



P-ISSN: 2664-3685

E-ISSN: 2664-3693

www.paediatricjournal.com

IJPG 2023; 6(2): 01-07

Received: 02-04-2023

Accepted: 03-05-2023

Rex Friday Ogoronte A Ijah

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

Datonye C Briggs

Department of Pediatrics, Rivers State University, Rivers State University Teaching Hospital, Port Harcourt, Rivers State, Nigeria

Friday E Aaron

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

Ajibola Alabi

Department of Pediatrics, Rivers State University, Rivers State University Teaching Hospital, Port Harcourt, Rivers State, Nigeria

Nwizor M Nkadam

Department of Anesthesiology, Rivers State University, Rivers State University Teaching Hospital, Port Harcourt, Rivers State, Nigeria

Boma Ibiba Douglas

Department of Internal Medicine, Rivers State University, Rivers State University Teaching Hospital, Port Harcourt, Rivers State, Nigeria

Hope I Bell-Gam

Professor of Geriatric, Department of Internal Medicine, Rivers State University, Rivers State University Teaching Hospital, Port Harcourt, Rivers State, Nigeria

Corresponding Author:

Rex Friday Ogoronte A Ijah

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

Surgery at extremes of age: Awareness, attitude, and reasons for patients' disposition in a tertiary health institution in Port Harcourt, Nigeria

Rex Friday Ogoronte A Ijah, Datonye C Briggs, Friday E Aaron, Ajibola Alabi, Nwizor M Nkadam, Boma Ibiba Douglas and Hope I Bell-Gam

DOI: <https://doi.org/10.33545/26643685.2023.v6.i2a.204>

Abstract

Background: Patient-related barriers to accessing surgical interventions including patient education issues, stigma, traditional beliefs, and absence of social support, negatively impact surgical outcomes. This study aimed at evaluating the awareness, attitude, and reasons for the disposition of patients and their relatives towards the offer of surgical intervention for infants and the old in Port Harcourt in the year 2022/2023.

Materials and Methods: A cross-sectional descriptive study was conducted in Port Harcourt Nigeria, among patients and relatives of patients at extremes of age (infants and the old) using an interviewer-administered questionnaire. Data were analysed using SPSS version 23.0.

Results: Of 575 respondents recruited with a mean age of 50.81 ± 17.77 , 395 (68.9%) were females. While 351 (61.5%) respondents were aware of the possibility of carrying out surgical operations on infants, 189 (32.9%) were aware of consent decline for surgery for their infants and, 66 (11.5%) stated the child died as a consequence of such a decision. Whereas, 493 (86.0%) of respondents were aware that surgery could be carried out on old persons, 196 (34.5%) were aware of consent decline for surgery for the old, for which some died. Yet, 444 (77.2%) and 459 (80.8%) of respondents had a positive attitude to surgery in infants and old persons, respectively. Aversion to surgery were mainly due to fear of losing child (72.3%) and fragility of old person (46.0%).

Conclusion: This study documented the awareness and attitude to surgery at extremes of age, and uncovered the reasons for such dispositions.

Keywords: Awareness, attitude, surgery at extremes of age, patients' disposition, Port Harcourt, rivers, Nigeria

Introduction

The last four decades have witnessed considerable improvement in surgical procedures in children (Neonate, infant and child) with minimally invasive approaches making significant in-road into surgical procedures that were initially carried out by open surgery [1-5]. The improvement has also affected anaesthesia for children's surgery, with a trend towards regional anaesthesia where possible and where unavoidable ensuring minimal or brief exposure to general anaesthesia by paediatric anaesthesiologists [6-11]. Although some studies have reported altered academic performance during childhood following anaesthesia and surgery in infants, [12, 13] other studies have disproved these findings [14, 15]. Even intrauterine fetal surgeries are being undertaken in the more technologically advanced countries where the facilities and expertise are available [16-18]. Similarly significant progress has been made concerning surgery done among the elderly. Old age is classified according to decades into three groups: "Young Old" (60-74 years), "Old" (75-84 years), and "Oldest Old" (≥ 85 years) [19]. Also youngest-old (65 to 74 years), middle-old (75 to 84 years), and oldest-old (≥ 85 years) [20]. The year 2021 to 2030 has been proclaimed by the United Nations General Assembly as a decade of healthy ageing, [21] and the world population of elderly persons (detailed in a United Nations Report) was estimated to be 703 million in 2019 with a projected likelihood of doubling to 1.5 billion by 2050 [22]. Therefore, there will continue to be elderly patients who would need one form of surgical intervention or the other.

