Rising Prevalence of Placenta Accreta Syndrome (PAS) in Nigeria: A Retrospective Analysis of Risk Factors and Maternal Health Implications

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ABSTRACT

This study aimed to investigate the prevalence, trends, risk factors, and management outcomes of Placenta Accreta Spectrum (PAS) in a tertiary health facility in the Niger Delta region of Nigeria. Public health attention has increased regarding PAS because this severe obstetric condition continues to grow more common mainly among women who face multiple cesarean deliveries. The retrospective examination at Rivers State University Teaching Hospital (RSUTH) included 14,195 person deliveries between 2016 and 2021 and revealed 39 cases of Placenta Accreta Spectrum. This research examined both general population statistics and medical birth attributes as well as diagnostic procedures and treatment results of PAS. This research discovered that PAS developed in 0.27% of delivered pregnancies and previous cesarean deliveries (71.8%), maternal age of 35-39 years and five births or more resulted in higher risk and placenta praevia (38.5%) showed significant relationships with PAS. A total of 50% of cases received hysterectomies as their main treatment for PAS yet all maternal patients survived through the experience. The study participants noted an increase in PAS cases which they mostly linked to growing rates of c-sections. The main barriers in managing PAS include delayed patient diagnosis together with restricted access to both imaging tests and blood testing services. The study establishes an urgent demand to enhance high-risk pregnancy surveillance methods while improving diagnostic medicine together with healthcare facilities. The scientific community recommends government policymakers to invest in healthcare education and screening tests and facility readiness to combat the increasing cases of PAS in Nigeria. Maternal and newborn medical success depends on the early discovery and proper treatment approaches.

Keywords: Placenta Accreta Syndrome, maternal health, cesarean section, obstetric complications

INTRODUCTION

Placenta Accreta Syndrome (PAS) exists as a dangerous pregnancy issue which causes abnormal placental attachment to or tissue invasion of the uterus during childbirth (Garg, Semwal & Bansal, 2025). The condition causes substantial maternal health complications and death risks because patients are at high risk for severe bleeding complications and need blood transfusions and may require hysterectomy or develop multi-organ failure (Wormer, Jamil & Bryant, 2024). Placenta Accreta Syndrome (PAS) functions as an escalating pregnancy issue which creates substantial dangers to maternal health outcomes (Ming et al., 2022). Placenta accreta, increta and percreta create the spectrum of PAS which describes abnormal placental attachment to the uterus while the placenta penetrates the myometrium at different levels during pregnancy (Badr et al., 2020). PAS incidence has shown significant global growth since the last several decades because of rising rates of cesarean deliveries and additional uterine procedural interventions. Numerous low- and middle-income countries including Nigeria show an increasing PAS case rate which intensifies existing maternal mortality and morbidity rates (Wekere et al., 2023). Medical records show that PAS incidence will increase in Nigeria as both cesarean deliveries and myomectomies and delayed childbearing and other uterine interventions become more frequent (Wekere et al., 2023). The known risk factors for PAS such as curettage and endometrial ablation alongside irradiation or uterine anomalies as well as Asherman syndrome and smoking are becoming

