The Impact of Covid19 Pandemic, Financial Wellness, and Online Teaching on The Mental Health of Lebanese Schoolteachers

Tarek Baroud (✉ Tarekbaroud01@hotmail.com )
Lebanese University: Universite Libanaise  https://orcid.org/0000-0001-9767-7971

Jad El Masri
Lebanese University: Universite Libanaise

Hadi Shammaa
Lebanese University: Universite Libanaise

Hani Chanbour
Lebanese University: Universite Libanaise

Issa Kamal Eddine
Lebanese University: Universite Libanaise

Pascale Salameh
Lebanese University: Universite Libanaise

Research

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Abstract

Teaching is mentally and physically draining occupation, and due to Covid-19, education shifted to online methods, which made it even harder. Lebanon is facing a huge economic crisis, making it harder on teachers to maintain mental health. An observational cross-sectional study was carried out, enrolling 300 schoolteachers assessing sociodemographic factors, teaching status, financial wellness, fear of covid-19, and mental health. Results showed high prevalence of depression, anxiety, and stress. Teachers showed severe levels of anxiety and stress with correlation to online teaching, with added depression when correlated with fear of Covid19 and financial wellness. Urgent measures should be taken to minimize the stressful environment and worsening situation in Lebanon.

Background

Over the course of 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 varying impact on psychological well-being scores, among employees with different occupations [3]. In this context, a study on common mental disorders among working population elicited utmost stress as a substantial risk for anxiety and depression, framed in the “sickness absence” [4].

A considerable number of studies conducted on a global scale have shown that teaching is a job satiated with pressure and a multitude of stressors [5], [6], [7], [8]. 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]. This context indeed highlights the drastic loads and noteworthy responsibilities teachers are assumed to handle and cope with.

Hence, it is vital to mention that literature has underscored some of tension factors stated by teachers. Pamela Manhan et al. have concluded that ongoing and episodic stressors (for example, lack of safety in school environment and student tardiness) are positively correlated with anxiety and depression levels among secondary school teachers [9]. Another study done to identify predictors for sources of stress experienced by teachers has confirmed that a worthy number of personal and interpersonal struggles significantly contribute to teachers’ depression and anxiety [10]. It’s also indispensable to place an exceptional emphasis on a newly striving stressful agent which is online teaching. A recently published article at Bucharest University on the motivation towards online instruction among teachers asserted that teachers who lack technical skills encounter agonizing emotions when teaching online. This finding is underlined by the direct relationship between burnout and technostress on one hand, and occupational stress on the other hand [11].

Two of many factors influencing psychological status are socioeconomic circumstances and health issues [12]. The declaration of COVID-19 outbreak as a worldwide emergency on 30 January 2020 by WHO resulted in augmented scales of anxiety and depression among the global populations due to the
Mindful of all these evidence and data available at hand, literature is in shortage for studies 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 the Lebanese schoolteachers in the light of COVID-19 outbreak, Lebanese economic crisis, and above all, online teaching, as a novel forced educational technique.

### Methods

#### Participants

An observational cross-sectional study was carried out in October-November 2020, enrolling 314 schoolteachers currently working in Lebanon. After rejecting responses that were not eligible to our study, we were left with a sample of 300 participants.

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 retired were excluded from the study.

#### Study Design

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.

Link to the Google form: https://forms.gle/C13WqRy4JJE4dTSV6

#### Data Source Measures

Data was collected using an online survey conducted by the researchers. The questionnaire was divided into six major parts:

- Sociodemographic characteristics
- Assessment of the participants’ occupational status
- Assessment of the participants’ situation in online teaching
- Assessment of participants’ financial wellness
• Assessment of participants’ fear of Covid-19
• Assessment of the participants’ psychological distress

Concerning the socio-demographic section, we asked about: age, marital status, household income and educational level. Occupational status was assessed by asking about teachers’ type of school, cycle, subject, duration of teaching, sessions per week, and number of classes they are responsible of.

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

InCharge financial distress/financial well-being scale (IFDFW) scale was used to assess participants’ financial wellness. This scale includes eight items, on a linear scale from 1 to 10 [17]. Higher financial distress is reflected by a lower score.

Fear of COVID-19 scale, containing 7 items, was used to assess participants’ fear of COVID-19 [18].

Generalized Anxiety Disorder scale with seven items (GAD-7), assessed anxiety disorders [19]. Participants were asked about seven symptoms based on a 4-point Likert scale, with 0 = “not at all”, 1 = “several days”, 2 = “more than half the days”, 3 = “nearly every day”. The total GAD-7 score ranges from 0 to 21. Students were classified as having anxiety disorder if they had a GAD-7 score ≥ 8 [20], [21].

The DASS-21 scale was employed to measure the psychological distress (depression, anxiety, and stress) of the participants. This scale is reliable and valid with a three-factor structure [22]. The DASS-21 has 3 subscales of 7 items each. It asks about depressive symptoms, anxiety symptoms, and general stress symptoms. Responses are on a 4-point scale (0 = did not apply to me at all and 3 = applied to me most of the time). Higher score indicates the severity of psychological distress [23].