Special precautions are needed in surgery involving infants. Differing surgery in the newborn for a few days could allow diuresis and spontaneous closure of ductus arteriosus to occur, and therefore improve respiratory function and outcome of surgery [23].

Other considerations for infants and children undergoing surgery are already reported [3, 24-26]. Surgery in the elderly requires informed evaluation as there are some systemic changes (limiting functional reserves) that are peculiar to the elderly that need to be considered in the preoperative preparation for this group of patients [27]. Co-morbidities are common among elderly requiring special preparation before surgery. Some of the co-morbidities may be associated with multiple drug usage whose functions would need to be considered in planning the intended surgical procedure. Choice of surgical approach - use of technology-based minimally invasive surgery has been found to reduce the morbidity (Of conventional surgery) resulting from interference with the already constricted system in the elderly [28-30]. Essentially some principles are known to guide the choice of surgery in geriatric or old persons (60 years and above) and they include: atypical clinical presentation of surgical disease and consequently delayed diagnosis; lack of physiologic reserve; need for attention to detail (Preoperative, intraoperative, and postoperative care); special consideration to preoperative preparation; comparative higher risk of emergency surgery; and status of age as a scientific fact [31, 32]. It is important that the status of the aged biologically and medically is crucial in the choice, type and packaged care at all levels of surgical interventions.

Many congenital anomalies require neonatal surgery and certain other illnesses are only treatable by surgical means irrespective of the age of the patient. Patient-related barriers to accessing surgical services were reported including patient education issues, stigma and traditional beliefs, and absence of social support, among others [33-35]. Other studies reports reluctance to accept needed surgery for patients at extremes of age, even when they are considered fit for surgery by the doctor [36]. Patients and their relatives decline the offer of surgery at extremes of age, and in most cases reasons are often not given. In Port Harcourt, studies that address this often-encountered situation in the health care facilities that negatively affect surgical outcomes and remains a silent cause for preventable deaths has been scarcely documented. This study therefore aimed to evaluate the awareness, attitude, and reasons for the disposition of patients and their relatives towards the offer of necessary surgery for infants (children less than 12 months) and the old (adults \geq 60years) in Port Harcourt in the year 2022/2023.

Materials and Methods

Research Design: A cross-sectional descriptive study was carried out.

Study Area: The study was carried out in Port Harcourt, the capital of Rivers State, South-South of the Federal Republic of Nigeria. It is a coastal city located on latitudes $6^{\circ}58'$ – $7^{\circ}60'E$ and longitudes $4^{\circ}40'$ – $4^{\circ}55'N$ [37]. Parts of two local government areas - Obio-Akpor and Port Harcourt City local governments areas – form the capital city, out of the 23 local government areas in Rivers State. (However, the Greater Port Harcourt include Port Harcourt, Okrika, Obio-Akpor, Ikwerre, Oyigbo, Ogu-Bolo, Etche and Eleme local government areas). Port Harcourt is a cosmopolitan city

having multinational petroleum exploring, processing and servicing companies, an international airport, a seaport, and many educational and health institutions, including three teaching hospitals – the University of Port Harcourt Teaching Hospital (federal-owned), the Rivers State University Teaching Hospital (State-owned), and the PAMO University Teaching Hospital (private).

Study Sites: The Surgical Out-patient Clinics, Pediatric Clinics, and Geriatric Clinics of the Rivers State University Teaching Hospital, were the study sites. In the year 2021, 34 surgeries were carried out on infants, and 242 on patients who were \geq 60 years.

Study Population: The patients and patient relatives/parents (For infants) at the study sites constituted the study population.