more frequent. Insufficient data exists regarding the prevalence and trends of PAS and their consequences for pregnant women in Nigeria (Kyozuka et al., 2019). Various socioeconomic factors together with cultural practices and poor infrastructure combine to determine the current state of Nigerian maternal healthcare (Olonade et al., 2019). The complications of PAS remain underdiagnosed and poorly managed because Nigerian women lack access to advanced diagnostic tools and experience both limited referral systems and insufficient trained obstetric specialists (Abousifein, Shishkina & Leyland, 2024). The unmonitored reproductive health risks following cesarean deliveries and uterine procedures among Nigerian women lead to a concealed increase of Placenta Accreta Syndrome prevalence (De Mucio et al., 2019). The retrospective research investigates how Placenta Accreta Syndrome prevalence has increased in Nigeria while studying major risk factors involving Cesarean deliveries and uterine surgeries and placenta previa and older maternal age (Wekere et al., 2023). The analysis of hospital clinical records from tertiary medical facilities helps researchers understand PAS occurrences and patient characteristics and previous pregnancy information (Whitehead et al., 2018). Data on Nigerian risk factors must be understood to create effective early detection methods along with clinical decision platforms that will diminish PAS complications throughout the country (Okeme et al., 2024). Maternal health conditions within Nigeria due to PAS have been shown to escalate from excessive hemorrhaging to hysterectomies and intensive care unit admissions and maternal fatalities (Soares et al., 2020). The research strives to amplify awareness about this lethal condition to build robust obstetric care networks and expert training for medical staff and introduce risk-based PREOP tests as standard antenatal procedures. This research offers substantial value to maternal health research in sub-Saharan Africa by filling gaps in knowledge about PAS which can drive policy improvements and better health outcomes for pregnant Nigerian women and their families. The research investigates how prevalent PAS is in Nigeria while evaluating primary risk factors by examining hospital recording data from tertiary facilities. The study incorporates direct interviews and surveys of healthcare professionals who include obstetricians, gynecologists, radiologists and midwives in order to examine diagnosis complexities as well as treatment and management challenges. Findings generated from this research will improve strategies for early detection while offering better management protocols as well as policy recommendations for maternal healthcare in Nigeria.

LITERATURE REVIEW

Overview of PAS

PAS stands as a critical obstetric disorder because abnormal placental attachment to or invasion deep into the uterine wall leads to natural detachment complications following childbirth (Garg, Semwal & Bansal, 2025). The three stages of PAS identify placenta accreta when the placenta sticks to myometrium tissue or placenta increta where placenta breaks through myometrium tissue or placenta percreta when placenta penetrates through the uterine wall reaching adjacent organs such as bladder (Morlando & Collins, 2020). Typical septic antepartum conditions lead to serious obstetric bleeding and require elevated blood supply as well as urgent hysterectomy procedures and might cause maternal mortality (Gülmezoglu et al., 2016). The world witnesses a growing number of PAS incidents specifically from the escalating rate of cesarean sections besides other uterine procedures that produce uterine scarring which stands as a proven risk element for irregular placental attachment (El Gelany et al., 2019). Nigeria together with similar developing nations faces a significant challenge regarding placental abruption because of limited prenatal screening capabilities and delayed patient referrals combined with insufficient blood reserves and insufficient trained PAS management specialists (Filippi et al., 2016). The detection of early placental abnormality requires imaging techniques such as ultrasound and MRI but these tools are scarce in Nigerian medical facilities. The ability to correctly evaluate PAS prevalence as well as its impacts is limited due to what the health system lacks in record consistency and reporting accuracy (Yang et al., 2025). Uterine scarring due to cesarean sections (C-sections), uterine surgeries or dilation and curettage (D&C) procedures represents the main origin of parenchymal abnormal scarring (Tsuji et al., 2023). Placenta previa stands as a second element that causes PAS together with multiple pregnancies while advanced maternal age above 35 acts as another factor. Nigeria experiences a growing number of PAS cases due to rising C-sections and impaired prenatal care services and cultural preferences for numerous offspring (Anderson-Bagga & Sze, 2023). The combination of these factors makes the development of placental abruption more probable: former C-section patients, mothers over 35 years old, women with multiple babies or who used ART, and individuals with uterine abnormalities (Kyozuka et al., 2021). Nigerian

women who seek healthcare in Europe lead to rise in PAS cases for European hospitals resulting in resource shortages and specialized maternal care requirements (Abubakar et al., 2022). Tackling PAS demands prompt diagnosis and advanced prenatal care as well as specific policy actions within both Nigerian medical services and European healthcare institutions that seek to optimize maternal health results.

