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Hysteroscopy in Bayelsa state of Nigeria. A Surgical Divide

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Background: Hysteroscopy has revolutionized gynaecological practice, improving the management of appreciable number of gynecological problems. It is right now a benchmark of the gynaecologicspecialists armamentarium. **Aim:** To assess the knowledge, practices and challenges of hysteroscopy amongst Doctors in Bayelsa state, creating awareness on this novel endoscopic procedure to improve on our surgical armamentarium. **Methodology:** This is a descriptive cross sectional study of Doctors in Federal Medical Centre, Yenagoa, Niger Delta University Teaching Hospital, Okolobiri, and Private Hospitals in Bayelsa State. A structured self-administered questionnaire was designed and used to collect information from 192 Doctors cutting across Medical and most especially Surgical disciplines. Data was analyzed with SPSS windows version 20. **Results:** Of the 192 respondents, 149 (77.6) showed low knowledge as against 4 (2.1%) that showed high level of knowledge while 39 (20.3%) expressed moderate knowledge. Only 12 (6.3%) of the 192 respondents have had a formal training in hysteroscopy. Of this 6.3%, only 1 (8.3%) of the respondents had performed hysteroscopy on his own. **Conclusion:** Despite the fact that hysteroscopy is currently a benchmark for gynaecological practice, there is a surgical divide for us in Bayelsa state and maybe other resource poor setting worldwide. Lack of equipment and enabling environment for training in the art of Hysteroscopy are major contributors. However withpolitical will, increasing knowledge and training of Doctors and support staff, collaboration with international partners endowed with endoscopic skills will go a long way in improving practice of hysteroscopy and service delivery in our environment.

Keywords: Knowledge, Practice, Challenges, Hysteroscopy, Endoscopy

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Introduction

Hysteroscopy has revolutionized gynaecologicalpractice, improving the management of appreciable number of gynecological problems - infertility, intrauterine adhesions, septate uterus, endometrial polyps, uterine myoma, hysteroscopic guided removal of impacted IUCD, biopsy of suspicious endometrium, treatment of hemangiomas and arteriovenous malformations andhysteroscopy guided tubal sterilization to mention a few[1-10]It is right now a benchmark of the gynaecologicspecialists armamentarium. Cost, convenience, accuracy and reliability, along with individual acceptability of this technique tend to be clearly superior to conventional surgical procedures. Modern hysteroscopy no doubt represents a technological triumph that has developed tremendously on the trial-and-error research of many scientists. Going down memory lane, endoscopy may be traced to the Italian-German Phillip Bozzini, who in 1804 conceptualized the idea of illuminating the body cavities by an external light source in a novel manner. [11]The first hysteroscope was produced in 1865 by Desormeaux.However, Pantoleoni in 1869 performed the first hysteroscopy, using Desormeauxhysteroscope[12]Using modern beginnings, Nitzein 1879, drew and produced an endoscope. Thecystoscopewas earlier described and presented in 1877 by Nitze and the hysteroscope as we know it today is similar to it.[13]

In 1898,Duplay and Clado; in 1908, David; in 1914,Heineberg; in 1925, Rubin; in 1926, Seymour; in 1927, Van Mikulicz; in 1928, Gauss; in 1934, Schroeder; in 1937, Segond; in 1952, Fourestier, Gladu and Vulmiere; in 1954,Mohri and Mohri; in 1956,Norment; in 1957, Palmer; in 1962,Silander; in 1966,Marleschki; in 1970, Edstrom and Fernstrom; in 1971,Lindemann and Mohr; in 1972, Porto and Gaujoux; in 1972,Vulmiere; in 1975, Iglesias; in 1976,Lindemann; in1976,Siegler and Kemman; in 1976, Hopkins; in 1978, March and Israel in 1978, Sugimotoall contributed in one way or the other to the progress of the instrument and technique of hysteroscopy[14]Just to mention but a few contributions; Edström and Fernström in 1970 introduced the use of a solution of a high-molecular-weight dextran from beet sugar as a distending medium while Hamou, in 1979, idealized the microhysteroscope with panoramic vision and of contact. Since then, the development Of hysteroscopy has flourished. During the 1980s and 1990s, gynaecology has shifted heavily towards endoscopy as specialty. Hysteroscopy in 21st century has finally found its niche,gynecologists and their trainees are required to learn skills of hysteroscopy.Tremendous advances are still being made. spite of these evolution, Nigeria is still at the familiarization stage, however, available literatures show that there is increasing acquisition of skills and keen interest in endoscopic surgeries,[15-19] with only few available literature on hysteroscopy [20-21]As this is the pilot hysteroscopic study in Bayelsa state, we aim to assess the knowledge, practices and challenges of hysteroscopy amongst Doctors in Bayelsa state, creating awareness on this novel endoscopic procedure to improve on our surgical armamentarium.