Sample Size Determination: All clinic attendees who gave consent for inclusion were recruited with a targeted minimum of 400 respondents.

Sampling Method: Total population of out-patient attendees was used until the minimum number was reached.

Study Instrument: A semi-structured interviewer-administered questionnaire was used to obtain data for the study.

Outcome Variables: The study variables were demographics, knowledge/awareness of surgery for infants, knowledge/awareness of surgery for the elderly, attitude to surgery for infants, attitude to surgery for the elderly, reasons for disposition to surgery for infants, and reasons for disposition to surgery for elderly.

Bias: The study was hospital-based, and may not have completely captured the opinion of the public. However, since the clinic attendees are random selections from different strata of society, the authors believe that similar results could be achieved.

Data Analysis: Data obtained were formed into table and analysed using descriptive statistics. The analysis was done using the Statistical Package for the Social Sciences (SPSS) version 23.0.

Validity/Reliability of Instrument: The study instrument was pre-tested in a similar environment, and all authors scrutinized the data obtained. The Cronbach's Alpha test was done for the reliability of the study instrument for data on attitude surgery was done (0.735).

Results

Table 1 shows the socio-demographic data of the respondents. There were 395 (68.9%) females and 180 (31.3%) males. The mean age of respondents was 50.81 ± 17.77 , and ranged from 18 to 88 years. Most of the respondents ($n = 473$, 83.6%) were married, and almost all ($n = 545$, 95.6%) were Christians.

Table 1: Socio-demographic characteristics of respondents

Variables	Frequency (n=575)	Percentage
Gender		
Male	180	31.3
Female	395	68.7
Age categories		
Less than 21	11	1.9
21-30	86	15.0
31-40	124	21.6
41-50	40	7.0
51-60	46	8.0
Above 60	268	46.6
Marital status		
Single	85	15.0
Married	473	83.6
Others	8	1.4
Non responders	9	
Religion		
Christianity	545	95.6
Islam	16	2.8
Others	9	1.6
No response	5	
Nationality (Nigerian)		
Yes	568	98.8
No	7	1.2

Table 2: Awareness of Surgery in Infants

Variables	Frequency (n=575)	Percentage
Do you know if surgical operation can be carried out on children less than 1 year?		
Yes	351	61.5
No	90	15.8
I don't know	130	22.8
No Response	4	
Do you know of any child less than 1 year who has been operated on?		
Yes	167	46.4
No	163	45.3
I don't know	30	8.3
Sub-Total	360	100
Not applicable	215	
Have you seen or heard parents refusing to give consent for needed surgery for a child?		
Yes	189	33.1
No	264	46.2
I don't know	118	20.7
Sub-Total	571	100
No Response	4	
If "Yes", what was the outcome of surgery in the child?		
Child survived	66	35.1
Child died	57	30.3
I don't know	65	34.6
Sub-Total	188	100
Not applicable	387	

Table 2 shows respondents' awareness of surgery in infants. Three hundred and fifty-one (61.5%) were aware of the possibility of carrying out surgical operations on children less than 1 year. Only 167 (29.04%) of the respondents knew at least an infant who had been operated on before. One hundred and eighty-nine (32.9%) of respondents were aware of patients' relatives declining consent for surgery for their infants, and 66 (11.5%) of respondents stated that the child died as a result of such decline of consent.

Table 3: Awareness of Surgery in Old

Variables	Frequency (n=575)	Percentage
Do you know if surgical operation can be carried out on the old (≥ 60 years)?		
Yes	493	86.0
No	16	2.8
I don't know	64	11.2
Total	573	100.0
No response	2	
Do you know of any of the old who has been operated on?		
Yes	378	75.9
No	89	17.9
I don't know	31	6.2
Total	498	100.0
Not Applicable	77	
Is there any community or LGA where surgery is forbidden in the old?		
Yes	2	0.4
No	279	49.0
I don't know	289	50.6
Total	570	100.0
No response	5	
Mentioned communities		
Ekine Southern Ijaw		
Opume in Ogbia LGA in Bayelsa		
Have you seen or heard relatives refusing to give consent for needed surgery for the old?		
Yes	196	34.5
No	290	51.1
I don't know	82	14.4
Total	568	100.0
No Response	7	
What was the outcome of surgery in the old?		
Patient survived	47	24.7
Patient died	77	40.5
I don't know	66	34.7
Total	190	100.0

