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Assessing the resident physicians' perceptions of the use of webinars to support training during the COVID-19 pandemic

Masayuki Misuno[1], Valerie Tiempo Guinto[1]

Abstract:

BACKGROUND: The coronavirus disease 2019 (COVID-19) pandemic has affected education systems worldwide. The disruption in education systems has impacted over 90% of the student population of the world (UNESCO, 2020). Electronic learning (e-learning), a form of teaching which involves electronic equipment and tools permits interaction between people involved in the education process. An example of which is the webinars. Webinars allow large groups of participants to engage in online discussions or training events and share audio, documents, or slides.

OBJECTIVE: We aim to assess the perception of resident physicians on the use of webinars to support learning during COVID-19.

METHODOLOGY: This is a cross-sectional study. An adequately powered paper survey was conducted among 123 resident physicians of St. Luke's Medical Center Global City. A 5-point Likert Scale was used for each of the questions in the questionnaire patterned after that of Nagar (2020). Descriptive statistics was used to analyze the data.

RESULTS: Majority of the respondents gave favorable answers to questions on pace of learning/flexibility (91.5%), cost (95.1%), convenience and comfort (95.1%), motivation (76.1%), ease of access (96.1%), visual perception (87.5%), visual difficulty (79.9%), audio perception (83.7%), Internet connection (61.8%), and navigation (83.7%), while Internet connection (28.5%) was seen with the highest disagreement.

CONCLUSION: Our data support the acceptability of webinars among resident physicians in a tertiary private hospital as an alternative learning tool in this COVID-19 era where face-to-face interaction or traditional learning is less likely to be employed.

RECOMMENDATIONS: We recommend future studies that can focus on the efficacy of the webinars in the improvement of knowledge and practice of medicine by doing pre- and posttests. We also recommend doing a similar study in government hospitals where facilities may not be on par with private hospitals.

Keywords:

Corona virus disease 2019, perception, physicians, webinars

[1]*Department of Obstetrics and Gynecology, St. Luke's Medical Center - Global City, Taguig, Philippines*

Address for correspondence:
Dr. Valerie Tiempo Guinto, Department of Obstetrics and Gynecology, St. Luke's Medical Center - Global City, Taguig, Philippines.
E-mail: vptiempoguinto@up.edu.ph

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Introduction

The coronavirus disease 2019 (COVID-19) pandemic has affected the education system worldwide. The disruption has impacted over 90% of the student population of the world according to UNESCO, 2020. Countries struck by the pandemic overcome these challenges by employing different modes of learning through a mix of technologies. Electronic learning (e-learning) can be defined as a means of education in which it involves electronic equipment and tools and may

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permit interaction between people involved in the education process. One medium of electronic learning is webinars-an online seminar that turns a presentation into a real-time conversation. Webinars allow large groups of participants to participate in online discussions or training events and share audio, documents, or slides – even when they are not in the same place as the meeting host or in the same room where the event or presentation is taking place.

Medical education employs books, lectures, seminars, conferences or conventions, and actual patient interactions. Prepandemic, these modes of learning are usually interactive and are face to face with the teacher and students. Upon the emergence of the coronavirus pandemic, this face-to-face mode of learning started to shift to a virtual mode of learning where the teacher is remote from the students so that transmission of the virus is prevented. The advent of recent technologies facilitating remote learning gave a new opportunity for teachers and students; however, being new, there are concerns on their acceptability among teachers and students alike.

One of these e-learning media widely used in the Philippines are the webinars– known as web-based seminars wherein an online presentation is done with the help of the internet, real-time, and can also permit interactive conversations between presenter viewers and vice versa. Webinars offer a unique platform to address this educational variability.[1]

