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# Psychosocial effects of COVID-19 in Ecuadorian university professors

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## Abstract

The objective of this work is to analyze the psychosocial effects of COVID-19 on Ecuadorian university professors, for which a quantitative research of descriptive and correlational nature was developed. Two instruments were applied, based on the Depression, Anxiety and Stress Scales and the Burnout questionnaire to the selected sample, in three public universities of easy access and linkage with the researchers. The population consisted of professors with appointment: 682 from the Technical University of Manabí, 678 from the Lay University Eloy Alfaro de Manabí, and 131 from the State University of Southern Manabí, from which a sample of 246, 246 and 98 professors was selected respectively. From the results it is derived that depression, anxiety, and stress were configured in psychosocial effects, which have had an impact during the COVID-19 pandemic on the professors of the universities studied, due to the pressure originated by new emerging methodological structures, the acquisition of other competences associated to technology, health and the risks of contagion, death and by the pedagogical attention through virtuality, unexpectedly arisen in times of pandemic.

**Keywords:** Psychology; Burnout syndrome; university teaching; virtual modality; Covid-19.

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# Efectos psicosociales del COVID-19 en profesores universitarios ecuatorianos

## Resumen

Este trabajo tiene como objetivo analizar los efectos psicosociales del COVID-19 en profesores universitarios ecuatorianos, para lo cual se desarrolló una investigación cuantitativa de índole descriptiva y correlacional, se aplicaron dos instrumentos, basados en las Escalas de Depresión, Ansiedad y Estrés y el cuestionario de Burnout a la muestra seleccionada, en tres universidades públicas de fácil acceso y vinculación con las investigadoras. La población estuvo conformada por docentes con nombramiento: 682 de la Universidad Técnica de Manabí, 678 de la Universidad Laica Eloy Alfaro de Manabí y 131 de la Universidad Estatal del Sur de Manabí, de los cuales se seleccionó una muestra de 246, 246 y 98 profesores respectivamente. De los resultados se deriva que la depresión, la ansiedad y el estrés se configuraron en efectos psicosociales, que han incidido durante la pandemia del COVID-19 en los docentes de las universidades estudiadas, debido a la presión que se originó por nuevas estructuras metodológicas emergentes, la adquisición de otras competencias asociadas a la tecnología, la salubridad y los riesgos de contagio, de muerte y por la atención pedagógica mediante la virtualidad, suscitada inesperadamente en tiempos de pandemia.

**Palabras clave:** Psicología; síndrome de Burnout; docencia universitaria; modalidad virtual, Covid-19.

## Introduction

University professors in Latin America, with few exceptions, were accustomed to the pedagogical process from the traditional/face-to-face modality, and from this modality, they developed their substantive academic activities, i.e.: Teaching, research, and social linkage. However, the emergence of the pandemic in the global context finally reached Latin America, and the emergency created a contingency situation, not only from the health point of view but also in various aspects of society.

Hence, this situation gave rise to an unexpected change in the educational modality, from face-to-face to virtual. Even with this, most university professors did not have the digital skills to face the contingency optimally. This is how the governing bodies developed updating programs in an emergent manner, which favored the process of change. Although this is true, it is no less true the fact of the occurrence of deficiencies in the performance and development of virtual competencies in

the teaching staff, the presence of disinterest, lack of motivation, resistance to change, possible connection failures, insufficiency of the existence of technological equipment, among other difficulties that hindered the updating processes in the field.

For this reason, it agrees with authors such as Luna-Nemecio (2020); Saldaña et al. (2020); Ozamiz-Etxebarria et al. (2021); Parra et al. (2022); Díaz, Díaz & López (2022); and Pinargote-Macias et al. (2022), who have realized that the COVID-19 pandemic caused the world to plunge into exceptional and unprecedented situations that have impacted people's lives in multiple areas, including financial stability, education, social connections, academic performance, professional development, and social-emotional well-being.

Likewise, it is the authors' consideration to think that the occurrence of COVID-19 generated socio-emotional effects due to pandemic stress caused by the risk of losing income or work, the lack of digital culture, as well as social isolation and loneliness, have brought as a consequence the increased risk of

alcohol abuse, domestic violence, mental and psychosocial problems, among others.

This situation also raised, within the educational environment, a psychosocial impact on university professors, generated both by the contextual situation and by government policies in response to the pandemic, in order to mitigate the disease, stay afloat, and sustain the economy, and health, which has caused concern regarding the mental exhaustion of professors (Filindassi et al., 2022). All this situation arises as a consequence of the strenuous activities in their work schedules, the immersion of the teaching-learning processes of the students, as well as their emotional environment, which sometimes also affects the work and family environment; not knowing how to face the confinement required by quarantine, a space that is made more complex by the new dynamics of its members (Carvalho et al., 2022).

