Adolescents' Perceptions and Academic Stress towards Online Learning during COVID-19 Pandemic

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Abstract:

Background: Corona virus disease (COVID-19) has completely changed the learning environment and experiences of adolescent learners. **Aim**: This study aimed to determine adolescents' perceptions and academic stress towards online learning during COVID-19 pandemic. **Design**: The study was quantitative research utilizing the descriptive survey design. **Sample:** The study participants were one thousand one hundred (1,100) adolescents from eighteen preparatory and secondary schools in Minia City, Egypt. **Tools:** Four tools were used in this study: **Tool I:** Profile characteristics of the studied adolescent .**Tool II**: Methods of online learning. **Tool III:** Online learning perception scale**. Tool IV:** Educational stress scale. **Results:** The study revealed that participants were mostly females, 16-18 years old, and in grade 12. Adolescents had a moderate level of perceptions towards online learning and a high level of academic stress during the COVID-19 pandemic .There was a significant relationship between the perceptions of adolescents towards online learning and academic stress during the COVID-19 pandemic. **Conclusion**: Adolescents taking online classes during the COVID-19 pandemic experienced academic stress which was strongly related to their perceptions towards online learning. **Recommendation**: Future researchers may explore different compounding variables contributing to academic stress and perceptions during outbreaks.

Keywords: Academic stress, Adolescents, COVID-19, Online learning & Perceptions.

Introduction

Adolescence is the time when a person transitions from childhood to adulthood. It encompasses numerous physical changes as well as changes with how a young person interacts with the world (**Allen, &Waterman 2019**). Adolescent well-being is a critical resource for positive development and a requirement for academic achievement. Evidence is accumulating that it is important for overall health, adaptive, cognitive, and behavioral outcomes. (**Hoyt et al., 2012**)

COVID-19 is a public health emergency that has changed people's lives and perspectives. COVID-19 was first discovered in December 2019 near Wuhan, the capital of China's Hubei province (**Hui et al., 2020**). Nearly 3 million positive cases had been confirmed worldwide as of April 2020, with roughly 200,000 deaths. Egypt has been one of the worst-affected countries in the Eastern Mediterranean, With 11,228 confirmed cases and 592 deaths. (**McCarthy, 2020**)

Adolescents don't directly suffer from a large burden of COVID-19, with a minimal rate of case fatality within this age group (**Roser, 2021**).However, public health measures to combat the pandemic, such as extended self-isolation, physical distance, school closures, online classes, fear of COVID-19 infection, may have negative consequences for adolescent development and health; leading to stress, anxiety, and other emotional problems among students (**Fegert, 2020**). Adolescents are concerned about the COVID-19 scenario, as well as educational constraints, peer interactions, and other difficulties, according to previous study (**Ellis , 2020**). To stop the spread of disease, governments around the world have shuttered all educational institutions, taking into account the safety of students, educators, and all other persons involved. (**Burges&Sievertsen, 2020**)

On the other hand; due to the spread of corona virus infection, schools in China and a few other impacted nations were shuttered in the beginning of February 2020. By mid-March, about 75 countries had completed or announced the closure of educational institutions (**Hui, et al., 2020**). Despite the fact that lockdown and social isolation are the only ways to stop the spread of the COVID-19 by breaking the transmission chain, the closure of educational institutions has impacted a large number of students. (**Li, & Lalani, 2020**)

Educational institutions in the affected areas are seeking for temporary solutions to keep classes running. It's important to keep in mind, however, that

the availability and efficiency of digital tools have an impact on the quality of learning. The online learning platform has been accepted and appreciated by students and educational institutions all around the world. The ease of use, learning flexibility, and customizable environment are the reasons for its acceptability **(Sá, & Serpa, 2020)**.

Despite the various advantages of online learning, there are several limitations and barriers in many Arab countries **(Lassoued et al., 2020)**. Many students, for example, lack proper preparation prior to using online learning systems, and in certain cases, they are forced to use rigid online learning systems. Furthermore, particularly in rural and isolated areas, inadequate bandwidth connections and internet inaccessibility.**(Diab; Elgahsh 2020 & Lassoued et al., 2020)** One of the ramifications of the epidemic, which required practically all students to stay and learn at home for their own safety, is that multiple students from the same household are compelled to attend online lessons from the same area and at the same time. These roadblocks have a substantial impact on the quality of online learning as well as the motivation and involvement of students **(El-Sayad et al., 2021)**.

Several Egyptian undergraduate students have continued their academic courses using an entirely online learning method since the current Covid-19 pandemic in mid-March **(Mahmoud, 2020 & Mai, 2020).** On the other side, facilities have benefited a number of Egyptian higher education institutions in disseminating learning content, whether through formal educational platforms like Moodle or university websites, or through free communication platforms like Google Classroom and Zoom meetings. On the other hand, several faculty members use a range of social networking sites such as WhatsApp, Facebook, and YouTube to communicate with their students. As a result, significant efforts are made to reduce technology literacy among students and instructors **(Sobaih et al., 2020)**.

On the other hand, it is likewise of great importance to explore the perceptions of students towards online learning. The COVID-19 situation brought a tremendous change to the current educational system worldwide. Schools and universities need to urgently shift to various frameworks to meet academic demands while educators, learners, and stakeholders are abruptly required to adapt to new educational systems and online platforms. In recent years, there has been a spike in research into students' perceptions and expectations of online learning **(Biswas, et al., 2020)**. As a result of its recent adoption, the "National Center for Education Statistics" has reported a rise in demand for online learning. The majority of students enrolled in online courses are satisfied with the

format of instruction, according to many studies. However, research shows that a range of characteristics, such as age, gender, prior computer literacy, and individual learning styles, influence learners' attitudes, all of which are major predictors of student technology adoption **(Shrestha, et al., 2019 & Pérez-Pérez, et al.,2020)**.

