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Original Research Article

Satisfaction among the nursing teachers with web-based teaching during COVID-19: a cross-sectional survey

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ABSTRACT

Background: The outbreak of COVID 19 led to the closure of all educational institutions worldwide. The teachers and students had to face a number of challenges because of the sudden change in the educational system and to ensure safety of public. To assess the satisfaction of nursing teachers with Web-Based teaching after the shift from traditional teaching to online teaching in the COVID 19 and related restrictions
Methods: An online survey was conducted amongst the teachers working in various nursing colleges in the Northern region of India. Standarized scale, an Online Faculty Satisfaction Survey (OFSS) consisting of 36 questions was used to collect the data through google form. The teachers were provided the online link on their WhatsApp or email to fill-up the questionnaire. One hundred fifty-nine teachers responded back. Ethical aspects were given due considerations.
Results: The mean age (years) ±S.D. of the participants was 34±10.1. Maximum (96.2) were females. Majority (93.1) of the teachers were satisfied with online teaching. Only 3.8% teachers were highly satisfied with online teaching. Around 3/4th agreed that they are satisfied with the online environment's flexibility and that the technology for online teaching is reliable. The most liked features/advantages were the ability to take courses even in this global pandemic. The least liked feature/disadvantages were poor connectivity in remote areas, technical problems, unsafe and losing personal information, lack of face-to-face interaction, and difficulty assessing students' response and attention.
Conclusions: Most of the teachers were satisfied with online teaching though few reported about connectivity problems. There is a need to develop various institutional mechanisms viz structured training, technical support, and effective online evaluation systems to run the online educational system properly.

Keywords: COVID-19, E–learning, Flexible teaching, Remote working, Global pandemic, Learning, Online teaching learning

INTRODUCTION

The outbreak of COVID-19 has shaken the educational system worldwide. To mitigate the spread of infection, the governments of most of the countries enforced a strict lock down, and all the educational institutions were also closed in March 2020. To avoid disruption of studies and complete the course work, the institutions had to leap from traditional classroom teaching to online teaching. This online teaching has led the teaching staff to use different online platforms to take classes irrespective of their practical and technical skills. Similarly, the students had to adjust to the online learning.[1] Thus, the online education move had several challenges for for the learners and the teachers.

Online education involves using various web-based soft wares by the teachers to deliver the teaching contents and facilitate two-way communication between the students and the teachers.[2-4] Some softwares also have advanced features like whiteboards, chat rooms, polls, quizzes,

discussion forums, surveys etc., which further facilitates the teaching-learning process goals during the online sessions. Earlier, online teaching was only part of a few distance learning courses. Though this teaching-learning system was widely acknowledged as a growing and lucrative field, only 29.7% of all the graduate and undergraduate students used to take at least one distance education course.[5] However, in the current scenario, the teaching-learning is majorly a distance learning using online portals.

There are many advantages to online teaching. It allows the use of innovative teaching methods with the help of technology and online tools, flexible work schedules, and reaching out to a large number of students across the globe.[6] Additionally, instructing online is a motivating factor to the faculty reported by Orr et al.[7] There are certain disadvantages of online teaching because it is a bit complex and demanding on faculty, leading to burnout.[8] Mukhtar et al, in a recent study, reported various limitations of online learning like inability to teach skills, lack of students' feedback, limited attention span, lack of attentiveness, lack of discipline, and even plagiarism.[9] The other challenges with the online education including academic dishonesty, impersonal, and lack of feelings have also been reported.[10]

The online system can't replace physical classroom teaching, especially in practice-oriented professions like nursing. However, there is no choice other than distance learning using the online classes in this pandemic. All the public and private nursing educational institutions are striving hard to teach the theory and skill to nurse students. Zoom, WebEx, Google meet, and Microsoft Teams are the most commonly used video conferencing services of online teaching. For clinical, expanded use of simulation and virtual reality, online resources for teaching clinical care, and online group chat features need to be adopted.[11]

Sloan Consortium considered faculty satisfaction regarding online satisfaction as one of the five pillars in its quality framework for online education.[12] Student and teacher satisfaction are interrelated. The teachers' satisfaction is paramount because it affects their motivation in teaching, which may improve the students' learning experience. Students' performance may also function as a motivating factor for the teachers.[13] Faculty satisfaction is also generally high when the institution values online teaching and implements policies that support the faculty. Wasilik et al.[14] have reported a moderately positive level of faculty satisfaction with the online teaching. Major frustrations were associated with technological difficulties, the lack of face-to-face contact, and students' involvement during teaching sessions.

