PERCEPTION OF ACADEMIC STRESS ON EXPOSURE OF ONLINE LEARNING DURING COVID-19 AMONG NURSING STUDENTS

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ABSTRACT
COVID-19 disease is causing a slew of public health responses around the world. Closures of schools, colleges, and universities are among the most severe social (physical) barriers utilized to restrict the spread of this deadly disease. The aim of this survey- cross sectional study was to assess the level of Perceived of academic stress on exposure of online learning during Covid-19 among nursing students across in India. A Google Form distributed via a WhatsApp group and mail, by convenient sampling technique those who were interested to provide their consent filled out the Google Form A total of 405 nursing students who were enrolled in GNM, B.Sc.(N), PB.BSc(N), and MSc(N) program participated in this study. Tool used in this study are as (a) demographic profile of the participating nursing students and (b) self-structured Perceived academic stress scale (20 items) was used to assess the level of online perceived academic stress. Majority of participants were between the ages of 21 and 25, 81.7% were female, 360 (88.9%) were single, 272 (67.2%) were enrolled in a BSc nursing program, and 152 (37.5%) were in the first year of the program. Additionally, 329 (81.2%) participants were from private institutes, and 206 (50.9%) participants lived in urban areas and 257 (63.5%) majority of the participants from Madhya Pradesh state. Of those surveyed, majority 184 (45.4%) said they were satisfied with their home learning environment. On the other hand, 84 (20.7%) participants were satisfied with their online learning environments for meeting their academic requirements, while 265 (65.5%) people were dissatisfied with online learning environments to complete their requirements. 239 (59% of the total) reported moderate levels of stress, 88 (21.7%) reported mild levels, and 78 (19.3%) reported severe levels, with mean and standard deviation values of 135 and 73.65, respectively. There was a significant association between perceived online academic stress and the number of online classes exposed per day (chi squre value of 20.733, df= 6 with p value = 0.002) and the duration of exposure of online classes per day (chi squre value of 20.734, df= 6 and p value 0.002). This research highlights that online perceived academic stress had a significant association with students' exposure of online classes and duration of exposure / day and academic performance in the context of the COVID-19 outbreak.
Key words: online, Covid-19, academic stress, nursing students, perception

INTRODUCTION
The COVID-19 pandemic has triggered extensive public health measures worldwide, with closures of educational institutions being one of the most significant strategies to curb the spread of the virus. There is no exception in the field of education, where addressing academic stress has emerged as a crucial concern, particularly within nursing institutions. Academic stress can profoundly impact students' health, underscoring the importance of monitoring its levels.

Stress, both physiological and psychological, arises in response to environmental stimuli. It is often defined as the feeling of tension or pressure, accompanied by negative emotions such as anxiety or anger. Stress manifests as a state of mental and physiological arousal, occurring when individuals perceive a situation as threatening to their well-being. (Tenibiaje, 2011)[1]. Modern definitions of stress all recognise that it is a personal experience caused by pressure or demands on an individual, and that it has an impact on that individual's ability to deal, or rather, his or her perception of that ability to cope (Blaug, Kenyon & Lekhi, 2007)[2].

Understanding the dynamic of teaching-learning during this pandemic period is compulsory to devise the different effective methods to ensure the educational continuity of the nursing students. With this backdrop, the present study aims to examine the various aspects of online education, including the delivery mode, learning outcomes, and perceived benefits & challenges associated with online classes amidst the lockdown imposed by the pandemic.

Need for the study:

This corona virus disease was unknown before the outbreak began in Wuhan, China, in December 2019. Then the COVID-19 is a pandemic disease affecting globally. Extensively the pandemic has reshaped the social interactions and leaving virtually no aspect of life untouched, including education. As the pandemic escalated, and also the need for continuation of academic activities, educational institutions have shifted rapidly to distance and online learning. It aims to assist teachers, schools, colleges, and universities facilitate student learning in periods of their closure. Additionally, most of those online systems of classes are completely free which may help ensure continuous learning of students.