Students experience academic stress as a result of many factors such as scholarship requirements, family responsibilities, class competition, course-related stress, and financial issues **(Bedewy & Gabriel, 2015)**. Students are constantly under pressure to outperform their classmates. On a regular basis, their parents, teachers, friends, and others compare them to their siblings and other youngsters their age **(Burges & Sievertsen, 2020)**. Most students report low self-esteem and poor attentiveness, both of which have an impact on their academic performance, as a result of the high level of stress generated by unprecedented academic pressure. Academic stress has a negative impact on well-being, career decisions, sleeping issues, psychosomatic complaints, future anxiety, comorbid conditions including anxiety and depression, and failure to handle course burden. **(Bedewy & Gabriel, 2015; Iqbal et al., 2015).**

However, the concern of whether online learning will be as effective to classroom learning remains uncertain. Primary and secondary learners are likely the most affected in these situations since classroom learning is customarily implemented in schools. Adolescents are known as eager, motivated and aggressive learners; they like exploring the outside world to learn new and fascinating things. Thus, the online environment may be a profound experience for them **(Khan et al., 2021)**.

Significance of the Study:

The online learning environment is very different from a traditional classroom setting in terms of student motivation, satisfaction, and interaction **(Bignoux & Sund, 2018).** In Egypt, fewer students are familiar with online learning. Due to the closing of school facilities, all educators are being urged to make a shift. There is no other option but to use online learning; despite the fact that many students feel unprepared during this changeover era, students must adjust while attempting to build meaning amid various challenges related to the pandemic**(El-Sayad et al., 2021)**. There is also a scarcity of such studies among adolescent students. To date, only three published studies reported anxiety among Egyptian students during the COVID-19 pandemic. Remote online learning was one of the stressors for anxiety among these students. Research about adolescent student's perception of online learning and academic stress during a pandemic is timely and relevant.

Adolescent learners will identify various limitations in the conduct of online learning. Further, it can serve as a basis in the development and improvement programs of the schools to address the specific psychological needs of the learners. Therefore, the researchers proposed to determine adolescents' perceptions and academic stress towards online learning during the COVID-19 Pandemic

Aim of the study:
The study aimed to determine adolescents' perceptions and academic stress towards online learning during COVID-19 pandemic

Research questions:
1. What is the perception of the adolescents towards online learning?
2. What is the level of academic stress of adolescents during the COVID-19 pandemic?
3. Is there a relationship between adolescents' perceptions and academic stress towards online learning during the COVID-19 Pandemic?

Materials and Method:

Research Design: The study is quantitative research utilizing the descriptive survey design.

Setting: The study was conducted at the preparatory and the secondary schools in Minia city, Egypt.

Sample and Sampling Technique:
The participants of the study were adolescent learners presently enrolled as grade 7 to grade 12 at selected schools in Egypt, Minia City. The participants included in the study are those who (1) are officially registered at a recognized school in Egypt, (2) have taken online classes or any method of e-learning platforms, (3) have understand the consent form or cover letter indicated in the questionnaire, (4) are willing to participate in the study. One thousand and one hundred (1,100) adolescents from the governmental and the private schools met the above-mentioned criteria .Selected schools in Egypt, Minia City which offers grade 7 to 12 curriculum and utilizes e-learning or online classes served as the setting of the study.

Multistage random sampling was the technique used by the researchers to identify the appropriate sample for the study. The total number of the preparatory and the secondary schools in Minia City used online classes during the conduct of the study was one hundred eighty-six (186). Ten percent (10%) or eighteen (18) of these schools were randomly chosen for the study, which included four (4) preparatory schools and fourteen (14) secondary schools. There were a total of two hundred forty-five (245) adolescents from preparatory schools and eight hundred fifty-five (855) adolescents from secondary schools who participated in the study.

Tools of the study:
Four tools were included in this study:

Tool I: This tool was developed by the researchers; it covered the profile characteristics of the participants in terms of gender, age, grade level, and GPA (general weighted average)

Tool II: this tool was developed by the researchers based on (**Parker &Martin, 2010, Çakıroğlu, U . 2014**). It included the methods of online learning which asked questions about devices used during online classes, method of contact used by the teacher during online class, and the teaching platform used. It also included items pertaining to the commitment of the participants and their teachers to online learning. The percentage that is given in synchronous and asynchronous classes and the percentage of interaction between teacher and classmates during online classes were asked as well. Moreover, this part covered questions regarding the participants' perception on how online classes affected their performance in school, and preparedness to take their subjects online.

Tool III: Online learning perception scale: This scale was developed by the researcher based on (**Parker &Martin, 2010, Çakıroğlu, U. 2014**).   It consisted of 20 items on the perceptions on E-learning. It discussed areas on student-school contact, prompt feedback, active learning, usefulness and ease of use, sense of community, behavioral intention to use and overall perception.

Responses were measured on 5-point Likert scale, (1) highly disagree, (2) disagree, (3) uncertain, (4) agree and, (5) highly agree. The overall score is a sum of these items, ranging from 20 to 100; and divided into three levels as follow: low perception from 20 to 46, moderate perception from47 to 73, and high perception from 74 to 100.The researchers modified some of the statement of the scale to be in line with COVID-19 pandemic and achieve the study aim.

Tool IV: Educational stress scale:
Educational Stress Scale for Adolescents (ESSA)**;** was developed by (**Sunet al., 2011**) to assess academic stressors that participants may have encountered while attending online classes during the COVID-19 pandemic; It consisted of 16 items. There are five domains of ESSA including attitudes toward study and grades, self-expectation, perceived pressure, perceived burden, and expectations from others.

The response format used a 5-point Likert scale ranging from 1 (Strongly disagree) to 5 (Strongly agree) with a higher score indicating greater stress. The overall score is a sum of ESSA items, ranging from 16 to 80; and divided into three levels as follows: low stress from 16 to 37, moderate stress from 38 to 59, and high stress from 60 to 80. The

researchers modified some of the statements of the scale to be in line with the COVID-19 pandemic and achieve the study aim.

Validity & Reliability of the study tools:

To test the content validity of the instrument, five panels of experts in the field of pediatric & psychiatric mental health nursing were assembled. The changes were made based on the panel's assessment of the clarity of the sentences and the appropriateness of the topic. The percentage of consensus among experts regarding the structured interviewing questionnaire was 96.0%; ESSA was 98.0%, and 97% for the perception scale. On the other hand, the tool reliability was carried out using the Cronbach alpha test; it was 0.97 for the ESSA and 0.98 for the online learning perception scale.

Procedure:

▪ A review of the current and past related literature to have a solid background on the research problem and study variables was performed. In addition, tools of data collection were translated into Arabic versions by the researchers and were reviewed and validated by the jury committee composed of 5 experts in pediatric nursing and psychiatric mental health nursing to test tools validity.

