Mental Health of Teachers in Bosnia and Herzegovina in the Time of COVID-19 Pandemics

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ABSTRACT
Background: The pandemic of COVID-19 has affected all spheres of life, including education. Teachers at all levels were faced with numerous challenges during the pandemic. These challenges had an impact on their mental health. Objective: The goal of the present study was to examine the depression, anxiety, and stress levels in teachers in Bosnia and Herzegovina. Methods: The sample for this study consisted of 559 teachers (471 female teachers and 88 male teachers). We used the Depression, Anxiety, and Stress Scale (DASS 21) to measure teachers’ emotional states of depression, anxiety, and stress. Results: The findings of this study clearly indicate the high levels of depression, anxiety, and stress in teachers. We also identified that levels of support provided by family members and school administration served as protective factors in the time of crisis. Conclusion: Teachers in Bosnia and Herzegovina have a high prevalence of elevated depression, anxiety, and stress levels. The article concludes with some recommendations on how to improve the mental health of teachers. Keywords: Teachers, mental health, Bosnia and Herzegovina, DASS-21.

1. BACKGROUND
The pandemic of Covid 19 has affected all spheres of life, including health, safety, and wellbeing of individuals (insecurity, emotional isolation, stigma) and communities (economic loss, school closures) (1). The stress caused by the public health measures such as quarantine, isolation, and closures, raises the question of how people will emotionally cope with these new challenges. Certain professions, such as healthcare workers, are at a higher risk of having emotional distress during the pandemic (2). Another profession that is at higher risk of emotional problems during the pandemic is the teaching profession. During the pandemics, teachers are regarded as frontline workers, and schools should monitor their mental health to provide the necessary supports (3).

Teachers’ stress level has been a subject of much scientific inquiry. There is wide scientific evidence suggesting that teaching is a highly stressful occupation for up to one-third of its professionals (4) and is related to numerous challenges (5). This stress has serious implications for teachers’ health status and work performance (6). The same factors contributing to stress also contribute to teachers’ anxiety and depression. Numerous studies have shown that stress levels are positively correlated with anxiety and depression, and stress is often cited as a predisposing factor to depression and anxiety. Workload, student behavior and relations with other teachers have a significant effect on teachers’ depression and anxiety (7).

The COVID 19 pandemic caused an urgent, unplanned change in education (8). The crises with COVID-19 significantly increased the stress teachers were already having as part of their profession. Much research has been published on teachers’ stress levels in the time of pandemics. Besides the concerns for their own health and health of their families and friends, teachers were faced with the challenges of adapting a new teaching model, namely distance teaching. Mastering distance teaching was challenging for many teachers. In addition, factors such as dealing with new public safety measures, insecurity, and lack of clear guidelines (9), also increase the stress of teachers.

Thus, in this study, we wanted to examine the effects of the COVID 19 pandemic on depression,
anxiety, and stress level of teachers in Bosnia and Herzegovina. Research questions are:

- What is the prevalence of depression, anxiety, and stress level in teachers?
- Are there differences in depression, anxiety, and stress in relation to the teachers’ gender?
- Are there differences in depression, anxiety, and stress between elementary school teachers and high school teachers?
- What is the role of interpersonal supports on depression, anxiety, and stress?
- Are there differences in the depression, anxiety, and stress in relation to the vaccination status of the teachers?

2. OBJECTIVE

The goal of the present study was to examine the depression, anxiety, and stress levels in teachers in Bosnia and Herzegovina.

3. MATERIAL AND METHODS

Participants

The sample for this study consisted of 559 teachers (471 females and 88 males). Of these, there were 408 elementary school teachers and 151 high school teachers. In relation to teachers’ age, there were 59 teachers aged 20-30 years, 211 teachers aged 31-40, 184 teachers aged 41-50, and 105 teachers aged above 50 years. Teachers were from all parts of Bosnia and Herzegovina.