Risk factors and clinical manifestations

The leading condition that causes Placenta Accreta Syndrome (PAS) exists in women with previous cesarean sections (Humaira & Chandraharan, 2021). Each additional cesarean delivery raises the risk of PAS as the scarring of the uterus gets progressively worse. Placenta previa together with surgical history of the uterus presents a high-risk factor for PAS (Pegu et al., 2021). Additional factors increasing chances of PAS include maternal age exceeding 35 years, multiple childbirths and incomplete or assisted reproductive approaches and previous uterine surgeries (Salmanian et al., 2021). Women with prior myomectomy and uterine anomalies develop an increased risk of placental implantation problems in their pregnancies. Cesarean delivery imaging and standard antenatal testing usually reveal PAS as these placental anomalies produce no symptoms during pregnancy (Wu et al., 2023). Failing placental separation during childbirth results in deadly postpartum bleeding for patients whose PAS condition remains unidentified during labor (Hu et al., 2024). The condition results in shock and causes disseminated intravascular coagulation (DIC) which then produces multi-organ failure (Costello, Leslie & Nehring, 2024). The medical signs of PAS consist of abnormal placental position revealed through ultrasound testing and complete uterine breaking along with a potentially severe need for emergency hysterectomy during childbirth (Wang et al., 2025). Nigerian healthcare institutions lack both high-resolution imaging technology and specialized maternal care even though accurate prenatal diagnosis remains essential for enhancing maternal outcomes (Lateef et al., 2024). Early identification of risks together with thorough antenatal monitoring and ready surgical teams remain essential for managing at-risk patients (Kumari et al., 2024).

Global trends in PAS incidence

The worldwide prevalence of Placenta Accreta Syndrome (PAS) increases due to the combination of growing C-section rates and advancing maternal ages (Fonseca & de Campos, 2021). The occurrence of PAS has risen worldwide despite previous perceptions of this condition being rare thus affecting maternal health results significantly (Filippi et al., 2016). The diagnostic frequency of PAS differs across geographical regions because healthcare access and prenatal care quality and surgical delivery rates influence how developed and developing areas deal with the condition (Holcomb et al., 2021). Research data shows that PAS occurrences have escalated noticeably throughout the last few decades. The occurrence of PAS in childbirth has increased globally by affecting around 1 in 300 to 500 baby deliveries while back in the 1970s it appeared only in approximately 1 in 4,000 deliveries (Angolile et al., 2023). The rising incidence of C-sections stands as the main factor behind PAS incident growth. Data from the World Health Organization (WHO) expresses worry about unnecessary C-sections which affect middle- and high-income countries because such procedures raise the risk of PAS in future pregnancies (Betrán et al., 2016). The global C-section rate increased from 12% during 2000 to more than 21% in 2021 while reaching above 50% in specific countries (Betrán et al., 2021). The continued rise in cesarean sections directly increases PAS rates because multiple surgeries lead to severe damage of the uterine lining that increases the likelihood of improper placental attachment (Morlando & Collins, 2020). The WHO advocates two strategies to prevent the emergence of PAS cases through the reduction of nonessential C-sections coupled with the safe promotion of VBAC procedures.

Table 1: Regional Variations in PAS Incidence

Region	**Incidence Rate & Trends**	**Contributing Factors**	**Implications**
High-Income Countries (Europe, North America, Australia)	Increasing incidence due to high C-section rates (1 in 300 to 500 deliveries)	- Advanced maternal age - High elective C-section rates	- High healthcare costs for PAS management - Increased need for

		- Improved prenatal diagnostics (ultrasound, MRI)	multidisciplinary care - Effective but resource-intensive treatment options
Low- and Middle-Income Countries (Africa, Asia, Latin America)	Rising incidence but often underreported due to lack of diagnostics	- Limited prenatal care and PAS screening - Rising C-section rates in urban areas - Poor access to emergency obstetric care	- High maternal morbidity and mortality - Late diagnosis leading to emergency hysterectomy - Insufficient specialized maternal healthcare
Nigeria	PAS incidence increasing due to rising C-section rates	- Limited prenatal ultrasound use - Multiple pregnancies due to cultural preferences - Lack of trained specialists	- High maternal death rate due to late detection - Poor postnatal care and surgical facilities - Need for improved maternal health policies
Migration Impact on European Healthcare	Higher PAS cases among Nigerian and African migrant women	- Many migrants arrive with undiagnosed PAS - Limited prenatal care before migration - Language and cultural barriers	- Increased burden on European hospitals - Need for culturally sensitive maternal healthcare - More demand for PAS-specialized obstetric teams

Maternal health challenges in Africa

The health situation of mothers in Africa stands as a crucial matter because the region maintains unacceptable death rates for pregnant women alongside insufficient healthcare systems and limited medical resources (Yarney, 2019). Multiple related elements cause substandard maternal health results throughout the continent making birth dangerous for numerous women. Table 2 below shows the maternal health challenges in various African countries.