▪ Distribution of questionnaires was performed after receiving permission and formal approval from the private and the governmental school managers in Minia city.

▪ The distribution of questionnaires to the participants was conducted electronically. It was presented to the participants through Google forms and they were asked to accomplish the forms and submit them automatically. The researchers sent an email with a

hyperlink (https://docs.google.com/forms/d/e/1FAIp QLSfDs2HdLpbukY7q5anuhpqG7GiRBt8840hZo2 IuQ7js4zt_fA/viewform) and a brief message about study purpose was available to the students through theWhatsApp application. Students were informed that their participation was voluntary, not connected to their course grade and that the survey was anonymous.

▪ The survey was available for three weeks, and during this time, two email reminders were sent. Samples of (900) students responded from several private schools through **Google forms**. While for (300) students in governmental schools, the data were collected through a direct interview because of the unavailability of electronic means of communication. The data was collected from October 2020 to February 2021.

Pilot study:

A pilot study was conducted at the beginning of the research. It includes ten percent (10%) of the total sample which represented one hundred and ten (110) students. Itwas conducted to test clarity, completeness, feasibility, objectivity, applicability, adequacy of the study tools, determine possible problems in the methodological approach or tool, and determine the time needed to complete the tools. No changes have been done in the assessment sheet, so the sample selected for the pilot study was included in the primary study sample.

Ethical Considerations:

The researchers secured an official letter from the research ethics committee of the Faculty of Nursing, Minia University before the pilot and actual study implementation. Consent was obtained from the participants after explaining the nature and aim of the study. Participants' rights to refuse to participate or withdraw from the study at any time without reason were emphasized. In addition, participants were assured that the data they provided was highly confidential. On the other hand, a number assigned for each adolescent instead of names was used to protect their privacy and ensure anonymity. Intellectual property rights were maintained and plagiarism was avoided through careful citations.

Statistical Analysis:

Data analysis was performed using IBM SPSS statistical software version 22. The content of each tool was analyzed, categorized, and then coded. Data was analyzed through descriptive statistics with mean and standard deviation (SD) for continuous variables and frequency for categorical variables. Qualitative variables were compared using coefficient correlation test, (r) test was used to evaluate the association between studied variables. Statistical significance was used at P. value <0.05 at a confidence interval of 95%. A significant level value was considered when the p-value ≤ 0.05 and a highly significant level value was considered when the p-value ≤ 0.001, while the p-value > 0.05 indicates non-significant results.

Results:

The findings were structured based on the aim of the study.

Table (1): Distribution of adolescents according to their demographic characteristics (n=1100).

Variable	No	%
Gender		
Male	514	46.7
Female	586	53.3
Age		
12-<13	55	5.0
13-<14	80	7.2
14-<15	110	10.1
15-<16	350	31.8
16-18	505	45.9
Academic grade level		
Grade :7	55	5.0
Grade :8	80	7.2
Grade :9	110	10.1
Grade :10	250	22.7
Grade :11	205	18.6
Grade :12	400	36.3
GPA on the previous academic year (2018-2019)		
2.5	0	0.0
3.5	68	6.2
4.5	773	70.3
More than 4.5	259	23.5
GPA last academic year (2019-2020)		
2.5	0	0.0
3.5	0	0.0
4.5	994	90.4
More than 4.5	106	9.6

Table (2): Distribution of online learning experience among the studied adolescents (n=1100).

Variable	Item	No	%
Devices used during the online classes			
	Laptop	305	27.7
	Desktop computer	281	25.5
	Tablet / I pad	320	29.2
	Mobile phone	194	17.6
The method of contact used by the teacher during online class			
	Email	219	19.9
	Phone call	224	20.4
	Text message	304	27.6
	Online chat through school's website	192	17.5
	Facebook, messenger	76	6.9
	WhatsApp	85	7.7
The teaching platform used for subjects			
	Blackboard	237	21.5
	Moodle	287	26.1
	Google classroom	288	26.2
	Zoom	166	15.1
	Cisco WebEx	66	6.0
	Telegram	56	5.1
Percentage of commitment in attending online class			
	More than 90%	241	21.9
	80-89%	389	35.4
	70-79%	470	42.7

Variable	Item	No	%
Percentage that is given in synchronous form for the subjects			
	More than 90%	272	24.7
	80-89%	352	32.0
	70-79%	476	43.3
Percentage of the interaction during online classes			
	More than 90%	190	17.3
	80-89%	210	19.1
	70-79%	312	28.4
	60-69%	189	17.2
	50-59%	102	9.2
	Less than 50%	97	8.8
Online classes contributed or affected the performance in school			
	Yes	804	73.1
	No	296	26.9
Preparation to take subjects online			
	Yes, I am fully (very) ready	483	43.9
	Yes, but partially (not so) ready	387	35.2
	No, I am not ready	230	20.9
The quality of the internet connection in the home			
	Excellent	76	6.9
	Very good	459	41.7
	Good	357	32.5
	Poor/weak	208	18.9
The type of internet connection in home			
	Mobile data	662	60.2
	Wi-Fi	438	39.8
Frequency of internet disconnection during the online class			
	1-2 times	292	26.5
	3-4 times	407	37.0
	5 and more	401	36.5

Table 3: Distribution of adolescents' perceptions towards online learning (n=1100).

Items	Strongly Disagree		Disagree		Uncertain		Agree		Strongly Agree		% of mean score
	No	%	No	%	No	%	No	%	No	%	
Student-school Contact 1. With the online learning, my teacher can encourage communication between me and my classmates.	59	5.4	101	9.2	110	10.0	758	68.9	72	6.5	3.62
2. I can reach my teacher easily, privately and ask questions	67	6.1	142	12.9	67	6.1	661	60.1	163	14.8	3.64
Prompt Feedback 3. My teacher provides multiple ways of feedback for projects, quizzes and other requirements	67	6.1	45	4.1	167	15.2	608	55.3	213	19.4	3.77
4. Feedback from my classmates and teachers was delayed online	12	1.1	774	70.4	12	1.1	302	27.5	0	0.0	2.54
5. My teacher can encourage and motivate me and my classmates through online class	0	0.0	382	34.7	16	1.5	701	63.7	1	0.1	3.31
Active Learning 6. My teacher used different kinds of instructional materials online	34	3.1	36	3.3	89	8.1	812	73.8	129	11.7	3.87