Methodology

Study Design: This is a descriptive cross sectional study of Doctors in Federal Medical Centre, Yenagoa, Niger Delta University Teaching Hospital, Okolobiri, and Private Hospitals in Bayelsa State.

Study Area: Bayelsa state is a Southern state of Nigeria in the core of the Niger Delta, between Rivers state and Delta state.

Study Population: This consisted of Medical Doctors.

Eligibility Criteria

- Doctors in Federal Medical Centre, Yenagoa.
- Doctors of Niger Delta University Teaching Hospital, Okolobiri, Bayelsa State.
- Private practitioners, Bayelsa State.

Inclusion Criteria

- House officers
- Corp members
- Medical officers
- Residents
- Consultants

Exclusion Criteria

- Nurses
- Pharmacists
- Medical Laboratory scientists
- Other supportive staff
- Patients

Sampling Method: This was a multistage random sampling in which a sample frame of the Tertiary hospitals (Federal Medical Centre, Yenagoa and Niger Delta University Teaching Hospital, Okolobiri) and Private Hospitals in Bayelsa state were obtained. 200 Doctors cutting across Medical and most especially Surgical disciplines were given a structured self-administered questionnaire and retrieved simultaneously. 192 questionnaires were correctly and completely filled.

Study Instrument: A structured self-administered questionnaire was designed and used to collect information from Doctors.

Consent and Ethical Approval: A permission to study was obtained from the Ethical and Research Committee of the Federal Medical Centre, Yenagoa. Verbal informed consent was obtained from each participant before inclusion in the study. The reason for the study and procedure for data collection was explained to the Doctors before collection of data from them.

Data Analysis: The data was processed using SPSSwindows version 20. Summary statistics, sample frequencies and crossed tabulations was then computed

Results

Table 1: Socio-demographic Distribution of Respondents

Statement	Frequency (F)	Percentage (%)
Age:		
20-30	80	41.7
31-40	97	50.5
41-50	4	2.1
51-60	8	4.2
61 and above	3	1.6
Sex:		
Male	132	68.8
Female	60	31.3
Area of specialization:		
General practitioner	78	40.6
General surgery	30	15.6
Urology	4	2.1
Orthopaedics	6	3.1
O&G	14	7.3
Pediatrics	6	3.1
Internal medicine	12	6.3
Dentistry	1	.5
Others	41	21.4

Table 1 shows the socio-demographic distribution of respondents: 80(41.7%) are 20-30yrs, 97(50.5%) are 31-40yrs, 4(2.1%) are 41-50yrs, 8(4.2%) are 51-60yrs while 3(1.6%) are 61 and above; 132(68.8%) are males while 60(31.3%) are females; 78(40.6%) are General practitioners, 30(15.6%) are General surgeons, 4(2.1%) are Urologist, 6(3.1%) are Orthopedics, 14(7.3%) are Obstetricians and Gynaecologists (O&G), 6(3.1%) are pediatricians, 12(6.3%) are in internal medicine, 1(.5%) are dentistry while 41(21.4%) are others.