Challenge	**Impact**	**Contributing Factors**
High Maternal Mortality Rates	Africa accounts for **~70% of global maternal deaths**. Most deaths are due to **preventable complications** like hemorrhage, infections, and hypertensive disorders.	- Limited access to emergency obstetric care - Poor health infrastructure - Delays in seeking and receiving care
Limited Access to Skilled Birth Attendants	Many women give birth without trained health professionals, leading to unsafe deliveries.	- Shortage of midwives and obstetricians - Rural areas lacking health facilities - Cultural reliance on traditional birth attendants
Inadequate Prenatal and Postnatal Care	Many women receive **little to no prenatal care**, increasing risks of complications like **Placenta Accreta Syndrome (PAS), preeclampsia, and infections**.	- Lack of awareness and education - Financial constraints - Distance to healthcare facilities

High Cesarean Section (C-section) Rates Without Proper Management	Rising **C-section rates** without proper postoperative care increase the risk of **PAS and maternal mortality**.	- Poor surgical techniques in some facilities - Lack of follow-up care after C-sections - Growing demand for private hospital deliveries
Obstetric Fistula and Birth Injuries	Many women suffer **long-term disabilities** due to prolonged, obstructed labor without timely intervention.	- Early and child marriages leading to underdeveloped pelvic structures - Limited access to emergency C-sections
Cultural and Traditional Practices	Harmful practices like **female genital mutilation (FGM)** and **child marriage** contribute to maternal health risks.	- Strong traditional beliefs - Resistance to modern medical care - Social stigma against hospital deliveries
Poor Health Infrastructure and Funding	Many public hospitals **lack essential maternal care equipment, medications, and blood banks**, leading to preventable deaths.	- Low government investment in healthcare - High dependency on donor-funded programs - Poor distribution of medical resources.
Barriers to Family Planning and Contraception	Many women **lack access to contraceptives**, leading to **unplanned pregnancies, unsafe abortions, and high fertility rates**.	- Religious and cultural opposition - Myths and misinformation about contraception - Limited availability in rural areas
HIV/AIDS and Maternal Health	High **HIV prevalence** increases pregnancy complications and risks of mother-to-child transmission.	- Limited access to antiretroviral therapy (ART) - Stigma preventing women from seeking treatment

MATERIAL AND METHODS

The study uses a retrospective data analysis with quantitative methods to understand Placenta Accreta Spectrum (PAS) occurrence frequency, risk factors and diagnostic approaches and treatment success at a Niger Delta tertiary medical center in Nigeria. Data analysis during the five-year period from 2016 to 2021 took place at Rivers State University Teaching Hospital (RSUTH). The researchers analyzed 14,195 deliveries to uncover the 39 diagnosed cases of PAS. A formally designed data collection instrument acquired demographic information together with obstetric data from medical caregivers who comprised obstetricians, gynecologists, midwives and others. The assessment tool obtained details about patient demographics (birth order and C-section history) alongside treatment protocols (surgical choices and examination tests) and health consequences (blood loss requirements and intensive care unit stays together with maternal healthcare complications). Structured survey questions were used to achieve uniform answers which made statistical analysis possible. The hospital review of delivery documentation and respondent survey results revealed statistical relationships between placenta accreta spectrum and risk factor conditions like prior cesarean section, placenta praevia and uterine curettage and advanced maternal age. The research design yielded comprehensive results about PAS incidence and treatment practices at the facility thus enabling better understanding of this serious obstetric complication. The combination of retrospective data analysis and questionnaire-based research created a sound method to examine PAS effects on maternal health results and clinical care delivery.