Globally, COVID-19 has huge impact on academic delivery adding further degree of complexity to Nursing Education due to the temporary lock downs. Most of the countries have suspended face-to-face teaching and learning activities, physical class room teaching where the chances of transmission of the disease is believed to be high due to direct contact, which forced them to find and practice alternatives for academic delivery like virtual classes, simulation based learning ,on-line mode teaching were the ways forward[3.] There would be many queries like whether the face-to-face classes through technology are effective? And does it has any advantages over offline mode classes? How far does each institution want to continue this virtual learning environment mode? No one knows the absolute solution however we need to promote the internal reflection from the nurse educators as well as students for renewal of teaching-learning process and pedagogical renewal that favors both quality and equality.

The academic delivery in the aspects of facilitation of theory contents can be done by using variety of online platforms and learning management system such as Google class room, Google meet, Google hangout, Zoom meetings, Microsoft team, Cisco webex meeting, go to webinar, you tube streaming, Google duo, college website, social media platforms such as face book groups, whatsApp etc[4].

The impact of covid-19, nursing students they may encounter anxiety and depression about results, examinations, assignments, clinical competencies, scholarship, course completion ,job ,continuing the situations of isolation, or fail to adjust with Tech communications/ online classes ,fear of the event of a long duration of the cessation of face-to-face activities since march 2020 (more than 6 months) to till date of 2020, it is most likely that there will be a spike in the next academic year or delay in completing the course, fear about delayed placements, delayed registration[5]. Learners' had many issues at individual level due to home isolation, cessation of face-to-face learning, technological issues, emotional challenges and other factors, thus affecting the effectiveness of online learning. Hence, its prime responsibility of the nurse educator's to concern about physical and mental health of the students. It is pivotal role to identify the challenges of the nursing students to improve the training and outcome of quality learning.[6]

RESEARCH QUESTIONS
- Is the lockdown, predominant sources of stress among nursing students?
- Is there any relationship between online learning learning and perceived stress?

OBJECTIVES
The following objectives of this study were to
1. assess the socio -demographic background of the nursing students.
2. assess the level of perception of academic stress on exposure of online learning during Covid-19 among nursing students.
3. associate relationship between perception of academic stress on exposure of online learning during Covid-19 and socio demographic background of the nursing students.

HYPOTHESES
The following are the hypothesis of this study -

H0: There is a no relationship between perception of academic stress on exposure of online learning during Covid-19 and socio demographic background of the nursing students.

H$_1$: There is a relationship between perception of academic stress on exposure of online learning during Covid-19 and socio demographic background of the nursing students.

RESEARCH METHODOLOGY
- **Study approach**: In this study the quantitative approach was used.
- **Study design**: This study used a survey- Cross sectional research study through Google form
- **Population:** Nursing students

- **Sample**: Nursing students studying in GNM, B.Sc (N)., PB.BSc(N)., MSc(N) programe in India
- **Sampling technique**: in this study the non-probability - convenient sampling technique was used to select the sample as per the inclusive criteria.
- **Sample size**: the sample size of this study was 500 participates.
- **Setting**: across the India and data collection was done through google form.

INCLUSIVE CRITERIA:
- Willing to participate through online survey
- Nursing students studying in General Nursing and Midwifery(Diplma) , B.Sc (N) (degree course) ., Post Basic .BSc(N)- 2 years program., MSc(N) program- 2 years program.

EXCLUSIVE CRITERIA
- Not willing to participate and incomplete filling of the google form.

Tools used in this study: the following tools were used in this study for data collection from the participants. Such as Demographic profile of the nursing students and online perceived academic stress scale (3 -points Likert scale). The following is a description of the tools:
- **Tool 1 -** Demographic profile of the participating nursing students like age, gender, marital status, nursing program, year of studying in nursing, type of institution, residence locality, and in which state belongs .
- **Tool 2** - Perceived academic stress score was used to assess the level of perceived academic stress through online perceived academic stress (OPAS) scale (20 items). It was developed and structured by researcher and validated with subject experts, research literature, and took their feedback into consideration.