Online teaching is not much prevalent in India, especially in nursing education. The current study is the first of its kind in the Indian setting specifically in nursing. It is understood that new and innovative educational ideas usually take time to become standardized and accepted. However, this time, online teaching was adopted throughout the nation as a compulsion and became more prevalent and dynamic. Henceforth, faculty satisfaction components need to be investigated as the adoption rates, learner expectations, levels of support, and other conditions continue to change. It is essential to have the data regarding the teachers' satisfaction with conducting the online classes and explore their problems for remedial measures in the future. It will add to the growing amount of literature on faculty satisfaction with online teaching and allow policymakers and faculty development experts to understand better faculty members' needs at various institutions.

Objective

To assess the satisfaction of nursing teachers with Web-Based teaching after the shift from traditional teaching to online teaching in the COVID 19 and related restrictions.

METHODS

The research design was a descriptive cross-sectional survey. The study participants were Nursing Teachers of various nursing colleges of North India who were practicing the online teaching during the lockdown period of COVID 19. They were selected by convenience sampling technique. All the teachers involved in online teaching were asked to fill Online Faculty Satisfaction Survey (OFSS) through google form. The OFSS consisted of 36 questions, out of which 28 questions were with a 4-point Likert scale, ranging from 1 for strongly disagree to 4 for strongly agree. These 28 items were related to the satisfaction scale. Four questions were related to the socio-demographic profile and four open-ended questions to assess the views of teachers regarding web-based teaching. The total score of the satisfaction scale ranged from 28 to 112. The participants scoring in the range of 28-56 were classified as 'not satisfied', scores from 57- 85 were scored as 'satisfied', and scores from 86-112 were classified as 'highly satisfied'. The questionnaire was a standardized questionnaire developed by D.U. Bolliger and O. Wasilik faculty from the University of Wyoming, USA. Permission was sought from the authors to use the tool. The items were further divided into three subscales: (a) student-related issues (14 items i.e. Item number 1,2,3,7,10,11,12,16,17,19,20,21,25,28), (b) instructor-related issues (8 items i.e. item numbers 4,5,8,13,14,22,23,27), and (c) institutional-related issues (4 items i.e. item numbers 6,15,24,26). Two items were related to general satisfaction (i.e. item no. 9, 18). The authors established the instrument's reliability by calculating internal consistency reliability; Cronbach's alpha coefficient of the overall scale (28 items) was high (0.85).[14]

Teachers working in various nursing colleges were provided the online link on their WhatsApp to fill up the questionnaire. Before data collection, online consent was taken from the respondents, and then they were asked to

fillup the questionnaire. Participants logged in to complete the questionnaire, which took approximately 10 minutes. However, all the responses were anonymous and confidential. A weekly telephonic reminder was sent to the non-responders for two weeks to fill the form. Total 159 participants filled the Performa. The self-reported data were coded and analyzed by using SPSS version 20. Before commencing the study, ethical clearance was obtained from the Institute Ethics Committee, PGIMER, Chandigarh. The participation was voluntary. Online informed consent was taken from each participant. They were allowed to clarify any aspect of the research. They were also informed that they can withdraw from the study at any time. The confidentiality/anonymity was maintained throughout the research process.

RESULTS

Sociodemographic cum work profile of the teachers

The mean age ±SD of participants was 34±10.1years, half (49.7%) of the participants were less than 30 years of age, and 8.8% were more than 50 years. Majority of the teachers (96.2%) were females. About half (47.8%) of them were masters in nursing. About 2/3rd (61%) of participants were Tutors, and 23.3% were Assistant Professor/Lecturer. Most of (76.7%) of the teachers were working in the private sector and 42.1% had 5-10 years of experience. The median (IQR) of teaching experience was 4.5 (2.5-9) years with the range of 0.2 months to 30 years. (Table 1).