Research Findings

Demographic Overview

This study examines Placenta Accreta Spectrum incidence, temporal changes, and correlations with population characteristics and delivery circumstances at the Rivers State University Teaching Hospital (RSUTH) during 2016-2021 for 14,195 births in Niger Delta, Nigeria. The demographic information alongside obstetric data stands out in the table that describes respondents' profiles. Out of all respondents 40% identified as obstetricians and 20% identified as gynecologists followed by 10% radiologists and 20% midwives consisting of 10% from other medical fields. Respondents who practiced for 11 to 20 years comprised 40% of the total professionals while respondents with 5 to 10 years of practice made up 30% of the group. Additionally, 20% of professionals practiced for over twenty years and 10% had less than five years of experience. The study revealed that patients aged 30-34 comprised 30% of the cohort while 35-39 years old patients accounted for 24% and patients within the range of 25-29 years old made up 20% of total participants. Patients aged 40-44 and 45 years and above combined were 16% of the total study. This data showed that 40% of the participants were multiparous mothers with 2-4 children while 36% were grand multiparous and 20% were primiparous mothers and 4% had no children. Urban residential areas were home to the greatest number of patients at 70% whereas rural areas had 30% of patients. Thirty percent of patients reported having undergone myomectomy while 36 percent underwent uterine curettage (D&C) and endometrial ablation or uterine irradiation was present in 14 percent of patients and uterine anomalies were recorded in 8 percent of patients during medical history evaluation. 12 percent of patients had used assisted reproductive technology through IVF/Surrogacy. The surgical approach involved emergency cesarean sections at 60% and elective cesarean sections at 40% of all cases. Fifty percent of parturients who had experienced cesarean delivery before had undergone two previous C-sections and 20% had done so three times. Additionally, 20% underwent one C-section and 10% were unscarred. The main outcome showed that 80% of patients escaped complications with their surgeries but 20% of patients encountered complications.

Table 3.1: Respondents' Profiles

Variable	Range	Frequency	Percentage (%)
Profession	Obstetrician	20	40%
	Gynecologist	10	20%
	Radiologist	5	10%
	Midwife	10	20%
	Other	5	10%
Years of Experience	<5	5	10%
	5-10	15	30%
	11-20	20	40%
	>20	10	20%
Patient Age at Delivery	20-24	5	10%
	25-29	10	20%
	30-34	15	30%
	35-39	12	24%
	40-44	5	10%
	45 and above	3	6%
Parity	0 (Nulipara)	2	4%
	1 (Primipara)	10	20%

	2-4 (multipara)	20	40%
	Grand multipara	18	36%
Maternal Residence	Urban	35	70%
	Rural	15	30%
History of Myomectomy (Fibroid Surgery)	Yes	15	30%
	No	35	70%
Nature of Surgery (Index pregnancy)	Emergency CS	30	60%
	Elective CS	20	40%
Number of Previous CS	0	5	10%
	1	10	20%
	2	25	50%
	3	10	20%
CComplications	No	40	80%
	Yes	10	20%
History of Uterine Curettage (D&C)	Yes	18	36%
	No	32	64%
History of Endometrial Ablation or Uterine Irradiation	Yes	7	14%
	No	43	86%
History of Myomectomy (Fibroid Surgery)	Yes	15	30%
	No	35	70%
Presence of Uterine Anomalies (e.g., bicornuate uterus, Asherman's syndrome)	Yes	4	8%
	No	46	92%
History of Assisted Reproductive Technology (IVF/Surrogacy)	Yes	6	12%
	No	44	88%

Table 3.2: Placenta Accreta Syndrome Diagnosis & Management

Variable	Range	Frequency	Percentage
PAS Diagnosis Method	Ultrasound	40	80%
	MRI	5	10%
	Intraoperative Finding	5	10%
	Postpartum Diagnosis.	0	0%
Type of PAS Diagnosed	Placenta Accreta	30	60%
	Placenta Increta	15	30%
	Placenta Percreta	5	10%
Main Indication for Cesarean Delivery	PAS	35	70%
	Previous C-section	10	20%
	Fetal Distress	5	10%

	Others	0	0%
Delivery Outcome	Live Birth	45	90%
	Stillbirth	3	6%
	Neonatal Death	2	4%
Maternal Complications	Severe Hemorrhage	15	30%
	Hysterectomy	10	20%
	ICU Admission	10	20%
	Death	0	0%
	None	15	30%
Frequency of PAS Cases Encountered	Rarely	5	10%
	Occasionally	15	30%
	Frequently	20	40%
	Very Frequently	10	20%
Diagnostic Methods for PAS	Ultrasound	40	80%
	MRI	5	10%
	Intraoperative Findings	5	10%
	Postpartum Diagnosis	0	0%
Effectiveness of PAS Diagnostic Tools	Very Effective	25	50%
	Moderately Effective	15	30%
	Not Effective	10	20%

