PERCEPTION AND SATISFACTION TOWARDS VIRTUAL CLASSES DURING COVID-19 PANDEMIC AMONG NURSING STUDENTS IN SELECTED NURSING COLLEGES OF GUWAHATI, ASSAM: A CROSS SECTIONAL STUDY

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ABSTRACT The COVID-19 pandemic has led to a dramatic loss of human life worldwide. The COVID-19 pandemic has disrupted teaching in a variety of institutions, especially in medical schools. In many countries, typical face-to-face classes had to be suspended to ensure the safety of students, teachers, and patients. To minimize the impact of lockdown, medical schools had to find another approach to teach medical students. Fortunately, current technology enabled electronic learning (e-learning) to be the core method of teaching the curriculum during the COVID-19 pandemic. **Aim:** The aim of the study was to assess the perception and satisfaction towards virtual classes during COVID-19 pandemic among nursing students in selected nursing colleges of Guwahati, Assam. **Methods and materials:** A cross sectional research design was used to accomplish the objectives. Study was undertaken among 250 undergraduate nursing students in selected nursing colleges of Guwahati, Assam by using stratified random sampling technique. 3points Likert scale was used to assess perception and satisfaction among nursing students. Modified Health Promotion model was used as conceptual framework. **Results:** Data analysis was done by percentage and chi-square test. Out of 250 nursing students, domain wise 62.8% had good perception towards effective use of virtual classes, 50.8% had poor perception towards teaching methods, 53.2% towards communication, 53.6% towards materials and resources provided, 52.8% towards encouragement and financial expenses. Whereas, 50% of the nursing students had good as well as poor perception towards the use of technology and 64.8% had good perception towards value of education. Domain wise result shows that, out of 250 students, 54% had low satisfaction towards fulfilment of needs/ expectations of students regarding theory and practical based virtual classes, 68.4% in teaching methods, 53.6% in class duration, 74% in communication, 67.6% in technology utilization had low satisfaction towards virtual classes during the COVID-19 pandemic. There was significant association between gender, number of classes per day, any experience of virtual classes before pandemic, with level of satisfaction towards virtual classes among nursing students but no association was found with perception towards virtual classes. **Conclusion:** Through this study the investigator concluded that virtual classes are necessary to cooperate the desired changes in the field of education.

KEYWORDS : Perception, satisfaction, COVID-19 pandemic, undergraduate nursing students.

INTRODUCTION:

The COVID-19 pandemic has disrupted teaching in a variety of institutions, especially in medical schools. In many countries, typical face-to-face classes had to be suspended to ensure the safety of students, teachers, and patients. To minimize the impact of lockdown, medical schools had to find another approach to teach medical students. Fortunately, current technology enabled electronic learning (e-learning) to be the core method of teaching the curriculum during the COVID-19 pandemic.

Objectives:

- To assess the perception towards virtual classes among nursing students in selected nursing colleges of Guwahati, Assam.
- To assess the satisfaction towards virtual classes among nursing students in selected nursing colleges of Guwahati, Assam.
- To find out the correlation between perception and satisfaction towards virtual classes among nursing students in selected nursing colleges of Guwahati, Assam
- To find out the association between perception and satisfaction towards virtual classes among nursing students with selected socio-demographic variables.

Review Of Literature:

Section I: Literature related to impact of Covid-19 on education.

Purabi Saikia, Jinamoni Sarma (2020) has conducted a descriptive survey on impact of COVID 19 among 200 under graduate students in Assam, India. Results shows that 55% students like to study in online platform. 35% students dislike online classes due to various problems. 15% students are neutral regarding online class. 47.5% UG students can adjust properly with the changing learning mode and also benefited. On the other hand, 30% are unable to cope up with this new online mode of learning. 22.5% are neutral. 92.5% students are facing shortage of study materials due to lockdown. 55% students are connected to a smooth communication with their own teacher, classmate via phone call, massage, WhatsApp Group, Telegram Group, audio and video conferencing.

Section II: Literature related to perception of virtual classes during covid-19 pandemic.

Chandrasiri N.R, Weerakoon B.S., (2021) has conducted a study to assess perceptions of allied health sciences undergraduates of the Faculty of Allied Health Sciences, University of Peradeniya, Sri Lanka. A total of 518 responses were received from the five disciplines of radiography (32.8%), nursing (24.9%), medical laboratory sciences (18.2%), pharmacy (14.5%), and physiotherapy (9.7%), resulting in a 76.4% response rate. The majority preferred smartphones (73.2%) for online access, and Zoom is the most utilized online communicating platform (72.8%). The overall respondent's perception score ranged from 9 to 27 (Positive $\geq$ 18, Neutral = 18, Negative $\leq$ 18) with a mean (SD) of 20.4 (4.0). Even though the majority (59.7%) agreed that online learning is more comfortable to communicate than conventional learning, most respondents (48.3%) have a negative perception towards offering practical and clinical-based subjects online. Poor internet connections (67.0%) and the lack of electronic devices (53.3%) were the most significant challenges encountered during online learning.

Section III: Literature related to satisfaction of virtual classes during covid-19 pandemic.

