

Impact of Covid-19 Pandemic on Surgical Practice and Training in Nigeria

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Abstract

Introduction: The capacity of hospitals to provide services and training has suffered a remarkable setback as a result of the ongoing COVID-19 pandemic. The magnitude of this negative impact and measures deployed to ensure continued provision of services (particularly surgical services) and training has become an active area of research. We examined the extent of disruption of surgical services as well as disposition of surgeons to surgical practice during the COVID-19 pandemic. The adoption of video conferencing as an alternative training platform was also assessed.

Methods: The study was a cross-sectional survey of 105 consultant surgeons in Nigeria. It assessed their demographic information, changes in surgical practice and training (academic) activities during the pandemic.

Results: Generally, there was an overall reduction in the number of elective and emergency surgical cases during the pandemic although the decline in elective cases was more remarkable with 73.3% of the respondents reporting greater than 75% reduction in their elective cases. However 91.4 % of respondents were willing to perform an emergency surgery on a COVID-19 positive patient provided adequate protective and treatment facilities were available while only 41.9% will perform an elective surgery on a COVID-19 patient even with adequate protective equipments. Furthermore, 71.4% of respondents recommended routine pre-operative COVID-19 screening tests for all surgical patients. As at the period of this study, 44.2 % of respondents were already conducting weekly academic activities via video conferencing while 66.7% will prefer online video conferencing for their weekly academic activities henceforth. Similarly, 66.7% of respondents expressed preference for local conferences conducted via video conferencing while 67.6% expressed preference for international conferences conducted via video conferencing.

Conclusion: There is a general decline in surgical cases during the COVID-19 pandemic and surgeon safety considerations is a major factor affecting the disposition of surgeons to surgical practice during this pandemic. Additionally, there is a growing acceptance of video conferencing for surgical education and this trend is likely to continue even after the pandemic.

Keywords: impact; COVID-19 pandemic; surgical practice; training; Nigeria.

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I. Background

The capacity of hospitals to provide health care services (particularly surgical services) has suffered a major set-back as a result of the COVID-19 pandemic due to the need to redistribute human and material resources (especially personal protective equipments- PPE) as well as maintaining a safe working environment. Similarly, surgical training and education which typically requires physical interaction is also compromised due to the need for physical (and social) distancing to mitigate the spread of the virus.¹ Consequently, surgical units are adapting their operational processes to enable continued provision of surgical interventions for patients, and education for their trainees.

However, as the pandemic continues hospitals risk becoming sources of infection and transmission both amongst patients and health care workers.^{2,3} In fact within 10 (ten) weeks of the spread of COVID-19 in

Nigeria, the Nigeria Medical Association (NMA) reported that out of 264 doctors already exposed in their line of duty, 20 were infected while 3 mortalities were recorded.⁴ In view of this, the disposition of surgeons towards provision of surgical services is now greatly influenced by physician safety considerations hence many surgical units have suspended (or rescheduled) elective surgery cases in compliance with Centers for Disease Control and Prevention (CDC) recommendations while cautiously providing emergency surgical services which is the first surgical priority of healthcare systems.^{5,6}

Similarly, training activities (in form of weekly seminars, journal clubs, grand rounds, clinical meetings) which traditionally require physical attendance are also negatively affected by the ongoing pandemic. Surgical units are now forced to either completely discontinue these activities or adopt the use of information technology by taking these activities virtual, using internet based tools which allow for connectivity and effective communication between multiple users simultaneously. Definitely, complete cessation of learning activities will compound the current situation however using virtual web based learning platforms will allow continuity, and create durable programs adaptable to multitude of situations.⁷

This study was therefore conducted among Consultant (Specialist) Surgeons in Nigeria to highlight the magnitude of disruption of surgical services and adaptive measures that can be taken to allow continuity of safe surgical services during this pandemic. In addition, the adoption of virtual learning via online video conferencing for training activities was evaluated. It is expected that the results and recommendations of this study will allow a reasonable degree of safe surgical practice and training during (and even after) the COVID-19 pandemic.