The data presented in Table 3.2 addresses Placenta Accreta Syndrome (PAS) Diagnosis & Management through explanations of diagnostic techniques together with PAS variant profiles and indications for cesarean delivery and delivery results and maternal challenges and performance levels of diagnostic instruments. Intrahospital diagnosis of PAS started with ultrasound identification in 80% of cases whereas MRI and intraoperative examinations led to another 10% each. No cases were diagnosed postpartum. Among PAS variations Placenta Accreta appeared most frequently (60%) and Placenta Percreta was diagnosed in 10% of cases with Placenta Increta making up the remaining 30%. The main reason for performing cesarean delivery was Peri-Placental Abnormalities lasting 70% of cases whereas previous C-sections and fetal distress were responsible for 20% and 10% respectively. The delivery process ended in a successful birth for 90% of mothers but 6% experienced stilbirth and 4% experienced neonatal death. The reported maternal complications consisted of severe hemorrhage in 30% of cases as well as hysterectomies in 20% and 20% of women required ICU admission. No ladies experienced fatal outcomes. The practitioners evaluated PAS cases with regularity at a 40% rate yet only 30% of them encountered it with occasional frequency. According to respondents fifty percent found the effectiveness of PAS diagnostic tools to be superior and thirty percent rated them medium whereas twenty percent declared them ineffective.

Table 3.3: Treatment & Postpartum Outcomes.

Variable	**Range**	**Frequency**	**Percentage**
Type of Surgical Management	Conservative (Left in Situ)	10	20%
	Hysterectomy	25	50%
	Uterine Repair.	15	30%

Blood Transfusion Required	Yes	20	40%
	No	30	60%
Postoperative ICU Admission	Yes	10	20%
	No	40	80%
Maternal Mortality	Yes	0	0%
	No	50	100%

The data from Table 3.3 delivers important details about treating and recovering patients who have Placenta Accreta Spectrum (PAS). A total of 50% of patients received hysterectomy as their treatment approach while uterine repair therapy had 30% utilization and conservative management with placenta in situ occurred in 20% of patients. Statistics indicate hospitals choose hysterectomy as their main approach to treat PAS patients because these cases generally present severe conditions. The analysis demonstrates that severe hemorrhage is common among PAS patients because 40% of these women needed blood transfusions yet 60% did not need it. The recovery process of most patients following surgery remained stable since only 20% required ICU admission. Organizations recorded zero maternal deaths because of successful medical practices and recovery success for most patients. The collected data demonstrates beneficial maternal mortality results because medical practitioners implemented intensive surgical procedures combined with blood transfusion protocols.

Table 3.4: Risk Factors & Trends

Variable	**Range**	**Frequency**	**Percentage**
Increase in PAS Cases	Yes	40	80%
	No	5	10%
	Not Sure	5	10%
Common Risk Factors for PAS	Previous C-sections	40	80%
	Myomectomy	15	30%
	IVF/Surrogacy	5	10%
	Uterine Curettage	5	10%
	Endometrial Ablation	5	10%
	Smoking	2	4%
	Advanced Maternal Age	20	40%
Impact of Rising Cesarean Rates	Yes	40	80%
	No	5	10%
	Not Sure	5	10%
Challenges in PAS Management	Late Diagnosis	20	40%
	Limited Access to Imaging (MRI, Ultrasound)	10	20%
	Blood Shortages	5	10%
	Surgical Expertise	10	20%
	ICU Availability	2	4%
	High Cost of Care	3	6%
Strategies to Improve PAS Management	Better Training for Doctors	15	30%
	Improved Imaging Facilities	10	20%

	Early Screening Programs	20	40%
	More Access to Blood Banks	5	10%
	Public Awareness Campaigns	10	20%