Awareness of surgery in the old (≥ 60 years) is shown in Table 3. Four hundred and ninety-three (86.0%) of respondents were aware that surgery could be carried out on the old (≥ 60 years), and 378 (75.9%) knew at least one old person that had been operated on in the past. Only 2 (0.4%) of the respondents knew and mentioned a community (Ekine in Southern Ijaw, and Opume in Ogbia, both in Bayelsa State) where surgery is forbidden in the old. One hundred and ninety-six (34.5%) respondents had seen or heard relatives refusing to give consent for a needed surgery for the old, for which some died.

Table 4 shows respondents' attitude to surgery and reasons for aversion to surgery in extremes of age. Four hundred and forty-four (77.2%) respondents had a positive attitude to surgery in the infant, and 459 (80.8%) had a similar attitude to surgery in the old. The reasons for aversion to surgery in infants were predominantly fear of losing a child, fear of future mental dullness or altered academic performance. The reasons for aversion to surgery in the old were mainly fear of losing the elderly, and the too fragile to undergo surgery. However, while some did not respond to the information on reasons, others were not sure.

Table 4: Attitude/reasons for aversion to surgery at extremes of age

	Frequency (n=575)	Percentage
If a child of less than 1 year is sick, and the doctors recommend surgery, will you advise them to accept surgery?		
Yes	441	77.2
No	58	10.2
I'm not sure	72	12.6
Sub-Total	571	100.0
No response	4	
Reasons for saying no to infant surgery		
Fear of losing child	47	72.3
Altered academic performance or dullness	9	13.8
Any other	2	3.1
I don't know	7	10.8
Sub-Total	65	100.0
Not applicable	510	
If an old person ≥ 60 years is sick, and the doctors recommend surgery, will you advise them to accept surgery		
Yes	459	80.8
No	49	8.6
I'm not sure	60	10.6
Sub-Total	568	100.0
No response	7	
Reasons for saying no to elderly surgery		
Fear of losing the elderly	22	44.0
The elderly are too fragile to undergo surgery	23	46.0
The elderly do not undergo surgery in our family or lineage	2	4.0
The elderly do not undergo surgery in our community	3	6.0
Sub-Total	50	100.0
Not applicable (did not say no to elderly surgery)	525	

Discussion

People have long been existing at extremes of age, however, what constitutes “practice” - application or use of an idea, belief, or method - among a people is a blend of available knowledge, information, and peculiar culture in that setting. This applies to health issues among people [38, 39]. This broad-based cultural factor to a large extent determines the acceptability of such knowledge/information or service among the people. Although such cultural issues may have some negative impact, it usually may require tact, patience and sustained multidimensional, collaborative effort [40]. The views of our respondents therefore, are not any different on issues of conduct of surgeries among persons at extremes of age. There were more women (almost two-thirds) than men respondents directly involved in the care of the sick in the hospital, their mean age was 50.81±17.77. The predominance of female respondents in this study is in agreement with the global observation of the role of women in the family as caregivers [41-43] and especially so in Africa [44, 45].

Awareness of infant surgery was 61.5%, with most respondents being unaware of infants previously operated upon. This information is revealing, implying that considerable proportion of Hospital-visiting relatives/general public were oblivious to successes being recorded, although some infant surgical procedures may have been effectively carried out. This lack of knowledge is concerning as babies born with surgically correctible congenital anomalies are not be brought to the health

facilities but left in the communities to die obscuring the true burden of the disease as has been reported in other low and middle-income countries [46]. However, we also observed that the majority of the respondents (86.0%) were aware of the possibility of successful surgery in the old and also, the majority knew someone who has had successful surgery in old age. From the foregoing, it means that there was better awareness of geriatric surgical services compared with pediatric surgery services among the hospital-visiting public, in the same centre. The absence of a dedicated specialist pediatric surgical team at the centre of the study could partly explain this observation, as some of these pediatric surgery services (Minor and intermediate) were initially being handled by the available General Surgery teams, before the establishment of a new Pediatric Surgery Team in the year 2023. The General Surgery Team also takes full responsibility for all geriatric surgical cases as it applies to General Surgery, along with the Geriatric Medical Team which has been in existence in the Rivers State University Teaching Hospital since 24th November 2021. This may partly explain the improved awareness of geriatric surgical services.