II. Methodology

The study was a cross-sectional study carried out amongst Consultant (Specialist) Surgeons in Nigeria during the 12th week (10th -17th May, 2020) of COVID-19 pandemic in Nigeria. Data was collected using a questionnaire designed online with Google forms. The questionnaire contained 14 sections comprising of questions relating to biodata, surgical practice and mode of training activities during the ongoing COVID-19 pandemic.

The questionnaire was transmitted electronically to Consultant Surgeons in Nigeria (from all specialties) via WhatsApp messaging app. Consultant Surgeons who consented to the study completed the questionnaire using their mobile electronic devices and on submission, their responses were received realtime via the Google account drive of the principal investigator. Completed forms were accepted from the first day of the study till submission was discontinued a week later.

Data collected was analysed and presented as percentages using the Google form response summary feature.

Ethical approval for the study was obtained from the Ethical Committee of Federal Medical Centre, Bida, Niger State, Nigeria.

III. Results

A. Demographics

A total of 105 Consultant (Specialist) Surgeons responded to the online survey completing all the 14 sections of the questionnaire, hence the response rate was 100%. Table 1 shows the respondents' demographic features.

Table1- Demographic features of respondents

Demographic features	Frequency	Percentage (%)
Gender:		
Male	92	87.6
Female	13	12.4
Age group:		
<30	1	0.9
30-50	93	88.6
>/=51	11	10.5
Surgical Specialty:		
1.Orthopaedic Surgery	37	35.2
2.General Surgery	25	23.8
3.Obstetrics and Gynaecology	12	11.4
4.Urology	7	6.7
5.Paediatric surgery	6	5.7
6.Neurosurgery	4	3.8
7.Ophthalmology	4	3.8
8.Plastic Surgery	4	3.8
9.ENT Surgery	2	1.9
10.Cardiothoracic Surgery	2	1.9
11.Oral and maxillofacial surgery	2	1.9

Place of Primary practice:		
Public	87	82.9
Private	12	11.4
Public-Private Partnership	6	5.7

