

Resident Doctors' Perception of Virtual Meetings as Alternative Training Platform during Covid-19 Pandemic in a Nigerian Tertiary Hospital

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Abstract

➤ Background

The prevention of COVID-19 infection spread brought about the concept of physical distancing and a resultant suspension of physical meetings. This posed a threat of interruption to the academic aspects of residency training and an alternative online teleconferencing was employed. The study assessed the perception of Resident Doctors' on Virtual Meetings as an alternative training platform during the COVID-19 pandemic, as well as the limitations of accessing this method of training in a Nigerian Tertiary Health Institution.

➤ Methods

This cross-sectional study was conducted using a semi-structured, self-administered questionnaire to obtain information on bio-data, participation/knowledge, perception and challenges of virtual meetings from all consenting Resident Doctors at the Federal Medical Centre Bida Niger State.

➤ Results

One hundred and eight resident doctors participated in the study. There was an increased Residents' participation in virtual meeting by 28.6% with the advent of COVID-19. A greater percentage (79.9%) of the respondents agreed that online meeting is a new innovation in residency training and 80% agreed it was a welcome idea for training. 53.7% agreed it would prevent an interruption in training while 73.7% want virtual meetings to continue after lockdown restrictions are relaxed. The major challenges identified by respondents were poor internet service (94%), lack of institutional internet facility (81%), Poor power supply (62%), and Distraction by calls/ads (58%).

➤ Conclusion

Virtual meetings have temporarily replaced traditional physical meetings and has been a major step to avoid programme interruption during the COVID-19 pandemic. It has effectively served the functions of physical meetings and should continue after the pandemic restrictions are relaxed despite its attendant challenges.

Keywords:- Perception, Virtual meetings, Resident doctors, alternative training platform, teleconferencing, COVID - 19.

I. INTRODUCTION

The residency training programme is a period of advanced medical training and education that equips medical graduates to become specialists in chosen fields of medicine.[1] This aspect of medical education commenced in Nigeria over 5 decades ago.[2]

It consists of supervised practice of a specialty in an approved training hospital with instruction from specialists on the hospital staff. It also employs various arms of training structured into a curriculum.[2][3] The aspects of training include Medical Education in form of patient bedside/clinics teachings, didactic teaching and hands-on experience, patient care with available ancillary support, research, and mentoring.[3][4] These are all evaluated by a Postgraduate college after a specified period.

A highly transmissible respiratory viral infection (COVID-19) was observed in Wuhan, China in December 2019 and was soon reported to have infected scores of people around the world.[5][6] Nigeria confirmed her first case in February 2020 and by May 2020, about 10,000 cases had been reported.[7] Transmission of the virus is thought to be person-to-person spread via respiratory droplets.[6] The virus is released in respiratory secretions when an infected person coughs, sneezes, or talks and may infect when it makes direct contact with the mucous membranes of another person.

One of the cardinal methods of preventing the spread of the virus is 'social distancing' and avoidance of large gatherings; therefore, physical meetings as well as clinical conferences were suspended. This posed a threat of interruption to the academic activities of doctors in the residency training programme,[3][8] bringing to the fore the need for alternative modes of training that do not involve physical presence.[9][10]

Teleconferencing has been an applied innovation in medicine that has improved information sharing and patient care around the globe but had not been a method for routine training or clinical meetings in Nigeria.[3][11] The global COVID-19 pandemic therefore served as a meeting point

for residents’ clinical meetings and routine e-conferencing. This was necessary to avoid interruptions in the academic sphere of the residency programme while simultaneously eliminating the risk of COVID-19 transmission.[9]

Our search revealed no literature in Nigeria has reported the experience of resident doctors with virtual meetings since the advent of the pandemic and suspension of physical meetings.

The aim of this study is to assess Resident Doctors’ perception of Virtual Meetings as an alternative training platform during the COVID-19 pandemic, as well as the limitations of accessing this method of training in a Nigerian Tertiary Health Institution.

II. MATERIALS AND METHODS

This cross-sectional study was conducted using a semi-structured, self-administered questionnaire to obtain information on bio-data, participation in/ knowledge of, perception and challenges of virtual meetings from Resident Doctors of Federal Medical Centre Bida Niger State; a 200 bedded tertiary healthcare centre accredited by the West African College of Surgeons/Physicians and National Postgraduate Medical College to train resident doctors in Family Medicine, Obstetrics and Gynecology, Paediatrics, Radiology and Surgery departments. The centre also has supernumerary residents training in centres across Nigeria with accreditation in other specialties of medicine.