Public attitude is partly framed by not only what they know, but also what they believe. Although 77.2% of the respondents were willing to accept needed surgery for infants, others would not. About a third of respondents therefore, was aware of decline of consent for needed surgery for their infants by patient relatives, and of which 11.5% of such infants died as a result. The outcome of this unfortunate few is undesirable and avoidable. Similarly, although 80.8% of respondents were willing to accept needed surgery for the old, a few others were not, and a third of the respondents were aware of the practice of declining consent for needed surgery for the old. Apart from outright surgical procedures, similar thinking applies to the conduct of some invasive procedures on the old. Withholding of consent for amputation has similarly been reported among the old who have diabetic foot disease in a rural community in the Eastern Cape, South Africa [47]. The reasons given for this attitude among this population were similarly fear of altered body image, fear of rejection, and fear of death from amputation. Although our study was city-based, similar attitude to surgery among this group was still observed. Attitude to surgery was also affected by cultural beliefs surrounding specific surgical conditions and the perception of “being too old for surgery”, as reported in a review on barriers to surgical care in low-income and middle-income countries [48].

Although the majority of the respondents were positively disposed to accepting needed surgery at extremes of age, a sizable number were either unwilling or unsure of what to do. The reasons for the negative attitudes to paediatric surgical services by relatives included fear of future altered academic performance or dullness (following anaesthesia), and fear of losing the child (however, hidden concerns may be cost of treatment, economic burden and the effect on other household members – hence the desire to let “this child go” so that others may survive). Similar concerns or reservations have been raised in some publications [6, 10]. However the use of regional/spinal anaesthesia in infants has been reported to be safe circumventing the potential risks associated with general anaesthesia [7-9]. Similarly, the reasons for aversion to geriatric surgical services were: “the fragile nature of the old; fear of losing the elderly; “the

elderly do not undergo surgery in our family or community” as aptly captioned by some respondents. For a few other respondents, it was forbidden in some communities for surgery to be carried out on the old. These findings partly agree with another Nigerian study that highlighted the role of traditional beliefs about disease processes and stigma as being part of the barriers to surgical services delivery in low and middle-income countries [33]. Local health beliefs affecting cataract surgery in Tanzania have also been reported, [35] and fears for total hip arthroplasty in the elderly in an ethnically diverse city in Toronto Ontario.³⁶ Although our study was a hospital-based study, it provided insight into the public perception of pediatric and geriatric surgical services in our setting.

Study Limitations: Although this study identified the reasons for consent decline for surgery in the old to be based on fear, we were unable to ascertain why this fear is so great as to warrant relatives choosing to accept the negative outcome of the illness (failing to try surgery) rather than the possible negative outcome of surgery. Further studies are therefore needed to ascertain this.

Conclusion

Although a majority of respondents were aware of surgical services for extremes of age, a third of them were also aware of the decline of consent for needed surgical services by patient relatives for infants and the old. The reasons for their disposition were fear of the effect of surgery on future academic performance, fear of losing the patient and outright forbidden nature of surgery in the old for a few families and communities.

Recommendations: There is a need to improve public awareness and attitude toward paediatric surgical services in the centre. This could be partly achieved by equipping the newly established pediatric Surgery Unit with the needed manpower and material support to enable improved service delivery and a change in public perception. Use of pamphlets and fliers on paediatrics and geriatrics surgical services would also go a long way to reassure and improve public awareness and attitude. Talks on surgeries at extremes of age through audiovisual media especially taking advantage of some yearly anniversaries on infants and the old is also a veritable pathway to improve awareness. A more targeted approach to changing long-held community beliefs would require more concerted efforts by governmental and non-governmental agencies.

