# **Original Research Article**

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# Knowledge, attitude and practice of laparoscopic surgery among medical doctors in Port Harcourt, Nigeria

# Rex F. O. A. Ijah\*, Amabra Dodiyi Manuel

Department of Surgery, University of Port Harcourt Teaching Hospital, Port Harcourt, Nigeria

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\*Correspondence: Dr. Rex F.O.A. Ijah,

E-mail: rexijah@gmail.com

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## **ABSTRACT**

**Background:** The use of minimal access techniques to achieve similar objectives as in open surgical procedures has witnessed a steady progress in the last two decades. The efficacy and safety of this mode of surgery has long been established. Medical doctors are not only members of the society; with their level of knowledge, their opinion is a strong mirror image of the pulse of the patients they treat. Aim of the study was to ascertain the knowledge, attitude, extent of practice, and factors affecting laparoscopic surgery among medical doctors in Port Harcourt, Nigeria.

**Methods:** A cross sectional study of four hundred and fourteen (414) practicing medical doctors was conducted. Using stratified sampling method, self-administered semi-structured questionnaires was distributed to respondents in Port Harcourt in 2018. Data obtained was analysed using the Statistical Package for the Social Sciences (SPSS) version 20.0.

**Results:** Knowledge of laparoscopic surgery among respondents was 89.6% (371). Three hundred and twelve respondents (75.4%) were willing to pay if such surgery is necessary and offered in Port Harcourt. Only 2.4%. of respondents asserted that laparoscopic surgery services are offered regularly in their hospital. Only 1 respondent (0.2%) was willing to pay ₹151,000.00-200,000.00 (\$430-\$570) for commonly performed laparoscopic abdominal surgical procedures.

**Conclusions:** Willingness to accept and knowledge of laparoscopic surgery was relatively high among medical doctors, hence a high prospect for laparoscopic surgery practice in Port Harcourt is therefore likely. The practice of laparoscopic surgery seems low and willingness to pay, even among doctors seem to be a challenge.

Keywords: Attitude, Knowledge, Laparoscopic surgeries, Medical doctors, Nigeria, Practice, Port Harcourt

#### INTRODUCTION

Modern surgical practice is fast tending towards minimal access/minimal invasive techniques to achieve similar objectives as in open procedures. Laparoscopy is an improvement on the work of several researchers. The technicalities of laparoscopic surgical procedure after careful case selection has been clearly described by a researcher. This procedure can be used for diagnostic and therapeutic purposes, and the benefits are myriad. Some consider it better than open surgery with less

chances of adhesion formation.<sup>5,6</sup> Patients from our West African sub-region, have been travelling for medical tourism to countries like India, Dubai, Israel, South Africa, Germany, United Kingdom, etc. where these services are offered with associated capital flight.<sup>7-9</sup> There have been several advocacies on international and local fora, for investment in laparoscopic surgery and its inclusion in routine surgical training.

Significant limiting factors in laparoscopic surgery were reported by Weizman et al, Chen et al, and Julianov et al. 4,11,12 Some of the factors limiting the practice of laparoscopy in developing countries have been identified and reported over the years. 13-15 Despite these challenges however, younger surgeons tend to do their own laparoscopies and subspecialize as reported by Weizman et al. 16

Some recommendations earlier made for advancement of laparoscopic surgery include: novel simulation and continuous medical education by Weizman et al, advocacy for laparoscopic appendectomy by Afuwape et al. and other researchers advocacy for increasing knowledge, improving training and practice of doctors to help surmount local challenges by Allagoa et al, Ray-Offor et al in Port Harcourt stressed on the safety and feasibility of laparoscopic surgical practice amidst myriads of problems especially absence of dedicated operating theatre suites for laparoscopy, inadequacy of trained surgeons, support staff and necessary infrastructure. <sup>15,17-21</sup>

Laparoscopic surgical practice in our environment is limited in scope. Is there low patronage? Are there challenges? These issues have partly warranted this study which was aimed at ascertaining the knowledge, attitude and practice of laparoscopic surgery among medical doctors in Port Harcourt Nigeria, by assessing the knowledge of laparoscopic surgery among medical doctors; finding out the attitude of medical doctors on laparoscopic surgery; determining the extent of practice of laparoscopic surgery among medical doctors; and establishing the factors affecting laparoscopic surgery practice among medical doctors in Port Harcourt.

# **METHODS**

The study was a cross-sectional descriptive study carried among medical doctors who were resident or practicing in Port Harcourt the capital of Rivers State, one of the Niger Delta States in the Federal Republic of Nigeria.

The study was done in tertiary health facilities in Port Harcourt, and also at the Annual General Meeting of the Nigerian Medical Association in Port Harcourt the capital of Rivers State, from July 2019 to December 2019.