From this framework, it is considered that the teaching staff has also been exposed to suffering the ravages of the pandemic and it is not exempt from its consequences, a fact that makes it a population susceptible to suffering from fatigue, depression, and stress due to exposure to the disease and the fact of assuming virtual education in an unusual, unprepared and unexpected way, due to the assumption of remote work without preparation, without possessing the skills required for this purpose and also abruptly (Mat, Maat & Mahmud, 2022).

The above seems to confirm that workers are facing imminent dangers that were added with the pandemic, derived from the demands related to work generating stress (Pais-Ribeiro et al., 2022), and the possible biological contamination of the disease. All of which brings as a consequence psychosocial effects that imply a great mental load, fatigue, stress, and even depression, whose symptoms can be manifested both inside and outside of work (Martínez, 2020).

As active university professors and in full professional practice, the researchers consider that the pandemic could exert a potential influence on the work performance

of university professors. Our older colleagues, those who are about to retire, those who already belong to the staff with fixed positions; and, with a certain history of work, have acted differently compared to new professors and those who have temporary contracts, who need to accumulate merits to ensure a new contract.

From this assumption and problem, our interest has arisen in undertaking a quantitative research and determining through the use of standardized instruments, the possible psychosocial effects that COVID-19 has probably caused on the personality of the university professors at three Ecuadorian public universities, with which inter-institutional relations have been established; in addition to being geographically close.

Given the above, and in order to respond to this relevant problem and to give methodological direction to this research, the objective was to analyze the psychosocial effects of COVID-19 on professors in three public universities in the province of Manabí, Ecuador.

## **1. Essential epistemic references in the approach to the psychosocial effects of COVID-19 on Ecuadorian university professors.**

In the process of recognition, diagnosis, and approach of the topic referred to the psychosocial effects caused by an external or internal agent in people, especially in university professors, it becomes highly relevant; given the current relevance that this topic has generated in the integral health of individuals (Heredia et al., 2018). Such elements influenced the social and labor development of people, as a result of the work context in which they are immersed (Naji et al., 2022).

In this regard, Moreno & Báez (2010) point out that psychosocial factors are conditions that occur in the organizational work environment, which can affect the health in a positive or negative way inside and outside the

workspace of the employees. For this reason, culture, leadership, or organizational climate are aspects that determine job satisfaction, as well as productivity, by virtue of the states of motivation that originate from the professional environment.

In the case of university professors, there are processes that generate great stress because they involve a great amount of effort even outside working hours, taking time away from personal and recreational activities, such as the execution of the teaching practice prior to the review of the material, planning, training, during (mastery of the topics discussed, control over the discipline of the students, and exposure to the contents) and after (evaluation, delivery of grades, note loading). In that order of ideas, the five most common stress symptoms according to Tacca & Tacca (2019) are: "Tiredness, not being able to sleep, headaches, lack of concentration and changes in appetite" (p.335), which generates mental and physical exhaustion.

It should be noted, that in these pandemic times, university professors could suffer from professional stress, called Burnout Syndrome, which in the words of Saborío & Hidalgo (2015), "it is described as an inadequate way of coping with chronic stress, whose main features are emotional exhaustion, depersonalization and decreased personal performance" (p.1), so it is inferred that people who suffer from it do not know how to handle this type of situation, leading them to make inappropriate decisions.

The stated above can cause deep stress, given the current health situation, expressed through physical, behavioral, emotional, or cognitive symptoms, resulting in absenteeism from work and a decrease in the professional level, reducing their performance within the classroom space to the detriment of their mental health, caused by mandatory preventive isolation, lack of digital skills, fear of being unemployed, becoming infected or losing family members, anxiety, despair and depression (Prada, Gamboa & Hernández, 2021).

## 2. Methodology

The present study was developed from a quantitative approach, by virtue of the fact that the data obtained were processed with statistical resources; in order to confirm or refute hypotheses from whose results emerged indicators that structurally constructed the answers to the questions posed. Similarly, the study was considered cross-sectional non-experimental, and descriptive, because the data were collected during a single-day of collection, they were not manipulated or established under experimental conditions; however, their application looked forward to solving problems (Sabino, 2002; Rodríguez, 2003; Torres, 2016).

In addition to the above, a method was used to determine the existence of a linear association that accounts for the possible link between two continuous quantitative variables, calculated through the correlation coefficient in order to obtain the estimate of the distribution of the variables in a plane (Camacho-Sandoval, 2008).

The investigated population was made up of professors with appointments structured as follows: 682 from the Technical University of Manabí (UTM), 678 from the Lay University Eloy Alfaro de Manabí (ULEAM), and 131 from the State University of Southern Manabí (UNESUM). For the calculation, the formula proposed by Hernández, Fernández & Baptista (2014) was used as a reference, and a sample of 246 professors from the UTM, 246 from the ULEAM, and 98 from the UNESUM was considered, which represented 36.07; 36.28, and 74.81%, respectively, for each university. The selection criteria of the universities immersed in the study were due to the fact that they were easily accessible and the authors linked with these Higher Education institutions.