The level of online Perceived Academic stress and its scoring key interpretation:
- 1-20 score – Mild academic stress
- 21-40 score - Moderate academic stress
- 41-60 score   - Sever academic stress

METHOD OF DATA COLLECTION:
A descriptive cross sectional online survey was conducted from General Nursing and Midwifery (diploma), BSc Nursing PBBSc nursing and MSc nursing students across the India. Permission from the institute ethical committee was obtained before beginning data collection for this study. Voluntary participation of all students will be taken through a link created google form and the same information to fill the form sent via created whatsapp group or mail by researcher. Before proceeding to the actual survey, the purpose of this study was clearly explained. Participants were also asked to respond whether or not they were willing to participate in the research. The participants who showed their willingness were then taken into the next step of filling out the demographic and academic stress scale and responses given accordingly. For this investigation, a total of 500 samples were anticipated during the period of August 2021 to January 2022. Responses from 454 were obtained. Of the 454, 49 participants did not provide all of their information. Ultimately, 405 individuals completed a Google form with all of their information. The measurement of subjective online academic stress assessed by online academic stress scale with 20 items.

STATISTICAL ANALYSIS:
A statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 23.0 software (SPSS Inc., Chicago, IL, USA). Categorical variables were expressed as percentages. The Chi square test was used to compare between perceived stress scales (low, moderate, and high perceived stress). ManneWhitney U and Kruskale Wallis tests were also used. When p   values were less than 0.05, the differences were considered statistically significant. A statistical analysis was performed using the Statistical Package for the Social Sciences (SPSS) version 23.0 software (SPSS Inc., Chicago, IL, USA). Categorical variables were expressed as percentages. The Chi square test was used to compare between perceived stress scales (low, moderate, and
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The Statistical Package for the Social Sciences (SPSS) version 23.0 program (SPSS Inc., Chicago, IL, USA) was used to conduct a statistical analysis. Frequency and Percentage was used to assess the demographic profile. The low, moderate, and high perceived stress scores were compared using the Chi square test. Chi-square test was used to assess the correlation between the online perceived stress level and demographic variables of the participants.

RESULTS AND INTERPRETATION

Table 1: Assess the socio -Demographic profile of the nursing students according to frequency and percentage   n= 405

Age in years	Frequency	Percentage (%)
16-20	172	42.5
21-25	187	46.2
26-30	17	4.2
31-35	12	3.0
36-40	12	3.0
41-45	04	1.0
46-50	01	0.2
Gender		
Male	74	18.3
Female	331	81.7
Marital status		
Single	360	88.9
Married	44	10.9
Divorced/ separated	01	0.2
Nursing program		
B.Sc. Nursing	272	67.2
Post Basic B.Sc. Nursing	30	7.4
MSc Nursing	07	1.7
GNM	96	23.7
Year of studying in Nursing		
First year	**152**	**37.5**
Second year	94	23.2
Third year	97	23.9
Fourth year	62	15.3
Type of Nursing institution		
Government	76	18.8
Private	329	81.2
Residing Locality		
rural	199	49.1
urban	206	50.9
State in which belongs		
Bihar	40	9.9
Haryana	29	7.2
J&K	52	12.8
Madhya Pradesh	257	63.5
UP & Tamil Nādu & Kerala	6+6 +6 = 18	4.5
Allahabad, Jharkhand, Odisha, Puducherry, west Bengal	1+1+1+1+1=5	1.1
New Delhi & Maharashtra	2 +2=4	01

Table 1 reveals that the majority of participants were between the ages of 21 and 25. The majority of students (81.7%) were female, 360 (88.9%) were single, 272 (67.2%) were enrolled in a BSc nursing program, and 152 (37.5%) were in their first year of study. Additionally, 329 (81.2%) of the participants were from private institutes,

and 206 (50.9%) participants lived in urban areas and 257 (63.5%) majority of the participants were from the state of Madhya Pradesh, India.