Procedure

Teachers were recruited through an online survey sent to schools and teacher associations in Bosnia and Herzegovina. The survey was open from 1 October 2021 to 31 October 2021. The total number of completed surveys was 564 forms. However, five forms were excluded due to incomplete data. It is important to note that there was no lockdown due to COVID-19 in this period. All participants signed a statement with all necessary information regarding the study, confirming they are volunteering to be included in the study, that the data collected is anonymous, and that the obtained data will be analyzed for the study purposes.

Instrument

Depression, Anxiety, and Stress Scales (DASS-21) was used to measure depression, anxiety, and stress in teachers. The DASS-21 was chosen because of its ease of administration and good psychometric properties (10, 11). The DASS-21 is a self-report measure designed to measure, as the name suggests, depression, anxiety, and stress. The instrument is shown to have good psychometric properties across different cultures. The DASS-21 is a measure appropriate for use in clinical and research settings providing different forms of emotional distress.

In addition to DASS-21, we used a customary questionnaire containing questions regarding independent variables in this study. More specifically, the questionnaire contained the questions regarding the age, gender, school (elementary school or high school), vaccination status, level of support they have from family, friends, and school management.

Statistical analysis

We first reported the descriptive data regarding the prevalence of levels of depression, anxiety, and stress in teachers. We next calculated a Chi square test to examine whether there are statistically significant differences in the distribution of depression, anxiety, and stress in relation to teachers’ gender and school they teach (elementary vs high school). A regression analysis was performed to see the effects of support levels on DASS-21 scores. Lastly, we examined the DASS-21 scores in relation to the vaccination status of the teachers. An alpha level of .05 was used for all statistical tests. We used a computer program SPSS v27 for Windows to analyze the results (12).

4. RESULTS

We first present descriptive data for the prevalence of depression, anxiety, and stress in teachers. These results are presented in Table 1.

As can be seen from Table 1, majority of teachers have normal levels of depression, anxiety, and stress. However, the number of teachers who have some form of depression, anxiety, and stress is also not negligible. The prevalence of depression symptoms, ranging from mild to severe, is 31.5%, prevalence of anxiety is 39%, and prevalence of stress is 19%.

In further analyses, we treated the levels of depression, anxiety, and stress as a dichotomous variable, that is whether the teacher had elevated depression, anxiety, and stress level or normal level. We next present the prevalence of teacher’s depression, anxiety, and stress levels in relation to the teachers’ gender. These results are shown in Table 2.

Table 1. Prevalence of depression, anxiety, and stress in teachers

| Depression | Anxiety | Stress |
|------------|---------|--------|
| Normal     | 383     | 341    |
| Mild       | 96      | 117    |
| Moderate   | 59      | 49     |
| Severe     | 20      | 37     |
| Extreme    | 2       | 0.4    |

Table 2. Distribution of depression, anxiety, and stress in female and male teachers

| Gender   | Depression | Anxiety | Stress |
|----------|------------|---------|--------|
| Female   | 155 (32.9) | 316 (67.1) | 195 (41.4) |
| Male     | 21 (23.9)  | 67 (76.1)  | 23 (26.1)  |

Table 3. Distribution of depression, anxiety, and stress in elementary and high school teachers

| Teachers   | Depression | Anxiety | Stress |
|------------|------------|---------|--------|
| Elementary | 122 (29.9) | 286 (70.1) | 154 (37.7) |
| Highschool | 54 (35.8)  | 97 (64.2)  | 64 (42.4)  |

4. RESULTS...
In relation to the prevalence of elevated depression in relation to teachers’ gender, it can be seen that female teachers had a slightly higher prevalence of elevated levels of depression but the difference was not statistically significant ($\chi^2 = 2.9; p = .09$). As for the anxiety, female teachers had statistically significantly higher prevalence of elevated anxiety in comparison with male teachers ($\chi^2 = 7.3; p = .007$). Lastly, there were no statistically significant differences in the prevalence of elevated stress in female and male teachers ($\chi^2 = 2.1; p = .15$).

We next wanted to examine whether there are differences in the prevalence of elevated depression, anxiety and stress levels in relation to elementary school teachers and high school teachers. These results are shown in Table 3.