The minimum sample size was determined using the formula for survey developed by Yaro Yamen based on estimated population of medical doctors in Port Harcourt estimated to be 4,000 obtained from the Nigeria Medical Association Secretariat.

 $n = N/1 + Ne^2$ 

where n is minimum sample size, N is total population size (of Doctors) and e is desired precision/level of significance, usually 5% (0.05) at 95% Confidence Interval (CI). Hence, n=  $4,000/1+4,000\times0.052=363.6$  being approximately 364. To cater for 10% attrition, we

have 10% of 364=36; 364 + 36=400. Thus, about 500 questionnaires to survey participants.

# Sampling technique procedure

All the medical doctors at the tertiary health facilities and meetings who gave consent were given self-administered semi-structured questionnaires with effort made to avoid double administration. Five hundred questionnaires were distributed to survey participants and 414 were retrieved.

#### Data analysis

Information on knowledge, attitude, extent of practice of laparoscopic surgery, and factors affecting the attitude of medical doctors on laparoscopic surgery were collated and analyzed using the Statistical Package for the Social Sciences (SPSS) version 20.0.

The approval of the Research Ethics Committee of the University of Port Harcourt Teaching Hospital was obtained.

## **RESULTS**

A total of 414 practicing medical doctors were included in the survey. The demographic characteristics of the respondents summarized in Table 1 indicated that about half of the respondents (50.7%) were age 25-34 years and only 1.9% were 65 years and above. About 53.6% were males and female respondents were 46.4%. Seventy-two (72.5%) of respondents work in public facility while 27.5% were into private practice.

Table 1: Socio-demographic characteristics of respondents.

Variables	Frequency	Percentage
Age (in years)		
16-24	23	5.6
25-34	210	50.7
35-44	140	33.8
45-54	22	5.3
55-64	11	2.7
>65	8	1.9
Sex		
Male	222	53.6
Female	192	46.4
Place of practice		
Public	300	72.5
Private	114	27.5
Total	414	100.0

Three hundred and seventy-one respondents (89.6%) knew or have heard about laparoscopic surgery before the survey, while 43 (10.4%) did not know about laparoscopic surgery (Table 2). The sources of awareness of laparoscopic surgery were: 171 (41.3%) from hospital; 24 (5.8%) from books/journals; 4 (1.0%) from the media;

and 173 (41.8%) from medical school. Two hundred and fifty-three (61.1%) affirmed that laparoscopic surgery is less invasive and has minimal scars.

Challenges of laparoscopic surgery highlighted by respondents include (Table 2): very expensive 167 (40.3%); lack of skilled/experience surgeon 133 (32.1%); prolong operating time 26 (6.3%); lack of equipment 25 (6%); and fear of complication 25 (6%). Three hundred and thirty-seven (81.4%) held the view that laparoscopic surgery is necessary in the hospital. Reasons given by respondents for held views were: 53 (12.8%) opined that it provides alternative method for surgery; 18 (4.3%) felt that it gives opportunity to train resident doctors; 104 (25.1%) respondents asserted that it enhances effective surgery; and 96 (23.2%) emphasized that laparoscopic surgery enhances patient's early recovery.

Table 2: Awareness on laparoscopic surgery.

Variables	Frequency	Percentage	
Known or heard about laparoscopic surgery			
Yes	371	89.6	
No	43	10.4	
Source of laparoscopic	surgery awaren	ess	
Hospital	171	41.3	
Books/journal	24	5.8	
Media	4	1	
Medical school	173	41.8	
All of the above	12	2.9	
None	30	7.2	
Benefits of laparoscopic surgery			
Less invasive and	253	61.1	
minimal scars	233	01.1	
Less complication	67	16.2	
Faster recovery	56	13.5	
Don't know	38	9.2	
Challenges of laparoscopic surgery			
Very expensive	167	40.3	
Lack of skilled/	133	32.1	
experience surgeon	133		
Prolong time	26	6.3	
Lack of equipment	25	6	
Fear of complication	25	6	
Don't know	38	9.2	
Total	414	100	

Two hundred and ninety six respondents (71.5%) would allow, while one hundred and eighteen (28.5%) would not allow their relative to undergo laparoscopic surgery in Port Harcourt (Table 3) and reasons given for not allowing the relatives are; fear of complication (19.8%), fear of cost (1.4%), and lack of trust (3.1%), no obvious reason (75.6%). Two hundred and ninety-three respondents (70.8%) strongly agreed that laparoscopic surgery training should be introduced early for surgical residents (Table 4). Three hundred and twelve

respondents (75.4%) were willing to pay if laparoscopic surgery is necessary and offered in Port Harcourt.