A minimum sample size of 106 was calculated for the study using the Taro Yamane formula for calculating sample size in a finite population[12] and approval was obtained from the Hospital Research Ethics committee of the Federal Medical Centre, Bida to conduct this study.

Data was analyzed using the IBM® SPSS version 23.0 with continuous variables expressed as mean and standard deviation (SD) and categorical variables as number and percentage. Chi-square was used to assess statistical significance with p-value set at < 0.05.

III. RESULTS

A total of 108 consenting resident doctors from 14 departments were selected by convenient sampling method and information was obtained using self-administered questionnaires. The data obtained are presented in the following charts and tables. Most of the respondents were

married male residents who had spent about 3 years in the residency programme (Table 1) with majority of the respondents being in family medicine department (Figure 1).

➤ *Participation*

Eighty five percent of respondents had participated in a residency training virtual meeting and ZOOM was the most used and popular platform followed by Skype. Sixty two percent of the respondents had not attended any virtual meeting before the advent of the pandemic (Table 2). The highest number of respondents was obtained from four department accredited to train residents as shown in figure I.

Variable		Frequency (%)
Age	26-30	12 (11.1)
	31-35	40 (37.1)
	36-40	33 (30.5)
	>40	23 (21.3)
Marital status	Single	15(13.9)
	Married	92(85.2)
	Widowed	1(0.9)
Number of years in training	≤ 3yrs.	58 (53.7)
	> 3yrs.	50 (46.3)
Designation	Registrar	67(62.0)
	Senior Registrar	41(38.0)

Table 1:- Demographics

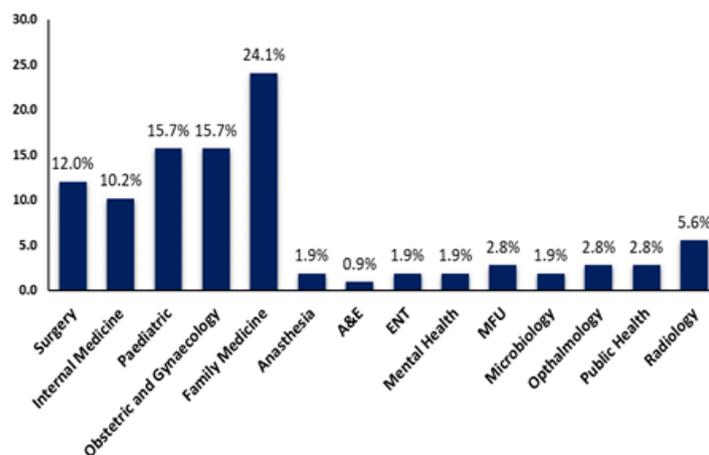


Fig 1:- Bar chart showing the various department of respondents

Variable	Frequency (%)
Participated in virtual meeting for training	
Yes	85 (78.7)
No	23 (21.3)
Virtual platform used	
Google Hangout	2 (1.9)
Zoom	66 (61.1)
Google Meet	3 (2.8)
Skype	23 (21.3)
Others (Go to meeting, webinar, pitcher, WhatsApp, visual learning environment)	12 (11.1)
Virtual platform known	
Google Hangout	15 (13.9)
Zoom	75 (69.4)
Google Meet	11 (10.2)
Skype	49 (45.4)
Others (Go to meeting, webinar, pitcher, WhatsApp, visual learning environment, CISCO, Microsoft team, Line Board)	10 (8.3)
Attend Virtual platform meeting before COVID-19 Pandemic	
Yes	41 (38.0)
No	67 (62.0)
Departmental schedule virtual meeting	
Yes	41 (38.0)
No	67 (62.0)

Table 2:- Participation of respondents in virtual meetings

➤ *Participation*

There was a 28% increase in the participation of residents in virtual meetings with the advent of COVID-19 as shown in Figure 2.

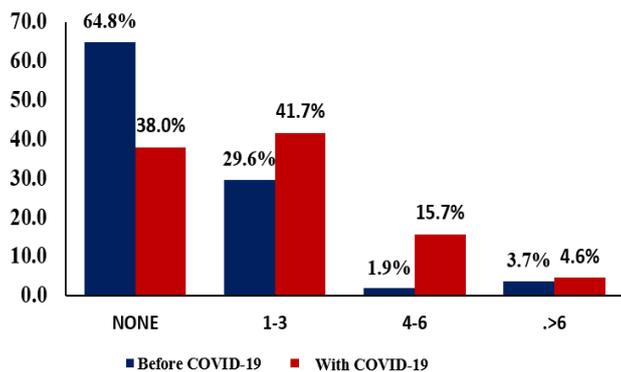


Fig 2:- Bar chart showing the Participation of respondents on virtual platform before and during COVID-19 restrictions.

