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Academic Stress of E-learning Among Nursing Students during the Pandemic of COVID-19

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Abstract
Objective: A quantitative descriptive research design was used in this research to assess the academic stress of e-learning among nursing students during the COVID-19 pandemic. The study also aimed to assess the relationship between academic stress during the COVID-19 pandemic. **Methodology:** The sampling method was applied in this study using a non-probability purposive method, and 237 undergraduate nursing students were selected from nursing colleges at three Iraqi universities. A tow parts questionnaire was used to fulfill the study objectives. The first part includes student's sociodemographic information, and the second part contains the Academic Stress Inventory Scale to assess the academic stress level. **Results:** The result indicated that about (70%) of students experienced a moderate level of academic stress whereas; about (25.3%) had severe academic stress, and also about (4.6%) had low academic stress. **Conclusion:** Because academic stress and nursing students were significantly correlated in this study, academic stress is a critical issue that requires close attention to minimize the expected impact on student academic performance. Therefore, it is important to raise awareness of faculty members about the alarming level of stress among students to help them find new ways of supporting their students.

Keywords: Academic stress, E-learning, COVID-19, Nursing students.

Introduction

As of December 2019, the new Coronavirus disease (COVID-19) was discovered in the Chinese city of Wuhan [(1)]. A novel virus, Severe Acute Respiratory Syndrome Corona Virus SARS-CoV-2 was identified as the causative agent for that observed pneumonia cluster a few weeks later, in January 2020, after deep sequencing analysis of lower respiratory tract samples [(2)]. On February 11, 2020, the World Health Organization designated this Coronavirus two (SARS-CoV-2) related disease as COVID19 [(3)]. Coronavirus Disease (COVID-19) has been declared an international emergency by the World Health Organization, and unprecedented restrictions have been placed on the disease's spread and effects [(4)].

Online learning is a cutting-edge method of instructing students in remote locations that encompasses all types of computer learning [(5)]. Around the world, higher education institutions are undergoing rapid change also of technological advancements, particularly in the area of Information and Communication Technology (ICT), changes the fundamental processes of higher education courses and degree awarding are inextricably linked to societal trends such as virtualization, internationalization, lifelong learning, and a focus on the customer [(6)].

Students face mental and emotional problems, such as stress, anxiety, and fear, as a result of changing circumstances, which may necessitate significant psychological and physical effort [(7)]. On the one hand, different groups of nursing students have different learning styles, as do rural and urban students it's critical to know if nursing students' academic levels differ at the end of their education, as pointed out[(8)]. Academic stress can have both positive and negative consequences if it is not addressed and managed properly [(9)]. Students must learn how to prevent, alleviate, and manage stress because both stress and anxiety have been shown to negatively impact academic performance as well as physical and mental health [(10)].

Methodology

Design

A quantitative descriptive research design was used in this research to accomplish the objectives of the study. This type of research is used to present and describe a problem in numerical data that can be converted into usable statics. The descriptive study was used in the present study with the application of the Academic Stress Inventory scale for the study sample.

Population

The population of this research consists of students of nursing colleges in Iraq. Three colleges were selected to represent the colleges of nursing in Iraq. the University of Baghdad, Karbala University, and Babylon University.

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Sampling

The sampling method was applied in this study using a non-probability purposive method. This type of sample was chosen, especially under the circumstances of the situation that students are going through and their absence on campus and e-learning study, as it saves the researcher time and financial cost. The sample criteria included both gender (male and female). The data was collected online using a Google Form that contains the questionnaire. **Inclusion/Exclusion Criteria.**The study included male and female students from the College of Nursing at the University of Baghdad, the University of Karbala, and the University of Babylon. The study included nursing students of both gender (males and females) of all religions, ethnicities, and ages to participate in the study, and the students included all class levels. Both morning and evening studies were included, and successful and unsuccessful students were also included in the study.

Sample Size and Effect Size. Approximately, the number of students in nursing colleges in Iraqi universities reached 8000, the significance level 90% with a margin of level 5%. The minimum sample size required in this study is 264 participants. 237 participants were collected. Not all students responded to the research form and the response rate was 13.1 percent.