Abbasi S Maria, Ahmed Naseer, Sajjad Batool, Alshahrani, Abdullah, Saeed, Sumera, Sarfaraz, Shaur et.al, (2020) conducted a study on e-Learning perception and satisfaction among health sciences students amid the COVID-19 pandemic. Results depicted that, from 1255 participants were included at a response rate of 66.4%. More than one third (37%) of the students took 25 or more online e-learning sessions and 47% preferred Zoom as an online platform. 41% reported interference of e-learning due to network problems. 60% considered that clinical and practical skills are best learned in clinics and laboratories. More than one third of the students preferred classroom teaching and 34% of the students did not feel confident enough to take exit exams after e-learning sessions.

RESEARCH METHODOLOGY:

Research approach: Quantitative research

Research desidn: Cross-sectional research design

Variables:

Research variable: Perception and satisfaction

Demographic variables: Age, gender, education, place of residence, economic dependence, type of device used, source of internet used during virtual classes, number of classes per day, duration per classes, break time in between, any hindrances faced during the classes, common teaching application used during the classes, any experience of virtual classes before the pandemic.

Setting of the study: Selected nursing institutes of Guwahati, Assam.

Population: Nursing students

Target population: Undergraduate nursing students who were studying B.Sc. Nursing

Accessible population: Undergraduate nursing students studying B.Sc. Nursing in selected nursing institutions of Guwahati, Assam

Sample: Undergraduate nursing students studying B.Sc. Nursing in selected nursing institutions of Guwahati, Assam

Sample size: 250

Sampling technique: Stratified random sampling technique

Inclusion criteria: Undergraduate nursing students who were-
a) willing to participate in the study
b) present at the time of data collection

Tools and techniques: 3points Likert scale was used to assess perception and satisfaction and technique was self-report.

Content validity of the tool: The prepared tool along with the problem statement and objective was submitted to subject experts of Medical surgical nursing, child health nursing and department of education (B.Ed.).

Reliability of the tool: The reliability of the tool was done by test-retest method. The tools was reliable as reliability of perception and satisfaction were 0.72 and 0.76 respectively.

Ethical consideration:
1. Ethical permission to proceed with the study was taken from the Ethics committee, INS Trust, GNRC Dispur, Guwahati, Assam.
2. The investigator obtained permission from the Principal of the selected colleges of Guwahati, Assam.
3. Nature of the study and the purpose was explained to the selected samples and informed consent was obtained from the samples before data collection.
4. Confidentiality was ensured.
5. The study was utilized non-invasive procedure and it was ensured that there would be no physical and psychological harm to the participants.
6. Participants had the liberty to leave the study at any point of time as desired.

Pilot study:
conducted from 30th November to 6th December, 2021. 25 samples were selected using stratifies random sampling technique and the study was found to be feasible.

Main study: 17th January to 4th February, 2022.

RESULTS:

Table I: Frequency And Percentage Distribution Of Demographic Variables Of Nursing Students. n = 250

Demographic Variables	Frequency (f)	Percentage (%)
Age		
18 – 19 years	59	23.6
20 – 21 years	84	33.6
22 – 23 years	106	42.4
>23 years	1	0.4
Gender		
Male	9	3.6.
Female	241	96.4
Transgender	nil	nil
Class of BSc Nursing		
B.Sc.(N) 1st year	44	17.6
B.Sc.(N) 2nd year	25	10.0
B.Sc.(N) 3rd year	59	23.6
B.Sc.(N) 4th year	122	48.8
Place of residence		
Urban	67	26.8
Rural	183	73.2
Economic dependency		
Parents	243	97.2
Siblings	nil	nil
Educational loan	7	2.8
Type of device used during virtual classes		
Laptop	18	7.2
Smartphone	229	91.6
Desktop	1	0.4
Tablet	2	0.8
Source of internet used during the virtual classes		
Mobile data pack	244	97.6
Broadband / WLAN	nil	nil
Both a & b	5	2.0
Free Wi-Fi	1	0.4
Number of classes per day		
1 – 2 classes	nil	nil
3 – 4 classes	74	29.6
5 – 6 classes	176	70.4
Duration per class		
30 mins	nil	nil
45 mins	70	28.0
60 mins	180	72.0
More than 60 mins		
Break time in between the classes		
5 – 10 mins	30	12.0
15 – 20 mins	nil	nil
More than 20 mins	nil	nil
Nil	220	88.0
Hindrances faced during virtual classes		
Network problem	239	95.6
Disturbances from environment	8	3.2
No problem	3	1.2
Common virtual teaching application used		
Zoom	84	33.6
Google meet	91	36.4
WebEx	nil	nil
Whatsapp	75	30.0
Others	nil	nil
Any experiences of virtual classes before pandemic		
Yes	9	3.6
No	241	96.4

Table II: Frequency And Percentage Distribution Of Level Of Perception Towards Virtual Classes Among Nursing Students.
n = 250

