

## **Original Research**

The Impact of COVID-19 Pandemic, Financial Wellness, and Online Teaching on Schoolteachers' Mental Health: A Cross-Sectional Study in Lebanon

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#### Abstract

**Background:** Teaching is a mentally and physically draining occupation, and due to the SARS-CoV-2 pandemic, the education system shifted to online platforms, which made it even harder. Lebanon is a developing country that is not well prepared for such a daunting outbreak. In addition to its tremendous economic crisis, it will be even harder for teachers to maintain mental stability. The aftermaths of this crisis could, perhaps, impact all the fundamental systems within the country including education.

**Aim:** This study aims to assess stress, anxiety, and depression levels among Lebanese schoolteachers based on the COVID-19 outbreak, the Lebanese economic crisis, and online education.

**Methods:** A cross-sectional study was carried out, enrolling 300 schoolteachers currently working in Lebanon. An online survey was used, assessing sociodemographic factors, teaching status, financial wellness, fear of COVID-19, and mental health. The IFDFW scale is used to assess financial distress, DASS-21 to assess psychological distress, and the COVID-19 fear scale to measure fear.

**Results:** Results showed that 23% of teachers had severe depression, 25% had severe anxiety, and 16% had severe stress. Depression was correlated to both fear of COVID-19 and financial wellness (p<0.0001 for both). Anxiety and stress were correlated with online teaching (p<0.05), fear of COVID-19 (p<0.001), and financial wellness (p<0.001).

**Conclusion:** Lebanese teachers showed severe levels of anxiety and stress as a consequence of online teaching, associated as well with depression when correlated with fear of COVID-19 and financial wellness. It is urgent to take measures to keep the Lebanese educational system productive, and dynamic, and prevent the storm of the stressful environment from worsening.

Keywords: Anxiety, Depression, Stress, Online teaching, Pandemic, Economic crisis

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### Introduction

Over decades, stress has been a critical scope of study [1]. Accordingly, many factors were identified as stressful parameters affecting adult mental health [2]. One of the demanding elements correlating with stress determinants is occupation, with various impacts on psychological well-being scores, emplovees with among different occupations [3]. Two of the many factors psychological influencing status are socioeconomic circumstances and health issues [4]. Moreover, the declaration of the COVID-19 outbreak as a worldwide emergency on 30 January 2020 by the World Health Organization (WHO) resulted in augmented scales of anxiety and depression among the global populations due to the disease itself along with the compulsory quarantine [5].

А considerable number of studies conducted on a global scale have shown that teaching is a job satiated with pressure and a multitude of stressors [6]. In a study carried out by Sheena Johnson et al, out of 26 distinct professions, teaching has been reported as one of the top 6 working fields recording worrisome scores on all of the different stress variables tackled [3]. Hence, it is vital to mention that literature has underscored some of the tension factors stated by teachers. Pamela Manhan et al. have concluded that ongoing and episodic stressors (for example, lack of safety in the school environment and student tardiness) are positively correlated with anxiety and depression levels among secondary school teachers [7]. It is also indispensable to place an exceptional emphasis on a newly striving stressful agent which is online teaching [8].

In Lebanon, the Minister of Public Health (MoPH) proclaimed the first identified case of coronavirus on February 21, 2020 [9]. After a few months, a web survey launched by the World Food Program has proven that the stringent situation of the COVID-19 outbreak in Lebanon has aggravated the already existing economic crisis [10]. The aftermaths of this crisis could, perhaps, impact all the fundamental systems within the country, particularly education. Mindful of all this evidence and data available at hand, is in shortage for studies literature considering stress among Lebanese teachers. Taking into account the intense impediments challenging the education system in Lebanon, the objective of this study is to assess the stress, anxiety, and depression levels among Lebanese schoolteachers in the light of the COVID-19 outbreak, Lebanese economic crisis, and above all, online teaching, as a novel forced educational technique.

### Methods

### Ethical consideration

Notre Dame University-Louaize Ethical Committee waived the need for approval because this was an observational study with no traceability of participants. The study respected participants' anonymity and confidentiality, and it was conducted according to the research ethics guidelines.

### Data collection

According to the latest published World Bank statistics, Lebanon had 50,049 secondary education teachers in 2020, or 0.73% of the total population. With a Type I error rate of 0.05 and an acceptable error of 0.05, 303 participants would be needed for this study. From October to the end of November, 314 schoolteachers working in Lebanon were enrolled. After rejecting responses that were not eligible for our study, we were left with a sample of 300 participants. Convenience sampling was used where the researchers posted the questionnaire online using google forms, and the link was shared by snowball technique, reaching many schoolteachers' groups. Individuals from these groups were also asked to send it to their colleagues. Participants consented to participate in the study, in which all study objectives and aims were described and the right to withdraw from participation was at their disposal during the survey.