The sample was selected according to the following criteria: Professors with several years of experience; professors who participated in updating plans in the use of ICT; with a permanent position; willing to

participate in the study; and professors who signed the informed consent.

The data were collected by the survey technique, through the use of two questionnaires, instruments based on the

depression, anxiety, and stress scales (DASS-21; Table 1) and the Maslach-Student Burnout Survey (MBSI; Table 2), which were analyzed by descriptive statistics with the support of the SPSS statistical software.

**Table 1**  
**Coding by questionnaire items (DASS-21)**

No.	Items	Factor	Coding
1	I had a hard time releasing the tension	Stress	E1
2	I realized that my mouth was dry	Anxiety	A2
3	I could not feel any positive feeling	Depression	D3
4	It was hard for me to breathe	Anxiety	A4
5	I found it difficult to take the initiative to do things	Depression	D5
6	I overreacted in certain situations	Stress	E6
7	I felt my hands shaking	Anxiety	A7
8	I felt that I was expending a great deal of energy.	Stress	E7
9	I was worried about situations in which I might panic or in which I might make a fool of myself	Anxiety	A9
10	I have felt that there was nothing to look forward to	Depression	D10
11	I have felt restless	Stress	E11
12	I found it difficult to relax	Stress	E12
13	I felt sad and depressed	Depression	D13
14	I did not tolerate anything that would not allow me to continue with what I was doing	Stress	E14
15	I felt I was at the point of panic	Anxiety	A15
16	I could not get excited about anything	Depression	D16
17	I felt I was worth very little as a person	Depression	D17
18	I have tended to feel angry easily	Stress	E18
19	I felt my heartbeat even though I had not made any physical exertion	Anxiety	A19
20	I was afraid for no reason	Anxiety	A20
21	I felt that life had no meaning	Depression	D21

**Source:** Own elaboration, 2022 based on the DASS-21 questionnaire.

**Table 2**  
**Maslach-Student Burnout Survey (MBSI) item coding**

No.	Items	Factor	Coding
1	I feel emotionally drained by my work.	Emotional exhaustion	C1
2	I feel tired at the end of the workday.	Emotional exhaustion	C2
3	When I get up in the morning and face another workday, I feel fatigued.	Emotional exhaustion	C3
4	I have a facility for understanding how my students feel.	Personal fulfillment	R4
5	I feel I am treating some students as if they were impersonal objects.	Depersonalization	Db5
6	I feel that working with students all day long is very demanding and tires me out.	Emotional exhaustion	C6
7	I feel that I deal very effectively with my students' problems.	Personal fulfillment	R7
8	I feel that my job is wearing me out. I feel burned out by my work.	Emotional exhaustion	C8

**Cont... Table 2**

9	I feel that I am positively influencing my students' lives through my work.	Personal fulfillment	R9
10	I have become more insensitive to people since I have been in the teaching profession.	Depersonalization	Db10
11	I think this job is hardening me emotionally.	Depersonalization	Db11
12	I feel very energetic in my job.	Personal fulfillment	R12
13	I feel frustrated in my job.	Emotional exhaustion	C13
14	I think I work too much.	Emotional exhaustion	C14
15	I don't really care what happens to some of my students.	Depersonalization	Db15
16	Working directly with students causes me stress.	Emotional exhaustion	C16
17	I feel that I can easily create a pleasant atmosphere with my students.	Personal fulfillment	R17
18	I feel motivated after working in contact with students.	Personal fulfillment	R18
19	I feel that I get a lot of valuable things out of this job.	Personal fulfillment	R19
20	I feel finished in my job, at the limit of my possibilities.	Emotional exhaustion	C20
21	In my job I deal with emotional problems very calmly.	Personal fulfillment	R21
22	I think the students blame me for some of their problems.	Depersonalization	Db22

Source: Own elaboration, 2022 based on the Maslach Burnout-Student Survey (MBISS) questionnaire.

### 3. Results and discussion

In order to describe the aspects of Burnout syndrome in professors at three public universities in the province of Manabí, Ecuador, the results

presented in Table 3 showed that in the first factor the opinions of the interviewees provided practically the same weight to the items of each scale and the same sign to the three scales, where neither dominated over the other.

**Table 3**  
**Psychosocial effects of COVID-19 on university professors at three universities in the province of Manabí, Ecuador**

Item	Mean	Standard deviation	Weight of factors			Communality	
			1	2	3	Initial	Extraction
A2	0.73	0.811	0.592	0.197	0.063	0.444	0.393
A4	0.34	0.638	0.571	-0.075	-0.128	0.419	0.349
A7	0.29	0.613	0.701	-0.013	-0.257	0.570	0.558
A9	0.39	0.620	0.621	0.063	-0.154	0.476	0.414
A15	0.24	0.534	0.792	-0.231	-0.195	0.693	0.719
A19	0.46	0.714	0.733	-0.116	-0.246	0.610	0.611
A20	0.36	0.633	0.774	-0.176	-0.246	0.685	0.691
E1	0.78	0.819	0.667	0.350	0.132	0.581	0.585
E6	0.48	0.618	0.608	0.006	0.051	0.435	0.372
E8	0.75	0.799	0.676	0.368	0.076	0.587	0.598
E11	0.64	0.698	0.726	0.238	-0.069	0.617	0.588