Table 2: Knowledge on Hysteroscopy

Statements	Frequency (F)	Percentage (%)
What is hysteroscope?		
A transperitoneal endoscopic instrument	31	16.1
A transcervical endoscopic instrument	161	83.9
Have you seen a hyteroscope?		
Yes	26	13.5
No	166	86.5
Light source		
True	153	79.7
False	3	1.6
I don't know	36	18.8
Camera		
True	131	68.2
False	8	4.2
I don't know	53	27.6
Hysteroscope tip 0o:		
True	30	15.6
False	7	3.6
I don't know	155	80.7
Hysteroscope tip 30o		
True	18	9.4
False	7	3.6
I don't know	167	87.0
Hysteroscope tip 1200		
True	15	7.8
False	6	3.1
I don't know	171	89.1
Monitor		
True	89	46.4
False	5	2.6
I don't know	98	51.0
Insufflator		
True	61	31.8
False	4	2.1
I don't know	127	66.1
Irrigator		
True	58	30.2

False	5	2.6
I don't know	129	67.2
Electro coagulation machine		
True	55	28.6
False	8	4.2
I don't know	192	67.2
Recorder		
True	79	41.1
False	3	1.6
I don't know	110	57.3
Water		
True	44	22.9
False	16	8.3
I don't know	132	68.8
Glycine		
True	22	11.5
False	16	8.3
I don't know	154	80.2
Leucin		
True	7	3.6
False	14	7.3
I don't know	171	89.1
Normal saline		
True	55	28.6
False	10	5.2
I don't know	127	66.1
Dextran 70		
True	20	10.4
False	21	10.9
I don't know	151	78.6

Table 2 shows respondents knowledge on hysteroscopy: 31(16.1%) stated hysteroscope is a transperitoneal endoscopic instrument while 161(83.9%) stated that it is a transcervical endoscopic instrument; 153(79.7%) stated that hysteroscope has a light source, 3(1.6%) stated no light source while 36(18.8%) don't know; 131(68.2%) stated that hysteroscope has a camera, 8(4.2%) stated no camera while 155(80.7%) don't know; 30(15.6%) stated that hyteroscope has hyteroscope tip 0o, 7(3.6%) stated no while 155(80.7%) don't know; 18(9.4%) stated that hyteroscope has hyteroscope tip 30o, 7(3.6%) stated false while 167(87.0%) don't know; 15(7.8%) stated that hysteroscope has hysteroscope tip 120o, 6(3.1%) stated false while 171(89.1%) don't know; 89(46.4%) stated that hysteroscopic trolley/tower is made up of Monitor, 5(2.6%) stated false while 98(51.0%) don't know; 61(31.8%) stated that hysteroscopic trolley/tower is made up of insufflator, 4(2.1%) stated false while 127(66.1%) don't know; 58(30.2%) stated that hysteroscopic trolley/tower is made up of irrigator, 5(2.6%) stated false while 129(67.2%) don't know; 55(28.6%) stated that hysteroscopic trolley/tower is made up of electro coagulation machine, 8(4.2%) stated false while 129(67.2%) don't know; 79(41.1%) stated that hysteroscopic trolley/tower has recorder, 3(1.6%) stated false while 110(57.3%) don't know; 44(22.9%) stated that water can be used in hysteroscopy, 16(8.3%) stated false while 132(68.8%) don't know; 22(11.5%) stated that Glycine can be used in Hysteroscopy, 16(8.3%) stated false while 154(80.2%) don't know; 7(3.6%) stated that leucin can be used in Hysteroscopy, 14(7.3%) stated false while 171(89.1%) don't know; 55(28.6%) stated that normal saline can be used in hysteroscopy, 10(5.2%) stated false while 127(66.1%) don't know; 20(10.4%) stated that Dextran 70 can be used in Hysteroscopy, 21(10.9%) stated false while 151(78.6%) don't know.