Instrumentation

To assess the level of academic stress among undergraduate nursing students, a scale of 34 items was used and called the Academic Stress Inventory Scale(11).The Academic Stress Inventory includes seven domains, with a total of 34 items. The scale domains are Stress from teachers, stress from results, the stress of studying in a group, stress from the test, self-inflicted stress, peer stress, and stress of time management [(11)]. This tool is rated on a four-point Likert scale, ranging from completely agree=4 to completely disagree=1. This research carried out the Cronbach reliability test. Factor 1 showed 0.90, factor 2 showed 0.89, factor 3 showed 0.92, factor 4 showed 0.87, factor 5 showed 0.85, factor 6 showed 0.87 and factor 7 showed 0.86.

In addition, Al-Ziyadi and Muhammad (2019) used the Academic Stress Inventory Scale in Arabic. In a study aimed at measuring academic stress among undergraduate nursing students. The Academic Stress Inventory Scale includes seven areas, with a total of 34 items[(12)]. The domains of the scale are stress from teachers, stress from results, and stress from studying in a group, stress from testing, subjective stress, peer pressure, and time management stress [(11)]. For the academic stress scale, the scale is rated as strongly agree, agree, disagree, and strongly disagree, and scored as 4, 3, 2, & 1 respectively. The assessment involves three levels of academic stress, mild, moderate, and severe. The sum of scores for the levels of assessment is 34-68 low, 69-102 moderate, and 103-136 for severe academic stress. Validity is the ability of the Academic Stress Inventory Scale to measure what it is constructed for.About a recent study, validity was measured for scale Academic Stress Inventory Scale among nursing students. The number of experts accepted to test the validity of the scale is three [(13)].

Demographics. The demographics include participants' age, gender, class level, place of residence, and monthly household income. In addition, another question regarding career interest (choosing a nursing school was my wish), with a yes or no answer was included

Data Collection Plan

A link was made on the Google form for the research questionnaire and a message via the social networking site (Telegram) to share to groups that gather students in the colleges through which consent was obtained to collect data. For the study participants, during and after their participation in the study, the researcher assured the participants that their data would remain confidential and secure. The sample participants were also told that their identities would remain anonymous by the researcher. Study participants were also informed that their names would be kept confidential at study initiation, publication, and/or later publication, according to the researcher. A questionnaire was used to collect data in Arabic.

Statistical Data Analysis

Descriptive Statistical Tests

Frequency (F). In statistics, the frequency of an event is the number of times the event occurred in an experiment or study[(14)].

Percentage (%). A number or rate is expressed as a certain number of parts of something divided into 100 parts [(15)].

Mean of Score (M.S). The arithmetic mean is the sum of the individual values in a data set divided by thenumber of values in the data set [(16)]. It was used for calculating and determining the level of academic stress and calculated according to the following formula.

Standard Deviation. Is a measure that is used to quantify the amount of variation or dispersion of a set of data values [(17)].

Results:

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Table (1)Distribution of Sample According to their Socio-demographic Characteristics

Baseline Characteristics		*n*	*%*
Age:	**M±SD= 21.55±3.24 year**		
Gender	Male	74	31.2
	Female	163	68.8
	Total	***237***	***100***
University	Baghdad	144	60.8
	Kerbela	83	35
	Babylon	10	4.2
	Total	***237***	***100***

Table (1) Continued

Baseline Characteristics		*n*	*%*
Class level	First	58	24.5
	Second	64	27
	Third	61	25.7
	Fourth	54	22.8
	Total	***237***	***100***
Residency	Urban	173	73
	Rural	64	27
	Total	***237***	***100***
Marital status	Single	205	86.5
	Married	25	10.5
	Divorced	5	2.1
	Widowed/er	2	0.8
	Total	***237***	***100***
Monthly income	Insufficient	18	7.6
	Barely sufficient	103	43.5
	Sufficient	116	48.9
	Total	***237***	***100***
Willing to study nursing	No	105	44.3
	Yes	132	55.7
	Total	***237***	***100***

n: Number, %: Percentage

The descriptive analysis demonstrates that students were with average age of 21.55±3.24 year old. Gender variable refers that they were female (n=163, %= 68.8). More than half of the students were from University of Baghdad (n= 144, %= 60.8). The class level was approximately equally from the four level; second level (n= 64, %= 27), third level (n= 61, %= 25.7), first level (n= 58, %= 24.5), and fourth level (n= 54, %= 22.8). The residency demonstrates that more of the students were from urban (n= 173, = 73). The students has seen single (n= 205, %= 86.5). The monthly income refers to sufficient income (n= 116, %= 48.9) while 48.9%, n=103 were associated with barely sufficient income. More than half of the students were studying nursing with their own willing (n= 132, %= 55.7).