2. Satisfaction of Home learning environment and online learning environment to complete the academic during the lockdown according to frequency and percentage:

n=405

Satisfaction of Home learning environment during the lockdown	Frequency	Percentage %
May be	69	17
No	152	37.5
Yes	184	45.4
Are you satisfied with online training to complete your academic		
Both	2	.5
May be	54	13.3
No	265	65.4
Yes	84	20.7

Table 2 illustrates how participants felt about their home learning environment during the lockdown. Of those surveyed, majority 184 (45.4%) said they were satisfied, 152 (37.5%) said they were not, and 69 (17%) said they might be. On the other hand, 84 (20.7%) participants were satisfied with their online learning environments for meeting their academic requirements, while 265 (65.5%) people were dissatisfied with online learning environments to complete their requirements

Table 3: Distribution of to frequency and percentage of the online learning platform and learning device that are commonly or frequently exposed for academic learning

n=405

Online learning platform that are exposed commonly or frequently for academic learning	Frequency	Percentage %
Zoom	381	94.1
Google meet	19	4.7
Microsoft Team and others	5	1.2
Frequently used device for online academic learning		
Mobile phones	401	99.0
Laptop	4	1.0
Do you have own computer / laptop/ separate mobile at your home		
No	104	25.7
Yes	301	74.3
Do you own a separate link to the internet for the academic purpose		
No	173	42.7
Yes	232	57.3

Table 3 shows that 381 participants (94.1%) frequently used the Zoom online learning platform for academic learning purposes. while 19 (4.7%) used the Google Meet platform and Five (1.2%) used the Microsoft Team and other online learning platforms. Of the devices, 401 (99%) were used often Mobile phones for academic online learning: 301(74.3%) had a personal computer, laptop, or separate mobile device at home; 232(57.3%) had a separate internet connection for academic use.

Table 4: Numbers of online classes exposed per day and duration of online learning during lockdown

n=405

How many hours of online classes exposed per day (hours)	Frequency	Percentage %
> 6 Hours	19	4.7
1-2 Hours	116	28.6
2-4 Hours	189	46.7

4-6 Hours	81	20.0
How long that have been exposed to online learning during lockdown		
Nil	1	0.2
<6 months	92	22.7
>6 months	312	77.0
Total	405	100.0

Table 4 represents that majority of them 189(46.7%) have exposed to 2-4 hours of online classes per day and 312 (77%) were exposed more than 6 months duration of online classes for their academic learning during lockdown.

Table 5: **Distribution of Perceived Academic Stress level (OPAS) according to frequency and percentage**
n=405

Online Perceived Academic Stress level (OPAS)	Frequency	%	Mean & SD
Mild	88	21.7	Mean= 135
Moderate	239	59.0	SD (σ) = 73.65
Severe	78	19.3	

Table 5 shows that the level of perceived academic stress of the nursing students, 239 (59% of the total) reported moderate levels of stress, 88 (21.7%) reported mild levels, and 78 (19.3%) reported severe levels, with mean and standard deviation values of 135 and 73.65, respectively. Hence, this above table indicates that the participants had undergone mild to moderate perceived academic stress level towards the implementation of online learning during Covid 19 pandemic.

Table 6 : Association of level of perceived academic stress with selected demographic profile of the nursing students

n=405

		Mild	Moderate	Severe	Total	Chi square	df	P value	Significance
1	Age in years								
	16-20	37	92	43	172				NS
	21-25	38	117	32	187				
	26-30	6	11	0	17				
	31-35	4	6	2	12	15.008	12	.241	
	36-40	3	8	1	12				
	41-45	0	4	0	4				
	46-50	0	1	0	1				
2	Gender								
	Male	17	41	16	74	.527	2	.769	NS
	Female	71	198	62	331				
3	Marital status								
	Single	76	211	73	360				NS
	Married	11	28	5	44	5.670	4	.225	
	Divorced	1	0	0	1				
4	Courses of nursing program								
	B.Sc. Nursing	59	152	61	272				NS
	Post Basic B.Sc. Nursing	6	21	3	30				
	MSc Nursing	3	4	0	7	8.280	6	.218	
	GNM	20	62	14	96				
5	Which year of nursing								