Cont... Table 3

E12	0.69	0.787	0.763	0.265	-0.011	0.645	0.652
E14	0.41	0.652	0.746	0.040	0.009	0.591	0.558
E18	0.64	0.725	0.719	0.145	-0.065	0.559	0.542
D3	0.36	0.687	0.512	-0.043	0.292	0.407	0.349
D5	0.44	0.648	0.609	0.126	0.208	0.457	0.431
D10	0.42	0.704	0.736	-0.028	0.184	0.601	0.577
D13	0.60	0.732	0.805	0.140	-0.034	0.690	0.670
D16	0.32	0.646	0.671	-0.255	0.368	0.585	0.650
D17	0.22	0.689	0.669	-0.463	0.107	0.680	0.674
D21	0.18	0.530	0.762	-0.473	0.083	0.777	0.811
Eigenvalue			<b>10.492</b>	<b>1.445</b>	<b>1.091</b>		
Variance explained (%)			<b>49.960</b>	<b>6.883</b>	<b>5.195</b>		
Cumulative variance (%)			<b>49.960</b>	56.843	62.038		

Source: Own elaboration, 2022.

In the second factor, a contrast was observed between anxiety and depression versus stress, given the negative signs (shaded) that indicated that there was an inverse relationship between depression and anxiety as opposed to stress. It should be noted that not all items had the same weight since within anxiety the most important were items A15, A19, and A20, and within depression were items D16, D17 and D21, while in stress were items E8, E11, and E12. In other words, for each factor, the same items were not related (Table 3).

The third factor was referred to a contrast between anxiety, stress, and depression. For its part, anxiety with a negative sign and represented by items A4, A7, A9, A15, A19, and A20, while stress was represented by items E11, E12, E18, and depression with item D16. For this purpose, the variance explained at the bottom of the table indicated how much variance of the information was attributed for each factor, and also the cumulative variance, depending

on the factors that were extracted. Ideally, with few factors a high percentage would have been explained; in this case, with three factors, approximately 62% was explained, which was significant (Table 3). It was also observed in most cases that the extracted variance was high, although for some it was low (less than 0.4) as in the case of items A2, A4, E6, and D3, which should be reconsidered for inclusion in subsequent studies (Table 3).

Regarding the analysis of variance, the sums of squares of those factors where significant differences were presented were highlighted. Analysis of variance indicated that there were revealing differences by age effect for the depression, anxiety, and stress scales (142.034, 150.227, and 261.58; respectively). Statistical differences were also found by sex effect for the anxiety scale (102.443) and by university effect for the depression (251.046) and stress (458.834) scales; in addition to the sex x university interaction for the depression, anxiety, and stress scales (Table 4).

**Table 4**  
**Analysis of variance to compare the effect on the values of the DASS-21 scales, sex, age, and university**

Background	Depression	Anxiety	Stress
Age	<b>142.034</b>	<b>150.227</b>	<b>261.583</b>
Sex	11.283	<b>102.443</b>	<b>35.085</b>
University	<b>251.046</b>	224.281	<b>458.834</b>
Age * Sex	<b>98.137</b>	<b>106.230</b>	<b>97.872</b>
Age * University	120.204	41.409	59.820
Sex * University	24.962	14.873	43.070
Age * Sex * University	<b>158.018</b>	83.934	<b>132.917</b>
Error	6188.102	6089.552	5582.327
<b>Total</b>	<b>11006.000</b>	<b>11691.000</b>	<b>103962070.000</b>

**Note:** Sum of squares Type III. Bold letters indicated significant effects (significance level of 0.05).

**Source:** Own elaboration, 2022.

The mean test showed statistical differences ( $P < 0.005$ ) for the depression, anxiety, and stress scales due to age effects, the youngest professors according to the three age ranges (from 20 to 50 years), showed similar behavior without statistical differences between them, but different from professors aged between 51 to 60 or more years, which presented the lowest value. The depression scale was statistically similar ( $P > 0.05$ ) for both female and male sex with an average value of 2.82 and 2.67; respectively, where the female sex was most affected. The same mode was presented for the anxiety and stress scales; both without being statistically different due to the effect of the sex factor, always greater in the female sex.

For the university factor, statistical differences were found ( $P < 0.04$ ) for the depression scale, where the behavior of the professors of the UTM and the ULEAM was not different among them, but both different from the UNESUM. In the three scales, the differences were presented among the ULEAM and the UTM, without differences among them, when compared with the UNESUM, the UTM presented the highest values with 3.54, 3.71, and 420.81 for the depression, anxiety, and stress scales; respectively. The lowest values corresponded to the UNESUM (1.44,

1.74, and 418.00 for depression, anxiety, and stress, respectively; Table 5).