Satisfaction level of the teachers as per the Online faculty satisfaction survey (OFSS)

Majority (93.1%) of the teachers were satisfied, a few (3.8%) were highly satisfied, and 3.1% were not satisfied with the online teaching. (Table 2). The skewness for overall satisfaction scores was -1.0, and the kurtosis value was 2.6. Hence forth the overall median (Q1-Q3) score was 72 (66 - 76). The median (Q1-Q3) score of student sub scale was 40 (37-43), 18 (17-19) for Instructor sub scale, 10 (9-10) for Institute subscale, and 6 (5-6) for general satisfaction sub scale (Table 3).

Item wise analysis of faculty with the online teaching using OFSS

Item wise analysis of faculty with the online teaching is depicted in Table 4. Majority (71.7%) of the subjects agreed that they were satisfied with the online environment's flexibility and with the technology they use for online teaching was reliable. More than 2/3rd (64.8%) agreed that the students were actively involved in learning and were very active in communication with them regarding online course matters. Regarding general satisfaction questions, item no 9, 74.2% agreed that they look forward to teaching in the next online course. Surprisingly, to item no 18, only half of the teachers responded that they were more satisfied with teaching online than other delivery methods.

Table 1: Sociodemographic cum work profile of teachers n=159.

Variable	f (%)
Age* (years)	
<30	79 (49.7)
30-40	52 (32.7)
40-50	14 (8.8)
>50	14 (8.8)
Gender	
Male	6 (3.8)
Female	153 (96.2)
Professional qualification	
Graduate	67(42.1)
MSc	76 (47.8)
PhD	16 (10.1)
Designation	
Principal	8 (5.0)
Professor	6 (3.8)
Associate professor	11 (6.9)
Assistant professor/lecturer	37 (23.3)
Tutor	97 (61)
Type of institute	
Govt	31 (19.5)
Semi govt	6 (3.8)
Private	122 (76.7)
Teaching experience in years**	
<5	86 (54.1)
5-10	41 (25.8)
10-15	18 (11.3)
>15	14 (8.8)
Web-Based program attended	81 (50.9)

Age* (mean ±SD) 34±10.1 years. Teaching experience in years**Median (Q1-Q3) 4.5 (2.5-9).

Table 2: Satisfaction level of the teachers.

Level of satisfaction (Satisfaction score)	Total score
Highly satisfied (86-112)	6 (3.8)
Satisfied (57-85)	148 (93.1)
Not satisfied (29-56)	5 (3.1)

Table 3: Median (Q1-Q3) of overall satisfaction score and subscales on OFSS.

Satisfaction	Median (Q1-Q3)
Overall score 28-112	74 (68-77)
Student subscale	40 (37-43)
Instructor subscale	18 (17-19)
Institute Subscale	10 (9-10)
General satisfaction	6 (5-6)

Associations of satisfaction score with age and teaching experience

Almost similar percentage of participants were in each quartile in each age group. Higher percentage of teachers

(30.8%) in 30 to 40 years of age were having satisfaction score in first quartile i.e., low score. But the difference was not statistically not significant. Thus, there was no significant association of satisfaction scores with the age.

Table 4: Item wise analysis of faculty with the online teaching using Online faculty satisfaction survey (OFSS).