As shown in Table 3, 67% of the respondents connected via mobile devices and 88% connected the devices they used with personal internet subscription. Fifty-Eight percent of the respondents joined the meetings from their homes.

Variable	Frequency (%)
Device used to access meeting	
Mobile phone	66 (61.1)
Tablet	17 (15.7)
Laptop computer	20 (18.5)
Desktop computer	0 (0.0)
Smart TV	2 (1.9)
Location used to connect	
Hospital premises	38 (35.2)
Home	57 (52.8)
Others (Anywhere)	2 (1.9)
Network used for connection	
Personal subscription	86 (79.6)
Hospital WI-FI	1 (0.9)

Table 3:- Device and location used for virtual meetings

➤ *Perception*

In figure 3, 79.9% of the respondents agreed that online meeting is a new innovation in residency training. 53.7% agree it would prevent an interruption in training. 73.7% of the respondents want this method to continue after the lockdown restrictions are relaxed. 80% of the respondents also see it as a welcome idea for training.

Thirty seven percent of the respondents disagreed that virtual meetings would increase absenteeism. 51% however agreed that it would improve participation. Most respondents (70%) know how virtual apps work and in comparison, to physical meetings, 68.5% of the respondents disagreed that virtual meetings were as interactive. 53% of respondents agreed to getting easily distracted by calls or ads during meetings.

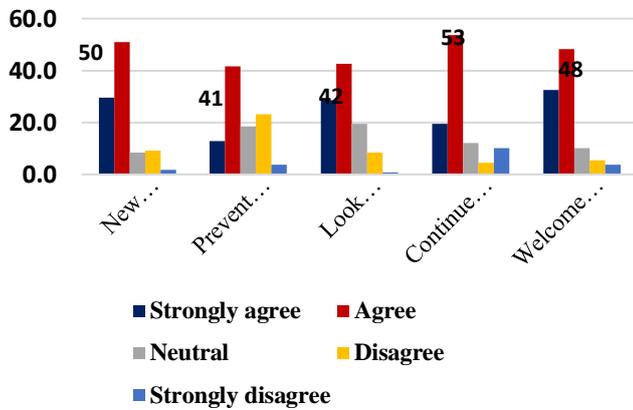


Fig 3a:- Bar chart showing Perception and experience of respondents on virtual platform for training

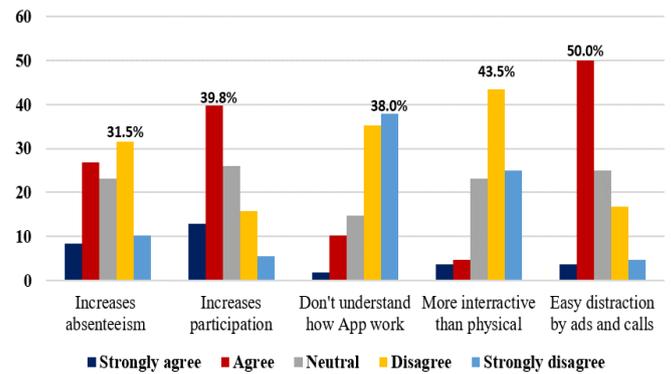


Fig 3b:- Bar chart showing Perception and experience of respondents on virtual platform for training

➤ Challenges

The major challenges identified by respondents were poor internet service (87%), lack of institutional internet facility (75%), Poor power supply (57.4%), Distraction by calls/ads (53.7%). Other challenges included lack of training on the use of virtual meeting apps, internet meeting hackers, lack of interest in learning a new method and non-acceptability (Table 4).

Variable	Frequency (%)
Challenges	
Poor internet service	94 (87.0)
No formal training	44 (40.7)
Poor power supply	62 (57.4)
Lack of institutional internet facility	81 (75.0)
Lack of interest	9 (8.3)
Internet meeting hackers	19 (17.6)
Not acceptable method of learning	6 (5.6)
Distraction by other device ads/functions	58 (53.7)
Others (cost of data, disturbance from other people around)	7 (6.4)

Table 4:- Challenges of using virtual meeting as a platform for learning/training

Variable	Ever participated in virtual meeting		X ²	d	p- value	SIG
	Yes	No				
Number of completed years			1.322	1	0.250	NS
≤3years	44 (40.7)	15 (13.9)				
>3years	41 (38.0)	8 (7.4)				
Designation			1.750	1	0.186	NS
Registrar	50 (46.3)	17 (15.7)				
Senior registrar	35 (32.4)	6 (5.6)				
Departmental scheduled meeting			14.021	1	0.001	S
Yes	40 (37.0)	1 (0.9)				
No	45 (41.7)	22 (20.4)				

Table 5:- Associations between numbers of completed years, designation, departmental scheduled meeting and participation in virtual meetings

The level of participation in virtual meetings by residents was greatly influenced by a departmental scheduled meeting as shown by the level of significance in table V and neither the number of years spent or the cadre of the resident doctor had a significant influence on participation in virtual meetings.