In the medical field, web-based education is a convenient and effective means of providing patients with valuable information related to their health and disease management.[2] It can allow the presentation of documents, slides, audio and video, and others which can be viewed anytime and anywhere, through computers or mobile phones provided with Internet connection. Harned *et al*. (2014) evaluated webinars in the context of mental health training. Their findings suggested that participants were most satisfied with consultations from the facilitator and being able to ask questions.[3] In a meta-analysis reviewing the effectiveness of webinars for training, Gegenfurtner *et al*. (2019) concluded that webinars were slightly more effective in promoting student achievement than were traditional face-to-face seminars and asynchronous training in learning management systems.[4] In a research at the Maryland State University to identify students' preference for the various e-learning types, it was reported that the majority (51.1%) of the respondents preferred hybrid courses to traditional face-to-face courses, 25.9% were neutral on this, while 23% disagreed. This research further shows that the majority of the respondents are interested in taking a fully online course in the future – 52.3% agree, 22.0% were neutral, and 25.7% disagreed.[5] The main finding of this thesis is that e-learning is perceived to be useful. Its usefulness includes people being able to study from anywhere in the world without necessarily relocating. E-learning platforms and tools are perceived to be easy to use. In the medical-surgical field of oral and maxillofacial surgery, using webinars, demonstrated a high overall acceptance rate for the attendees independent of sex, specialty, and years of professional experience.[6] In another study on webinars, participants reported exceptionally high levels of satisfaction with the accessibility, scope, quality, and interactivity of the webinar.[7] To make this more interactive, students gave suggestions to start blogs, online discussions, online submission of homework, and video-assisted training for clinical work.[8]

The COVID-19, pandemic disturbed social, political, economic, religious, and financial structures worldwide. In the Philippines, the first recorded case was noted in January 2020. On March 14, 2020, President Rodrigo Duterte put the whole country in quarantine status ("lock-down") due to the rising cases of COVID-19. This quarantine status shut down businesses, commerce and trade, face-to-face education, and other services except the heath force and services for basic needs. This restriction shifted education to online-based education, such as webinars. Due to the pandemic, participants of webinars have to make some adjustments and be familiar with the technology. This disruption of the education industry due to COVID-19 has become clearly visible due to the sudden, forced immersion of learners into virtual learning during this period of pandemic.[9] Training hospitals/institutions in the country shifted lectures, training, and conferences of the resident physicians to e-learning, mainly, webinars. In a study, nursing students, similarly situated as resident physicians, had good self-efficacy and confidence in their computer skills and felt positive toward e-learning.[10] Trainees and trainers both report that they are satisfied with or enjoyed participating in webinar-based training.[11] Shifting the education from traditional to a new approach of education shows that it is not only acceptable but it also helps the students to learn as well which is moreover applicable in this time of the pandemic.

The objective of this study is to assess the resident physicians' perceptions of the parameters of pace of learning/flexibility, cost, convenience and comfort in remoteness, motivation, ease of access, visual perception, visual difficulty, audio perception, Internet connection, and navigation with the use of webinars as a form of learning.

The results of this study will help training institutions design and improve their residency training programs to adapt to the limitations imposed by the present pandemic or similar problems in the future.

Methodology

We used a cross-sectional descriptive research design. The study subjects were the resident physicians currently in training in a tertiary private hospital in the National Capital Region at the time of the study in January–March of 2021.

Those who were absent/on leave at the time of data collection were excluded. The total number of resident physician trainees at the time of the study was 139. The sample size of 103 was computed using the internet software (https://www.calculator.net/sample-size-calculator.html?type=1andcl=95andci=5andpp=50andps=200andx=109andy=14) with 95% confidence level at $P < 0.05$, 5% margin of error and population control of 50%. To account for possible dropouts, we added 20% to the desired sample size of 103, to get a total of 123 respondents. The names of the resident physicians were alphabetically arranged and computer-generated numbers were obtained to come up with the 123 residents. These residents were given consent forms through their department secretary. Of those who consented, they answered a survey form answerable by a 5-point Likert Scale, which was patterned after the previous studies by Nagar[9] and Eldeeb.[12] The following data were gathered from the participants: age, sex, year level, and institute/department. Survey forms were given through their department secretaries who then distributed them to the identified resident physicians of their respective departments. Survey forms were returned to their respective secretaries in a sealed envelope. Survey forms and other study-related materials were kept by one of the investigators in a sealed envelope in a locked cabinet. The key is only accessible to the primary investigator. Proper disposal of forms will be done by shredding the study materials after 5 years.

Results

There were a total of 123 respondents given the survey forms and only a total of 105 were returned, fulfilling the desired sample size of 103. The 18 unreturned forms were considered dropouts. All of the returned survey forms included signed informed consent and were completely filled out.

Table 1 shows the demographic data of the 105 respondents. Most of the participants are in the age of 28–30 years old and mostly females. There are less participants from year levels IV and V because only obstetrics and gynecology, pathology, and general surgery offer more than 3 years of training.

Table 2 shows the proportion of the responses on the 5-point Likert Scale for the 9 parameters assessed.