7. My teacher can create learning environments according to various learning styles in online class	128	11.6	447	40.6	90	8.2	379	34.5	56	5.1	2.80
8. Me and my classmates are engaged in talking, writing, presentation and studying about our subjects during online class	145	13.2	485	44.1	88	8.0	316	28.7	66	6.0	2.70
9. Me and my classmates were generally passive listeners during online class	124	11.3	258	23.5	69	6.3	610	55.5	39	3.5	3.16
10. Online learning supported different kinds of materials (video, text, audio, multimedia, etc.)	112	10.2	49	4.5	134	12.2	727	66.1	78	7.1	3.55
Usefulness and ease of use											
11. The online instructions are clear and understandable	77	7.0	283	25.7	78	7.1	539	49.0	123	11.2	3.31
12. Online learning is flexible to use	75	6.8	423	38.5	156	14.2	362	32.9	84	7.6	2.96
13. Online learning is possible to be used without any expert help or help from others	291	26.5	458	41.6	176	16.0	142	12.9	33	3.0	2.24
Sense of community											
14. I feel alone and did not feel a sense of belonging as similar to face-to-face classroom learning	40	3.6	59	5.4	204	18.5	436	39.6	361	32.8	3.92
15. There are limited collaborative or group activities in online class	17	1.5	32	2.9	222	20.2	352	32.0	477	43.4	4.12
16. I mostly worked on my own to complete my projects	29	2.6	32	2.9	224	20.4	246	22.4	569	51.7	4.17
Behavioral Intention to Use											
17. I intend to begin and continue in the future using online learning as learning tool	315	28.6	390	35.5	188	17.1	149	13.5	58	5.3	2.31
18. I will recommend others to use online learning as learning tool	399	36.3	355	32.3	140	12.7	127	11.5	79	7.2	2.21
Overall perception											
19. I am generally satisfied about the online learning system of my school	58	5.3	652	59.3	108	9.8	222	20.2	60	5.5	2.61
20. My school performance becomes better because of online learning	51	4.6	426	38.7	192	17.5	361	32.8	70	6.4	2.97

Table (4): Mean score of adolescents' perceptions domains towards online learning (n=1100).

| Perception domain	Score	Mean ±SD	% of mean score
Student-school contact	10	7.2673±1.71421	72.67
Prompt feedback	15	9.6427±1.86598	64.28
Active learning	25	16.1082±3.19351	64.43
Usefulness and ease of use	15	8.5209±2.21224	56.80
Sense of community	15	12.2300±2.34255	81.53
Behavioral intention to use	10	4.5245±1.97720	45.24
Overall perception	10	5.5882±1.75331	55.88
Total perception	100	63.8818±6.75643	63.88
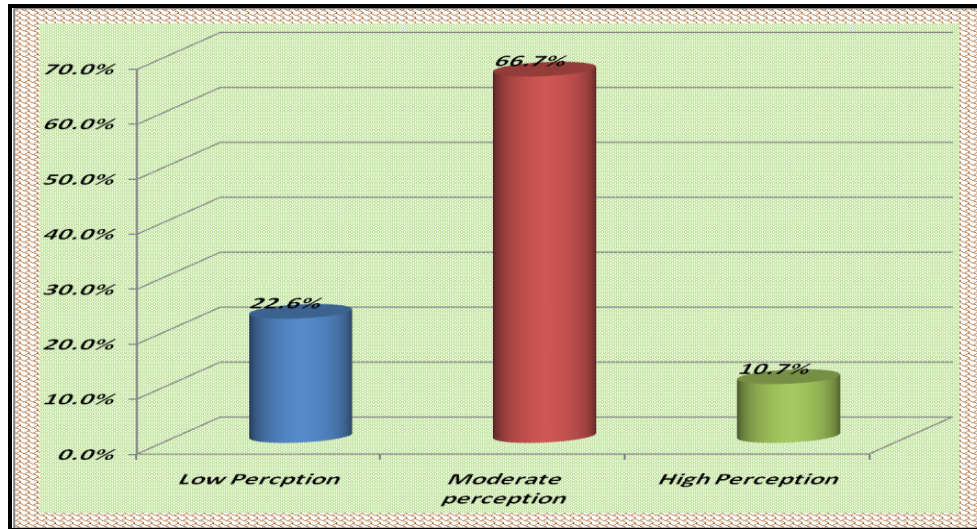
Figure (1): Percentage level of the studied adolescents' perception towards online learning:

Table (5): Distribution of the adolescents' academic stress during COVID 19 pandemic (n=1100)

Items	Strongly Disagree		Disagree		Uncertain		Agree		Strongly Agree		% of mean score
	No	%	No	%	No	%	No	%	No	%	
1. Because my classes were conducted online during pandemic, I am very dissatisfied with my academic grades	72	6.5	520	47.3	37	3.4	417	37.9	54	4.9	2.87
2. I feel that there is too much school work during pandemic	69	6.3	40	3.6	72	6.5	322	29.3	597	54.3	4.21
3. I feel that there is too much homework when class are conducted during the period of pandemic	53	4.8	24	2.2	79	7.2	280	25.5	664	60.4	4.34
4. I feel that if the pandemic will continue, my future education and employment will bring me a lot of pressure	45	4.1	5	0.5	106	9.6	443	40.3	501	45.5	4.22
5. Because of the pandemic, my parents care about my academic grades too much which brings me a lot of pressure	28	2.5	395	35.9	102	9.3	416	37.8	159	14.5	3.25
6. 6.Online classes during pandemic give me a lot of pressure in my daily studying	22	2.0	71	6.5	96	8.7	356	32.4	555	50.5	4.22
7. I feel that there are too many tests and exams given during the pandemic	39	3.5	82	7.5	90	8.2	372	33.8	517	47.0	4.13
8. Factors such as online class and pandemic situations can affect my academic grade which is very important to my future	165	15.0	97	8.8	108	9.8	419	38.1	311	28.3	3.55
9. This time of the pandemic, I feel that I have disappointed my parents when my test/exam results are poor	155	14.1	326	29.6	84	7.6	286	26.0	249	22.6	3.13
10. I feel that I have disappointed my teacher when my test/exam results are not ideal	170	15.5	310	28.2	102	9.3	292	26.5	226	20.5	3.08
11. There is too much competition among my classmates during the pandemic which brings me a lot of academic pressure	169	15.4	199	18.1	78	7.1	377	34.3	277	25.2	3.35
12. During this pandemic, I always lack confidence with my academic scores	188	17.1	325	29.5	49	4.5	285	25.9	253	23.0	3.08

