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Socio-Demographic and Obstetric Profile of Late Pregnancies in Douala (Cameroon)

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Abstract

Introduction: Geriatric pregnancy, defined as pregnancy occurring at age 35 or older, is becoming increasingly common worldwide. In Sub-Saharan Africa, where late pregnancies are common in the context of limited resources, they are associated with an increased risk of maternal and perinatal complications. However, local data in Cameroon remain scarce, thus prompting this review. **Objective:** To describe the socio-demographic and obstetric profile of geriatric pregnancies in Douala. **Methods:** We conducted a longitudinal observational study with prospective data collection. The study lasted eight months, from January to August 2025, and collected data from 234 women aged 35 years or older who were treated at Laquintinie Hospital in Douala. The variables analysed included age, marital status, educational level, occupation, medical history, prenatal care, and the course of pregnancy and delivery. Statistical analysis was performed using SPSS 26.0. The results are presented as means ± standard deviations and proportions. **Results:** The average age of the participants was 38.7 ± 3.1 years, with a predominance of those aged 35 - 39 (62.5%) and those aged ≥ 40 (37.5%). The majority were multiparous (71.8%), single (61.1%) and had secondary or higher education (74.6%). More than half were employed (57.9%). Prenatal care was considered satisfactory (1 antenatal care visit per month) in 61.3% of cases. The caesarean section rate reached 50.8%, dominated by indications of cephalopelvic disproportion and scarred uterus. The main maternal complications were gestational hypertension and postpartum haemorrhage. **Conclusion:** In Douala, geriatric pregnancies mainly concern multiparous women aged 35 - 39, with a good level of education and relatively adequate prenatal care. However, the high

caesarean section rate highlights the need for appropriate preventive strategies and enhanced intrapartum monitoring.

Subject Areas

Gynecology & Obstetrics

Keywords

Late Pregnancy, Socio-Demographic Profile, Obstetric Profile, Cameroon

1. Introduction

Geriatric pregnancy, defined as pregnancy occurring at age 35 or older, is a growing phenomenon worldwide. In industrialised countries, this phenomenon is linked to the decline in the age of marriage, the voluntary postponement of motherhood for professional reasons, and increasing access to medically assisted reproduction techniques [1] [2]. In Sub-Saharan Africa, this trend is more attributable to repeated pregnancies over long periods of reproductive life, often in a context of polygamy or late remarriage [3]. From an obstetric point of view, pregnancy after the age of 35 is associated with an increased risk of complications, including gestational hypertension, gestational diabetes, haemorrhages and a higher frequency of caesarean sections [4] [5]. On the neonatal side, it increases the risk of chromosomal abnormalities, intrauterine growth retardation, prematurity and perinatal mortality [6]. In the sub-region, a recent Ghanaian study showed that primigravidas aged ≥ 35 years had a significantly increased risk of stillbirth and low birth weight compared to younger mothers [7]. Similarly, a multicentre review conducted in East Africa confirmed the association between advanced maternal age and the occurrence of major obstetric complications [8]. In Cameroon, data remain limited but concerning: a study conducted in two university hospitals in Yaoundé reported significantly higher caesarean section rates among women aged ≥ 40, associated with a high incidence of obstetric complications [9]. More recently, a study conducted in Douala emphasised the need for rigorous prenatal monitoring and anticipation of complications to improve the prognosis for these pregnancies [10]. In this context, a better understanding of the socio-demographic and obstetric profile of geriatric pregnancies in Douala appears essential. It is with this in mind that we conducted this multicentre study aimed at describing the characteristics of these pregnancies in the city's main referral hospitals.

2. Methods

2.1. Study Type and Setting

We conducted a longitudinal observational study with prospective data collection over an eight-month period, from January to August 2025, at Laquintinie Hospital in Douala (HLD).

2.2. Study Population

All pregnant women aged 35 years and older were included, who we followed and who gave birth at Laquintinie Hospital during the study period, and whose medical records contained usable data. Women under 35 years of age, pregnancies terminated before 22 weeks of amenorrhoea, and incomplete records were excluded.

2.3. Sample Size

The sample was exhaustive and included all cases meeting the inclusion criteria. A total of 234 geriatric pregnancies were analysed.

2.4. Variables Studied

- Socio-demographic data: Age, marital status, level of education, and professional activity.
- History: Obstetric (parity, history of caesarean section), and medical (chronic conditions).
- Obstetric variables: Number of prenatal consultations, prophylaxis received, term at delivery, mode of delivery, and indications for caesarean section.

2.5. Data Collection

Data were collected from obstetric records, hospitalisation files and maternity records. A standardised form, which had been tested beforehand, was used to ensure uniformity of data collection across all participating sites.

2.6. Statistical Analysis

The data were entered and analysed using SPSS version 26.0 software.

- Quantitative variables were expressed as means ± standard deviation.
- Qualitative variables were presented as numbers and percentages.

2.7. Ethical Considerations

Authorisation to conduct this study was obtained from the Institutional Ethics Committee of the University of Douala. The confidentiality and anonymity of the participants were guaranteed. All patients gave their informed consent before inclusion.

3. Results

The frequency of geriatric pregnancies in our study is 29.3% (234/798) (see **Figure 1**).

3.1. Socio-Demographic Characteristics (N = 234)

Of the 234 pregnant women included in the study, the majority (67.9%) were aged 35 to 39, while 28.6% were aged 40 to 44, and only 3.4% were aged 45 or older. In

terms of marital status, single women represented a higher proportion (61.1%) compared to married women (38.9%). Regarding educational attainment, more than two-thirds (69.7%) had a secondary education, 24.8% had a higher education, and only 5.5% had a primary education, with no participants having no education. Analysis of the employment situation shows that 37.6% worked in the informal sector, 31.6% were unemployed, 29.5% were employed with an income at least equal to the minimum wage, and 1.3% were employed with an income below the minimum wage. These results highlight a population composed mainly of young women of advanced maternal age (35 - 39 years), educated to at least secondary level, but with a high proportion of unemployment and work in the informal sector (see Table 1).