Although high school teachers had a higher prevalence of depression in comparison to elementary school teachers, the difference in the prevalence was not statistically significant ($\chi^2 = 1.7; p = .18$). Elevated anxiety levels were again more prevalent in high school teachers but there were no statistically significant differences in the distribution ($\chi^2 = 0.9; p = .32$). Elevated stress levels were almost equally distributed in high school teachers and elementary school teachers ($\chi^2 = 0.1; p = .98$).

We next examined the effects of various supports on teachers’ level of depression, anxiety, and stress.

In Table 4 are the scores of the effects of different supports on depression, anxiety, and stress.

The model presented in Table 4 is statistically significant ($F = 29.9; p < .001$), and it explained about 19% of the variance in the depression scores. Significant predictors were family support and school administration support. More support is related to lower levels of depression.

Note. The model predicting anxiety scores was statistically significant ($F = 14.9; p < .001$), and explained 12% of the variance. Besides family support and school administration support, in this model a variable “understanding from students” had a significant effect on anxiety.

Predicting stress level was statistically significant ($F = 22.4; p < .001$) and significant predictors were again family support, school administration support and understanding from students.

Our last hypothesis was to examine depression, anxiety, and stress levels in relation to the vaccination status. These results are shown in Table 5.

As can be seen from Table 5, the prevalence of depression is slightly higher in not vaccinated teachers, however, the difference is not statistically significant ($\chi^2 = 0.62; p = .43$). The reverse trend was present for anxiety scores. In this case, vaccinated teachers had slightly higher prevalence of elevated anxiety but the difference was not statistically significant ($\chi^2 = 0.48; p = .48$). Lastly, for the stress level, there were no statistically significant differences in the distribution of elevated stress between vaccinated and not vaccinated teachers ($\chi^2 = 0.17; p = .68$).

5. DISCUSSION

The goal of the present study was to examine mental health in teachers from Bosnia and Herzegovina. The results of this study clearly indicate high prevalence of elevated depression levels (31.5%), anxiety (39%) and stress

| Term                  | Estimate | Std Error | t Ratio | Prob>|t| | Std Beta |
|-----------------------|----------|-----------|---------|---------|-----------|
| Understanding from students | -0.26    | 0.12      | -2.16   | 0.031   | -0.103    |
| Administrative support | -0.35    | 0.12      | -2.88   | 0.004   | -0.160    |
| Understanding from students | -0.26    | 0.12      | -2.16   | 0.031   | -0.103    |
| Note. R² = .12; (N = 559) |

| Term                  | Estimate | Std Error | t Ratio | Prob>|t| | Std Beta |
|-----------------------|----------|-----------|---------|---------|-----------|
| Understanding from students | -0.45    | 0.14      | -3.28   | 0.001   | -0.172    |
| Friend support        | -0.02    | 0.15      | -0.14   | 0.889   | -0.008    |
| Administrative support | 0.04     | 0.15      | 0.24    | 0.814   | 0.014     |
| Understanding from students | -0.26    | 0.12      | -2.16   | 0.031   | -0.103    |
| Note. R² = .19; (N = 559) |

| Term                  | Estimate | Std Error | t Ratio | Prob>|t| | Std Beta |
|-----------------------|----------|-----------|---------|---------|-----------|
| Understanding from students | -0.41    | 0.16      | -2.65   | 0.009   | -0.134    |
| Friend support        | -0.26    | 0.17      | -1.52   | 0.129   | -0.086    |
| Administrative support | 0.05     | 0.17      | 0.32    | 0.750   | 0.018     |
| Understanding from students | -0.51    | 0.14      | -3.78   | 0.001   | -0.205    |
| Note. Depression R² = .17; Anxiety; (N = 559) Stres R² = .12 |