**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.

**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 < 0.05 was considered statistically significant. Descriptive statistics were conducted where continuous variables were expressed as mean ± standard deviation (SD), while categorical variables were presented as numbers and percentages. Concerning the bivariate analysis, the independent samples t-test was used to test mean differences between two groups, one-way ANOVA and Kruskal-Wallis were used to compare means between more than two groups and Pearson to test 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 were sociodemographic characteristics, online teaching, fear of covid-19, and financial wellness. Results that were significant were reported, after checking that the model was adequate to 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. 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 by their income (90.7%, n = 272) (Table 1).
Table 1  
Socio-demographic characteristics of the sample (N = 300)

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

**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).
Table 2
Attitude toward online teaching

| 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)    |                             |        |
| Technical problems                    | Lack of internet            | 20 (7.51%) |
|                                       | Poor internet connection    | 215 (80.82) |
|                                       | Lack of devices             | 94 (35.33%) |
|                                       | Problems in electricity     | 126 (47.36%) |
|                                       | No technical problems       | 33 (12.40%) |
| Difficulties in online teaching       | No                          | 193 (64.3%) |
|                                       | Yes                         | 73 (24.3%) |
| Workshop on teaching online methods   | No                          | 98 (32.7%) |
|                                       | Yes                         | 168 (56%) |
| Efficiency of online learning         | No                          | 55 (18.3%) |
|                                       | Yes (more efficient)        | 1 (0.3%) |
|                                       | Yes (but less efficient)    | 196 (65.3%) |
|                                       | Yes (same efficiency)       | 14 (4.7%) |
| Serious environment while teaching    | No                          | 44 (14.7%) |
|                                       | Yes                         | 222 (74%) |

Prevalence of depression, anxiety, and stress:

20.3% (n = 61) of the participants take drugs for depression, anxiety, or stress.

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 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 summarizes all these findings.
Table 3
Prevalence of depression, anxiety, and stress in schoolteachers

| DASS-21 scores | Depression | | | Anxiety | | | Stress | | |
|---------------|------------|------------|------------|-----------------|------------|-----------------|------------|-----------------|------------|
|               | N   | %    | CI            | N   | %    | CI            | N   | %    | 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     |

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

It was significant that participants aged between 30 and 39 had highest rate of depression (10.42 ± 5.759, p = 0.000), anxiety (7.13 ± 5.504, p = 0.008), and stress (11.49 ± 5.861, p = 0.001) (Table 4).
Table 4
Factors associated with DASS-21 scores – bivariate analysis.

| Characteristics | Categories | Depression | Anxiety | Stress |
|-----------------|------------|------------|---------|--------|
|                 |            | Mean + SD  | p value | Mean + SD | p value | Mean + SD | p value |
| Gender          | Male       | 7.85 ± 5.226 | 0.178  | 4.92 ± 5.171 | 0.076  | 8.88 ± 5.279 | 0.109  |
|                 | Female     | 9.03 ± 5.865 |       | 6.36 ± 5.321 |       | 10.34 ± 6.060 |       |
| Age             | 18–29      | 7.47 ± 5.393 | 0.000* | 5.37 ± 4.214 | 0.008* | 9.10 ± 5.081 | 0.001* |
|                 | 30–39      | 10.42 ± 5.759 |       | 7.13 ± 5.504 |       | 11.49 ± 5.861 |       |
|                 | 40–49      | 8.56 ± 5.595 |       | 6.01 ± 5.422 |       | 9.75 ± 6.047 |       |
|                 | 50–64      | 6.09 ± 5.198 |       | 4.11 ± 4.634 |       | 7.76 ± 5.681 |       |
| Marital Status  | Divorced   | 10.29 ± 4.821 | 0.658  | 9.71 ± 5.024 | 0.113  | 12.71 ± 4.855 | 0.461  |
|                 | Single     | 9.19 ± 5.636 |       | 5.41 ± 5.126 |       | 9.76 ± 5.836 |       |
|                 | Married    | 8.68 ± 5.841 |       | 6.19 ± 5.345 |       | 10.10 ± 6.011 |       |
| Number of children | > 4       | 7.08 ± 6.982 | 0.35   | 4.00 ± 3.808 | 0.221  | 8.62 ± 7.206 | 0.501  |
|                 | 3–4        | 8.27 ± 5.453 |       | 6.02 ± 5.317 |       | 9.93 ± 6.078 |       |
|                 | 1–2        | 9.31 ± 5.716 |       | 6.77 ± 5.212 |       | 10.68 ± 5.592 |       |
|                 | 0          | 9.23 ± 5.61  |       |         |       | 9.65 |       |
Online teaching showed significant association with anxiety (6.36 ± 5.315, p = 0.022) and stress (10.35 ± 5.879, p = 0.032). Financial wellness and fear of covid-19 showed significance regarding depression, anxiety, and stress (8.83 ± 5.769, p = 0.000, 6.11 ± 5.315, p = 0.000, 10.09 ± 5.949 p = 0.000 respectively) (Table 5).