Items	Strongly Disagree		Disagree		Uncertain		Agree		Strongly Agree		% of mean score
	No	%	No	%	No	%	No	%	No	%	
13. It is difficult for me to concentrate during online classes	133	12.1	65	5.9	43	3.9	496	45.1	363	33.0	3.81
14. I feel stressed when I do not live to my own standards	125	11.4	189	17.2	53	4.8	568	51.6	165	15.0	3.41
15. I feel that during this pandemic, I fail to live my own expectations and I feel I am not good enough	102	9.3	295	26.8	126	11.5	478	43.5	99	9.0	3.16
16. In this pandemic, I usually cannot sleep because I worry when I cannot meet the goals, I set for myself	107	9.7	417	37.9	154	14.0	327	29.7	95	8.6	2.89
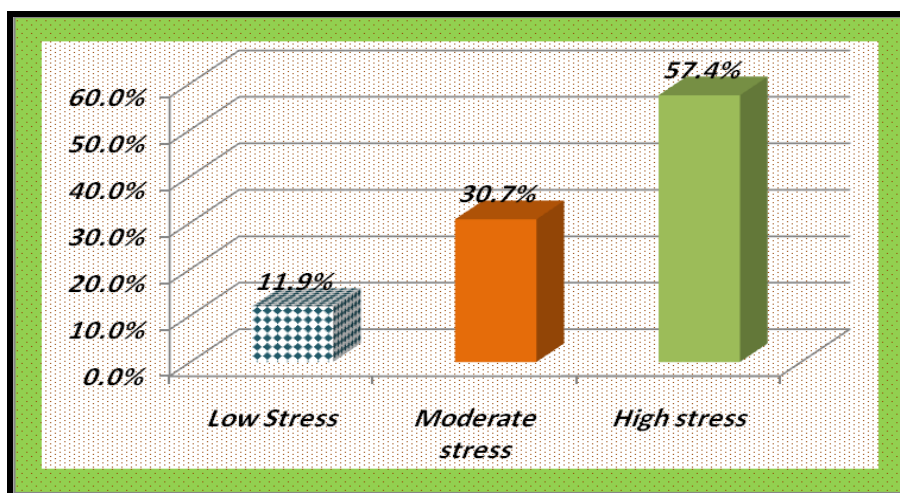
Figure (2): Levels of academic stress experienced by the studied adolescents during COVID-19 pandemic(n=1100)

Table (6): Relationship between the adolescents' total academic stress score and their online learning perception (n=1100)

Variables	Total Academic Stress Score	
	r	P value
E-learning perception	-0.438	<0.001**

Table (1): presents that more than half (53.3%) of the studied adolescents were females, while the rest were males. In terms of adolescents age, the highest percentages was from 16-18years (45.9%)while the lowest percentages (5.0%)was from 12-13years .Concerning the academic grade, most of the adolescents were in grade 12 with the highest percentage (36.3%)and the lowest percentage belong to grade 7 (5.0%).Also Less than three quarters (70.3%)of the adolescents 'general weighted average from the previous academic year (2018-2019) was 4.5 and similar result was also noted at the last academic year, 4.5 with 90.4% of them.

Table (2): Shows that 17.6% of the studied adolescents used Mobile phone during the online classes while 29.2% used Tablet/ IPad. Regarding the teaching platform used for online subjects, Moodle and Google classroom presented more than half of all platform with (26.1and 26, 2 respectively) . 41.7% of the studied adolescents stated that the quality of the internet connection in their home was very good and nearly two third of them used mobile data during online classes.

Table (3): Regarding school-student contact, adolescent students can reach their teacher easily, privately and ask questions with a mean score of (3.64) .While in terms of prompt feedback their teacher provides them multiple ways of feedback for projects, quizzes and other requirements with a mean score of (3.77). Cornering active learning, the

adolescents perceived that their teacher used different kinds of instructional materials online with a mean score of (3.87). Beside usefulness and ease of use, the online instructions were clear and understandable with a mean score of (3.31). Concerning sense of community, the adolescents perceived that mostly they worked on their own to complete their projects with a mean score of (4.17). On the other hand, behavioral intent to use; the studied adolescents reported that; they intend to begin and continue in the future using online learning as a learning tool with a mean score of (2.31).

Table (4): Shows that sense of community domain has the highest mean score percentage of 81.53% followed by student-school contact domain with a percentage of 72.67%. , and the least mean scores were usefulness and ease of use with 56.80% and behavioral intention to use with 45.24%.

Figure (1): Shows that two third (66.7%) of the studied adolescent had moderate perception towards online learning, 22.6% of them had low perception and the lowest percentage (10.7%) have high perceptions.

Table (5): Represents that distribution of the adolescents' academic stress during COVID- 19 pandemic. The table revealed that majority of them felt that there is too much homework when classes are conducted during the period of pandemic with a mean score (4.34). Similarly, experienced that online class during pandemic gave them a lot of pressure in their daily studying with a mean score (4.22). Furthermore, the adolescent participants felt that there is too much school work during pandemic with a mean score (4.21).

Figure (2): Illustrates that more than half of the studied adolescents had high academic stress (57.4%) during COVID -19 pandemic. While nearest one third have moderate academic stress (30.7%), and the rest have low academic stress (11.9%).

Table (6): Presents the relationship between the adolescents' total academic stress scores and their perception towards online learning. The findings in the table suggest a negative association between adolescents 'total academic stress score and their perception towards online learning based on r value of -0.438. However, the P value score of <0.001 revealed a strong statistically significant relationship between academic stress and perception of the studied adolescent towards online learning.

Discussion:

The COVID-19 pandemic forced the closure of thousands of schools and institutions in 2020. Millions of students were obliged to complete the semester via distance learning, causing enormous disruptions in educational systems all around the world **(Goldstein, 2020).** Despite the fact that COVID-19 offers a modest risk to adolescent students' health and death, the pandemic has likely created a great deal of uncertainty and distress among these students **(Centers for Disease Control and Prevention, 2020)**.