B. Impact of COVID-19 Pandemic on Surgical Practice

i. Percentage reduction (red.) in number of emergency surgery cases

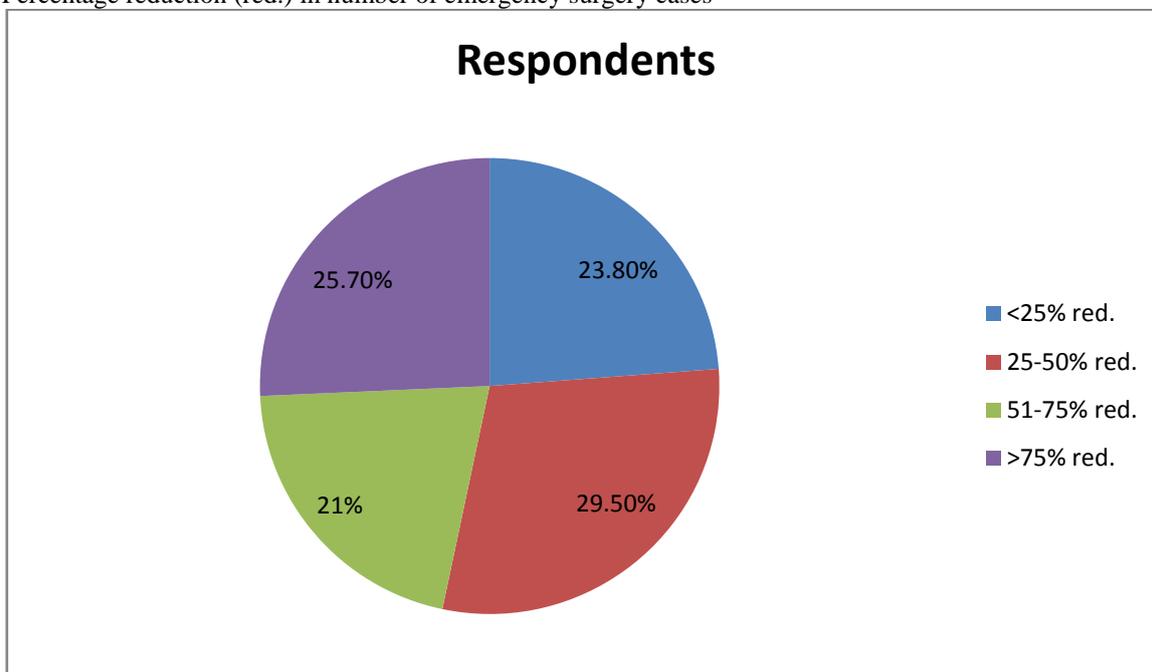


Figure 1- Percentage reduction (red.) in the number of emergency surgery cases

ii. Percentage reduction (red.)s in number of elective surgical cases

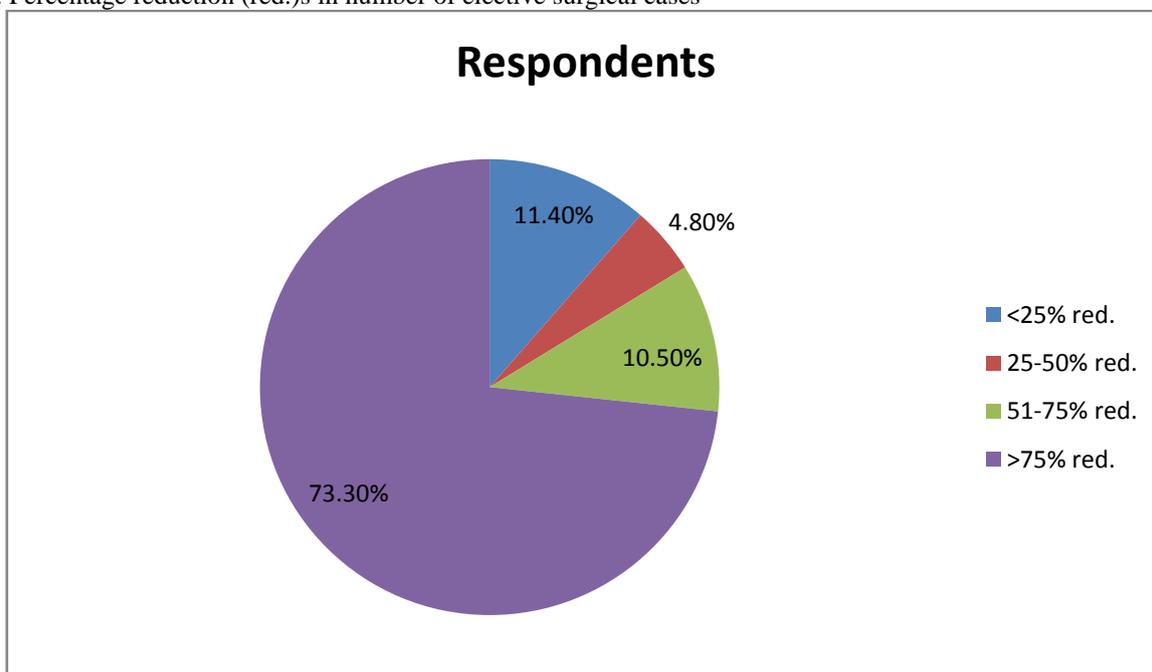


Figure 2- Percentage reduction (red.) in number of elective surgery cases

iii. Disposition of Consultant Surgeons to Surgical Practice during COVID-19 Pandemic

Table 2- Disposition of Consultant Surgeons to Surgical Practice during COVID-19 Pandemic