Table 5
Online teaching, financial wellness, and fear of covid-19 in correlation with DASS-21 score

| Characteristics   | Categories | DASS-21 scores |          |          |            |          |            |          |
|-------------------|------------|----------------|----------|----------|------------|----------|------------|----------|
|                   |            | Depression     | Anxiety  | Stress   |            |          |            |          |
|                   |            | Mean + SD      | Mean + SD| Mean + SD| p value    | Mean + SD| p value    | Mean + SD| p value   |
| Do you teach online? | YES        | 8.94 ± 5.681   | 6.36 ± 5.315| 10.35 ± 5.879| 0.343 | 0.022* | 0.032* |
|                   | NO         | 7.94 ± 6.438   | 4.15 ± 4.955| 8.03 ± 6.177|          |          |          |
| Financial Wellness |            | 8.83 ± 5.769   | 6.11 ± 5.315| 10.09 ± 5.949| 0.000008* | 0.00068*| 0.000388*|
| Fear of COVID-19  |            | 8.83 ± 5.769   | 6.11 ± 5.315| 10.09 ± 5.949| 0.000008* | 0.00068*| 0.000388*|

**Multivariate Analysis**
The multiple regressions showed that online teaching mainly affected stress and anxiety, while fear of COVID and the economic hardship affected depression, anxiety and stress (Table 6).

| Model | Unstandardized Coefficients | Standardized Coefficients | t   | P value | 95.0% Confidence Interval for B |
|-------|-----------------------------|---------------------------|-----|---------|--------------------------------|
|       | B     | Std. Error | Beta  |       | Lower Bound | Upper Bound |
| Depression |     |            |       |       |                    |
| (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       |

**Discussion**

Our study is one of the first assessing depression, anxiety, and stress in schoolteachers in the Middle East, aiming to assess their relationship with online teaching, fear of covid-19, and financial wellness. Three hundred participants were included in our study.
Teachers between 30 and 39 years old had the highest level of depression, anxiety and stress, which might be due to the higher level of responsibilities during online teaching.

Nearly one third of our sample (34.3%) had severe or extremely severe depression, which reflects the tough situation the teachers in Lebanon are passing through. This value was much higher than that in Nigeria (23.7%), Malaysia (9.9%) and Egypt 0.7% [24], [25], [26]. The rate of depression was higher than expected, due to the added effect of Covid19 pandemic, and Lebanon's economic crisis. A systematic review and meta-analysis of studies regarding mental illness through COVID-19 outbreak showed a high prevalence of depression (28%), which is slightly lower than that found in our sample of teachers [27], [28], [29]. Online teaching did not show any significance regarding depression rate.

As predicted, fear of covid-19 showed an increase in depression rate (p value < 0.001), which verifies a study conducted in USA stating that fear disorders were linked to depression [30]. 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 [31]. In addition, another study showed that financial stressors due to COVID-19 increased rates of depression [32]. Furthermore, some studies correlated the increase in income to a decreased prevalence of common mood disorders, especially depression [33], [34], [35], [36].

Around 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 [26], [25]. This rate was nearly double the number measured in China, through the COVID-19 pandemic, which was 13.6% [37]. When compared to the Lebanese population, anxiety in schoolteachers is higher than that in general population, measured before COVID-19, where 25.6% of people showed signs of anxiety disorders [38]. Anxiety was positively correlated with online teaching (p = 0.022). This also reflects the difficulties that face teachers every day. Online education also increased anxiety rates in students, as a study in China showed [39]. Anxiety was also highly correlated with the fear of Covid19 (p < 0.001). Similar result was also reached in a study in China [37]. 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 [40], [41].

Regarding stress, 35.5% of schoolteachers showed severe or extremely severe stress, higher than results found in schoolteachers in Malaysia (25%) [25]. On the other hand, this value was lower than that in Egypt, showing 67.6% of teachers having severe stress [26]. A study in China showed that stress has reached high levels due to covid-19 pandemic, which might be a cause for this high level in our population [42]. 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 [43]. This common environment for students and teacher 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 [44]. Moreover, individuals with severe mental health problems are more prone to suffer from chronic diseases, negatively affecting their lives [45]. 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[46]. 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 prevent greater damage to their psychological wellbeing.

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 for the Lebanese population of schoolteachers, as 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 accumulation of stressors.

Conclusion

Lebanese teachers have showed severe levels of anxiety and stress with correlation to online teaching, with added depression when correlated with fear of Covid19 and financial wellness. The repercussion on the 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 a productive performance by schoolteachers.

Declarations

1) Ethics approval and consent in participation:

-Ethical approval: Notre Dame University-Louaize Ethical Committee

-Consent: Each participant had approved on participating in this study.

2) Consent for publication: Not applicable
3) **Availability of date and materials:** The datasets used and/or analysed during the current study are available from the corresponding author on reasonable request.

4) **Competing interests:** The authors declare that they have no competing interests

5) **Funding:** No funding

6) **Authors’ contributions:**

*Study concept and design:* TB, JM

*Data acquisition:* JM, HS, IKD

*Data analysis:* JM, TB, IKD

*Drafting of the manuscript:* JM, HS

*Critical revision of the manuscript:* HC, PS

All authors read and approved the final manuscript.

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