**Table 5**  
**Comparisons of means for the DASS 21 scale of the depression, anxiety, and stress variables by sex and university**

Factor	Variable		
	Depression	Anxiety	Stress
<b>Age</b>			
1	2.757 a	3.282 a	419.511 a
2	3.305 a	3.348 a	420.621 a
3	2.575 a	2.858 a	419.758 a
4	1.784 b	1.921 b	418.549 b
<b>Sex</b>			
Female	2.815 a	3.377 a	419.979 a
Male	2.368 a	2.249 a	419.258 a
<b>University</b>			
ULEAM	2.852 a	3.053 a	420.191 a
UNESUM	1.444 b	1.737 b	418.003 b
UTM	3.543 a	3.709 a	420.805 a

**Note:** Different letters in the columns for each factor indicated statistical differences according to Tukey's multi-range comparison test ( $P < 0.05$ ).

**Source:** Own elaboration, 2022.

To describe aspects of Burnout syndrome among professors at three public universities in the province of Manabí, Ecuador, it was found in the analysis of factors of the Burnout scales that in the first factor there was a contrast between fatigue and depersonalization versus

personal fulfillment since observations were presented that showed high negative values of factor 1, which represented individuals with high responses for the items of personal fulfillment, but low values in the items of fatigue and depersonalization (Table 6).

**Table 6**  
**Descriptive statistics and analysis of factors of the Burnout instrument**

Items	Descriptive statistics		Factor					Communality	
	Mean	Standard deviation	1	2	3	4	5	Initial	Extraction
C1	2.85	1.965	0.737	0.345	-0.209	-0.259	0.021	0.704	0.772
C2	3.22	2.045	0.711	0.412	-0.189	-0.194	-0.095	0.695	0.758
C3	2.02	2.059	0.737	0.213	-0.164	-0.003	-0.012	0.593	0.616
C6	1.85	1.952	0.677	0.169	0.081	0.052	0.215	0.526	0.543
C8	1.94	2.019	0.793	0.262	-0.064	0.110	0.098	0.677	0.723
C13	1.18	1.765	0.688	0.066	0.018	0.086	-0.053	0.483	0.488
C14	2.69	2.273	0.638	0.345	-0.093	-0.105	-0.057	0.520	0.549
C16	0.96	1.510	0.603	-0.011	0.253	0.067	0.232	0.426	0.485
C20	1.04	1.703	0.703	0.036	0.093	0.279	0.041	0.541	0.584
Db5	0.39	1.160	0.405	-0.159	0.348	-0.094	0.094	0.280	0.328
Db10	0.66	1.541	0.369	-0.115	0.413	-0.026	-0.202	0.326	0.362
Db11	0.85	1.625	0.512	-0.155	0.514	-0.012	-0.262	0.445	0.619
Db15	1.85	2.507	0.097	-0.104	0.315	-0.021	0.141	0.128	0.140
Db22	0.64	1.258	0.411	-0.087	0.218	0.091	0.060	0.256	0.235
R4	5.05	1.549	-0.128	0.477	0.077	0.020	-0.204	0.260	0.292
R7	5.26	1.370	-0.217	0.547	0.144	0.148	-0.247	0.331	0.450
R9	5.54	1.098	-0.334	0.404	0.006	0.282	0.042	0.297	0.356
R12	5.29	1.290	-0.504	0.254	0.283	-0.183	0.014	0.374	0.432
R17	5.65	0.971	-0.407	0.428	0.017	0.227	0.140	0.378	0.420
R18	5.65	0.907	-0.390	0.440	0.184	-0.112	0.131	0.363	0.409
R19	5.62	0.981	-0.487	0.453	0.324	-0.223	0.192	0.458	0.634
R21	5.25	1.502	-0.227	0.307	0.089	0.112	-0.079	0.169	0.173
		Eigenvalue	6.627	2.592	1.710	1.036	1.012		
		Variance explained (%)	30.121	11.784	7.774	4.711	4.600		
		Cumulative variance (%)	30.121	41.905	49.679	54.390	58.990		

Source: Own elaboration, 2022.

On the other hand, positive values were shown, which indicated, they were individuals with high values in the items of fatigue and depersonalization and low values

in the items of personal fulfillment. Then, the first factor measured high performance versus low performance, factor two measured high depersonalization for negative values of this

factor and low depersonalization if its values were positive and high, while the third factor was associated with fatigue, and for negative values of this factor indicated individuals with high rates of fatigue, low depersonalization and low personal fulfillment (Table 6).

Similarly, it was evidenced in the

analysis of variance, that there were significant differences by the effect of age, sex, and university for the fatigue scale (2.813.99, 503.38, and 10.539.40; respectively), and the personal fulfillment scale was significant by the effect of age (765.823) and by the effect of university (327.196), as observed in Table 7.