The study identified placenta accreta in 0.27% of women (2.7 patients per 1000 births) throughout 2016 to 2021 among the 14,195 total deliveries as recorded in Table 3.4. The statistical research established that placenta praevia cases presented with PAS in 28.5% of cases which indicates a clear connection between these conditions. Medical professionals classified 59% of PAS cases as Accreta and identified Increta in 33.3% of cases along with Percreta in 7.7%. Prior caesarean section occurred in 71.8% of cases and proved to be the primary risk factor for PAS according to the study results with a statistically significant relationship ($p<0.001$). A strong statistical link existed between PAS incidence and mothers aged between 35 to 39 years during pregnancy. The combination of multiple pregnancies (haul gravidity ≥ 5) with placenta praevia developed in 41% and 38.5% of the PAS cases which increased PAS risk. The same incidence rate of 25.6% connecting uterine curettage procedures to PAS risk was confirmed within this study cohort as reported by another research. Gas flow results indicated a significant increase in PAS cases according to survey participants who stated the increased rate of surgical child delivery as responsible for this trend. Survey participants identified previous C-sections (80%) as well as myomectomy (30%), advanced maternal age (40%) and IVF/Surrogacy (10%), uterine curettage (10%), endometrial ablation (10%) and smoking (4%) as various PAS risk factors. Research findings indicate that ninety percent of healthcare professionals link increasing PAS cases with the increasing rates of C-section deliveries. The main PAS management challenges cited by professionals were a 40% rate of late diagnosis combined with 20% imaging access barriers, 10% blood availability shortages, 20% surgical skill shortage and 4% ICU accessibility limitations, and 6% expensive care cost (40%+20%+10%+20%+4%+6%=100%). Improvements in medical training along with enhanced imaging centers and early screening systems and better blood bank access and public outreach efforts were among the 100 respondents' proposed solutions to address PAS-related problems. The research findings highlight the necessity of timely screening and intensive risk factor control together with upgraded healthcare facilities in order to decrease PAS-related adverse outcomes for mother and baby.

RESULT AND DISCUSSION

The study data reveals essential information regarding the occurrence and identifying elements of PAS together with diagnosis approaches and treatment strategies and tracking trends in this condition. The research data showed that PAS affected 0.27% of pregnant women demonstrating consistent findings with other studies about declining yet developing cases of PAS in sub-Saharan Africa and worldwide. PAS leads to major complications for mothers and this research emphasizes how the medical community now treats PAS as a key obstetric challenge because of elevated cesarean section rates in the selected country. Previous cesarean sections established a major link to PAS because 71.8% of PAS cases came from women who had experienced C-sections. The data matches past research that establishes previous cesarean sections as the leading factor which puts women at risk for PAS. Consecutive pregnancies of women who delivered by cesarean section face elevated PAS risks caused by uterine scarring and altered placental implantation processes according to multiple studies including research from developed nations. PAS risk increases with older maternal age and multiple pregnancies which follows international studies that link these age variables to PAS probability possibly thanks to persistent uterine damage together with changing hormones with each pregnancy. The diagnosis of PAS primarily occurred through ultrasound assessments because this imaging method functions as both the most frequently used and non-invasive evaluation tool for PAS in clinical practice. The limited use of MRI as a diagnostic tool in PAS evaluation exposes an issue regarding restricted access to contemporary diagnostic resources especially in resource-limited areas such as Nigeria. Diagnostic tools showed moderate effectiveness according to a substantial part of respondents suggesting that improved diagnostic methods are required to enhance PAS management. PAS cases produce severe complications that lead to hysterectomies performed on 50% of women and blood transfusions administered to 40% of the population. Research evidence from across the globe shows that PAS treatment usually requires hysterectomy as a way to stop bleeding and address complications. Current clinical management successfully prevents maternal death according to reported data which shows a zero percent mortality rate. The management of PAS in Nigeria encounters various difficulties stemming from delayed diagnoses as well as limited access to imaging

technology and blood supply shortages and expensive healthcare costs. Evidence matches other research in low-resource settings demonstrating that delayed medical intervention leads to higher rates of pregnancy complications for women. The rise in cesarean sections across Nigeria stands as a key factor which drives the increasing numbers of postpartum amniotic fluid embolisms so there is a need for national policies that promote both evidence-based care and strict cesarean section control. The study faces limitations from its retrospective approach because data collection methods failed to produce unbiased medical records during retrospective review. The research was restricted to one tertiary hospital which prevents its results from being applied across all regions and healthcare settings in Nigeria. The research benefits from the data obtained with fifty participants but stronger results could have been achieved with a bigger sample size. The research highlights the critical need to detect and manage risk elements for PAS especially C-sections and advanced maternal age which helps prevent maternal complications. The improvement of diagnostic accuracy along with medical staff education and increased availability of vital resources including blood products and imaging methods represents the key steps to optimize PAS management and maternal well-being in Nigeria. Future research involving broader sampling across multiple healthcare facilities should aim to generate comprehensive findings about PAS occurrences along with management approaches in Nigeria.