Table 3: Need assessment for laparoscopic surgery.

Variables	Everyoner	Donaontess
		Percentage
Laparoscopic surgery neces	<del>_</del>	
Yes	337	81.4
No	49	11.8
Don't know	28	6.8
Why laparoscopic surgery is hospital	s necessary ii	n the
Provide alternatives	53	12.8
Opportunity to train resident doctors	18	4.3
Enhance effective surgery	104	25.1
Patients early recovery	96	23.2
Less invasive and quick recovery	35	8.5
None	108	26.1
Why laparoscopic surgery n		
hospital	100 110 00 55 661 9	
Is necessary	327	79
Some complications	3	0.7
No facilities	69	16.7
Don't know	15	3.6
Would allow relative to und	ergo laparos	copic
surgery in Port Harcourt	. ·	•
Yes	296	71.5
No	118	28.5
Reason given not to allow re	elative do lap	aroscopic
surgery in Port Harcourt		
Fear of complication	82	19.8
Fear of cost	6	1.4
Lack of trust	13	3.1
None	313	75.6
Total	414	100

Out of 414 respondents in the study, one hundred and eight (26.1%) were of the opinion that laparoscopic surgery services are offered in their hospital (see table 5). Two hundred and thirty-two respondents (56%) said laparoscopic surgery is not offered in their hospital, while seventy-four (17.9%) do not know.

Information about the frequency of laparoscopic surgeries done revealed that 10 (2.4%) respondents ticked that it was regular; 49 (11.8%) occasional; 72 (17.4%) were not sure; 267 (64.5%) stressed that it was not done in their hospitals; and 16 (3.9%) did not know whether it was done or not. Most common laparoscopic surgeries performed (see table 5) as indicated by the respondents includes; Appendectomy 13 (3.1%), cholecystectomy 7 (1.7%), myomectomy 5 (1.2%), and prostatectomy 3 (0.7%). The highest number of laparoscopic surgeries performed (Table 5) in their centre in the last one year as indicated by nine respondents (2.2%) was between 2 and 5.

Table 4: Need assessment for laparoscopic surgery Cont'd.

Variables	Frequency	Percentage (%)	
Laparoscopic surgery training should be introduced early for surgical residents			
Strongly agree	293	70.8	
Agree	68	16.4	
Not sure	50	12.1	
Disagree	3	0.7	
Why laparoscopic surgery training should be			
introduced early			
Early exposure to standard relevant skills	132	31.9	
Promote proficiency and world standard	80	19.3	
Patients benefits/satisfaction	31	7.5	
Better treatment outcome	6	1.4	
None	165	39.9	
Willingness to pay if laparoscopic surgery necessary and offered in Port Harcourt			
Yes	312	75.4	
No	5	1.2	
Not sure	97	23.4	
Total	414	100	

Three hundred and twelve respondents (75.4%) were willing to accept and pay for the service and ninety-seven (23.4%) were not sure (Table 4).

Only 1 (0.2%) of the respondents was willing to pay \$\frac{\times151,000.00}{151,000.00} - 200,000.00 (\$430 - \$570) and another 1 (0.2%) was willing to pay \$\frac{\times500,000}{1500,000} (\$1430) and above for commonly performed laparoscopic surgical procedures (see table 6). The reasons why laparoscopic surgery is not done in their hospitals according to respondents' opinion include: lack of complete set of equipment (8.7%); absence of trained personnel (22.9%); absence of equipment and personnel (38.4%); and 3.9% felt laparoscopic surgery procedure is not relevant to their hospital specialty.

On the other hand, 8 (1.9%) respondents preferred laparoscopic surgery (see table 6) due to less complication; twenty six (6.3%) due to less pain after surgery; one hundred and twenty-nine (31.2%) due to small scar or wound mark (cosmesis); and two hundred and thirty (55.6%) due to early recovery and discharge from hospital.

High cost of laparoscopic surgery was mentioned by one hundred and sixty-four (39.6%) of respondents as reason they will avoid the laparoscopic surgery; while sixty-nine (16.7%) avoid due to fear of complications; and one hundred and sixty-three (39.4%) due to lack of experienced surgeon (Table 6).

Table 5: Laparoscopic surgery in Port Harcourt.

Variables	Frequency	Percentage
Laparoscopic surgery offered in your hospital		
Yes	108	26.1
No	232	56.0
Don't know	74	17.9
Frequency of laparoscopic surgery		
Regularly	10	2.4
Occasionally	49	11.8
Not sure	72	17.4
None	267	64.5
Don't know	16	3.9
Number of laparoscopic surgery performed in the last one year		
2-5	9	2.2
6-10	5	1.2
11-20	1	.2
21-30	5	1.2
31-50	2	.5
>50	2	.5
None	154	37.2
Don't know	236	57.0
Most common laparoscopic surgery performed		
Myomectomy	5	1.2
Appendectomy	13	3.1
Cholecystectomy	7	1.7
Prostatectomy	3	0.7
None	155	37.4
Don't know	226	54.5

Continued.

