



## BALTIC JOURNAL OF LAW & POLITICS

A Journal of Vytautas Magnus University  
VOLUME 15, NUMBER 1 (2022)  
ISSN 2029-0454



Cit.: *Baltic Journal of Law & Politics* 15:1 (2022): 170-182  
DOI: 10.2478/bjlp-2022-00013

### **Self-Esteem, Educational Stress, and Depression among Students in High School in context of E-learning during COVID Outbreak**

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Received: November 8, 2021; reviews: 2; accepted: June 27, 2022.

#### **Abstract**

This study aims to identify the mean values of self-esteem, educational stress, and depression, to examine the correlations between them, and to identify their contributing factors among students in high school within the context of e-Learning during the covid-19 outbreak. Across sectional design was utilized in this study. A convenience sampling technique was used to select 1380 students from four public schools in Amman, Jordan. A self-administered questionnaire was utilized to collect the data from the students. The descriptive and inferential analyses were carried out using the Statistical Package for Social Sciences (SPSS) version 21 software. The results showed that the mean values of the mean self-esteem, educational stress, depression level were moderate (mean=32.21/50, SD=5.41; mean=21.72/35, SD=5.27; mean=11.86/18, SD=3.27). The results showed a significant negative correlation between self-esteem and education stress ( $r=-.157$ ,  $p$  value= .01) and depression ( $r=-.094$ ,  $p$  value= .04) and a significant positive correlation between education stress and depression ( $r=-.129$ ,  $p$  value= .02). Finally, gender, receiving the private course, satisfaction with e-learning, and religiosity factors are considered predictors for self-esteem, educational stress, and depression among students in high schools. Self-esteem, educational stress, depression level are important variables affecting the students' wellbeing in high school. Many students' characteristics may affect these variables.

### **Key Words**

Self-Esteem Educational Stress, Depression, Students. High schools, Jordan

### **Introduction**

Since the new coronavirus, also known as coronavirus disease 2019 (COVID-19), was proclaimed a worldwide pandemic and pronounced a global pandemic, governments all over the globe have implemented rigorous public health measures to control the epidemic and result in the fewest number of fatalities as feasible (Rothan & Byrareddy, 2020). All public and private organizations, including educational institutions, have been compelled to suspend face-to-face teaching sessions in whole nations, which have been placed under lockdown by their governments. As a consequence of the extensive transmission of the virus across nations and even continents, as well as the closure of educational institutions, more than 80 percent of students around the globe have chosen not to attend their respective institutions (Huang et al., 2020; Langegård et al., 2021).

As a result, e-learning has been widely embraced worldwide as an alternative teaching and learning approach during the coronavirus disease 2019 (COVID-19) quarantine to cover the academic gaps produced by the current reality of the pandemic (Al-Ruzzieh et al., 2020; Zhou et al., 2020). However, the sudden adoption of e-learning could negatively affect the self-esteem especially among adolescence who needs more social and educational support than other age groups due to lack of knowledge about and adequate structure for e-learning. This situation may increase the risk of students' educational stress and depression (Faasse & Newby, 2020; Sakib et al., 2021; Sheek-Hussein et al., 2021).

It is important to understand that self-esteem is a psychological construct that underlies and often explains human thoughts, feelings, and behaviors. According to a broad range of research, high self-esteem is associated with better well-being, functioning (including cognitive function), and psychological health, while low self-esteem is considered a problem and undesirable due to its association with poor functioning and psychological health (Al-Hussami & Ayaad, 2020; Robins et al., 2001; Rosenberg, 1986). Self-esteem is usually stable, but it can fluctuate from time to time; a phenomenon is known as situational versus global self-esteem. Self-esteem can be trait-like and steady, or state-like and fluctuate in response to various environments and circumstances. The relationship between self-esteem and culture, age, and gender has been confirmed by several studies (Al-Hussami & Ayaad, 2020; Robins et al., 2001).