**Table 7**  
**Analysis of variance to compare the effect on the values of the Burnout scales, Sex, Age, and University**

Background	Fatigue	Despair	Personal fulfillment
Age	<b>2813.991</b>	98.409	<b>756.823</b>
Sex	<b>503.378</b>	5.113	34.721
University	<b>10539.454</b>	6.453	<b>327.196</b>
Age * Sex	437.980	33.493	84.295
Age * University	696.352	223.020	218.856
Sex * University	445.204	4.483	142.298
Age * Sex * University	922.602	119.562	166.977
Error	80763.345	15016.011	18883.802
<b>Total</b>	<b>288678.000</b>	<b>26962.000</b>	<b>20669.473</b>

**Note:** Sum of squares Type III. Bold letters indicated significant effects. (P=0.05).

**Source:** Own elaboration, 2022.

Additionally, the mean test showed statistical differences (P<0.001) for the age, sex, and university scales. The depersonalization scale was not statistically significant (P>0.05) for any of the factors (age, sex, and university). For the fatigue scale, differences were found due to the effect of age, the ages between 31-40 to 41-50 were statistically similar between them (P>0.05), but different at the age of 20 to 31, with values between 19.469 and 15.122 and also with the ages between 51 to 60 or more, which suggests that the youngest and the most adult professors were those who reflected less fatigue.

However, to describe the aspects of Burnout syndrome in professors at three public

universities in the province of Manabí, Ecuador, the following results emerged. Regarding the sex factor, statistical differences were found (P<0.01) for the fatigue scale, between the female (17.825) and male (15.401) genders, and also among the professors of the universities evaluated, statistical differences were found (P<0.001), the professors of the UTM (22.024) and those of the ULEAM (19.904) were those who expressed greater fatigue, with differences between them, the professors of the UNESUM (8.734) were also different, but with the lowest value (Table 8).

**Table 8**  
**Comparisons of means for the Burnout scale of the fatigue, depersonalization, and personal fulfillment variables due to the effect of age, sex, and university**

Factor	Variable		
	Fatigue	Depersonalization	Personal fulfillment
<b>Age</b>			
1	15.122 b	5.423 a	43.762 b
2	19.469 a	4.501 a	41.301 d
3	18.172 a	4.674 a	43.221 c
4	13.193 c	3.807 a	44.918 a
<b>Sex</b>			
Female	17.825 a	4.427 a	43.145 a
Male	15.401 b	4.627 a	43.111 a
<b>University</b>			
ULEAM	19.904 b	4.333 a	42.435 b
UNESUM	8.734 c	4.434 a	44.115 a
UTM	22.024 a	4.765 a	42.834 b

**Note:** Different letters in the columns for each factor indicated statistical differences according to Tukey's multi-range comparison test ( $P < 0.05$ ).

**Source:** Own elaboration, 2022.

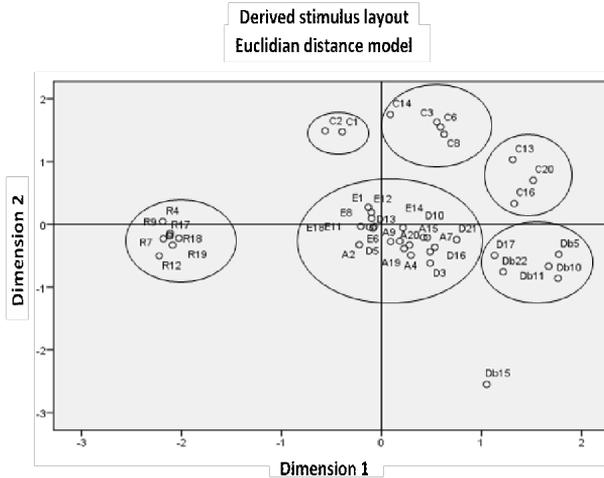
Regarding the scale of personal fulfillment, the average test indicated the presence of significant statistical differences ( $P < 0.001$ ) due to the effect of age and university; due to the effect of sex, no statistical differences were detected. In this sense, the age range was different for all the values of the scale, being higher in professors from 51 to 60 years or more years (44.918), followed by professors from 20 to 30 years (43.762), those from 41 to 50 years (43.221) and finally those from 31 to 40 years (41.301) (Table 6).

For the university factor, statistical differences were found between UNESUM when compared with UTM and ULEAM. This suggests that since UNESUM is a university with a smaller number of students, fewer demands from the point of view of control of academic activities (preparation of reports), in addition to having a relatively young teaching

staff, which contributed to the fact that psychosocial aspects had less influence on the teaching staff.

### 3.1. Multidimensional escalation

Figure I shows the composition of seven groups referring to the psychosocial effects of COVID-19 on university professors, obtained through the items that were evaluated. In the DASS-21 questionnaire the scales were concentrated around the origin in the Cartesian plane, distributed in the four quadrants, the items related to the anxiety scale were shared in quadrants III and IV, the stress scale was distributed in quadrants I, II, and III; and the depression scale between quadrants I, III and IV.



Source: Own elaboration, 2022.

