have to face another day at university, while for 30% studying or attending a class is really stressful. Finally, only 7% consider feeling exhausted by their studies. However, when analyzing the items that qualify the exhaustion dimension, a very high trend towards exhaustion classified as high intensity is found (Figure 2).

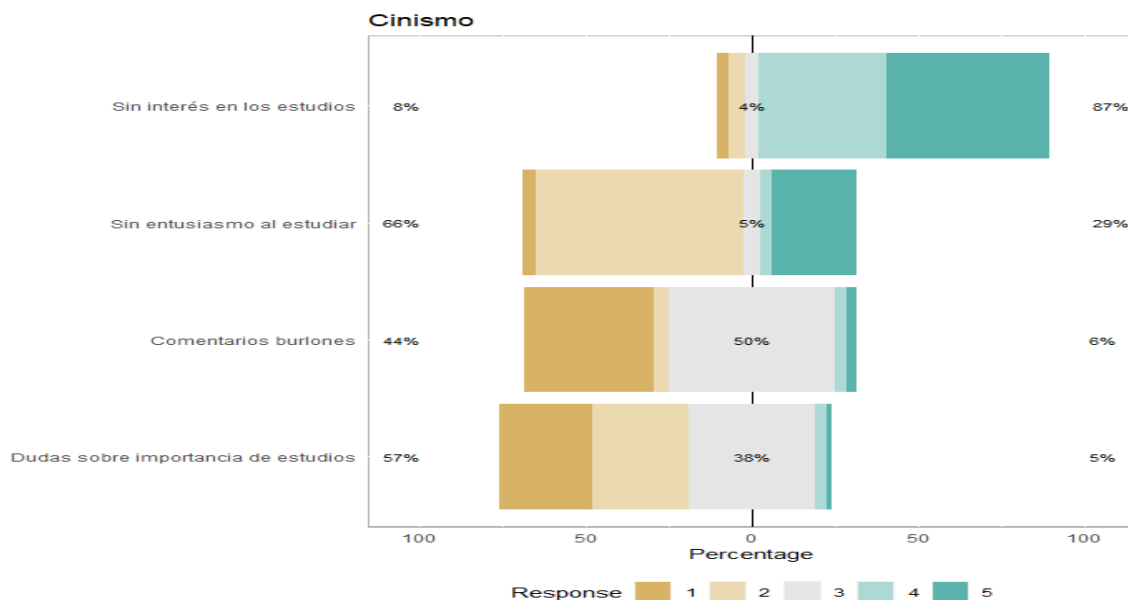
Figura 2. Dimensión *agotamiento*



Fuente: Elaboración propia

Regarding the cynicism dimension, the results show that 87% of the students express disinterest in their studies, 29% lack enthusiasm to study, 6% always consider making derisive comments about the usefulness of what they study, and 50% do so. seldom ago. Likewise, 5% always have doubts about the importance of their studies, while 38% claim to do so rarely (Figure 3). In this dynamic, the cynicism dimension can be considered as low intensity.