Educational stress refers to mental discomfort associated with expected academic difficulties or failure or even the dread of the prospect of academic failure. Tests, grades, homework, academic and performance expectations,

and family pressure are among the most common academic stresses experienced by high school students, according to their admission. Excessive levels of academic stress may lead to a rise in the incidence of psychological and physical issues such as depression, anxiety, nervousness, and stress-related illnesses, which can have a negative impact on students' academic performance (Assana et al., 2017; Yildirim et al., 2017). Depression is quickly becoming the most frequent mental health issue that students are experiencing these days that lead to a person's feelings of academic dissatisfaction, academic conflict, academic worry, and academic pressure are also reflected in their grades (Datu et al., 2019; Obradović & Armstrong-Carter, 2020; Osborn et al., 2020; Townsend et al., 2017).

Although many studies discussed self-esteem, educational stress, and depression among students in high school (Al-Hussami & Ayaad, 2020; Assana et al., 2017; Datu et al., 2019; Obradović & Armstrong-Carter, 2020; Osborn et al., 2020; Robins et al., 2001; Townsend et al., 2017; Yildirim et al., 2017), the limited study discussed them within the context of eLearning during the covid-19 outbreak (Aqeel et al., 2021; Gazmararian et al., 2021; Yadav et al., 2021). For this reason, this study aims to identify the self-esteem, educational stress, and depression, to examine the relationship between them, and to identify their contributing factors among students in high school within the context of e-Learning during the covid-19 outbreak.

## **Methods**

### **Study Design and Setting**

A cross sectional design was conducted in this study. These designs aimed to identify the overall situation of phenomena at specific time (Salkind, 2010). The study was conducted in four public schools in Amman, Jordan between Dec 2020 to May 2021.

### **Sample**

Around 1380 students were selected in this study using convenience sampling technique. All students who were enrolled in one public school and had a normal cognitive ability to fill the scale, were considered eligible to participate in the study.

### **Instruments**

Self-administered questionnaire was utilized to collect the data from the students. The questionnaire included four parts. The first one was demographic

data section which including many demographic and educational characteristics including gender, age, economic status, gender, academic achievement in previous year, receiving private education course, feeling of anxious due to study, violence exposure and mothers' educational level, and satisfaction with e-learning and religiosity levels (1-10)

Second, we assessed self-esteem using the Rosenberg Self-Esteem Scale (RSES). This scale consists of a 10-item scored by five- Likert- scale (6 positive items and 4 negative items), with one indicating "Strongly agree" and five indicating "Strongly disagree,". Values range from ten to fifty, with higher scores indicating better levels of self-esteem and self-confidence. (Rosenberg, 1986). Many studies showed the validity and reliability of scale in many languages (Jordan, 2020; Robins et al., 2001; Sinclair et al., 2010).

Third, we assessed depression using 6-ITEM Kutcher Adolescent Depression Scale (KADS). Every item is scored from 0-3 where the zero is "Hardly Ever" and 3 is "All of the time". Values range from 0 to 18, with higher scores indicating high depression level. the sensitivity and specificity rates were 92 percent and 71 percent, respectively, when the six-item KADS was used with a cutoff score of 6 (LeBlanc et al., 2002).

Fourth, we assessed the educational stress using 7 items retrieved from the Academic Expectations Stress Inventory (AESI), which measures the expectations of middle and high school Asian students regarding the educational stress. Five Likert-type scale was used with one indicating "Strongly agree" and five indicating "Strongly disagree," and each item is answered on a five-point scale. Five- Likert-scale was used to score the items, with one indicating "Strongly agree" and five indicating "Strongly disagree,". The reliability and validity of this scale were confirmed. Values range from 7 to 35, with higher scores indicating high depression level (Ang & Huan, 2006).

A forward and backward translation was used by bilingual translators to convert the scales into the Arabic language. This technique is regarded to be one of the most widely utilized ways of translation in the world. In a reverse translation process, there are many steps to complete: a group of experts reviews and approves the final version after it has been translated from its original language into the target language by bilingual translators, modified and corrected by experts, back-translated into the original language, and compared to the original version for semantic equivalence (Heatherington et al., 2018).

As a result, the forward translation of the English questionnaire into Arabic was carried out by two separate native Arabic multilingual speaking experts who worked independently. It was necessary to develop two distinct forward translations. Following that, both Arabic translations were reviewed by an expert

panel of five psychologists for clarity and cultural appropriateness, and the results were combined to form a single Arabic version. Following that, the reconciled Arabic version was translated backward into the English language by two bi-linguistic experts who were not affiliated with the initial translators in order to reduce prejudice and identify inconsistencies. The English version of the reconciled questionnaire was compared to the original questionnaire. The second edition of the Arabic questionnaire was created after a comprehensive evaluation of all forward and backward translations, as well as reconciled versions, by the expert panel after the first version's completion.