On pace of learning/flexibility

Webinars provides opportunity to learn at our own pace–this enables me to record, take notes and do screenshots which I deem important for future use/reviews. 91.5% of the respondents agreed that webinars provide an opportunity to learn at their own pace in such a way that they can record, take notes, and take screen shots.

On cost

The webinars I attended are cost-effective. All participants agreed with 46.6% chose strongly agree and the rest (48.5%) chose agree.

On convenience and comfort in remoteness

Webinars are convenient as they can be accessed whenever I am. 44.7% strongly agreed and 50.4% agreed.

On motivation

I feel that webinars motivated me to learn more compared to traditional/face-*face learning*. 76.1% of the respondents agreed and only 9.5% of the respondents disagreed.

On ease of access

I can participate in webinars with ease given a good internet connection. An overwhelming 96.1% agreed with this statement.

On visual perception

I feel that webinars help in my learning moreover with good visual aids that attracts my attention and visual difficulty. I feel that long webinars strains my eyes and this makes me distracted. It is noted that most respondents agree on both statements, 87.5% and 79.9%, respectively.

Table 1: Demographic data

	Frequency (*n*=105) (%)
Age (years)	
25–27	9 (9)
28–30	71 (68)
31–33	20 (19)
>33	5 (5)
Gender	
Male	41 (39)
Female	64 (61)
Year level	
I	32 (30)
II	33 (31)
III	34 (32)
IV and/or V	6 (6)

Table 2: Frequency and percentage of replies of resident physicians on 10 parameters evaluating perception of learning through webinars (*n*=105)

	Strongly agree, *n* (%)	Agree, *n* (%)	Neutral, *n* (%)	Disagree, *n* (%)	Strongly disagree, *n* (%)
Pace of learning/flexibility	26 (24.8)	70 (66.7)	70 (6.7)	2 (1.9)	0
Cost	49 (46.6)	51 (48.5)	5 (4.7)	0	0
Convenience and comfort in remoteness	47 (44.7)	53 (50.4)	4 (2.8)	1 (0.9)	0
Motivation	44 (41.9)	36 (34.2)	15 (14.2)	6 (5.7)	4 (3.8)
Ease of access	55 (52.3)	46 (43.8)	4 (3.8)	0	0
Visual perception	33 (31.4)	59 (56.1)	12 (11.4)	1 (0.9)	0
Visual difficulty	31 (29.5)	53 (50.4)	17 (16.1)	2 (1.9)	2 (1.9)
Audio perception	15 (14.2)	73 (69.5)	17 (16.1)	0	0
Internet connection	7 (6.6)	58 (55.2)	9 (8.5)	30 (28.5)	0
Navigation	15 (14.2)	73 (69.5)	16 (15.2)	1 (0.9)	0

On audio perception

I can control/modulate *the volume of the webinar I am attending in a way that will not distract me.* 83.7% of respondents agreed with the statement. Volume modulation is the main concern for most of the webinars. Others used headset/earphones so that they will not be distracted from the noise outside for noise cancellation.

On internet connection

The internet connection does not bother me in my learning from webinars. About 61.8% of the respondents agreed while 28.5% of respondents disagreed on the statement.

And finally, on navigation

I don't have any difficulty in accessing/navigating to attend webinars. 83.7% of the respondents agreed that webinars are easy to navigate.

Reviewing all the 10 domains in the questionnaire, most of the respondents answered favorably in all the 10 parameters in the survey. The greatest percentage of disagreement was seen on the question about Internet connection.

Discussion

Using the data in this study, we noted that the majority of the respondents gave favorable answers to questions on the following parameters. Most agreed on webinars' pace of learning/flexibility (91.5%) where the student can learn at his/her own pace and this gives them a chance to do some recordings, notes, or do screenshots for review and future use. This agrees with the study of Nagar (2020), where he noted that the majority of the respondents agreed that they can learn through online mode at their own pace. In this way, they can review their notes/do screenshots wherein they can research further on the topics that are not clearly explained or unanswered questions during the webinar. On the parameter of cost (95.1%), most agreed that the cost of attending webinars is more cost-efficient. Prepandemic era, we know that seminars and conventions are pricey, with much of these held abroad or attended by international speakers. Some would have to go to other countries, book a plane ticket and hotel just to attend a convention. In this pandemic era, these conventions/seminars are now brought more affordably to the audience; in this case, all they need is a laptop or mobile device and an internet connection. Compared to the cost spent prepandemic versus the COVID-19 era, the cost of conventions/seminars in the COVID-19 era is way too affordable. Although some webinars now are paid, comparing the cost of the webinars to the conventions/seminars pre-COVID-19, the webinars are still cost-effective. In another study, majority (47%) of the respondents agreed to the cost-effective and time-saving feature. Majority of the respondents feel that the e-learning platforms offer their courses at low prices in comparison to fees charged for regular conventional courses. Online learning also saves the commutation cost and time of traveling to campus to attend regular classes.[9]