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Table (2) Overall Assessment of Academic Related Stress among Undergraduate Nursing Students

Academic stress	f	%	M ± SD
Low stress	11	4.6	
Moderate stress	166	70	**93.78 ± 15.036**
High stress	60	25.3	
Total	***237***	***100***	

f: Frequency, %: Percentage
M: Mean for total score, SD: Standard Deviation for total score
Low= 34 – 68, Moderate= 69 – 102, High= 103 – 136

The analysis of academic-related stress was demonstrate that students are experienced academic stress with average of 93.78 ± 15.036; the students experienced moderate level of academic related stress during pandemic of Covid-10 (n=166, %=70) .

Discussion

Socio-demographic Characteristics Table (1):-

The data were analyzed through the application of descriptive and inferential statistics to meet the study objectives related to evaluate levels of academic stress among nursing undergraduate students and to find out the significant relationship between academic stress and their variable in the current study. The study hypothesis was be tested and estimated through statistical analysis of findings. The study clarifies that the study hypothesis (undergraduate nursing students experiencing a significant level of academic stress during the pandemic COVID pandemic) was supported as the finding shows there is a significant experience of academic stress among the students.

According to the descriptive analysis, the average age of the student was21.55± 3.24years. There is also a study (Al-Ziyadi& Muhammad 2019) to measure academic stress among undergraduate nursing students, and the main age group of the study sample was (18-23) years 47.8%[12]. O'Callaghan (2014) also found an association between stress, gender, age, academic motivation, student expectations, and self-esteem among students whose main age group was the study sample (27-25) years [18]. The current results may clarify the natural numbers and proportions of the class of students, as it is normal for students to be accepted into Iraqi universities from the age of 18 to 22 or 23 years [19].

The gender variable indicates that females (n = 163, percentage = 68.8) and males (n = 74, percentage = 31.2). O'Callaghan (2014) also found associations between stress, gender, age, academic motivation, student expectations, and self-esteem among students, there were 436 participants in total, with 31.4 percent (n = 137) males and 68.6 percent (n = 299) females [18]. According to the findings of a recent study, the number of female students who participated in the study was almost three times that of male students, indicating that female students outnumber male students [20]. This percentage is due to the Iraqi Ministry of Higher Education and Scientific Research's central acceptance plan, which places women at 75% acceptance and men at 25%, indicating a clear increase in the number of females [12].

More than half of the students were from the University of Baghdad (n= 144, %= 60.8). The class level was approximately equally from the four-level; second level (n= 64, %= 27), third level (n= 61, %= 25.7), first-level (n= 58, %= 24.5), and fourth level (n= 54, %= 22.8). Al-Ziyadi and Muhammad (2019) on measuring academic stress among undergraduate nursing students, most of the participants were second-year students at 43.2%, the percentage of the rest of the stages was the first year of university (19.7%), the third university year (21.5%) and the fourth university year (15.6%) (12). This result may be due to the convenience sample and the presence of students in

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clinical training areas at the teaching hospitals which requires the attendance of students in the hospitals, not at college [21].

The residency demonstrates that more of the students were from urban (n= 173, = 73%). Totan et al., (2014) also conducted on the importance of rural, municipal and urban life in the interaction between social and emotional learning and social behaviors the results show that about 82% were living in urban areas [22]. This is due to the density of population distribution, which is concentrated in cities and not in rural areas because of the availability of infrastructure, services, and job opportunities [23].