No. Item	Strongly disagree		Disagree		Agree		Strongly agree	
The level of my interactions with students in the online course is higher than in a traditional face-to-face class.	13	(8.2)	73	(45.9)	61	(38.4)	12	(7.5)
The flexibility provided by the online environment is important to me.	1	(0.6)	24	(15.1)	114	(71.7)	20	(12.6)
My online students are actively involved in their learning.	9	(5.7)	36	(22.6)	103	(64.8)	11	(6.9)
I incorporate fewer resources when teaching an online course as compared to traditional teaching.*	14	(8.8)	83	(52.2)	53	(33.3)	9	(5.7)
The technology I use for online teaching is reliable.	3	(1.9)	14	(8.8)	114	(71.7)	28	(17.6)
I have a higher workload when teaching an online course as compared to the traditional one.*	36	(22.6)	66	(41.5)	55	(34.6)	2	(1.3)
I miss face-to-face contact with students when teaching online.*	63	(39.6)	74	(46.5)	20	(12.6)	2	(1.3)
I do not have any problems controlling my students in the online environment.	10	(6.3)	59	(37.1)	77	(48.4)	13	(8.2)
I look forward to teaching my next online course.	6	(3.8)	18	(11.3)	118	(74.2)	17	(10.7)
My students are very active in communicating with me regarding online course matters.	4	(2.5)	38	(23.9)	103	(64.8)	14	(8.8)
I appreciate that I can access my online course any time at my convenience.	1	(0.6)	9	(5.7)	117	(73.6)	32	(20.1)
My online students are more enthusiastic about their learning than their traditional counterparts.	11	(6.9)	45	(28.3)	97	(61.0)	6	(3.8)
I have to be more creative in terms of the resources used for the online course.*	29	(18.2)	101	(63.5)	29	(18.2)	0	(0.0)
Online teaching is often frustrating because of technical problems.*	57	(35.8)	77	(48.4)	24	(15.1)	1	(0.6)
It takes me longer to prepare for an online course on a weekly basis than for a face-to face course.*	0	(0.0)	43	(27.0)	89	(56.0)	27	(17.0)
I am satisfied with the use of communication tools in the online environment (e.g., chat rooms, threaded discussions, etc.).	4	(2.5)	33	(20.8)	105	(66.0)	17	(10.7)
I am able to provide better feedback to my online students on their performance in the course.	4	(2.5)	56	(35.2)	91	(57.2)	8	(5.0)
I am more satisfied with teaching online as compared to other delivery methods.	3	(1.9)	72	(45.3)	76	(47.8)	8	(5.0)
My online students are somewhat passive when it comes to contacting the instructor regarding course related matters.*	13	(8.2)	103	(64.8)	41	(25.8)	2	(1.3)
It is valuable to me that my students can access my online course from any place in the world.	0	(0.0)	4	(2.5)	113	(71.1)	42	(26.4)
The participation level of my students in the class discussions in the online setting is lower than in the traditional one.*	33	(20.8)	95	(59.7)	29	(18.2)	2	(1.3)

Continued.

No. Item	Strongly disagree		Disagree		Agree		Strongly agree	
My students use a wider range of resources in the online setting than in the traditional one.	6	(3.8)	44	(27.7)	95	(59.7)	14	(8.8)
Technical problems do not discourage me from teaching online.	11	(6.9)	39	(24.5)	93	(58.5)	16	(10.1)
I receive fair compensation for online teaching.	20	(12.6)	48	(30.2)	86	(54.1)	5	(3.1)
Not meeting my online students face-to-face prevents me from knowing them as well as my on-site students.*	20	(12.6)	88	(55.3)	50	(31.4)	1	(0.6)
I am concerned about receiving lower course evaluations in the online course as compared to the traditional one.*	16	(10.1)	94	(59.1)	48	(30.2)	1	(0.6)
Online teaching is gratifying because it provides me with an opportunity to reach students who otherwise would not be able to take courses.	4	(2.5)	17	(10.7)	113	(71.1)	25	(15.7)
It is more difficult for me to motivate my students in the online environment than in the traditional setting.*	26	(16.4)	86	(54.1)	44	(27.7)	3	(1.9)

Table 5: Associations of satisfaction score with age and teaching experience of the participants (n=159).