The primary purpose of this study was to determine the adolescents' perceptions and academic stress towards online learning during the COVID-19 Pandemic. The study reveals that more than half of the studied adolescents included in this study were females, while less than half of them were in age group from16-18 years old. Also, mostly of them were in grade 12. Similarly, this finding congruent with **(Yeboah& Smith, 2016 & Khan et al., 2021)** who reported that females accounted for 51.63 percent of the sample responses, while males accounted for 48.37 percent. The age group 16–19 years comprises 84.78 percent of the responses. The finding of the current study demonstrated that the studied adolescents have an equal academic performance in 2018-2019 while taking face-to-face classes and during 2019-2020 while taking online classes. From a different standpoint, **(Cavanaugh & Jacquemin, 2015)** suggested that students taking online courses receive a grade point average higher than students taking the face-to-face. Also **(Xu& Jaggars, 2013)** stipulated that grades of students are lower when taking online courses.

The finding of this study shows that less than quarter of the studied adolescents used Mobile phone during the online classes while nearly about third of them used Tablet/IPad. Regarding the teaching platform used for online subjects, it was noticed that Moodle and Google classroom presented more than half of all platforms that used(Table 2).These results may be related to availability of Mobile phone &tablet\IPad means with most of students during COVID-19 pandemic to communicate with their teacher through online classes. The current study results were in the same line with **(Kennedy et al., 2016)** who reported that the majority of students have their own internet-enabled devices, such as computers and cellphones. They communicate with these digital devices through formal and informal networking venues such as emails, blogging, and so on. On the other side, **(Commodari & La Rosa, 2021)** found that the majority of students (98.1 percent) used an online platform (such as Google Class or Zoom) for distance learning, and that teachers structured virtual sessions as if they were face-to-face lessons (48.8%).7.6% of the participants in the survey reported that they use their mobile phone.

This study also explored the perceptions of adolescents towards online learning. Specifically, in terms of school-student contact, the participants

stated that they can reach their teacher easily and privately. Teachers are perceived to be available to queries about their assignments, activities, and requirements (Table 3). This result may be related to: the adolescent participants perceived that they have better chances during online classes to ask questions from teachers and request to explain further for ease in understanding the lesson. In addition, the presence of teachers is essential during online learning. This finding was affirmed by **(Almahasees, et al., 2021)** expected the instructor to clarify students' doubts within a day and during an online class. Several studies **(Shrestha et al., 2019, Salloum et al., 2019)**indicated that the majority of students enrolled in online courses expressed satisfaction with the form of instruction. However, research have indicated that a variety of factors influence learners' attitudes, including age, gender, and prior computer literacy. Furthermore, some studies have found that women are more stressed than men and have different attitudes about online learning. **(Khan et al., 2021, Alateeqet al., 2020).**

Considering the prompt of feedback, adolescents perceived that their teachers provide multiple ways to give feedback on projects, quizzes, and other requirements. In terms of active learning, the students perceived that their teacher used different instructional materials online (Table 3).From the researcher's perspective, teachers and students can easily and swiftly communicate instructional materials perspective through the medium of e-learning. Students can quickly access a variety of study resources with the help of an e-learning system. **(Khan et al., 2021)** verified these findings, demonstrating that e-learning technology allows for simple access to information, resulting in students developing a good attitude toward it.

In usefulness and ease of use, the adolescent participants noted that the instructions in the online class are clear and understandable (Table 3). In the same line **(Van Loon et al.,2012)** emphasized the utility of e-learning in terms of ease of use, stating that it allows students to connect with their teachers, follow their peers, and participate in study materials while being comfortable and flexible in terms of location and time. Similarly, Egyptian researchers **(Zalat et al., 2021)** praised e-learning systems as simple and easy to use. These findings are due to the fact that adolescents are technologically dependent and are the most frequent users of these online sites.

Adolescents perceived a sense of community as the primary domain to affect their learning experience (Table 4). The findings posited strong perceptions of the adolescents with interactions during online class, collaboration with classmates, and completion of requirements. They had high regard for a sense of

belongingness as previously experienced with face-to-face learning. These findings may be provided definite evidence on how crucial role of the teachers and peers of adolescents in online learning. Once online learning develops a sense of community, adolescents will perform satisfactorily and cope effectively with academic stress. Likewise, the students perceived immediate consultation with the teachers and availability of social media to access them easily as effective means to online learning. This point with school-student contact as previously discussed further affirmed the findings of the study. **(Jacobson et al., 2020)** opined that humans suffer from stressful situations, irrelevant thoughts, and anxiety as a result of their isolation. It occurs because humans are social creatures that require connections with one another, emphasizing the significance of a feeling of community in online education

On the other hand, the adolescents perceived behavioral intent to use online learning as the last domain to affect their learning experience (Table 4). This finding may be related to; the students not understand that the use of technology will be a part of their daily and usual school routine, so the perceptions on this domain were the least. This finding was contradicted with **(Ituma, 2011)** who stated that e-learning is used by 79.9% of respondent students as a learning aid; 85.3 percent of respondent students use e-learning to update their subject knowledge; and 86.9% of respondent students use e-learning as a free-learning tool.

As regard total perception of the studied adolescents, the results revealed that the majority of the adolescent had a moderate level of perception towards online learning (figure 1). This result may be explained as the sense of community and student-school contact were domains that strongly contributing to adolescents' perception. With this, interactions and connections to teachers, classmates, and school can be considered significant factors that will highly influence students' learning during the pandemic.

Concerning academic stress related to adolescent's ability to succeed in this new environment, on the other hand, is a major source of concern for students at various educational levels (Table 5). This finding could be linked to a combination of stress and difficult home circumstances, such as a lack of access to academic tools such as computers and internet access. Distractions in the learning environment at home are additional factors to consider. Similarly, **(Son, et al., 2020)** asserted that at-home distractions, such as interruptions from other family members and additional tasks, provide a substantial problem for students learning from home during COVID-19.

These factors, when considered collectively, are likely to cause academic anxiety and stress.

In addition, adolescents pointed out the bulk of homework during online classes contributes to the academic stress they experienced (Table 5). This could be because, in the event of a pandemic, online learning reduces the amount of time students have in class to engage. To compensate for the classes and improve students' ability, teachers devoted more time to asynchronous activities like homework. In a survey performed by **(Moawad, 2020)**, with Saudi Arabian university students, exams and assignments were identified as major pressures in taking online classes .Lecture time, home environments, and internet platforms were among the other sources of stress. As to this study, pressure in daily studying and self-discontentment on their capability to perform future jobs compliments the students' stress. Everyday struggles to complete requirements without the usual physical assistance from their teachers make the class difficult. It likewise made them feel overburdened with expectations. On the other hand **(Sa&Serpe, 2020)** speculated that despite the numerous benefits of e-learning, social isolation and lack of face-to-face interactions were limitations.