Indicate marital status single (86.5%), married (10.5%), divorced (2.1%), and widowed/er(0.8%). Ermasova et al., (2020) also found stress and coping in Russian students: do gender and marital status make a difference? Percentage of participating students in relation to marital status single (87.7%), married (9.6%), divorced (2.2%), and widowed/er (0.3%) (24). This is attributed to the cultural norms of Iraqi society, where students prefer to marry after graduation [25].

The monthly income refers to sufficient income (n= 116, %= 48.9) while 48.9%, n=103 were associated with barely sufficient income. Al-Ziyadi and Muhammad (2019) also about measuring academic stress among undergraduate nursing students, the results indicated that the monthly income of families ranged between barely (43.0) and sufficient (40.7) [12]. Finally, more than half of the students were willingly studying nursing (n=132,%=55.7).Al-Ziyadi and Muhammad (2019) measured the academic stress of undergraduate nursing students, finding that about half of the students (53.2%) attended important nursing college[12].This may mean that employment is guaranteed for Iraqi nursing graduates [26].

Overall Assessment of Academic Related Stress among Undergraduate Nursing StudentsTable (2):-

It has known out of analysis for data related students' responses about academic-related stress demonstrated that they are experiencing average academic stress as seen moderately reported by the range score (mean and standard deviation) 93.78 ± 15.036 (n=166, %=70). Additional analysis of finding related to academic-related stress that presented by mean score and standard deviations of the scale's items that revealed students are experienced moderate level of academic stress as indicated by moderate mean scores among all items except item 10 (I feel that my parents think that I am not serious with my studies) that show high level and item 11 (I have conflicts with my parents due to my academic results) and item 22 (Sometimes, the words used by my classmates easily hurt my self-esteem or cause harm) that show low level. Such finding could be interpreted as that pandemic of COVID-19 has an impact on the students in addition to other variables that might have effects also such as learning through the internet, socioeconomic status, and health quarantine by the government [27].

Conclusions

The outbreak of the coronavirus pandemic has an impact on various community groups especially the students who are considered at-risk groups. The feeling of contamination or get a virus infection is very stressful and worries among the students. The finding concludes that undergraduate nursing students experiencing a moderate level of academic stress during the outbreak of COVID-19. The pandemic of COVID-19 has a significant impact on the students' evidenced by the moderate level that they experience it. The students are more stressed about their academic future evidenced by a moderate level of stress reported among scale items. This hypothesis needs studies to be proven.

Limitations

The current study has several limitations, according to the authors. The study sample maybe not the representative of the population of the study and not estimated the effect size power for determining the sample size. Only three colleges from three universities are selected in the current study which may not represent all nursing colleges all over the country. The time of the study, given that the pandemic of COVID-19 has passed since its spread for more than a year which may influence the responses of the students.

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Implications and Recommendations

The college of nursing as an educational institution has the role in providing of control feeling through provide a stable educational system and maintaining a stable educational framework for the students through the provision of adequate information about the curriculum and times of exams. The necessity of conducting educational sessions and workshops for the students and their families to teach them more important strategies to reduce stress in addition to measures that can protect them from getting virus infection.

References

1- Sahu, P. 2019. (2020). Closure of Universities Due to Coronavirus Disease 2019 (COVID-19): Impact on Education and Mental Health of Students and Academic Staff.

2- Huang, C., Wang, Y., Li, X., Ren, L., Zhao, J., Hu, Y., Zhang, L., Fan, G., Xu, J., &Gu, X. (2020). Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. The Lancet, 395(10223), 497–506.

3- Franchi, T. 2020. (2020). The impact of the Covid-19 Pandemic on current anatomy education and future careers: A Student's Perspective. Anatomical Sciences Education, 13(3), 312–315.

4- Abdulghani, H. M., Sattar, K., Ahmad, T., &Akram, A. (2020). Association of COVID-19 Pandemic with undergraduate Medical Students' Perceived Stress and Coping. *Psychology Research and Behavior Management, 13, 871.*

5- Dhawan, S. (2020). Online learning: A panacea in the time of COVID-19 crisis. *Journal of Educational Technology Systems*, *49*(1), 5–22.

6- Johnson, L., Becker, S. A., Cummins, M., Estrada, V., Freeman, A., & Hall, C. (2016). NMC horizon report: 2016 higher education edition. The New Media Consortium.