Variables	Frequency	Percentage	
Number of open abdominal surgical procedures in the last one year			
>10	9	2.2	
>20	50	12.1	
>50	17	4.1	
>100	18	4.3	
>200	10	2.4	
>300	11	2.7	
None	103	24.9	
Don't know	196	47.3	
Total	414	100.0	

Table 6: Cost implication of laparoscopic surgery in Port Harcourt.

Variables	Frequency	Percentage
Average cost of commonly performed laparoscopic s	urgery	
₩51,000 - 100,000	2	0.5
₩101,000 - 150,000	6	1.4
₩151,000 - 200,000	1	0.2
№500,000 and above	1	0.2
No response	135	32.6
Don't Know	269	65.0
Average cost of commonly performed open abdomination	al surgical procedures	
N50,000 - 80,000	31	7.5
₩81,000 - 100,000	23	5.6
₩101,000 - 150,000	46	11.1
₩151,000 - 200,000	10	2.4
₩201,000 - 300,000	4	1.0
₩301,000 - 400,000	2	.5
No response	84	20.3
Don't Know	214	51.7
Why laparoscopic surgery not done in your hospital		
No complete set of equipment	36	8.7
No trained personnel	95	22.9
No equipment and personnel	159	38.4
Not relevant to hospital specialty	16	3.9
Laparoscopic services available	108	26.1
Advantage of laparoscopic surgery that will make yo	u prefer it	
Less complication	8	1.9
Less pain after surgery	26	6.3
small scar or wound mark (cosmetic)	129	31.2
Early recovery and discharge from hospital	230	55.6
All of the above	21	5.1
Reasons to avoid laparoscopic surgery		
High cost	164	39.6
Fear of complication	69	16.7
Lack of experience surgeons	163	39.4
All of the above	18	4.3
Total	414	100.0

# **DISCUSSION**

Majority of respondents were willing to pay for and allow their relatives to undergo laparoscopic surgery in Port Harcourt if necessary, and asserted that laparoscopic surgery is necessary in the hospital. This can be seen as being predictive of a positive hope for this mode of surgical procedure in Port Harcourt. However, when willingness to pay for services is quantified in monetary terms, very few respondents were willing to pay a significant amount for commonly performed laparoscopic surgical procedures. This is unhealthy for sustenance of

the practice, and a pointer to what public opinion will possibly be.

Preference for laparoscopic surgery still centers on issues of less complication; less pain after surgery; small scar or wound mark; and early recovery and discharge from hospital; as indicated in increasing order of percentage responses. The findings are similar to earlier documented reports. 4,22-24

Challenges highlighted by respondents in this study are known to be associated with laparoscopic surgery. More than a third of respondents blame high cost of laparoscopic surgery and lack of experienced surgeon as being reasons for not doing laparoscopy in their hospitals. Lack of equipment, prolong operating time, and fear of complications were also mentioned in this study. These are similar to reports by other researchers.<sup>5,12</sup>

There were very few centres that carry out laparoscopic surgery in Port Harcourt, and the responses elicited on the regularity of these procedures were also on the very low side. Laparoscopic appendectomy was ranked by respondents as the most common procedure performed. This seem to give some credence to the advocacy by Afuwape et al. and other researchers to make laparoscopic appendectomy the procedure of choice just like laparoscopic cholecystectomy, for obvious reasons.<sup>17</sup>-

Low case performance experienced in this study can be addressed through information dissemination in the media (radio and television). This has the potential of improving patronage and improving the skills of practicing laparoscopic surgeons. Investment in human and material resources necessary for laparoscopic surgery practice should therefore be given some priority by relevant government and private investors.

The limitation of this study is that it is individual doctorbased, and the opinion expressed by respondents though genuine may not exactly reflect the records in centers where laparoscopic surgery is performed. There is therefore need for a center-based study to determine the actual practice in Port Harcourt, Nigeria.

#### **CONCLUSION**

Willingness to accept and knowledge of laparoscopic surgery was relatively high among medical doctors, hence a high prospect for laparoscopic surgery practice in Port Harcourt is therefore likely. However, this study showed that very few centers actually carry out laparoscopic services and the number of cases done in the last one year was abysmally low. Medical doctors are not only members of the society, their level of knowledge and opinion is a strong mirror image of the feelings of the patients they counsel and treat.

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