Age	n	No of teachers in different Quartile of satisfaction score			X^2 (df) p
		<1st Q n=39	**1st to 3rd Q n=82**	**>3rd Q n=38**	
<30	79	16 (20.3)	43 (54.4)	20 (25.3)	2.22 (6) 0.89
30-40	52	16 (30.8)	24 (46.2)	12 (23.0)	
40-50	14	3 (21.4)	8 (57.2)	3 (21.4)	
>50	14	4 (28.6)	7 (50.0)	3 (21.4)	
Teaching experience					
<5	86	14 (16.3)	49 (57.0)	23 (26.7)	
5-10	41	12 (29.3)	20 (48.7)	9 (22.0)	10.64 (6) 0.1
10-15	18	9 (50.0)	7 (38.9)	2 (11.1)	
>15	14	4 (28.6)	6 (42.8)	4 (28.6)	

The higher percent of teacher in 10-15 years of age were in first quartile score i.e., low score but statistically this difference was not significant showing that years of experience of the participants were not significantly related with satisfaction score (p>0.05). (Table 5).

Views of teachers regarding web-based teaching

The teachers were asked to write about the features of Web Based classes they liked the most and the least. The most liked features/advantages were ability to continue academics even in this global pandemic though distance learning, flexibility in terms of taking classes on convenient time, affordable to almost all, more number of students can attend the classes, ability of students to access lectures anytime from anywhere, ability to download wide range of material, media and use advance features to teach. Above all, teachers felt that online classes have helped them reduce stress as they can complete their syllabus on time.

The least liked feature/disadvantages were poor connectivity in remote areas, technical problems, unsafe and losing personal information, lack of face-to-face interaction, and difficulty assessing students' response and attention.

DISCUSSION

The COVID-19 pandemic has increased the utilization of web-based teaching-learning worldwide. In India, all the teaching Institutions, government or private, offering nursing programs have adopted this web-based learning system over the last ten months. Faculty satisfaction is an important social construct that needs exploration in the current nursing curriculum context supported through web-based teaching. There is emerging evidence on the relevance of faculty satisfaction for various micro and macro level outcomes like student learning, student satisfaction, and the program's success, respectively.[15, 16] The importance of faculty satisfaction can also be gauzed from the fact that faculty satisfaction is identified as one of the pillars in the online learning consortium.[17]

In the present dataset, it was found that most of (93%) nursing faculty were satisfied with the web-based teaching. It was further found that almost 3/4th of participants were satisfied with the flexibility element of the online teaching. Such high degree of satisfaction with flexibility, specifically in terms of the anytime/anywhere instructional model, is also reported well in literature.[18, 19] There are also reports of certain difficulties with added flexibility due to the inability to create a healthy balance in personal life.[20] As teachers started using this mode only from last 10 months and the teachers were more concerned about completing the loss of the academics that happened due to social restrictions and imposed lockdown, and they might have never focused on the element of flexibility affecting personal life. In this study, satisfaction was not associated with age and experience. On the other hand, in traditional teaching, age and experience matter, and the burnout is less in the employees with more experience as they develop coping strategies, professional and social skills, enjoy more salaries, and good working conditions.

Another important element of satisfaction among the faculty is the communication /interaction among students and teachers. There were four items in the tool utilized in the present study to explore this particular domain. Since one of the limitations of the online teaching mode is the lack of direct access to verbal and nonverbal feedback from the students, which is otherwise readily utilized by the teachers in pacing the instructional process. However, effective utilization of various asynchronous and synchronous discussions coupled with collaborative activities and interactions like group chats etc can make learning online effective.[21] In the present data set, more than half of the teachers reported lower student participation in the class discussions in the online setting, this could be due lack of training of teachers for utilization of these novice techniques of online teaching and learning.

Various modes to improve the overall quality of student teacher interaction in an online environment is well researched and infact Bickel has provided methods for calculating indices that quantitatively describe interactions, student contributions, instructor contributions, and the extent to which the interactive potential of the discussion can be achieved.[22] However, such fine objective assessments and evaluations have not been done considering the recent and emergent transition from conventional teaching to web based teaching in the nursing curriculum. The study was conducted after a sudden and emergent shift from traditional teaching to online teaching; the long-term factors contributing to satisfaction remains explored

CONCLUSION

One of the key findings of the current study is that a very small proportion (3.8%) of the teachers were highly satisfied with online teaching. They were satisfied more as this mode allowed them to complete academics and provided flexiblility. Therefore, it is recommended to develop various institutional mechanisms viz structured training, technical support, effective online evaluation systems, faculty remuneration systems, and mechanism to motivate the teachers.

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