Inclusion criteria: All schoolteachers in Lebanon who could answer the questionnaire, independently if they were eligible to participate in this study.

Exclusion criteria: Participants who are currently teaching outside Lebanon and those who retired were excluded from the study.

### Study Design

An observational cross-sectional study was carried out in October-November 2020. An extensive questionnaire was used to collect the corresponding data. Data was collected using an online survey conducted by the researchers. The questionnaire consisted of parts: sociodemographic six major characteristics, participants' occupational status, evaluation of its impact on online teaching, as well an assessment of the participants' financial wellness. psychological distress, and fear of COVID-19.

(1) In the socio-demographic section, we asked about: age, gender, marital status, number of children, and current province.

(2) Occupational status was assessed by asking about teachers' type of school, cycle, subject, duration of teaching, sessions per week, and several classes they are responsible for.

(3) The online teaching section focused on technical problems faced (lack of devices, poor internet connection, and more), ability to maintain a serious environment, efficiency of teaching, and having a workshop in this field.

(4) In charge financial distress/financial wellbeing scale (IFDFW) was used to assess participants' financial wellness. This scale includes eight items, on a linear scale from 1 to 10 [11]. Higher financial distress is reflected by a lower score.

(5) Fear of COVID-19 scale, containing seven items, was used to assess participants' fear of COVID-19 [12].

(6) The DASS-21 scale was employed to measure the psychological distress (depression, anxiety, and stress) of the participants. The DASS-21 has three subscales of seven items each. It asks about

depressive symptoms, anxiety symptoms, and general stress symptoms. Responses are on a four-point scale (0=did not apply to me at all and 3=applied to me most of the time). A higher score indicates the severity of psychological distress [13]. Based on published studies, all of the scales and scores used in this study are reliable and valid [14,15,16].

### Statistical Analysis

The collected data was entered in Microsoft excel and was analyzed using the Statistical Package of the Social Sciences (SPSS) v.25. A p-value less than 0.05 was considered statistically significant. Descriptive statistics were conducted where continuous variables were expressed as mean ± standard deviation (SD), while categorical variables presented as numbers were and percentages. Concerning the bivariate analysis, the independent samples t-test was used to test mean differences between two groups, one-way ANOVA was used to compare means between more than two groups, and Pearson to test the correlation between two quantitative variables.

Furthermore, three linear regressions were conducted using the General Linear Model function in SPSS: the three dependent variables were depression score, anxiety score, and stress score. The independent variables corresponded to sociodemographic characteristics, online teaching, fear of COVID-19, and financial wellness. Significant results were reported after checking that the model was adequate for the data.

### Results

# Socioeconomic-demographic characteristics

300 Lebanese schoolteachers, having a current occupation in a Lebanese school, were enrolled in this study. 82.7% (n=248) of subjects were females, 40.7% (n=122) were between 30 and 39 years old. The highest percentage of participants had 1 or 2 children (37%, n=111), and more than two-thirds of the subjects were married (76.7%, n=230). Most teachers had 1-2 or 3-4

persons that they support directly (30.7%, n=92 and 33%, n=100 respectively). Almost all participants were unsatisfied with their income (90.7%, n=272) (Table 1).

### Online teaching

Out of 300 teachers, 88.7% (n=266) are teaching online. Among these, 87.6% (n=233) have technical problems, while only 12.4% (n=33) have no problems. 64.3% (n=193) have no difficulty teaching online, 74% (n=222) have a serious environment while teaching and 56% (n=168) had a workshop for teaching methods (Table 2).

# Prevalence of depression, anxiety, and stress

20.3% (n=61) of the participants took drugs for depression, anxiety, or stress when asked about their mental health history. Regarding depression, 26.7 (n=80) had no depression, 28% (n=84) of the total participants had moderate depression, and 23% (n=69) had extremely severe depression. Also, 40.3% (n=121) of the total participants had no anxiety, 11.3% (n=34) of the total participants had moderate anxiety, and 25% (n=75) had extremely severe anxiety. In addition, 36.3% (n=109) of total participants had no stress, 16.3% (n=49) had moderate stress, and 16% (n=48) had extremely severe stress (Table 3).