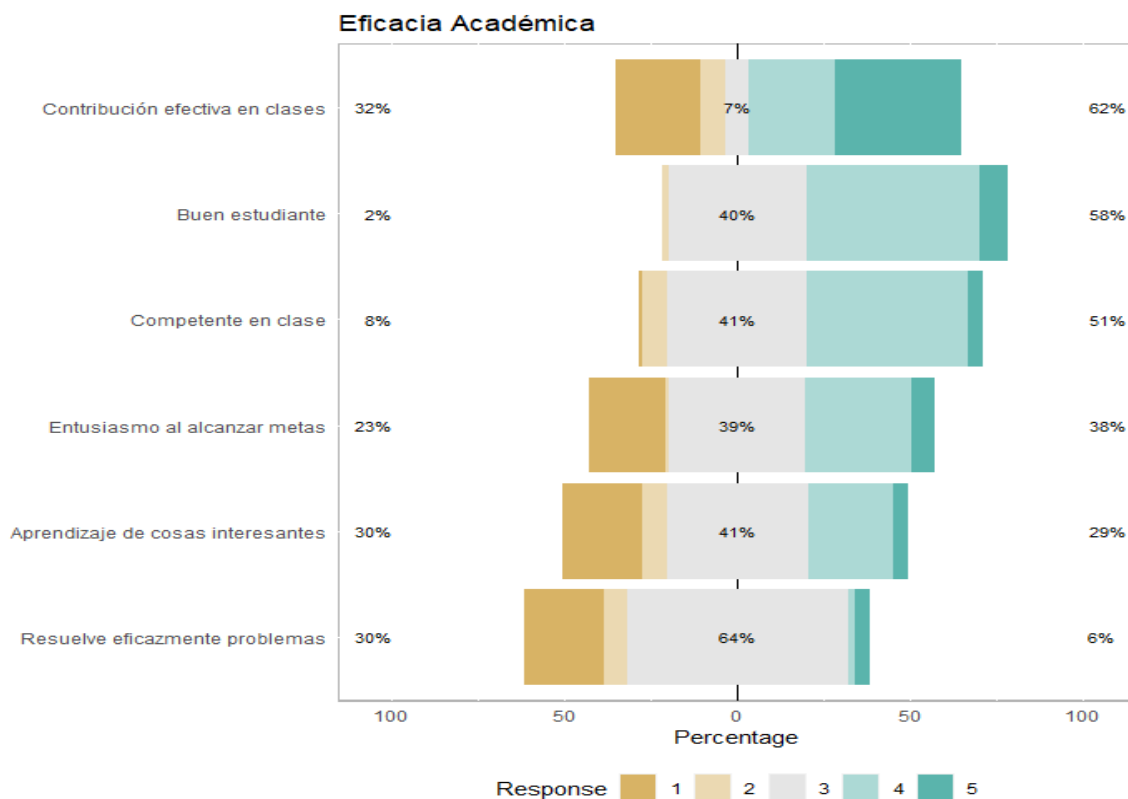
Figura 3. Dimensión *cinismo*



Fuente: Elaboración propia

Finally, in the academic efficacy dimension, it was found that 62% of students can effectively solve problems that arise in their studies, 58% believe that they can make an effective contribution in the classes they attend, 51% consider themselves a good student, 38% feel enthusiastic when they reach their goals, and 29% have learned interesting things throughout their studies; However, 41% say that they have rarely learned something interesting and 6% mention that during the class they feel confident of being competent, although in this item, 64% rarely feel confident, so this dimension can be classified as high intensity (figure 4).

Figura 4. Dimensión *eficacia académica*



Fuente. Elaboración propia

Discussion

The results obtained show that the participants present high levels of exhaustion, although in terms of academic efficiency, they still maintain a fairly acceptable level, so stress has not yet affected them in this dimension. On the other hand, the results of the cynicism dimension contribute to the fact that students are in medium levels of stress, so the signs of exhaustion and cynicism, if they are not attended to soon, will begin to wreak havoc on health, such as point out Macías and Báez (2019). These authors show that the participants with higher levels of burnout do not have desirable mental health. Likewise, Bresó, Pedraza and Pérez (2019) agree that this criterion must be addressed in order to avoid major health problems; Therefore, it is necessary for government authorities to intervene in health matters, as well as those responsible for academics.

For their part, Suárez, Caballero, Palacio and Abello (2019) indicate that if exhaustion and cynicism are greater than academic efficiency, the level of burnout will tend to be high. In this sense, the contributions of Guillen et al. (2018) allow us to compare the cynicism

dimension and conclude that students with burnout have less assertive opinions, which are reflected in their learning process. Based on these results, and taking into account the results of the present study, it is possible to indicate that of the three dimensions analyzed show a high tendency towards exhaustion derived from the activities carried out in an environment completely different from the one they are accustomed to, where the Use of technology turns out to be a stressor in your academic activity. Even so, there is still time to take actions that contribute to reducing the burnout syndrome of students in order to improve their quality of life in the personal and academic sphere.

Conclusions

Although the results obtained in this research are not yet worrying for the academic technological community, they are indicators to establish actions that contribute to improving the quality of life of students. In fact, it is important to mention that these results were obtained in the month of March 2020, so it is advisable to re-apply the instrument to see how much stress has grown in students due to the long-lived confinement that currently exists. In addition, it should be considered that the classes are now fully online, a factor that could influence raising stress levels.

As for the authors cited in this work, it should be noted that they served as the basis for achieving this project; However, it is worth arguing that the most relevant results that had the greatest impact on this research conclude that students with burnout have less assertive opinions that are reflected in their learning process, an aspect that can be contrasted with the results obtained in this research, since the cynicism dimension - by demonstrating a non-significant result - brings as a consequence a positive academic efficacy.

In this context, the burnout syndrome, according to the results obtained, has permeated towards a decline in the health of the students, by demonstrating a significant exhaustion, which begins to affect their academic effectiveness. However, although the results obtained to date are not alarming, they are significant and require prompt attention to avoid further wear and tear that compromises the physical and emotional health of the technology community.

Therefore, in relation to the research question posed (that is, how does burnout syndrome affect students of higher technological education academically in this time of pandemic?), It can be concluded that so far (March 2020) it has been a significant negative impact that has generated excessive exhaustion in students caused by the overload of activities and the change of environment (online) to develop the activities; Therefore, it is preponderant to establish actions that help reduce this factor in students.

Future lines of action

Based on the results obtained, it is pertinent to continue with the investigation given that the times that confinement has required each day are longer in Mexico, so that conditions have already changed to a great extent. For future research projects it is advisable to be able to analyze how burnout affects women given the physiological and emotional conditions that influence gender and to be able to contrast both sexes under the same phenomenon. The results can be useful to establish strategies that contribute to the national mentoring program. Finally, it is important to study the teaching staff to check what are the effects that stress is causing in them and to be able to find a balance in both contexts, that is, student-teachers and that the teaching-learning process is really significant.

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