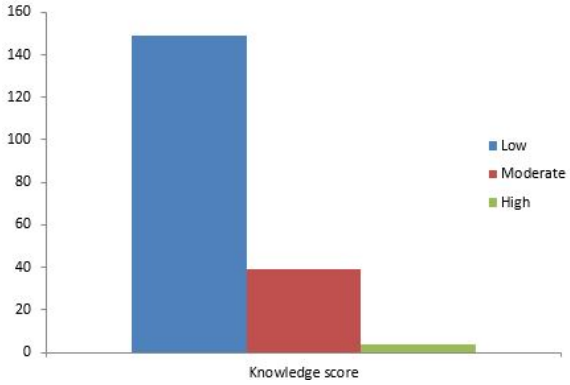

Fig 1 shows knowledge distribution of respondents: 149(77.6%) expressed low knowledge, 39(20.3%) expressed moderate knowledge while 4(2.1%) showed high level of knowledge.

Table 3: Practice of Hysteroscopy

Question/Statement	Frequency (f)	Percent (%)
Have you had a formal training in hysteroscopy before?		
Yes	12	6.3
No	180	93.8
Have you performed hysteroscopy before?		
Yes	1	8.3
No	11	91.7
Do you have a Hysteroscope in your hospital/Institution of training?		
Yes	1	0.5
No	191	99.5
Hysteroscopy can be diagnostic & therapeutic		
Yes	149	77.6
No	43	22.4

Table 3 shows respondents practice of hysteroscopy: 12(6.3%) stated that they have had a formal training in hysteroscopy while 180(93.8%) have not; Of the 12 doctors that have had formal training before, 1(8.3%) stated that he has performed hysteroscopy before while 11 (91.7%) have not; 142(74.0%) stated that they would like to have a formal training in hysteroscopy while 50(26.0%) stated they wouldn't like to; 35(18.2%) stated that they do have hysteroscopy in their hospital while 157(81.8%) stated that they do not; 149(77.6%) stated that hysteroscopy can be diagnostic & therapeutic while 43(22.4%) stated it is not.

Table 4: Advantages of Hysteroscopy

Statement/Question	Frequency (F)	Percent (%)
Reduce costs		
True	77	40.1
False	71	37.0
Don't know	44	22.9
Prolong hospital stay		
True	35	18.2
False	129	67.2
I don't know	28	14.6
Does not require incision		
True	105	54.7
False	48	25.0
I don't know	39	20.3
Less post-operative pains		
True	159	82.8
False	10	5.2
I don't know	23	12.0
Less infection:		
True	160	83.3
False	3	1.6
I don't know	29	15.1
Improves diagnosis/treatment of infertility		
True	158	82.3
False	4	2.1
I don't know	30	15.6
Increase cost equipment:		
True	160	83.3
False	5	2.6
I don't know	27	14.1

Table 4 shows respondents knowledge on advantages of hysteroscopy: 77(40.1%) stated true that hysteroscopy reduces cost, 71(37.0%) stated false while 44(22.9%) don't know; 35(18.2%) stated that hysteroscopy prolong hospital stay, 129(67.2)stated false while 28(14.6%) don't know; 105(54.7%) stated that hysteroscopy does not require incision, 48(25.0%) stated false while 39(20.3%) don't know; 159(82.8%) stated that hysteroscopy has less operative pains, 10(5.2%) stated false while 23(12.0%) don't know; 160(83.3%) stated that hysteroscopy has less infection, 3(1.6%) stated false while 29(15.1%) don't know; 158(82.3%) stated that hysteroscopy improve diagnosis, 4(2.1%) stated false while 30(15.6%) don't know; 160(83.3%) stated that increased cost of equipment is one of the challenges of hysteroscopy, 5(2.6%) stated false while 27(14.1%) don't know.

Table 5: Challenges of Hysteroscopy

Question/Statement	Frequency (F)	Percent (%)
Reduced trained support staff:		
True	143	74.5
False	12	6.3
I don't know	37	19.3
Acceptance of patients		
True	101	52.6
False	50	26.0
I don't know	41	21.4
Awareness among medical doctors		
True	119	62.0
False	33	17.2
I don't know	40	20.8
Lack of constant power		
True	146	76.0
False	14	7.3
I don't know	32	16.7
Resistance to change		
True	108	56.3
False	28	14.6
I don't know	56	29.2
Increase in learning curve:		
True	92	47.9
False	39	20.3
I don't know	61	31.8
Hysteroscopy is preferred to laparoscopy in tubal sterilization		
True	110	57.3
False	73	38.0
I don't know	9	4.7