# Associated parameters with DASS-21 included in the Linear regression model

We found statistical significance pertaining to participants aged 30 to 39 having the highest rate of depression ( $10.42 \pm 5.759$ , p=0.000), anxiety ( $7.13 \pm 5.504$ , p=0.008), and stress ( $11.49 \pm 5.861$ , p=0.001) (Table 4). Online teaching showed a significant association with anxiety ( $6.36 \pm 5.315$ , p=0.022) and stress ( $10.35 \pm 5.879$ , p=0.032). Financial wellness and fear of COVID-19 showed significance regarding depression, anxiety, and stress ( $8.83 \pm$ 5.769, p=0.000,  $6.11 \pm 5.315$ , p=0.000, 10.09  $\pm 5.949$  p=0.000 respectively) (Table 5).

### Multivariate Analysis

The multiple regressions showed that online

teaching mainly affected stress and anxiety, while fear of COVID-19 and economic hardship affected depression, anxiety, and stress (Table 6).

### Discussion

Our results show that Lebanon's teachers showed severe stress levels, anxiety, and depression following online teaching, combined with the fear of COVID-19 and financial stress.

This study is one of the first to investigate the impact of online teaching, fear of COVID-19, and financial wellness, on depression, anxiety, and stress among school teachers in the Middle East.

Nearly one-third of our sample (34.3%) had severe or extremely severe depression, which reflects the tough situation teachers in Lebanon are passing through. This value was much higher than that in Nigeria (23.7%), Malaysia (9.9%), and Egypt 0.7% [17]. The rate of depression was higher than expected, due to the added effect of the COVID-19 pandemic, and Lebanon's economic crisis. A systematic review and meta-analysis of studies regarding mental illness during the COVID-19 outbreak showed a high prevalence of depression (28%), which is slightly lower than that found in our sample of teachers [18,19]. Online teaching did not show any significance regarding the depression rate.

As predicted, fear of COVID-19 showed an increase in depression rate (p-value < 0.001), which verifies a study conducted in the USA stating that fear disorders were linked to depression [20]. Moreover, financial wellness was negatively correlated with depression, showing higher levels as wellness decreased (p-value < 0.001). This coincides with a study that connects financial difficulties to depression [21]. In addition, another study showed that financial stressors due to COVID-19 increased rates of depression [22]. Furthermore, some studies correlated the increase in income to a decreased prevalence of common mood disorders, especially depression [23].

Around a third of the participants (36.6%)

had severe or extremely severe anxiety. This value was slightly higher than that of Egypt and Malaysia, being 26.7% and 23.3% respectively [17]. This rate was nearly double the number measured in China, through the COVID-19 pandemic, which was 13.6% [24]. When compared to the Lebanese population, anxiety among schoolteachers is higher than that in the general population, measured before COVID-19, where 25.6% of people showed signs of anxiety disorders [25]. Anxiety was positively correlated with online teaching (p=0.022). This also reflects the difficulties that teachers face every day. Online education also increased anxiety rates in students, as a study in China showed [26]. Anxiety was also highly correlated with the fear of COVID-19 (p<0.001). A similar result was reached in a study in China [24]. In addition, financial wellness seemed to be related to higher levels of anxiety, as poor levels of wellness increased anxiety rates (p<0.001). Other studies showed that low socioeconomic status was considered a significant risk factor for mental illness [27].

Regarding stress, 35.5% of schoolteachers showed severe or extremely severe stress, higher than results found in schoolteachers in Malaysia (25%) [28]. On the other hand, this value was lower than that in Egypt, showing 67.6% of teachers having severe stress [17]. A study in China showed that stress had reached high levels due to the COVID-19 pandemic, which might be a cause for this high level in our population [29]. The stress showed to be directly correlated with online teaching (p=0.032). A study on students during distance learning showed that around 85% had stress [30]. This common environment for students and teachers may explain the correlation between online teaching and stress. Fear of COVID-19 also had a positive association with stress (p<0.001), as well as worse financial wellness scores (p<0.001).

Mental health is of extreme importance, as it influences productivity, which is of major concern in teachers' occupation [31]. Moreover, individuals with severe mental health problems are more prone to suffer from chronic diseases, negatively affecting their lives [32]. Our study showed a significant association between online teaching and higher levels of anxiety and stress. Online educators mostly suffer from compassion fatigue, where caregivers provide so much support, leaving no time to care for themselves [33]. It also emphasized the clear effect of fear of COVID-19 and low financial wellness in causing depression, anxiety, and stress. Based on what preceded, our study shed the light on the mental health of schoolteachers during the pandemic, as online teaching emerged to replace the healthy environment that was once held at schools. It highlights the importance of assessing the struggles that teachers pass through during online teaching, to improve their performance, and damage prevent greater to their psychological well-being.