**Figure I: Derived stimulus layout from the Euclidean distance model**

The scales corresponding to the Burnout questionnaire were distributed in the four quadrants, but far from the origin of the Cartesian plane. The items referring to the fatigue scale presented dissimilar distances, so they formed three groups, two located in quadrant I and the other group in quadrant II. The personal fulfillment scale constituted a single group that was located between quadrants II and III. The depersonalization scale formed two groups in quadrant IV, highlighting that item Db15 presented a dissimilar distance from the rest of the items forming a single group. In addition, in the depersonalization group, item D17 was included, which was also isolated from its scale (Figure I).

For the interpretation of the two dimensions, it was found that in dimension 1 the scales of fatigue, stress, depression, depersonalization, personal fulfillment, and anxiety were located. On the other hand, in dimension 2 it was fatigue and personal fulfillment against depersonalization that was the one that was most dispersed. In general,

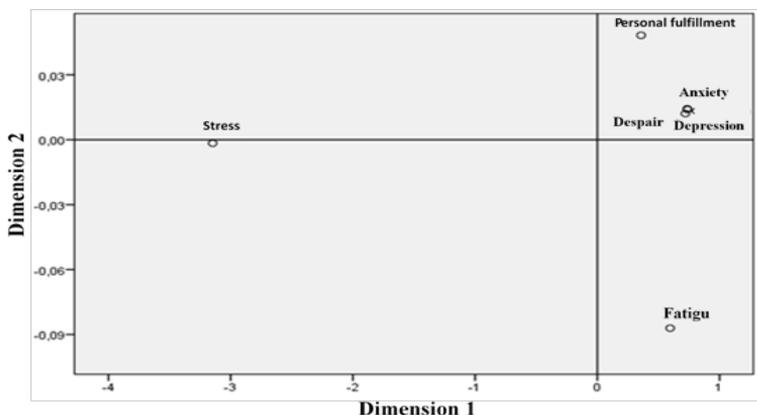
the behavior of the data could be attributed to the information provided by the Burnout questionnaire.

On the other hand, the scales were used to carry out the analysis in the search for a greater understanding of the results; for this, the data analyzed constituted the sums of the values of the items within each scale of the two instruments, which were joined, since the subjects to whom both instruments were applied were the same. Therefore, we worked with the Euclidean distance between the total ratings of the scales (variables) and the objective of the application of the multidimensional escalation technique, in order to find an association between the ratings of both scales.

Consequently, Figure II shows the formation of three groups referring to the psychosocial effects of COVID-19 on university professors. On the one hand, an association was found between the anxiety and depression scales of DASS-21 with the scales of personal fulfillment and depersonalization of Burnout. One group was made up of

personal fulfillment, despair, anxiety, and depression (quadrant I), in quadrant II none of the factors were located, the second group was

made up of stress (quadrant III) and group four was fatigue (quadrant IV).



Source: Own elaboration (2022)

**Figure II: Conformation of three groups referring to the psychosocial effects of COVID-19 on university professors**

For the interpretation of the two dimensions, it was established that in dimension 1 the anxiety and depression scales of the DASS-21 questionnaire and the depersonalization and personal fulfillment scales of the Burnout questionnaire were found, which when located very close implied the presence of very small distances, close in terms of the fatigue scale (ranges between 0 and 1.1 in the horizontal); on the other hand, the stress scale with greater dispersion of the data, was not related to the other scales, discriminated by dimension 1 (ranges between 0 and -4).

These four scales showed a behavior totally contrary to stress, according to dimension 1, and contrary to fatigue according to dimension 2. In the latter, the stress scale was presented (between 0 and -0.01) far from the fatigue scale (close to the distance -0.09), but close to the depression, anxiety, and depersonalization scales (between 0.0

and 0.015) and further from the personal fulfillment scale (approximately 0.05).

In short, it is important to note that, due to the data obtained, depression, anxiety, and stress were psychosocial effects that have affected during the COVID-19 pandemic the professors of the universities studied, due to the pressure that was generated by the new methodological structures, the acquisition of other skills associated with technology, health and the risks of contagion or death and pedagogical attention through virtuality.

This result is similar to the work done by Cadauid (2021), in which they concluded that stress is a threat to the occupational health of academic workers because it contributed negatively to the physical, mental and psychological deterioration of the professor that influenced their behavior, provoking disorders whose symptoms caused physical and physiological diseases, which in these times is derived from the student load and confinement.

It is also highlighted that anxiety is a dominant sign in professors, which is caused by uncertainty about the bewilderment of the disease, the lack of security of the immediate future, vulnerability, and fear represented by the pandemic. Based on the above, the research by Said, Marcano & Garzón-Clemente (2021) offered knowledge regarding the negative perception of academic anxiety, expressed by professors of higher education institutions during the confinement due to COVID-19, applied to 251 professors who affirmed the need to receive training at the psychosocial level, in relation to emotional management and management when facing uncertain and demanding scenarios such as the pandemic.