### Table 3. Distribution of depression, anxiety, and stress in relation to vaccination status

| Vaccination Status | Depression Elevated N (%) | Depression Normal N (%) | Anxiety Elevated N (%) | Anxiety Normal N (%) | Stress Elevated N (%) | Stress Normal N (%) |
|--------------------|---------------------------|-------------------------|------------------------|----------------------|-----------------------|---------------------|
| Vaccinated         | 261 (69.6)                | 114 (30.4)              | 150 (40)               | 225 (60)             | 70 (18.7)             | 305 (81.3)          |
| Not vaccinated     | 122 (66.3)                | 62 (33.7)               | 68 (37)                | 116 (63)             | 37 (20.1)             | 147 (79.9)          |
(19%). These results are in line with other studies reporting high prevalence of these mental health issues among teachers (15). As we had no data on the prevalence of depression, anxiety, and stress in teachers in Bosnia and Herzegovina prior to COVID-19, we cannot claim that the rate of mental health problems increased with the pandemic. However, it is certain that COVID-19 increased a stress load of teachers.

In our study, the most prevalent mental health issue was anxiety, followed by depression, and stress. This study revealed higher levels of depression, anxiety, and stress in female teachers, corroborating some previous findings on the subject (14, 15). Some possible reasons for higher mental health issues might be related to psychosocial factors. Multiple roles (professional and private) might place additional demands on women which in turn might affect their overall health (16).

Our study did not find any statistically significant differences in the levels of depression, anxiety, and stress between elementary school teachers and high school teachers. It seems that elementary and high school teachers are similar in how they cope with stress and in the levels of support they receive. Other studies have showed similar levels of satisfaction between elementary and high school teachers (17) and that can also help explain our results.

This study has shown the great positive effects of family support, school administration support and understanding from students as protecting factors in mental health. Teachers who had greater perception of support from their families tended to have better mental health. Family support was found to be a mental health protective factor in other studies as well (18). Similarly, administrative support is also found to be a protective factor for depression, anxiety, and stress. Earlier studies have found the relationship of administrative support and job satisfaction (19), and job satisfaction and mental health (20). Understanding and support from students was another factor affecting teachers’ mental health. There is a significant relationship between teachers’ wellbeing and students’ wellbeing and lower depressive symptoms in teachers are related to better wellbeing of students (21). Some studies have shown that the most serious work-related stress factor for teachers is the disruptive and aggressive behavior of their students. Thus, it should be of utmost importance building good relationship between teachers and students. Establishing and maintaining good teacher-student relationship is seen as one of the central competencies for successful teaching (22).

Lastly, we compared levels of depression, anxiety, and stress in COVID-19 vaccinated and not-vaccinated teachers. This study revealed no statistically significant differences between vaccinated and not-vaccinated teachers in depression, anxiety, and stress. To the best of authors’ knowledge there were no studies conducted that compared depression, anxiety, and stress level in these two groups of teachers, so these findings can serve as an initial benchmark for further research. However, it is important to note that 375 teachers (or 67%) were vaccinated, a rate significantly higher than that of general population. According to the report for October 31, 2021, share of people who received at least one dose of COVID-19 vaccine was 24.4% (https://ourworldindata.org/coronavirus/country/bosnia-and-herzegovina). Of course, these data about teachers’ rate of vaccination should be interpreted cautiously as it might be the case that teachers who did not respond to our study survey have in fact different rate of vaccination.

**Limitations of the study**

This study is not without limitations. The first one is related to the survey design, as we do not know how honest the teachers were when they completed the questionnaires. Also, it might be the case there was a bias in the sample of teachers. Although the sample size is large it might be the case it is not representative of the entire population of the teachers.

**6. CONCLUSION**

Teachers in Bosnia and Herzegovina have a high prevalence of elevated depression, anxiety, and stress levels. Female teachers have higher depression, anxiety, and stress level than male teachers. There were no differences in depression, anxiety, and stress between elementary school teachers and high school teachers. Protective factors for depression, anxiety, and stress are levels of family support, school administration support and understanding from students. Depression, anxiety, and stress levels were not statistically significantly different in vaccinated and not-vaccinated teachers.

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Mental Health of Teachers in Bosnia and Herzegovina in the Time of COVID-19 Pandemics

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