### Limitations

Limitations were mainly related to the cross sectional design of our study. Sex ratio, governates, distribution, and the number of teachers involved, were not a perfect representation of the Lebanese population of schoolteachers, as a larger number is needed to formulate a definitive conclusion. In addition, resorting to an online survey meant excluding individuals inactive on the internet. Furthermore, not having a baseline pre-pandemic DASS-21 for teachers, accurate pre-post analyses could not be conducted. Confounding biases may have occurred, due to the increased numbers of stressors, which might have led to the decline in mental health. Specificity of cause might be lost due to the accumulation of stressors.

### Conclusion

Lebanese teachers have shown severe levels of anxiety and stress with correlation to online teaching, with added depression when correlated with fear of COVID-19 and financial wellness. The repercussion of psychiatric morbidity calls for stepping up of the Lebanese organizational system to perform periodic mental health screening, to evaluate and follow up on teachers' psychological state. Regular monitoring of the possible conversion to psychiatric illnesses is also fundamental. Urgent measures should be taken to minimize the stressful environment and worsening situation in Lebanon, to maintain a healthy dynamic of the educational system, and productive performance by schoolteachers.

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### Appendix

### Tables

Table 1: Socio-demographic characteristics of the sample (N= 300). Abbreviations: Number of individuals.

Characteristics	Categories	N (%)	
Gender	Female	248 (82.7%)	
	Male	52 (17.3%)	
	18-29	30 (10%)	
470	30-39	122 (40.7%)	
Age	40-49	102 (34%)	
	50-64	46 (15.3%)	
	Single	63 (21%)	
Marital Status	Married	230 (76.7%)	
	Divorced	7 (2.3%)	
	0	71 (23.7%)	
Number of children	1 or 2	111 (37%)	
	3 or 4	105 (35%)	
	>4	13 (4.3%)	
	0	51 (17%)	
Number of people you support directly	1 or 2	92 (30.7%)	
	3 or 4	100 (33.3%)	
	>4	57 (19%)	
Satisfied by salary	No	272 (90.7%)	
Calibia by Salary	Yes	28 (9.3%)	

Characteristics	Categories	N (%)						
Total Teachers (N=300)								
Online teaching	No, only on campus	34 (11.3%)						
	Yes	266 (88.7%)						
Online Teaching Teachers (N=266)								
	Lack of internet	20 (7.51%)						
	Poor internet	215 (80.82)						
Technical problems	connection	213 (00.02)						
	Lack of devices	94 (35.33%)						
	Problems in electricity	126 (47.36%)						
	No technical problems	33 (12.40%)						
Difficultion in online teaching	No	193 (64.3%)						
Difficulties in online teaching	Yes	73 (24.3%)						
Workshop on teaching online	No	98 (32.7%)						
methods	Yes	168 (56%)						
	No	55 (18.3%)						
	Yes (more efficient)	1 (0.3%)						
Efficiency of online learning	Yes (but less efficient)	196 (65.3%)						
	Yes (same efficiency)	14 (4.7%)						
Pariaua anvironment while teaching	No	44 (14.7%)						
Serious environment while teaching	Yes	222 (74%)						

#### Table 2: Attitude towards online teaching. N: Number of individuals

Table 3: Prevalence of depression, anxiety, and stress in. N: Number of individuals CI: Confidence Interval.

#### Schoolteachers

DASS-21 scores	Depression			Anxiety			Stress		
	Ν	%	CI	N	%	CI	Ν	%	CI
Normal	80	26.7	21.7-31.7	121	40.3	34.7-46	109	36.3	30.7-41.7
Mild	33	11	8-14.7	36	12	8.3-15.7	36	12	8.7-16
Moderate	84	28	23-33.3	34	11.3	8-15.3	49	16.3	12.3-20.7
Severe	34	11.3	8-15.3	34	11.3	15-Aug	58	19.3	15-23.7
Extremely Severe	69	23	18.3-28	75	25	20.3-30	48	16	12.3-20.3

Table 4: Factors associated with DASS-21 scores – bivariate analysis. Abbreviations: SD: Standard Deviation.