Question	Frequency of Responses	Percentage (%)
If provided full PPE and fully functional isolation and treatment facilities, will you carry out an emergency surgery on a COVID-19 positive patient?		
Yes	96	91.4
No	9	8.6
If provided full PPE and fully functional isolation and treatment facilities, will you carry out an elective surgery on a COVID-19 positive patient?		
Yes	44	41.9
No	61	58.1
Will you recommend routine preoperative COVID-19 screening tests for all surgical patients		
Yes	75	71.4
No	30	28.6

C. Impact of COVID-19 on Surgical training and education

Table 3- Impact of COVID-19 On surgical training and education

Question	Frequency of responses	Percentage(%)
Has your surgical unit/department commenced online video conferencing for weekly residency training/academic seminars?		
Yes	46	44.2
No	59	55.8
Will you prefer your weekly residency training/academic seminars conducted via online video conferencing henceforth?		
Yes	70	66.7
No	35	33.3
Will you prefer local conferences organized via video conferencing?		
Yes	71	67.6
No	34	32.4
Will you prefer international conferences organized via video conferencing?		
Yes	71	67.6
No	34	32.4

IV. Discussion

Although surgeons are not considered as direct first-line responders to the COVID-19 pandemic (there is no doubt that since the first case was confirmed in Nigeria on the 27th of February, 2020)⁸ the capacity of surgeons to provide surgical services has been severely hampered. The impact of disruptions to service delivery and training has since been an active area of research with many academic institutions realigning their research goals to tackle COVID-19, and surgeons are not an exception.^{9,10}

This survey shows a remarkable decrease in the number of both emergency and elective surgical cases. This represents a compliance with recommendations of the American College of Surgeons.¹¹ In addition, this reduction in surgical operations is an indication of an increased adoption of non-operative mode of treatment during this pandemic as part of measures to control the hospital transmission of the disease.^{9,12} This finding is similar to that of a study amongst 902 spine surgeons from 7 global regions which reported that 81% of surgeons were no longer performing elective surgeries.¹³ Furthermore, this study also shows that safety considerations are major factors affecting the disposition of surgeons to their practice during this pandemic. This implies that surgeons are largely favourably disposed to continue providing surgical services provided protective equipments are readily available and preoperative COVID-19 screening is made routine.

Similarly, surgical training has also been impacted negatively. In a study conducted amongst Nigerian paediatric surgeons during the 8th week of the disease spread in Nigeria, 58% of the centres surveyed had suspended academic/training activities with 6% conducting ‘WhatsApp’ chatroom sessions and 10% having traditional physical meetings with social distancing. Only 6% of the surgical units surveyed had adopted video conferencing for their academic activities.⁹ However, this survey which was conducted in the 12th week of the pandemic in Nigeria indicates a growing acceptance of video conferencing for academic activities as well as local and international conferences (as 66.7% of respondents will prefer online video conferencing for all academic programmes henceforth while 44.2% of respondents were already using video conferencing for

weekly academic activities). This is similar to a report from Italy where in order to limit the impact of COVID-19 on residents' learning curves, use of web-based technologies including live webinars, journal clubs via social media, podcasts and virtual rounds were adopted and has allowed teaching activities to continue while some scientific conferences have been converted to virtual model using video conferencing.^{14,15} In view of the advantages provided by introduction of information technology to surgical training and education, it is highly unlikely that there will be a return to the previous traditional approach as existed before the pandemic.¹⁶

V. Conclusion

Despite the current disruptions to routine surgical practice, adequate provision of protective equipments as well as routine preoperative COVID-19 screening are important measures necessary for return of stable surgical services. In addition, there is a growing trend towards virtual learning via video conferencing which is likely to continue even after the pandemic. It is our recommendation that adequate protective equipments and domestication of COVID-19 test in all Nigerian hospitals should be a priority while surgeons and trainees should develop their capacity to use internet based tools particularly video conferencing to ensure continuity of training. Furthermore, hospital authorities should invest in information technology infrastructure for use in service delivery and training to improve efficiency.

Conflict of Interest: The authors declare no conflict of interest

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Ethical approval: Ethical approval was obtained from the Ethics Committee of Federal Medical Centre Bida, Niger State, Nigeria.

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