A pilot study involving 20 students was carried out with the use of the Arabic version of the questionnaire. Clarity, ease of use, difficulty with the questionnaire, perplexity, and cultural appropriateness were all evaluated by the students when it came to the Arabic version of the questionnaire. The outcome of the pilot revealed that there were no unclear terms, translation difficulties, or cultural issues.

### **Data Analysis**

The descriptive and inferential analyses were carried out using the Statistical Package for Social Sciences (SPSS) version 21 software. In order to demonstrate the characteristics of students and study variables, descriptive statistics were employed, such as frequency and percentage, arithmetic mean, and standard deviation. In order to evaluate the correlation between variables and to measure the differences between variables according to the characteristics of students, inferential statistics were used in this study including the Pearson's correlation coefficient, T test and ANOVA. Adjusted univariate or multivariate logistic regression was used for predication.

### **Results**

Around 1380 students were selected in this study. The age of participants ranged between 13 and 18 years (mean= 16.22, SD= 3.188). The majority of the participants were female (66.5%, n = 918). Most of students had a very good economic status (n= 570, 41.30%), and excellent academic performance in previous years (n=684, 49.56%), did not non-receiving private education and courses (n=1044, 75.65%) and exposing to violence (n=1014, 74.48%), had a moderate anxious due to study (n=642, 46.52%), mothers with university degree (n=839 , 60.79%). Moreover, the study showed that the satisfaction with e-learning was low (3.94 out of 10, SD=3.01) while the level of religiosity was moderate (6.94 3.94 out of 10, SD 2.01). See table 1

Table 1: Participants Characteristics

Characteristics	Results
Age in years (Mean, SD)	16.22 (3.188)
Gender (n, %)	
• Male	918 (66.5%)
• Female	462 (33.4%)
Economics status (n, %)	
• Low	75 (5.40%)
• Good	534 (38.69%)
• Very Good	570 (41.30%)
• Excellent	201 (14.56%)
Academic performance in previous year (n, %)	
• Very Low	28 (2.0%)
• Low	123 (8.91%)
• Moderate	546 (39.56%)
• Excellent	684 (49.56%)
Did you receive private courses? (n %)	
• Yes	336 (24.35%)
• No	1044 (75.65%)
Did you be anxious due to study? (n %)	
• Low	435 (31.25%)
• Moderate	642 (46.52%)
• High	303 (21.9%)
Mother education Level (n %)	
• Primary	101 (7.31%)
• Secondary	440 (31.88%)
• University	839 (60.79%)
Did you expose to violence? (n %)	
• Yes	366 (25.52%)
• No	1014 (74.48%)
Satisfaction with e-learning (1-10) (mean, SD)	3.94 (3.01)
Religiosity Level (1-10) (mean, SD)	6.94 (2.01)

As Table 2 shown, the mean self-esteem among the student was moderate (mean=32.21 / 50, SD=5.41). The mean of educational stress was moderate (Mean=21.72/35, SD=5.27). Finally, the mean depression level was moderate (mean=11.86/18, SD=3.27).

Table 4: Relationships between Self Esteem, Educational Stress, and Depression using Pearson Correlation Coefficient ®

Variables	Mean (SD)	Self Esteem r (p value)	Educational Stress r (p value)	Depression r (p value)
Self Esteem	32.21 (5.41)	1		
Educational Stress	21.72 (5.27)	-.157 (0.01*)	1	
Depression	11.86 (3.27)	-.094 (0.04*)	.129 (0.02*)	1

Significant at p<0.05

The results showed significant negative correlation between self-esteem and education stress (r=-.157, p value= .01) and depression ((r=-.094, p value= .04). Moreover, the results showed a significant positive correlation between education stress and depression (r=-.129, p value= .02).