Table 5 shows the challenges of hysteroscopy: 143(74.5%) stated that reduced trained support staff is one of the challenges of hysteroscopy, 12(6.3%) stated false while 37(19.3%) don't know; 101(52.6%) stated that acceptance by patients

Is a challenge of hysteroscopy, 50(26.0%) stated false while 41(21.4%) don't know; 119(62.0%) stated that awareness among medical practitioner is a challenge of hysteroscopy, 33(17.2%) stated false while 40(20.8%) don't know; 146(76.0%) stated that lack of constant power is a challenge of hysteroscopy, 14(7.3%) stated false while 32(16.7%) don't know; 108(56.3%) stated that resistance of power is one of the challenges of hysteroscopy, 28(14.6%) stated false while 56(29.2%) don't know; 92(47.9%) stated that increase in learning curve is one of the challenges of hysteroscopy, 39(20.3%) stated no while 61(31.8%) don't know; 110(57.3%) stated that hysteroscopy is preferred to laparoscopy in tubal sterilization, 73(38.0%) stated false while 9(4.7%) don't know.

Table 6: Relationship between Age and Knowledge on Hysteroscopy

Educational Status	Knowledge Score			Df	X2	P-value
	Low	Moderate	High	8	6.546	0.586
20-30	62	16	2			
31-40	76	19	2			
41-50	4	0	0			
51-60	4	4	0			
61 and above	3	0	0			
Total	149	39	4			

Table 6 shows the relationship between age and knowledge on hysteroscopy. At P < 0.05, Chi-square (X_2) = 6.546, difference (df) 8 and P-value = 0.586, there was no statistical significant relationship between age and knowledge on hysteroscopy.

Table 7: Relationship between Sub-specialty and Knowledge on Hysteroscopy

Sub-specialty	Knowledge Score			Df	X2	P-value
	Low	Moderate	High	16		
General practitioner	66	11	1		23.230	0.108
General surgery	25	5	0			
Urology	2	2	0			
Orthopaedics	6	0	0			
O and G	9	5	0			
Paediatrics	4	1	1			
Internal medicine	8	3	1			
Dentistry	0	1	0			
Others	29	11	1			
Total	149	39	4			

Table 7 shows the relationship between sub-specialty and knowledge on hysteroscopy. At P < 0.05, Chi-square (X_2) = 23.230, difference (df) 16 and P-value = 0.108, there was no statistical significant relationship between sub-specialty and knowledge on hysteroscopy.

Discussion

Hysteroscopy is generally a low risk technique that uses the endocervical canal, the natural passageway of the body, to gain entry into the uterine cavity. Refinement of optical and fiberoptic light instrumentation and of operative accessories allow high resolution and excellent visual documentation by hysteroscopy.[22]

Interestingly, majority (92.2%) of the respondents are young Doctors within the age groups of 20-30 and 30-40 years respectively.

These groups of Doctors have the capacity to be trained in the art of endoscopy and mentor their younger colleagues over a long period of active years of their service.

Of the 192 respondents, 149 (77.6) showed low knowledge as against 4 (2.1%) that showed high level of knowledge while 39 (20.3%) expressed moderate knowledge. This is not surprising as an earlier study done on laparoscopy amongst Doctors in Bayelsa state showed low knowledge for majority (61%) of the respondentsvis-à-vis 7.1% of Doctors that expressed high knowledge.

In the same study, the remaining 31.8% of Doctors expressed moderate knowledge (AllagoaDO et al 2015).[22] It is not surprising because laparoscopy is utilized almost in allgynaecological/surgery sub-specialties while hysteroscopy is limited to gynaecology. So if their general knowledge is low on laparoscopy, it is expected to be lower on hysteroscopy.