IV. DISCUSSION

The COVID-19 pandemic forced the world to find new ways of carrying out established principles and processes, including essential activities while reducing the risk of new infections from the deadly virus. The residency training programme also underwent this paradigm shift as routine physical meetings for medical education had to be abandoned. However, an interruption in training and its attendant effects were not desirable therefore, the virtual meeting alternatives came on board.

Virtual meetings will afford Resident doctors the opportunity of continuing education despite restrictions to physical gatherings and gain access to international centres of excellence for global skills and knowledge sharing. It also prevents interruption in training, reduces the stress of travelling distances for conferences and meetings as well as cost of training. The ripple effect of this on the health system include improved quality of care, effective patient consultation and quality management.

The advent of COVID-19 elicited the rise of virtual meetings among residents, as seen in this study. Majority of the respondents participated in virtual meetings more than they did in the pre-COVID era and they did this mostly on the ZOOM platform. One study reported Skype™ and Polycrom® as the frequently used virtual meeting applications.[13] Participation was specifically increased in departments that had a scheduled departmental meeting, some Resident doctors whose departments had not started scheduled meetings had also participated in other virtual meetings. This shows that virtual meetings supersede the limitations of one's training institution/Department.

Most respondents connected with their mobile phones using personal internet subscription, this highlights the flexibility of location, and easy accessibility to online meetings.

Majority of the respondents in this study agreed that teleconferencing is a new innovation that is desirable for training and should continue after the COVID-19 restrictions are relaxed. Teleconferencing has been used for continuing education for health professionals since the 1960s.[14] The findings in this study that it's a new innovation possibly arises from the fact that it is not a method employed routinely in developing countries because of the high cost of infrastructure needed for its set up.

Participation in clinical meetings will improve if virtual meetings become a routine, this however may need to be proven over time with more studies. Evidence from other programmes reported in some studies showed high acceptability and comparable efficacy for students both on site and off site.[13][15][16] Residents in locations remote from the primary training facility will have the opportunity to attend. Most of the respondents however disagreed that the level of interaction at online meetings is as good as during physical meetings.

Despite the advantages and the acceptance of virtual meetings for training resident doctors, poor infrastructure may be the bane of achieving optimal results. This study found that poor internet service, lack of institutional internet facility, and poor power supply ranked top among the challenges to achieving a seamless virtual meeting. These findings were similar to a World health organization report on Telematics that stated lack of necessary infrastructure and maintenance among other challenges in achieving effective tele-education in developing nations.[11] A report by Boatin *et al*[13] on the experience of training Obstetrics & Gynaecology Residents in two collaborating training centres in Boston USA and Mbarara Uganda also reported poor connectivity and resort to use of cellular data and audio rather than video conferencing. These challenges were however more in the Ugandan centre. A seamless internet connectivity is needed if a participant would get the best from a virtual meeting as an interruption may mean loss of vital information.

Hospital Wi-Fi service at the training institution where this study was carried out was not optimal, and the cost of mobile internet was also highlighted as a challenge by respondents. A functional Internet facility provided for common use by the training centre may significantly reduce the cost of internet subscription on resident doctors.

A peculiar challenge to virtual meetings also found are pop-up adverts encountered on some applications as well as interruption by voice calls when a mobile phone is used to connect. The use of a laptop/desktop computers rather than mobile phones and using a paid rather than a free version with appropriate screen sharing restrictions could help surmount this challenge.

V. CONCLUSION

- COVID-19 has changed the approach to meetings and training for resident doctors with virtual meetings serving as interim alternative to physical meetings.
- Virtual meeting for resident doctors has experienced a steep rise since the advent of the pandemic in a bid to avoid programme interruption.
- Virtual meeting is a welcome idea among residents because of its accessibility and flexibility and its continuous deployment after the pandemic restrictions are relaxed is agreeable to them, despite the attendant challenges.

RECOMMENDATION

- The Federal Government can enhance the ICT infrastructures in all tertiary health facilities in the country. This will facilitate many aspects of residency training, including virtual meetings, by making Wi-Fi accessible and affordable.
- Virtual meetings and tele-conferencing should be accepted and incorporated into the routine modes of instruction and training in the residency programmes in the country.

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