Table 3 showed the correlations and differences in the means values of self-esteem, educational stress, and depression according to student characteristics. The results showed a significant correlation between the means values of self-esteem, academic stress, and depression with Satisfaction with e-learning and religiosity level (p<0.05). Moreover, the results showed significant differences in the means values of self-esteem, educational stress, and depression according to gender, academic performance in the last year, and receiving private courses). Finally, the results showed significant differences in the mean value in self-esteem according to economic status.

Table 3: Correlations and Differences in the Means Values of Self-esteem, Educational Stress, and Depression according to student characteristics

Characteristics	Self Esteem	Educational Stress	Depression
Age in years (r, p value)	(.055, .87)	(-.041, .92)	(-.0671, .52)
Gender (t test, p value)	(8.425, >.001) **	(7.520, >.001) **	(7.911, >.001) **
Economics status (ANOVA (F), p value)	(5.157, >.001) **	(2.417,.071)	(1.992,.091)
Academic performance in previous year (ANOVA (F), p value)	(4.770,.042) *	(4.526,.045) *	(3.979,.049) *
Receiving private courses (t test, p value)	(6.124, >.001) **	(8.125, >.001) **	(8.123, >.001) **
Being anxious due to study (ANOVA (F), p value)	(2.115,.121)	(1.327,.821)	(1.901,.611)
Mother education Level (ANOVA (F), p value)	(2.558,.072)	(2.972,.061)	(1.177,.121)
Exposed to violence (t test, p value)	(1.778,.075)	(1.222,.092)	(1.267,.121)
Satisfaction with e-learning (1-10) (r, p value)	(.165, .027) *	(-.221, .032) *	(-.2661, .012) *
Religiosity Level (1-10) (r, p value)	(.225, .017) *	(-.351, .002) *	(-.3421, .003) *

\*Significant at p<0.05 \* Significant at p<0.001

Finally, the gender, receiving private course, satisfaction with e-learning, and religiosity factors are considered as predictors for self-esteem, educational stress, and depression by using Adjusted univariate or multivariate logistic regression. See table 4

Table 4: Predicators of Self-Esteem, Educational Stress, And Depression

Characteristics	Self Esteem OR, (CI), P value	Educational Stress	Depression
Gender (Male reference)	1.580 (0.91-2.71) 0.009*	2.180 (1.21-3.11) 0.002*	1.440 (0.89-2.57) 0.001*
Economics status (Excellent status-reference)	0.213 (0.018-2.530) 0.221	1.634 (0.264-2.524) 0.308	1.734 (0.329-2.639) 0.451
Academic performance (Excellent status-reference)	0.512 (0.286-0.914) 0.054	1.449 (1.153-3.316) 0.144	1.392 (0.328-5.919) 0.654
Receiving private courses (Yes-reference)	.038 (0.022-1.290) 0.004*	1.197 (0.040-0.958) 0.044*	1.580 (0.118-3.719) 0.009*
Being anxious due to study (Yes-reference)	1.582 (0.166-4.043) 0.398	0.392 (0.028-1.919) 0.654	0.651 (0.095-1.137) 0.054
Mother education Level (University degree-reference)	1.009 (0.443-2.299) 0.982	0.500 (0.108-2.318) 0.375	1.094 (0.647-1.849) 0.737
Exposure to violence (Yes-reference)	1.029 (0.443-2.299) 0.972	0.944 (0.575-1.551) 0.821	1.392 (0.328-5.919) 0.654
Satisfaction with e-learning (Less than 5-referance)	2.339(1.113-4.914) .025*	2.187(1.011-4.732) .047*	2.384 (1.130-5.030) .023*
Religiosity level (Less than 5-referance)	6.942(1.351-15.666) 0.020*	0.041(0.005-0.357) 0.004*	0.890(0.077-3.285) .024*

\*Significant at p<0.05

### Discussion

This study aims to identify the self-esteem, educational stress, and depression, to examine the relationship between them, and to identify their contributing factors among students in high school within the context of e-learning during the covid-19 outbreak. We used a self-administered questionnaire that covered many factors, which were not discussed very well in previous studies. The sample size is considered excellent when comparing with other national surveys (AlAteeq et al., 2020; Fitzgerald & Konrad, 2021; Waters et al., 2021).