Overall, this study generated high academic stress experienced by adolescents during the COVID-19 pandemic (Figure 2). This could be because students are more distracted when studying during the COVID-19 pandemic, have trouble organizing their studies, and are worried about lockdown, all of which have a poor impact on their academic performance. This finding is in line with **(Commodari&La Rosa, 2021)** who claim that distant learning is associated with a significant increase in student workload and, as a result, psychological distress associated with homework. This contradicts the findings of **(Alateeq et al., 2020)** who discovered a moderate amount of academic stress among students, but a larger link among female participants.

Lastly, this study revealed a strong association between perceptions towards online learning and academic stress during the pandemic (Table 6). This result can be explained by the fact that academic stress and perception can impair one's capacity to engage in online learning. Similarly, teenage performance in online classrooms may be influenced or determined by their views of academic stress and their ability to cope with it. This finding is in line with **(Gillis& Krull, 2020),** who found that students who participated in more online activities performed better. In addition, focusing on students' online habits has a positive effect on future learning outcomes.

Conclusions:
This study aimed to determine adolescents' perceptions and academic stress towards online learning during the COVID-19 pandemic. Adolescents are taking online classes during COVID-19 pandemic experienced academic stress which was strongly related to their perceptions towards online learning. Adolescents had a moderate level of perceptions towards online learning and a high level of academic stress during the COVID-19 pandemic. However, this study is uncertain whether these factors contributed to their academic performance since there was no relative difference between their grade point average during face-to-face learning and online learning. Worthy to note, the findings of this study affirmed the majority of the studies conducted on online learning in terms of various factors such as student-instructor interactions, prompt feedback, and ease of use. In any learning setting, adolescents want to establish meaningful communication with teachers and collaborate with their peers.

Recommendations:
▪ Investigations to clarify the limitations of this study should be considered in the future. Since conducted in one state or locality, future researchers may explore different compounding variables contributing to academic stress and perceptions during outbreaks or pandemics like socioeconomic demographics of adolescents.
▪ Focus areas to enhance learner-instructor contacts and strategies to strengthen coping during online learning should be the highest priority in instructional development.
▪ Stakeholders, administrators, and program planners should design effective online and distance instruction models to move and compete with the changing global learning environment.

References:
▪ **AlAteeq, D., Aljhani, S., & AlEesa, D. (2020):** Perceived stress among students in virtual classrooms during the COVID-19 outbreak in KSA. Journal of Taibah University Medical Sciences. 15(5), 398-403doi: 10.1016/j.jtumed.2020.07.004.
▪ **Allen, M., & Waterman, H. (2019):** Can children prioritize more valuable information in working memory? An exploration into the effects of motivation and memory load. *Developmental Psychology, 55*(5), 967–980.
▪ **Almahasees, Z. Mohsen, K. & Amin, M. (2021)**: Faculty's and Students' Perceptions of Online Learning during COVID-19. Front. Educ. 6:638470.doi: 10.3389/feduc.2021.638470

- **Ituma, A. (2011):** An evaluation of students' perceptions and engagement with e-learning components in a campus based university.Act. Learn. High. Educ., 12, 57–68.

- **Bedewy, D. & Gabriel, A. (2015):** Examining perceptions of academic stress and its sources among university students: the perception of academic stress scale, *Health Psychology Open, 2*(2), 2055102915596714.

- **Bignoux, S & Sund, K. (2018):** Tutoring executives online: What drives perceived quality? Behaviour & Information Technology, 37 (7) (2018), pp. 703-713

- **Biswas, B. Roy, S. & Roy, F. (2020):** Students Perception of Mobile Learning during COVID-19 in Bangladesh: University Student Perspective. *Aquademia2020,* 4, ep20023.

- **Burges, S., & Sievertsen, H. (2020):** Schools, Skills, and Learning: The Impact of COVID-19 on Education, CEPR Policy Portal, available at: https://voxeu.org/article/impact-covid-19-education Retrieved on April 30, 2020

- **Cavanaugh, J. & Jacquemin, S. (2015):** A Large Sample Comparison of Grade Based Student Learning Outcomes in Online vs. Face-to-Face Courses. *Journal of Asynchronous Learning Network, 19*(2). Doi:10.24059/olj.v19i2.454.

- **Centers for Disease Control and Prevention (2020):** Coronavirus Disease 2019 (COVID-19). *Centers for Disease Control and Prevention.* Available at: https://www.cdc.gov/coronavirus/2019-ncov/index.html (Accessed November 12, 2020).

- **Commodari, E. & La Rosa, L. (2021):** Adolescents and Distance Learning during the First Wave of the COVID-19 Pandemic in Italy: What Impact on Students' Well-Being and Learning Processes and What Future Prospects? Eur. J.Investig. Health Psychol. Educ, 11, 726–735. https://doi.org/10.3390/ejihpe 11030052

- **Diab, G & Elgahsh, F. (2020):** E-learning during COVID-19 pandemic: Obstacles faced nursing students and its effect on their attitudes while applying it. American Journal of Nursing, 9(4): 300–314, doi: https://doi.org/10.11648/j.ajns.20200904.33.

- **Ellis, W. (2020):** Physically isolated but socially connected: Psychological adjustment and stress among adolescents during the initial COVID-19 crisis. *Canadian Journal of BehaviouralScience , 52*(3), 177–187.

- **El-Sayad, G., Saad, N. & Thurasamy, R. (2021):** How higher education students in Egypt perceived online learning engagement and satisfaction during the COVID-19 pandemic .Journal of Computer Education, 8(4):527–550

- **Fegert, J. (2020):** Challenges and burden of the Corona virus 2019 (COVID-19) pandemic for child and adolescent mental health: a narrative review to highlight clinical and research needs in the acute phase and the long return to normality, Child Adolesc Psychiatry Ment Health, 14(20)

- **Gillis, A& Krull, L. (2020):**COVID-19 Remote Learning Transition in Spring 2020: Class Structures, Student Perceptions, and Inequality in College Courses. Teaching Sociology, Vol. 48(4) 283–299

- **Goldstein, D. (2020):** Research shows students falling months behind during virus disruptions. *The New York Times.* Available at:https://www.nytimes.com/2020/06/05/us/corona virus-education-lost-learning.html (Accessed November 12, 2020).