	you are studying now?								
	First year	35	91	26	152	2.267	6	0.893	NS
	Second year	22	55	17	94				
	Third year	17	58	22	97				
	Fourth year	14	35	13	62				
6	Which types of nursing institution under you are studying?								
	Government	16	47	13	76	.372	2	.830	NS
	Private	72	192	65	329				
7	**State in which you belong**								
	Allahabad	0	1	0	1				NS
	Bihar	8	26	6	40				
	Delhi	1	0	0	1				
	Haryana	3	19	7	29				
	J&K	12	36	4	52				
	Jharkhand	0	1	0	1				
	Kerela	1	3	2	6				
	Maharashtra	1	1	0	2	30.766	28	.328	
	MP state	59	142	56	257				
	New Delhi	0	0	1	1				
	Odisha	0	1	0	1				
	Puducherry	1	0	0	1				
	Tamil Nādu	1	4	1	6				
	UP	1	5	0	6				
	west Bengal	0	0	1	1				
8	Are you satisfied with home environment for learning due to lock down?								
	May be	11	40	18	69				NS
	Yes	46	107	31	184	4.417	4	.352	
	No	31	92	29	152				
9	Which online learning platform you are exposed commonly or frequently for academic learning?								
		0	1	0	1				NS
	Zoom	84	222	75	381	3.740	8	.880	
	Google meet	4	12	3	19				
	Microsoft Team	0	3	0	3				
	If Any, specify	0	1	0	1				
10	Frequently used device for online academic learning								
	Mobile phones	88	236	77	401	1.122	2	.571	NS
	Laptop	0	3	1	4				
11	How many number of online classes exposed per day related to the subject concerned to your course?								

	1-2	27	71	18	116	20.733	6	0.002	S
	2-4	49	108	32	189				
	4-6	11	52	18	81				
	Above six	1	8	10	19				
12	**Residing Locality**								
	Rural	43	122	34	199	1.312	2	.519	NS
	Urban	45	117	44	206				
13	**Are you satisfied with home environment for learning due to lock**								
	May be	11	40	18	69	4.417	4	.352	NS
	No	31	92	29	152				
	yes	46	107	31	184				
14	**Which online learning platform you are exposed commonly or frequency**								
		0	1	0	1	3.740	8	.880	NS
	Google meet	4	12	3	19				
	Microsoft team	0	3	0	3				
	Teachmint	0	1	0	1				
	Zoom	84	222	75	381				
15	**Do you have own computer lap top separate mobile at your home**								
	No	20	59	25	104	2.185	2	.335	NS
	Yes	68	180	53	301				
16	**Do you own a separate link to the internet for the academic purpose**								
	No	31	105	37	173	2.872	2	.238	NS
	Yes	57	134	41	232				
17	**How long you have been exposed to online learning during lock do**								
	Nil	0	1	0	1	2.790	4	.594	NS
	<6 months	22	57	13	92				
	>6 months	66	181	65	312				
18	**Are you satisfied with online training to complete your academic**								
	both	1	1	0	2	10.068	6	.122	NS
	May be	14	34	6	54				
	No	51	152	62	265				
	yes	22	52	10	84				
19	**How many hours of online classes exposed per day**								
	>6hours	1	8	10	19	20.734	6	.002	S
	1-2hours	27	71	18	116				
	2-4 Hours	49	108	32	189				
	4-6Hours	11	52	18	81				

Table 6 demonstrates that there was a significant association between perceived online academic stress in the number of online classes exposed per day (chi squre value of 20.733, df= 6 with p value = 0.002) and the duration of exposure of online classes per day (chi squre value of 20.734, df= 6 and p value 0.002). There was no significant correlation found between the nursing students' and other demographic profile with their online perceived academic stress level.