		DASS-21 scores						
Characteristics	Categories	Depress	sion	Anxiety		Stress		
	Categories	Mean + SD	р	Mean +	р	Mean+ SD	р	
			value	SD	value		value	
	Male	7.85 ±		4.92 ±		8.88 ±		
Gender	THAIO	5.226	0.178	5.171	0.076	5.279	0.109	
	Female	9.03 ±	0.170	6.36 ±	0.070	10.34 ±	0.109	
	romaio	5.865		5.321		6.060		
	18-29	7.47 ±		5.37 ±		9.10 ±		
	10-23	5.393		4.214		5.081		
	30-39	10.42 ±		7.13 ±	-	11.49 ±		
400	30-39	5.759	0.000*	5.504	0.008*	5.861	. 0.001*	
Age	40-49	8.56 ±	0.000	6.01 ±	0.000	9.75 ±		
	40-49	5.595		5.422		6.047		
		6.09 ±		4.11 ±		7.76 ±		
	50-64	5.198		4.634		5.681		
	Divorced	10.29 ±	0.658	9.71 ±	0.113	12.71 ±	0.461	
		4.821		5.024		4.855		
Marital Otatua	Single	9.19 ±		5.41 ±		9.76 ±		
Marital Status		5.636		5.126		5.836		
	Married	8.68 ±		6.19 ±		10.10 ±		
		5.841		5.345		6.011		
		7.08 ±		4.00 ±		8.62 ±	-	
	>4	6.982		3.808		7.206		
	0.4	8.27 ±		6.02 ±	-	9.93 ±		
Number of	3,4	5.453	0.05	5.317	0.001	6.078	0.501	
children	1.0	9.31 ±	0.35	6.77 ±	0.221	10.68 ±	0.501	
	1,2	5.716		5.212		5.592		
	0	9.23 ±		5.61 ±	-	9.65 ±		
	0	6.060		5.630		6.085		
Number of	× 1	9.54 ±		6.88 ±		11.35 ±	0.095	
Number of	>4	6.528	0.070	5.946	0.404	6.810		
people you	0.4	7.96 ±	0.278	5.77 ±	0.401	9.40 ±		
support directly	3,4	5.592		5.427		5.900		

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	1.2	9.34 ±	6.42 ±	10.64 ±	
		6.099	5.080	5.964	
	0	8.80 ±	5.35 ±	9.02 ±	
		4.373	4.728	4.641	
	NO	8.86 ±	6.14 ±	10.17 ±	
		5.826	5.311	5.934	

Table 5: Online teaching, financial wellness, and fear of covid-19 in correlation with DASS-21 score. Abbreviations: SD: Standard deviation.

		DASS-21 scores							
Characteristics	Categories	Depression		Anxiety		Stress			
	Calogonoo	Mean	p value	Mean +	p value	Mean+	p value		
		+ SD	pvalue	SD	p value	SD	p value		
	YES	8.94 ±		6.36 ±	0.022*	10.35 ±	0.032*		
Do you teach		5.681	0.343	5.315		5.879			
online?		7.94 ±		4.15 ±		8.03 ±			
		6.438		4.955		6.177			
Financial W	Financial Wellness		0.000008*	6.11 ±	0.00068*	10.09 ±	0.000388*		
	01111033	5.769	0.000000	5.315	0.00000	5.949	0.000000		
Fear of COVID-19		8.83 ±	0.000008*	6.11 ±	0.00068*	10.09 ±	0.000200*		
		5.769	0.000000	5.315	0.00000	5.949	0.000388*		

Table 6 – Multiple regressions of depression, anxiety, and stress. Abbreviations: B: Unstandardized Beta, t: t statistic value, CI: Confidence Interval

	Unstandardized		Standardized	t	P value	95.0% Cl for B	
Model	Coefficients		Coefficients				
Model	В	Std.	Beta	L	r value	Lower	Upper
	D	Error	Dela			Bound	Bound
			Depression		1		
(Constant)	8.075	1.221		6.613	<0.001	5.672	10.478
Fear of Covid-19	0.229	0.048	0.253	4.778	<0.001	0.135	0.323
Financial Wellness	-0.116	0.018	-0.335	-6.33	<0.001	-0.152	-0.08
			Anxiety				
(Constant)	2.475	1.088		2.275	0.024	0.334	4.615
Fear of Covid-19	0.326	0.043	0.392	7.651	<0.001	0.242	0.41
Financial Wellness	-0.076	0.016	-0.238	-4.631	<0.001	-0.108	-0.044
Online teaching	1.833	0.832	0.109	2.202	0.028	0.195	3.471
			Stress				
(Constant)	9.106	1.238		7.357	<0.001	6.67	11.542
Fear of Covid-19	0.257	0.049	0.276	5.3	<0.001	0.162	0.353
Financial Wellness	-0.12	0.019	-0.335	-6.418	<0.001	-0.157	-0.083
Online teaching	1.758	0.947	0.094	1.856	0.064	-0.106	3.622