- **Hoyt, T. Chase-Lansdale, L. McDade, W. & Adam, K. (2012):**Positive Youth, Healthy Adults: Does Positive Well-being in Adolescence Predict Better Perceived Health and Fewer Risky Health Behaviors in Young Adulthood? J Adolesc Heal.; 50: 66–73 .

- **Hui, S., Azhar, I., Madani, A., Ntoumi, F., Kock, R. & Dar, O. (2020):** The continuing 2019-nCoV epidemic threat of novel corona viruses to global health – the latest 2019 novel corona virus outbreak in Wuhan, China, *International Journal of Infectious Diseases, 91*(14), 264-266.

- **Iqbal, S., Gupta, S., & Venkatarao, E. (2015):** Stress, anxiety and depression among medical undergraduate students and their socio-demographic correlates, Indian Journal of Medical Research,141(3), 354-357.

- **Jacobson, N., Lekkas, D., Price, G., Heinz, M. V., Song, M., O'Malley, A., & Barr, P. (2020):** Flattening the mental health curve: COVID-19 stay-at-home orders result in alterations in mental health search behavior in the United States. Retrieved from: https://psyarxiv.com/24v5b/

- **Khan, M., Vivek, Nabi, M., Khojah, M. & Tahir, M. (2021):** Students' Perception towards E-Learning during COVID-19, Pandemic in India: An Empirical Study, Sustainability 2021, 13,57. https://www.mdpi.com/journal/

- **Kennedy, G. Krause, L. Gray, K. Judd, T. Bennett, J. Maton, A. Dalgarno, B. & Bishop, A. (2016):** A collaborative project in Australian higher education. In Proceedings of the Annual Conference of the Australasian Society for Computers in Learning in Tertiary Education,: Sydney, Australia, pp. 413–417.

- **Lassoued, Z., Alhendawi, M., & Bashitialshaaer, R. (2020).**An exploratory study of the obstacles for achieving quality in distance learning during the COVID-19 pandemic.

Education Sciences, 10(9), 232. https://doi.org/10.3390/educsci10090232

- **Li, C., & Lalani, F. (2020)**: "The COVID-19 pandemic has changed education forever", this is how. World Economic Forum published: April 29, 2020, available at:https://www.weforum.org/agenda/2020/04/coronavirus-education-global-covid19-online-digital-learning/ (accessed 3 May 2020).

- **Mahmoud, S. (2020):** Higher education" is a safe transit in the Corona crisis ... and "distance learning" is another face for universities. http://gate.ahram.org.eg/News/2403717.aspx. Accessed 31 Aug 2020.

- **Mai, S. (2020):** Egyptian universities launch "distance education" application. https://see.news/egyptianuniversities-launches-distance-education-application/. Accessed 17 Aug 2022.

- **McCarthy, K. (2020):** The effect of frailty on survival in patients with COVID-19 (COPE): a multicenter, European, observational cohort study, The Lancet Public Health5(8),444-451o

- **Moawad, A. (2020):** Online Learning during the COVID-19 Pandemic and Academic Stress in University Students. RevistaRomaneascapentruEducatieMultidimensionala, 12 (1Sup2).

- **Parker, M. & Martin, F.(2010):** Using Virtual Classrooms: Student Perceptions of Features and Characteristics in an Online and a Blended Course,MERLOT Journal of Online Learning and Teaching Vol. 6, No. 1, March 2010

- **Pérez-Pérez, M. Serrano-Bedia, M. & García-Piqueres, G. (2020)**: An analysis of factors affecting students´ perceptions of learning outcomes with Moodle. Journal of Further Higher Education, 44, 1114–1129.

- **Roser, M. (2021):** A global database of COVID-19 vaccinations ,Nature Human Behaviour ,5, 947–953

- **Sá.J; & Serpa, S. (2020):** The COVID-19 Pandemic as an Opportunity to Foster the Sustainable Development of Teaching in Higher Education. *Sustainability 2020, 12,* 8525.

- **Salloum, A. Al-Emran, M. Shaalan, K. Tarhini, A. (2019):** Factors affecting the E-learning acceptance: A case study from UAE. Educ. Inf. Technol., 24, 509–530

- **Shrestha, E. Mehta, S. Mandal, G. Chaudhary, K. & Pradhan, N. (2019):** Perception of the learning environment among the students in a nursing college in Eastern Nepal. BMC Medical Education, 19, 382.

- **Sobaih, E. Hasanein, A. & Abu Elnasr, E. (2020):** Responses to COVID-19 in higher education: Social media usage for sustaining formal academic communication in developing countries. Sustainability, 12(16), 6520.

- **Son, C., Hegde, S., Smith, A., Wang, X., & Sasangohar, F. (2020):** Effects of COVID-19 on college students' mental health in the United States: Interview survey study. *Journal of Medical Internet Research. 22*(9).

- **Sun, J., Dunne, M., Hou, J., & Xu, A. (2011):** Educational Stress Scale for Adolescents: Development, Validity and Reliability with Chinese Students. Journal of Psychoeducational Assessment 29(6). 534-446

- **Çakıroğlu, U. (2014)**:Evaluating students' perspectives about virtual classrooms with regard to Seven Principles of Good Practice, South African Journal of Education; 2014; 34(2)

- **Van Loon, M., Ros, A., & Martens, R. (2012):** Motivated learning with digital learning tasks: what about autonomy and structure? Educational technology research and development, 60(6), 1015-1032.

- **Xu, D., & Jaggars, S. (2013):** The impact of online learning on students' course outcomes: evidence from a large community and technical college system. Economics of Education Review, *37*, 46–57.

- **Yeboah, K., &Smith, P. (2016):** Relationships Between Minority Students Online Learning Experiences and Academic Performance. Online Learning, 20(4).

- **Zalat, M., Hamed, S.,& Bolbol, A. (2021):** The experiences, challenges, and acceptance of e-learning as a tool for teaching during the COVID-19pandemic among university medical staff. https://doi.org/10.1371/journal.pone.0248758