On convenience and comfort, about 95.1% of respondents agreed with this statement. In relation to another study, majority of respondents (45%) had given their strong agreement to the statement which says that e-learning can enable people to study; irrespective of where they are located in the world.[9] Unlike the pre-COVID-19 time, conventions/seminars are only held in a given place and a given time. You have to be present at that time if you want to attend a given convention/seminar. The advantage of COVID-19 era on this issue is that you do not have to be in a certain place just to attend the lecture. As long as you have a device and an Internet connection, you can easily attend your desired lecture anywhere, may it be home, coffee shop, beach, etc., given a correct link/platform. On motivation, 76.1% of the respondents agreed with the statement. Although some answered neutral and disagreed, some would still prefer face-to-face learning merely because some individuals find it easy to learn with interpersonal interaction and tactile learning which is not present in virtual learning. This is more true when learning requires face-to-face interaction such as dealing with patients and

doing bedside rounds. On ease of access, 96.1% of the respondents had favorable responses. In a similar study, students believed that it was easy to use, eased their access to the course material.[12] For visual perception and visual difficulty, 87.5% and 79.9% of respondents, respectively, were in favor of the statement. Webinars can help in the learning process through good visual aids – diagrams, pictures, or videos. This will help much more for the visual learners in keeping with the topics. As much as visuals are concerned, prolonged screen time can strain the eyes of the viewers and with this, the attention of the viewers is decreased. On audio perception, 83.7% of the respondents were in favor of this. Reviewing a study relating to the audiovisual, by the use of these tools in synchronous forms of e-learning students are able to interact with their peers and instructors, which gives them the sense of belongingness as done in the face-to-face learning (Mamattah, 2016). Majority (83.7%) favorably assessed navigation during online learning. Given a correct link/platform and a good internet connection, little of no problem can be encountered in this parameter. With regards to Internet connection, 61.8% agreed and 28.5% disagreed on the statement. While most institutions offer free Wi-Fi connectivity, some who do not have free connectivity resort to out of pocket Internet connection such as Internet line, Wi-Fi, or data Internet allocation. While most of the respondents have no difficulty in Internet connection, other people experience slow Internet connection which could cause transmission delay of the webinars and may affect the attention and learning of the viewers. At times, free or even paid internet connections may have slow internet connection primarily due to Internet traffic due to less communication towers or infrastructure, political policies, and communication company competition. In other countries, internet connection is fast and has less interruption due to slow internet connection. In news reports in 2020 done by Ookla's Speedtest Global Index, the Philippines was ranked 110 out of 139 countries in internet speed with only about 18.49 Mbps in average download speed.[13] In other similar studies, this challenge was also noted, with 30% having difficulties related to the internet and Wi-Fi connection. This is in accordance with other studies that reported the technical problems as a major challenge for the use of technology in learning.[12]

In the light of the pandemic, webinars seem to be a good alternative tool for learning, even in the medical field. Utilizing this modality not only helps in the learning process but also prevents the transmission of the virus which lessens the casualties brought about by COVID-19. Although we still see the value of interpersonal interaction or face-to-face interaction in learning, webinars may help us lessen the time of exposure and thus lessen the chance of transmission of the virus.

Conclusion

Based on the conducted study, data support that webinars had become an accepted learning modality among resident physicians in a private tertiary hospital in Metro Manila. It can be an alternative learning tool in this COVID-19 era where face-to-face interaction or traditional learning is less likely to be employed.

Recommendations

We also recommend future studies that can focus on the efficacy of the Webinars in the improvement of knowledge and practice of medicine by doing pre- and post-tests in the Philippine setting. We also recommend doing a similar study in government hospitals where facilities may not be on par with private hospitals.

Authorship contributions

Masayaki Misuno - Involved in the conceptualization, methodology, validation, formal analysis, data curation, writing of the original draft, review and editing.

Valerie Tiempo Guinto - Involved in the conceptualization, methodology, validation, formal analysis, data curation, writing of the original draft, review and editing.

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Conflicts of interest

There are no conflicts of interest.

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