Other Information

Acknowledgement: The contributions of the Headship of Nursing Services at the Surgery, Pediatric Department, and Geriatric Clinic at the Rivers State University Teaching Hospital are herein acknowledged. These individuals facilitated the collection of data used for this study. Our appreciation also goes to Dr Michael O. Ogba for the data entry and analysis of the work.

Research Ethics Consideration: The approval of the Research Ethics Committee of the Rivers State University Teaching Hospital was obtained. Informed consent was obtained from patients / relatives before data was collected and confidentiality of information was maintained in the process of data collection.

Source of Funding: The study was self-funded by the researchers.

Conflict of interest: None declared

References

1. McHoney M, Eaton S, Pierro A. Metabolic response to surgery in infants and children. *European journal of pediatric surgery*. 2009;19(05):275-285.
2. Bax N. Laparoscopic surgery in infants and children. *European journal of pediatric surgery*. 2005;15(05):319-324.
3. Rothenberg SS, Chang JH, Bealer JF. Experience with minimally invasive surgery in infants. *The American journal of surgery*. 1998;176(6):654-658.
4. Ponsky TA, Rothenberg SS. Minimally invasive surgery in infants less than 5 kg: experience of 649 cases. *Surgical endoscopy*. 2008;22(10):2214-2219.
5. Kuebler JF, Ure BM. Minimally invasive surgery in the neonate. *Semin Fetal Neonatal Med*. 2011 Jun;16(3):151-6. doi: 10.1016/j.siny.2011.03.001.
6. Houck CS, Vinson AE. Anaesthetic considerations for surgery in newborns. *Archives of Disease in Childhood-Fetal and Neonatal Edition*. 2017;102(4):F359-F63. doi.org/10.1136/archdischild-2016-311800
7. Abajian JC, Mellish RP, Browne AF, Perkins FM, Lambert DH, Mazuzan Jr JE. Spinal anesthesia for surgery in the high-risk infant. *Anesthesia & Analgesia*. 1984;63(3):359-362.
8. Williams RK, Adams DC, Aladjem EV, Kreutz JM, Sartorelli KH, Vane DW, *et al*. The safety and efficacy of spinal anesthesia for surgery in infants: the Vermont Infant Spinal Registry. *Anesthesia & Analgesia*. 2006;102(1):67-71.
9. Jöhr M. Regional anaesthesia in neonates, infants and children: an educational review. *European Journal of Anaesthesiology| EJA*. 2015;32(5):289-297.
10. Anand KJ, Brown M, Bloom S, Aynsley-Green A. Studies on the hormonal regulation of fuel metabolism in the human newborn infant undergoing anaesthesia and surgery. *Hormone Research in Paediatrics*. 1985;22(1-2):115-128.
11. Heydinger G, Tobias J, Veneziano G. Fundamentals and innovations in regional anaesthesia for infants and children. *Anaesthesia*. 2021;76:74-88.
12. Sun LS, Li G, Miller TL, Salorio C, Byrne MW, Bellinger DC, *et al*. Association between a single general anesthesia exposure before age 36 months and neurocognitive outcomes in later childhood. *Jama*. 2016;315(21):2312-2320.
13. Block RI, Thomas JJ, Bayman EO, Choi JY, Kimble KK, Todd MM. Are anesthesia and surgery during infancy associated with altered academic performance during childhood? *The Journal of the American Society of Anesthesiologists*. 2012;117(3):494-503.
14. Davidson AJ, Disma N, De Graaff JC, Withington DE, Dorris L, Bell G, *et al*. Neurodevelopmental outcome at 2 years of age after general anaesthesia and awake-regional anaesthesia in infancy (GAS): An international multicentre, randomised controlled trial. *The Lancet*. 2016;387(10015):239-250.
15. McCann ME, De Graaff JC, Dorris L, Disma N, Withington D, Bell G, *et al*. Neurodevelopmental