Perception Domains	Maximum Score	Mean±S.D	≤Mean		>Mean	
			F	%	F	%
Effective use of virtual classes	9	6.87±1.44	93	37.2	157	62.8
Teaching methods	9	7.31±1.38	127	50.8	123	49.2
Technology used	9	7.34±1.18	125	50.0	125	50.0
Communications	6	5.07±1.07	133	53.2	117	46.8
Materials and resources	3	2.19±0.84	134	53.6	116	46.4

Encouragement	12	10.38±1.15	132	52.8	118	47.2
Financial expenses	3	2.19±0.78	146	58.4	104	41.6
Value of education	3	1.83±0.71	88	35.2	172	64.8
Overall	54	43.19±3.55	144	57.6	106	42.4

Table III: Frequency And Percentage Distribution Of Level Of Satisfaction Towards Virtual Classes Among Nursing Students.
                                                                        n = 250

Satisfaction Domains	Maximum Score	Mean± S.D	≤Mean		>Mean	
			F	%	F	%
Fulfillment of needs or expectations of students regarding theory and practical based virtual classes	2	3.64±1.04	135	54.0	115	46.0
Teaching methods	3	6.11±1.33	171	68.4	79	31.6
Class duration	3	6.29±1.64	134	53.6	116	46.4
Communications	1	2.09±0.65	185	74.0	65	26.0
Technology utilization	1	2.2±0.64	169	67.6	81	32.4
Overall experienced	1	2.04±0.67	188	75.2	62	24.8
Overall	11	22.38±3.89	144	57.6	106	42.4

Table: IV Correlation between perception and satisfaction towards virtual classes among nursing students.
                                                                        n = 250

Variables	Mean	S.D.	Karl Pearson's Correlation Value
Perception	43.19	3.55	r = -0.081
Satisfaction	22.38	3.89	p = 0.199, N.S

N.S – Not Significant

The table shows the relationship between perception and satisfaction scores towards virtual classes among nursing students. The table depicts that the mean score of perception was 43.19±3.55 and the mean score of satisfaction was 22.38±3.89. The calculated Karl Pearson's Correlation Value of r = -0.081 shows a negative correlation between perception and satisfaction scores which was not found to be statistically significant.

Table: V Association Of Level Of Satisfaction Towards Virtual Classes Among Nursing Students With Their Selected Demographic Variables.

Demographic variables	Chi-square	df	p-value	Remarks
Age	3.747	3	0.290	NS
Gender	4.785	1	0.029	S*
Class of B.Sc(N)	3.855	3	0.278	NS
Place of residence	0.166	1	0.684	NS
Economic dependency	0.641	1	0.423	NS
Type of device used during virtual classes	3.501	3	0.321	NS
Source of internet used	1.374	2	0.503	NS
Number of classes per day	5.514	1	0.019	S*
Duration per class	1.100	1	0.294	NS
Breaktime in between the classes	2.841	1	0.092	NS
Hindrances faced during virtual classes	4.358	2	0.113	NS
Common virtual teaching application used	3.700	2	0.157	NS
Any experiences of virtual classes before pandemic	12.683	1	0.0001	S***

The table V depicts the association of level of satisfaction towards virtual classes among nursing students with their selected demographic variables. It shows that gender, number of classes per day, any experience of virtual classes before pandemic had shown statistically significant association with level of satisfaction towards virtual classes among nursing students.

DISCUSSION:
The present study shows that, out of 250 students, domain wise 62.8% had good perception towards effective use of virtual classes and 64.8% had good perception towards value of education. 50.8% had poor perception towards teaching methods, 53.2% towards communication, 53.6% towards materials and resources provided, 52.8% towards encouragement and financial expenses. Whereas, 50% of the nursing students had good as well as poor perception towards the use of technology. In satisfaction, domain wise result shows that, out of 250 students, 54% had low satisfaction towards fulfillment of needs/ expectations of students regarding theory and practical based virtual classes, 68.4% in teaching methods, 53.6% in class duration, 74% in communication, 67.6% in technology utilization had low satisfaction towards virtual classes during the COVID-19 pandemic.

The calculated Karl Pearson's Correlation Value of r = -0.081 shows a negative correlation between perception and satisfaction scores which was not found to be statistically significant.

All the demographic variables had not shown statistically significant association with level of perception towards virtual classes among nursing students with their selected demographic variables.

The table further shows that the demographic variables gender (χ^2=4.785, p=0.029), number of classes per day (χ^2=5.514, p=0.019) had shown statistically significant association with level of satisfaction towards virtual classes among nursing students at p<0.05 level. Demographic variable any experience of virtual classes before pandemic (χ^2=12.683, p=0.0001) had shown statistically significant association with level of satisfaction towards virtual classes among nursing students at p<0.001 level.

The other demographic variables had not shown statistically significant association with level of satisfaction towards virtual classes among nursing students during COVID-19 pandemic.

CONCLUSION:
Out of 250 nursing students, overall frequency and percentage result shows that, 144(57.6%) had poor perception and 106(42.4%) had good perception towards virtual classes among nursing students. 144(57.6%) had low level of satisfaction and 106(42.4%) had high level of satisfaction towards virtual classes among nursing students.
Through this study, the investigator concluded that there is mixed response about perception and satisfaction of virtual classes among nursing students during COVID-19 Pandemic.

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