The results showed that the mean values of self-esteem, educational stress, and depression are moderate. However, comparing them with some studies that discussed these variables before the COVID-19 outbreak, they are considered high (Li & Sullivan, 2016; Sotardi, 2016). These results are expected and consistent with other studies that conducted during COVID-19 (Arima et al., 2020; Cataudella et al., 2021; Gazmararian et al., 2021). These studies indicated that an online learning environment added additional stresses, feelings of isolation, difficulty concentrating, and feeling anxious to the students.

The results showed significant negative correlation between self-esteem and education stress and depression. Moreover, the results showed a significant positive correlation between education stress and depression. Students who reported higher impacts on their activities and relationships throughout the research period were the ones who most strongly questioned their capacity to achieve their own objectives and who felt worried or disturbed about academic issues, according to the findings. This demonstrates that the pandemic, as well as the shift to all-online teaching, may have a detrimental effect on the capacity of these students to go further in the program (Bao, 2020; Waters et al., 2021).

The changes cognitive, emotional, and behavioral coping strategies during remote learning may be able to predict stress when students return to school. Through COVID-19, all three coping skills were shown to be substantially associated with the degree to which students felt they had grown. The breakout of a virus and the imposition of immediate control measures may result in extreme anxiety and social isolation, while a lack of information about infectious diseases may lead to widespread panic, stress, and depression. The novelty of the virus itself, as well as the unpredictability and uncertainty about when the situation would be completely under control, has caused individuals to experience extreme stress, particularly when social face-to-face contacts are lost. Students who have been infected by the virus or who are suspected of having acquired the disease are plagued with the dread that the infection may be deadly (AlAteeq et al., 2020; Aqeel et al., 2021; Arima et al., 2020). As a result, the feeling of a profound sense of weakness and helplessness becomes more intense.

It was observed that the mean values of self-esteem, academic stress, and sadness were significantly correlated with satisfaction with e-learning and religiosity level. The findings also revealed statistically significant variations in the means of self-esteem, educational stress, and sadness depending on the gender, academic achievement in the previous year, and whether or not the students received private courses. Finally, the findings revealed that there were statistically significant variations in the mean value of self-esteem according to socioeconomic level. By utilizing adjusted univariate or multiple variable logistic regression, the variables of gender, getting a private course, dissatisfaction with e-learning, and religion are examined as predictors of self-esteem, educational stress, and depression. These results are expected and consistent with previous studies that indicated the significant impact of students' characteristics in their self-esteem, academic achievement, educational stress, and depression (Al-Hussami & Ayaad, 2020; Arima et al., 2020; Corwyn, 2000).

The findings provide baseline information on students' self-esteem, educational stress, and depression, as well as an examination of the relationship between them and the identification of factors that contribute to these outcomes among high school students in the context of e-learning during the covid-19 outbreak, according to the researchers. As a result, numerous interventions may be implemented to improve these variables now that the primary determinants have been identified.

While conducting the study, the researchers were confronted with a number of restrictions. The first restriction is the collection of information via e-collaboration technologies such as email and WhatsApp. They were used to avoid the infection transition, but not everyone utilized them. This was particularly true for low-income children who were at risk of unfavorable outcomes owing to COVID-19. As a result, this group may have been underrepresented in our sample. In addition, there were no research that discussed the factors that occurred during the COVID-19 epidemic, which was particularly true among poor people. The study did not indicate the role of the adoption of e-health and its characteristics in education, which could influence the results due to its role in enhancing nursing work and team effectiveness (Al-Ruzzieh et al., 2020; Qaddumi et al., 2021; Sharikh et al., 2020).

### **Conclusion**

Results revealed that the mean values of self-esteem, educational stress, and sadness are all in the middle of the range. The findings revealed a statistically significant negative relationship between self-esteem and education stress and depression. Conclusions Furthermore, the findings revealed a statistically significant positive relationship between education stress and depression.

The findings revealed a statistically significant relationship between the mean values of self-esteem, academic stress, and depression, as well as satisfaction with e-learning and religiosity degree, among other variables. The findings also revealed statistically significant variations in the means of self-esteem, educational stress, and sadness depending on the gender, academic achievement in the previous year, and whether or not the students were getting private courses. Finally, variables such as gender, getting a private course, happiness with e-learning, and religion are believed to be predictors of self-esteem, educational stress, and depression in college students.

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