- outcome at 5 years of age after general anaesthesia or awake-regional anaesthesia in infancy (GAS): an international, multicentre, randomised, controlled equivalence trial. *The Lancet*. 2019;393(10172):664-677.
16. Diemert A, Diehl W, Glosemeyer P, Deprest J, Hecher K. Intrauterine surgery—choices and limitations. *Deutsches Ärzteblatt international*. 2012;109(38):603–608.
 17. Bruner JP. Editor Intrauterine surgery in myelomeningocele. *Seminars in Fetal and Neonatal Medicine*. 2007;12(6):471-476. doi.org/10.1016/j.siny.2007.06.011.
 18. Rossi AC. Indications and outcomes of intrauterine surgery for fetal malformations. *Current Opinion in Obstetrics and Gynecology*. 2010;22(2):159-165.
 19. Berman A, Snyder SJ, Kozier B, Erb G, Levett-Jones T, Dwyer T, *et al*. Kozier and Erb's fundamentals of nursing: Pearson Australia; 2010.
 20. Lee SB, Oh JH, Park JH, Choi SP, Wee JH. Differences in youngest-old, middle-old, and oldest-old patients who visit the emergency department. *Clin Exp Emerg Med*. 2018;5(4):249-255. doi.org/10.15441/ceem.17.261
 21. Won CW, Ha E, Jeong E, Kim M, Park J, Baek JE, *et al*. World Health Organization Integrated Care for Older People (ICOPE) and the Integrated Care of Older Patients with Frailty in Primary Care (ICOOP_Frail) Study in Korea. *Ann Geriatr Med Res* 2021;25(1):10-16. doi.org/10.4235/agmr.21.0025.
 22. Sarkar SM, Dhar BK, Crowley SS, Ayittey FK, Gazi MAI. Psychological Adjustment and Guidance for Ageing Urban Women. *Ageing International*. 2021, 1-9.
 23. Nakayama DK. Management of the surgical newborn: physiological foundations and practical considerations. *Journal of Pediatric Urology*. 2010;6(3):232-238.
 24. Mishra P, Gupta B, Nath A. Anesthetic considerations and goals in robotic pediatric surgery: A narrative review. *Journal of anaesthesia*. 2020;34(2):286-293.
 25. Murray-Torres TM, Winch PD, Naguib AN, Tobias JD. Anesthesia for thoracic surgery in infants and children. *Saudi J Anaesth*. 2021 Jul-Sep;15(3):283–299.
 26. Bannister CF. Anesthesia considerations for laparoscopic procedures in children. 2014.
 27. Hulzebos E, Van Meeteren N. Making the elderly fit for surgery. *Journal of British Surgery*. 2016;103(2):e12-e5. DOI: 10.1002/bjs.10033
 28. Brunt L, Quasebarth M, Dunnegan D, Soper N. Outcomes analysis of laparoscopic cholecystectomy in the extremely elderly. *Surgical endoscopy*. 2001;15(7):700-705.
 29. Kim H-H, Hyung WJ, Cho GS, Kim MC, Han S-U, Kim W, *et al*. Morbidity and mortality of laparoscopic gastrectomy versus open gastrectomy for gastric cancer: an interim report—a phase III multicenter, prospective, randomized Trial (KLASS Trial). *LWW*; 2010;251(3):417-420. DOI: 10.1097/SLA.0b013e3181cc8f6b
 30. Caglià P, Tracia A, Buffone A, Amodeo L, Tracia L, Amodeo C, *et al*. Physiopathology and clinical considerations of laparoscopic surgery in the elderly. *International Journal of Surgery*. 2016;33:S97-S102. doi.org/10.1016/j.ijssu.2016.05.044
 31. Katlic MR. Principles of geriatric surgery. *Cardiothoracic Surgery in the Elderly*: Springer; 2011. p. 25-42.
 32. Saber A. Perioperative care of elderly surgical patients. *American Medical Journal*. 2013;4(1):63-77. doi:10.3844/amjsp.2013.63.77
 33. Ologunde R, Maruthappu M, Shanmugarajah K, Shalhoub J. Surgical care in low and middle-income countries: burden and barriers. *International Journal of Surgery*. 2014;12(8):858-863.
 34. Munro SA, Lewin SA, Smith HJ, Engel ME, Fretheim A, Volmink J. Patient adherence to tuberculosis treatment: a systematic review of qualitative research. *PLoS medicine*. 2007;4(7):e238. doi.org/10.1371/journal.pmed.0040238