Our study was also supported byRay-Offor E and Fiebai PO in University of Port Harcourt Teaching Hospital Nigeria. In their study,knowledge was rated inadequate as 49.3% of surgeons, gynaecologists and their trainees could not accurately define laparoscopy and 21.8% did not know the abdomen as the body part involved in laparoscopy[19](Ray-Offor E and Fiebai PO, 2012). Even though these studies were on laparoscopy, they are all forms of minimal access techniques.

Statistically, there was no significant relationship between age and knowledge on hysteroscopy (P < 0.05, Chi-square (X_2) = 6.546, difference (df) 8 and P-value = 0.586).

There was also no statistical significant relationship between sub-specialty and knowledge on hysteroscopy (P < 0.05, Chi-square (X_2) = 23.230, difference (df) 16 and P-value = 0.108). From first principles, considering the fact that hysteroscopy is an endoscopic procedure used by gynaecologists for both diagnostic and therapeutic purposes, it is expected that gynaecologists and their trainees would display more knowledge. Also because of the inclusion of endoscopy in medical school, one could expect that newly graduated Doctors will show more knowledge. On the contrary, our study showed no statistical significant relationship. More so, literature from available research to support it are scant (AllagoaDO et al 2015).

Only 12 (6.3%) of the 192 respondents have had a formal training in hysteroscopy. Of this 6.3%, only 1 (8.3%) of the respondents had performed hysteroscopy on his own. This depicts a very poor practice of hysteroscopy amongst the Doctors in Bayelsa state. What explains this primarily is the unavailability of hysteroscopic equipment in the hospitals. The cost of acquiring these equipment and training of doctors may also be prohibitive.

Even though generally, the knowledge of the respondents was very low with relatively very poor or no practice of hysteroscopy, 110 (57.3%) mentioned that hysteroscopy is preferred than laparoscopy for tubal sterilization. This was supported by otherstudies as hysteroscopicEssure and Adianamethods were more preferred than the laparoscopicelectrocautery or electrocoagulation and clip methods.[23-27] Also, 158 (82.3%) respondents recognized the benefits of hysteroscopy on diagnosis and treatment of infertility. This is supported by other studies; Bozdag et al in 2008 stated that hysteroscopy remains the gold standard in diagnosing uterine abnormalities prior to IVF. Although, advanced evaluation of the endometrial cavity is not recommended as routinework upfor infertility, hysteroscopy enables diagnosis and treatment of intrauterine pathology in the same setting. [28-30]

The challenges identified by respondents include increase in cost of hysteroscopic Equipment, reduced trained support staff, acceptance of patients, awareness among Doctors, resistance to change and lack of constant power supply. Similarly, other endoscopic studies have reported high cost of procedure, lack of hospital equipment, insufficient experience and training, poor support from colleagues, relatively low reimbursement rates from institutions and protracted learning curves amongst others [18], [31], [32]

We therefore recommend for;

- Political will as this has a role in the provision of hospital equipment and then training and retraining of personnel.
- Tertiary hospitals and private specialist hospitals in Bayelsa state and other resource poor settings to procure hysteroscopic equipment as providing such services to the people will in addition to the aforementioned benefits reduce the cost with increasing uptake.
- Training and retraining of gynaecologists and their trainees on basic and advanced laparoscopic courses.
- Introduction of hysteroscopic lectures in our CMEs to increase knowledge and awareness amongst Doctors for prompt referral of cases to centres where such services can be enjoyed.
- Convincing colleagues and patients that it can be done here is pertinent.
- Inclusion of hysteroscopic surgeries in the National Health Insurance Services program would be vital in reducing the cost implication and making it affordable to many.
- Collaboration with international partners that are vast with interventional laparoscopy for transfer of knowledge.

Conclusion

Despite the fact that hysteroscopy is currently a benchmark forgynaecological practice, there is a surgical divide for us in Bayelsa state and maybe other resource poor setting worldwide. Lack of equipment and enabling environment for training in the art of Hysteroscopy are major contributors. However with political will,increasing knowledge and training of Doctors and support staff, collaboration with international partners endowed with endoscopic skills will go a long way in improving practice of hysteroscopy and service delivery in our environment.

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