7- SedejKnezović, M. (2020). Doživljanještudijanadaljavoštudentovzdravstvenenege med epidemijo covid-19 (Doctoral dissertation, University of Ljubljana, University College of Health Studies).

8- Hallin, K. (2014). Nursing students at a university—a study about learning style preferences. Nurse Education Today, 34(12), 1443-1449.

9- Bataineh, M. Z. (2013). Academic stress among undergraduate students: the case of education faculty at King Saud University. *International interdisciplinary journal of education, 1(1033),* 1-7.

10- Petko, D. J. (2017). Mindfulness-based Stress Reduction (MBSR) in Reducing Stress in Nursing Students: An Integrative Review and Toolkit.

11- Lin, Y. M., & Chen, F. S. (2009). Academic stress inventory of students at universities and colleges of technology. *World Transactions on Engineering and Technology Education*, *7*(2), 157–162.

12- Al-Zeyadi, S., & Mohammed, S. H. (2019). Measures Academic Stress among Undergraduate Nursing Students. *Indian Journal of Forensic Medicine & Toxicology*, *13*(4).

13- Price, S. (1999). The selection of students for children's nursing: the qualities expected of candidates. *Nurse Education Today*, *19*(3), 227–238.

14- Kenney, J. F.; Keeping, E. S.(2016). Mathematics of Statistics, Part 1 (3rd ed.). Princeton,NJ:VanNostrandReinhold.Retrieved from http://onlinebooks.library.upenn.edu.

15- Merriam-Webster.(2016).Percentage.http://www.merriam-webster.com/dictionary/percentage

16- Chernick, M. R., &Friis, R. H. (2003). Introductory biostatistics for the health sciences. Wiley Interscience.

17- Bland, J. M., & Altman, D. G. (1996). Statistics note measurement error proportional to the mean. BMJ, 313(7049), 106.

18- O'Callaghan, P. (2014). The relationship of stress to gender, age, academic motivation, student expectations, and self-esteem among students.

19- Aljuboori, A. F., Fashakh, A. M., &Bayat, O. (2020). The impacts of social media on university students in Iraq. *Egyptian Informatics Journal, 21(3),* 139–144.

20- Lindau, S. T., Schumm, L. P., Laumann, E. O., Levinson, W., O'Muircheartaigh, C. A., & Waite, L. J. (2007). A study of sexuality and health among older adults in the United States. *New England Journal of Medicine, 357(8),* 762–774.

21- Omer, T. A., Suliman, W. A., &Moola, S. (2016). Roles and responsibilities of nurse preceptors: Perception of preceptors and preceptors. Nurse Education in Practice, 16(1), 54–59.

22- Totan, T., Atalay, Z., Deniz, M., &Kıyar, F. (2014). The importance of rural, township, and urban life in the interaction between social and emotional learning and social behaviors. Educational Sciences: Theory & Practice.

ISSN: 0975-3583, 0976-2833 VOL 12, ISSUE 04, 2021

23- Wang, L., Wang, S., Zhou, Y., Liu, W., Hou, Y., Zhu, J., & Wang, F. (2018). The mapping population density in China between 1990 and 2010 using remote sensing. Remote Sensing of Environment, 210, 269–281.
24- Ermasova, N., Ermasova, E., &Rekhter, N. (2020). Stress and coping of Russian students: do gender and marital status make a difference? *Journal of Gender Studies, 1–17.*
25- Mark, G. J., Al-Ani, B., &Semaan, B. (2009). Resilience through technology adoption: merging the old and the new in Iraq. Proceedings of the SIGCHI Conference on Human Factors in Computing Systems, 689–698.
26- Mohammed Q. (2016). Academic-related stress and responses of nursing college students in Baghdad City, *IOSR Journal of Nursing Health Science; 5(2)*: 63-69.
27- Pastorino, R., Villani, L., Mariani, M., Ricciardi, W., Graffigna, G., &Boccia, S. (2021). Impact of COVID-19 pandemic on flu and COVID-19 vaccination intentions among university students. Vaccines, 9(2), 70.