 35. Bronsard A, Geneau R, Shirima S, Courtright P, Mwende J. Why are children brought late for cataract surgery? Qualitative findings from Tanzania. *Ophthalmic epidemiology*. 2008;15(6):383-838.
 36. Hudak PL, Clark JP, Hawker GA, Coyte PC, Mahomed NN, Kreder HJ, *et al*. You're perfect for the procedure! Why don't you want it? Elderly arthritis patients' unwillingness to consider total joint arthroplasty surgery: A qualitative study. *Medical Decision Making*. 2002;22(3):272-278.
 37. Uko E, Tamunobereton-Ari I. Variability of climatic parameters in Port Harcourt, Nigeria. *Journal of Emerging Trends in Engineering and Applied Sciences*. 2013;4(5):727-730.
 38. Kickbusch IS. Health literacy: addressing the health and education divide. *Health promotion international*. 2001;16(3):289-297.
 39. Nutbeam D. Health literacy as a public health goal: a challenge for contemporary health education and communication strategies into the 21st century. *Health promotion international*. 2000;15(3):259-267.
 40. Ogundipe R. Cultural Practices and Health Consequences: Health or Habits, the Choice Is Ours. *Public Health in Developing Countries-Challenges and Opportunities*: IntechOpen; 2020. DOI: 10.5772/intechopen.89778
 41. Ruiz IJ, Nicolás MM. The family caregiver: The naturalized sense of obligation in women to be caregivers. *Enfermería Global*. 2018;17(49):434-447.
 42. Sharma N, Chakrabarti S, Grover S. Gender differences in caregiving among family-caregivers of people with mental illnesses. *World journal of psychiatry*. 2016;6(1):7-17. doi: 10.5498/wjp.v6.i1.7
 43. Williams LA, Giddings LS, Bellamy G, Gott M. 'Because it's the wife who has to look after the man': A descriptive qualitative study of older women and the intersection of gender and the provision of family caregiving at the end of life. *Palliative Medicine*. 2017;31(3):223-230.
 44. Asuquo EF, Akpan-Idiok PA. The exceptional role of women as primary caregivers for people living with HIV/AIDS in Nigeria, West Africa. *Suggestions for Addressing Clinical and Non-Clinical Issues in Palliative Care*: intechopen; 2020. DOI: 10.5772/intechopen.93670
 45. Yakubu YA, Schutte DW. Caregiver attributes and socio-demographic determinants of caregiving burden in selected low-income communities in cape town, South Africa. *Journal of Compassionate Health Care*. 2018;5(1):1-10.

46. Kim NE, Vervoot D, Hammouri A, Riboni C, Salem H, Grimes C, *et al.* Cost-effectiveness of neonatal surgery for congenital anomalies in low-income and middle-income countries: a systematic review protocol. *BMJ Paediatrics Open.* 2020;4(1):e000755. doi:10.1136/bmjpo-2020-000755
47. Owolabi EO, Chu KM. Knowledge, attitude and perception towards lower limb amputation amongst persons living with diabetes in rural South Africa: A qualitative study. *African Journal of Primary Health Care & Family Medicine.* 2022;14(1):1-10.
48. Grimes CE, Bowman KG, Dodgion CM, Lavy CB. Systematic review of barriers to surgical care in low-income and middle-income countries. *World journal of surgery.* 2011;35:941-50.

How to Cite This Article

RFO A Ijah, DC Briggs, FE Aaron, A Alabi, NM Nkadam, BI Douglas, HI Bell-Gam. Surgery at extremes of age: Awareness, attitude, and reasons for patients' disposition in a tertiary health institution in Port Harcourt, Nigeria. *International Journal of Paediatrics and Geriatrics.* 2023;6(2):01-07.

Creative Commons (CC) License

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 International (CC BY-NC-SA 4.0) License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.