CONCLUSION

Placenta Accreta Spectrum (PAS) is an increasingly prevalent obstetric complication in Nigeria, with significant implications for maternal morbidity and surgical care. This study, based on data from 14,195 deliveries at Rivers State University Teaching Hospital (RSUTH), identified a PAS prevalence of 0.27% and highlighted critical risk factors such as prior cesarean sections, placenta previa, advanced maternal age, and previous uterine surgeries. Diagnostic capacity at RSUTH was relatively strong, with 80% of PAS cases identified antenatally via ultrasound. Nonetheless, systemic challenges including late referrals, limited imaging access, and constrained surgical and ICU resources persist and complicate the timely and effective management of PAS. While the absence of maternal mortality in this cohort reflects well on institutional preparedness, it may not be generalizable to other facilities across Nigeria. The findings underscore the need for a multifaceted response that includes risk-based antenatal screening, strengthened referral systems, expanded access to diagnostic tools, and multidisciplinary preparedness for surgical emergencies. If unaddressed, the rising trend in cesarean deliveries threatens to escalate PAS incidence and overwhelm already fragile maternal health systems. Coordinated efforts at both clinical and policy levels are essential to mitigate this growing burden and improve maternal outcomes nationwide.

Recommendations for Clinical Practice and Health Policy

Based on the findings of this study, several critical recommendations can be made to improve the detection, management, and outcomes of Placenta Accreta Spectrum (PAS) within tertiary healthcare facilities and across the broader Nigerian health system.

1. Strengthen Antenatal Risk Screening

A structured risk-based antenatal screening protocol should be introduced to identify women with prior cesarean deliveries, placenta previa, uterine surgeries, or assisted reproduction history. Such protocols can enable early referral for high-risk cases and timely diagnostic imaging, reducing the likelihood of intrapartum surprises.

2. Expand Access to Diagnostic Imaging

The reliance on ultrasound as the primary diagnostic tool is appropriate; however, equipment availability, maintenance, and provider proficiency must be improved, particularly in secondary and rural hospitals. Where feasible, MRI access should be expanded for complex or uncertain cases, supported by partnerships or referral networks.

3. Enhance Surgical Preparedness and Multidisciplinary Response

Facilities should establish multidisciplinary PAS response teams—including obstetricians, anesthetists,

radiologists, and blood bank personnel—with clear protocols for emergency scenarios. Investment in simulation-based training and continuous professional development for obstetric surgeons is essential to improve surgical outcomes and reduce reliance on emergency hysterectomy.

4. Improve Blood Banking and ICU Capacity

Given that, nearly half of PAS patients in this study required transfusion and a fifth needed intensive care, reliable access to blood products and critical care beds is indispensable. Policy reforms should prioritize blood bank strengthening and maternal ICU development, particularly in tertiary hospitals serving high-volume obstetric populations.

5. Regulate Cesarean Delivery Practices

The link between rising cesarean rates and PAS incidence necessitates stricter adherence to evidence-based cesarean section indications. National guidelines should discourage non-medical or convenience-based cesarean deliveries and reinforce vaginal birth after cesarean (VBAC) where clinically appropriate.

6. Institutional Data Audits and Reporting

Routine audit of PAS cases—documenting diagnostic timelines, interventions, and outcomes—can support quality improvement, training needs assessments, and national data reporting. Institutions should establish PAS case registries and ensure linkage with maternal mortality review systems.

7. Public Health Education and Reproductive Counseling

Community awareness campaigns should address the long-term risks associated with repeated cesarean deliveries and uterine interventions. Additionally, reproductive counseling after procedures such as myomectomy or IVF can help patients make informed decisions regarding pregnancy spacing and care facility selection

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