DISCUSSION

In this study , majority of participants were between the ages of 21 to 25. The majority of students (81.7%) were female, 360 (88.9%) were single, 272 (67.2%) were enrolled in a BSc nursing program, and 152 (37.5%) were in their first year of study. 401 (99%) were used often Mobile phones for academic online learning: 301(74.3%) had a personal computer, laptop, or separate mobile device at home; 232(57.3%) had a separate internet connection for academic use. It is supported Oducado, R. M. F., & Estoque, H. (2021) [7] study participants' average age was 19.91 years and the average time spent daily for online learning was 7.20 hours. Most students were females (70.4%)with middle-income status (89.8%) and from the town areas (53.7%). Smart or mobile phone (57.4%) and laptop (38%) were commonly used to connect to the internet for online learning and the majority (75%)had a somewhat stable internet connection. A another study Sharma A, Kumar R (2022)[8]similarly describe about the age of the nursing Students' mean age was 22.22 ± 1.24 years. The mean IES-R was 19.59 ± 12.45 in nursing students.

The findings of this study suggested that stress was a major issue in online learning among the nursing students during the COVID-19 pandemic. In the present study, 239 (59% of the total) reported moderate levels of stress, 88 (21.7%) reported mild levels, and 78 (19.3%) reported severe levels, with mean and standard deviation values of 135 and 73.65, respectively. Sharma A, Kumar R (2022)[8] stress level found a significant association with first-year academic level (OR: 3.250, 95% CI: 1.429-7.390, P = 0.005). also concluded that during the pandemic, stress management to support mental health is highly recommended. Oducado, R. M. F., & Estoque, H. (2021)[7,] the undergraduate nursing students considered that online learning during the COVID-19 outbreak was stressful (44.4%) and very stressful (47.2%). Moreover 37% of the undergraduate nursing students had low satisfaction and 46.3% had moderate satisfaction towards online learning. In terms of academic performance, 43.6% were considerably affected, while 30.6% were greatly affected by the pandemic. The undergraduate nursing students' rated their academic performance to be poor (37%) and fair (50%). Moreover, the undergraduate nursing students were not satisfied (42.6%) and unsure (34.3%) with their current academic performance.

This research investigated the undergraduate nursing students' stress, satisfaction, and academic performance towards the implementation of online learning during the COVID-19 pandemic. Remote electronic exams were also found more stressful by one-third of medical students (Elsalem et al., 2020)[9.] The results from a global survey disclosed that the students reported increased workload during online learning (Aristovnik *et al*., 2020)[10]. A global survey among the higher education students also reported the problems with Internet connectivity (Aristovnik *et al*., 2020)[10].

A significant negative correlation was also noted between satisfaction with e-learning and stress among the university students in Lebanon during the COVID-19 outbreak (Fawaz & Samaha, 2020)[11]. Kim SC, Sloan C, Montejano A, Quiban C (2021) [12], Among 173 nursing students at a private university in Southern California, USA, self-reported stress, anxiety, and depression were significantly higher during the lockdown compared to the pre-lockdown period (p < 0.001). Almost a quarter of participants reported high stress, while more than half reported moderate-to-severe symptoms of anxiety and depression. Oducado, R. M. F., & Estoque, H. (2021)[7,] it was also demonstrated in this study that stress had a significant and negative inverse relationship with the students' satisfaction and academic performance toward online learning. The research findings indicated that a higher stress level led to lower satisfaction and poorer academic performance with reference to online learning. Wynter K, Redley B, Holton S, Manias E et al. (2021)[13], the proportions of students reporting moderate to severe symptoms of depression, anxiety and stress were 48.5%, 37.2% and 40.2% respectively. Poor psychological wellbeing can impact students' successful completion of their studies. Policy makers, Academic nursing institutions, and nursing educators play important parts in addressing the learning challenges in the era of the COVID-19pandemic and beyond in both online and off line mode of teaching – learning process/ blended or hybrid mode at the accessible, and affordable to all.

CONCLUSION

The COVID-19 pandemic has substantially affected the undergraduate nursing students' academic performance and resulted in unparalleled stressful situations. Stress significantly influences the students' satisfaction and academic performance. This research highlights that online learning stress negatively impacts students' satisfaction and academic performance in the context of the COVID-19 outbreak. According to the study, interventions should be

created to lessen stress among undergraduate nursing students and assist them in managing the demands and challenges of their studies in the event of a pandemic.

CONFLICT OF INTEREST
The authors declare that there is no potential conflict of interest with respect to the research, authorship and / or publication of this article.

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