Depression also echoed the opinions of professors at the three universities, who reported feeling overwhelmed by the situation, as well as physically and emotionally exhausted, resulting in frustration, discouragement, disinterest, and impotence.

In this regard, the coincident findings of Prada et al. (2021) are mentioned, in which the percentage distribution highlighted four levels of depression, mainly caused by mandatory isolation, where 76% of professors reported experiencing symptoms of minimal depression, followed by 14% who were at the level of mild depression and 3% of them, with severe depression.

The data that were obtained in terms of the indicators of depression in the female professors of the UTM older than 50 years are of interest, for which it is assumed that they have the "Burnout teacher syndrome", they do not feel useful or sufficiently valued, generating low self-esteem in them, to this perhaps we should add the fact of the use of new technologies, in particular when professors are not familiar with them, in addition to the use and preparation of classes and activities in virtual classrooms.

This requires that the aspects of Burnout syndrome in professors, whose ages ranged from 31 to 50 years in the three public universities studied, were perceived in themselves as tired, as opposed to professors aged 50 to 60, who said they felt active and

willing. It is the authors' consideration to assume that this was due to the fact that most of the professors were between the ages of 31 and 50, therefore, they were the ones who participated the most; however, it could be thought that the older professors (50-60), who have more experience, were those who held managerial positions and therefore remained more willing.

In the words of Giler-Zambrano et al. (2020), the prevalence of Burnout Syndrome in university professors in Ecuador in the context of the COVID-19 pandemic was associated with socio-demographic and labor factors, due to the fact that more energy was consumed.

The gender that expressed the greatest fatigue was the female assigned to the UTM, this was due to the fact that university has a wide student enrollment; therefore, the professors acquired greater commitment in the academic load that was related to the planning, dictation of classes and evaluation, taking into account that some activities were performed from their homes in the time they had free time to dedicate to their family, in addition to biological factors such as menstruation, pregnancies, childbirth, menopause, parenting, the role of wife and mother, which complicate their situation. This contradicts the work of Romero et al. (2019) in which male professors projected themselves with more fatigue.

The professors who manifested the greatest personal fulfillment were those whose ages ranged from 51 to 60 or more years. It is believed that it was due to the achievements obtained, goals achieved, and lived experiences. In relation to this topic, Tabares-Díaz, Martínez-Daza & Matabanchoy-Tulcán (2020) evaluated different age groups reporting that, in similarity to the present work, professors aged 51 to 60 years presented higher levels of personal fulfillment. In this sense, the confrontation and realization of new challenges could be one of the reasons for this marked satisfaction in older professors.

From the correlation, it was deduced that, in short, anxiety and depression, together with the scales of personal fulfillment and

depersonalization of Burnout, generated an influence on the mood and attitude of the professors that had an impact on personal fulfillment, and therefore on work performance, since this depended on their state of physical and mental health caused by the interference of concerns, that arose in the context in which we live today.

## Conclusions

From the data provided in the statistical analysis regarding the factors studied (depression, anxiety, and stress) it is noted how in the opinion of the respondents similarity of weighting is handled because the three scales that generated a similar value; which means that they are all binding psychosocial effects on the psyche of professors during the COVID-19 pandemic.

On the other hand, regarding the signs of anxiety, the answers about the lack of concern for students, the valuation at work, and exhaustion have evidenced that the same are indicators that express the limitations of the possibilities of the job performance of the professors. In relation to depression, it was found that the fact of working directly with students produces stress, although some claim to be able to easily create a pleasant climate with them, even in that relationship emotional problems are also treated, so they insist on staying calm.

When describing the aspects of Burnout syndrome in professors at the three public universities studied, professors perceive themselves as tired, which disrupts the usual routine of their work. Despite this, the study subjects have claimed to feel fulfilled. By virtue of these other aspects that provide them with personal satisfaction, such as goals achieved in performance and professional training, among others. Likewise, it is considered that, at an older age, greater personal satisfaction, this may be due to several factors: professors have achieved their promotions, their training periods, they enjoy professional prestige,

they have already reached positions of administrative responsibility and they are about to retire.

Regarding the correlation, there was observed a link between the scales of anxiety and depression of DASS-21, with the scales of personal fulfillment and depersonalization of Burnout, where despair, anxiety, and depression that together with fatigue set the tone in the results that affect personal fulfillment. Hence it should be considered that Burnout syndrome, despair, and depression among others are psychosocial effects that the pandemic situation with all its social, health, and academic consequences has caused in university professors of these three institutions of higher education.

The limitations of the study were derived from the confinement, which prevented the application of the instrument in person, a situation that was remedied by using digital techniques to do it virtually. Another restriction presented was that not all professors had direct access to the Internet or to a computer to answer the questionnaire. In addition, there is a risk that the interviewees may have some bias when giving their answers.

Finally, it is important to consider that anxiety, stress, and depression; which could be included with their multiple socio-psychological links in the pandemic context of COVID-19, digital competencies, job stability, and their consequences on the emotional health of university professors, both in Ecuador and in Latin America and worldwide.

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