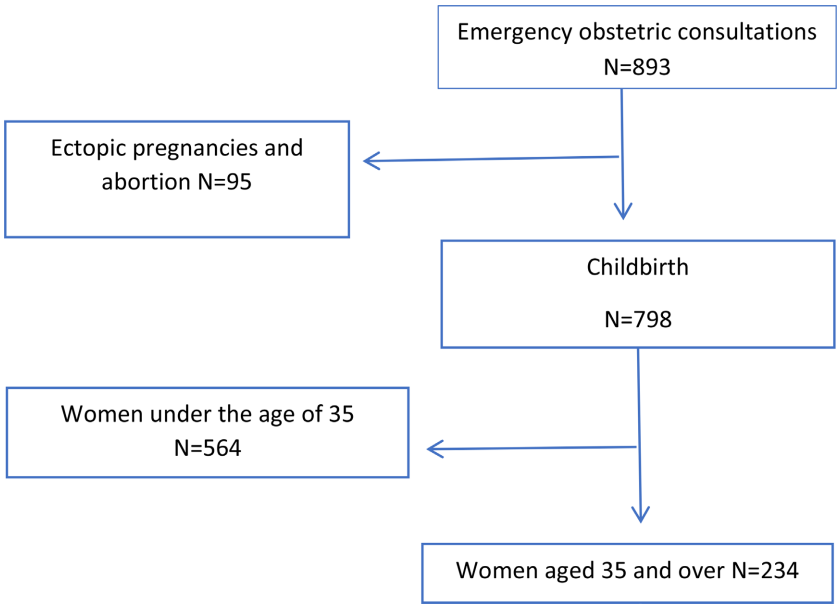

Figure 1. Flow chart.

Table 1. Distribution of participants according to socio-demographic characteristics (N = 234).

Variable	Number (n)	Percentage (%)
Age (years)		
[35 - 40[	159	67.95
[40 - 45[	67	28.63
≥45	8	3.42
Marital status		
Single	143	61.1
Maried	91	38.9
Level of education		
None	0	0.0

Continued

Primary	13	5.5
Secondary	163	69.7
Higher	58	24.8
Occupation		
Unemployed	74	31.6
Employee ≤ minimum wage	3	1.3
Employee ≥ minimum wage	69	29.5
Informal sector	88	37.6

Minimum wage in Cameroon = 43,969 FCFA since the Decree N˚2024/0168/PM of 23 February 2024.

3.2. Clinical and Obstetric Profile of Geriatric Pregnancies

3.2.1. Personal History

Analysis of the obstetric and medical history of the participants reveals that the majority of pregnant women were multiparous (73.9%), followed by primiparous (15.5%) and nulliparous (10.6%), while grand multiparous women remained marginal (0.8%). With regard to medical history, 15.4% of women had a known chronic condition. Among these, HIV infection was the most common condition (6.8%), followed by high blood pressure (3.4%). Other conditions, such as asthma (1.3%), sickle cell disease (0.9%), hepatitis B (0.9%), diabetes (0.9%), obesity (0.9%) and epilepsy (0.4%), were much less common. In addition, more than a quarter of the participants (26.5%) had previously undergone a caesarean section. These results highlight a maternal profile dominated by multiparous women, but also marked by a significant proportion of chronic conditions and surgical history, factors that are likely to increase obstetric and neonatal risk in this population (see Table 2).

Table 2. Distribution of patients according to personal history (N = 234).

Variables	Number (n)	Percentage (%)
Parity		
Nulliparous	25	10.6
Primiparous	34	15.5
Multiparous	173	73.9
Grand multiparous	2	0.8
Medical history		
Yes	36	15.4
No	198	84.6

Continued

Type of medical history		
Asthma	3	1.3
Diabetes	2	0.9
Sicle cell anaemia	2	0.9
Hepatitis B	2	0.9
Hypertension	8	3.4
Obesity	2	0.9
HIV	16	6.8
Epilepsy	1	0.4
Previous caesarean section		
Yes	62	26.5
No	172	73.5

3.2.2. Prenatal Care

Analysis of antenatal care practices among pregnant women of advanced maternal age shows very good coverage. Almost all women (95.7%) received at least one monthly antenatal consultation, and 96.2% received iron and folic acid supplementation. Similarly, 93.6% had received intermittent preventive treatment (IPT) for malaria. However, coverage of certain preventive measures remained insufficient: only 8.1% of women had received aspirin prophylaxis and 72.2% had received calcium supplementation. With regard to pregnancy-related morbidity, a condition was discovered during pregnancy in 20.5% of cases. High blood pressure was the most common condition (14.5%), followed by malaria (3.0%), hepatitis B (1.7%) and gestational diabetes (0.9%). These results reflect good adherence to standard prenatal care measures, but also reveal significant gaps in aspirin and calcium coverage, which are essential for the prevention of hypertensive complications and intrauterine growth retardation in this at-risk population (see Table 3).

Table 3. Prenatal monitoring of participants (N = 234).

Variables	Number (n)	Percentage (%)
ANC*/month		
Yes	224	95.7
No	10	4.3
Multiple pregnancy		
Yes	7	3.0
No	227	97.0
Iron + folic acid		
Yes	225	96.2

Continued

No	9	3.8
IPT**		
Yes	219	93.6
No	15	6.4
Aspirin		
Yes	19	8.1
No	215	91.9
Calcium		
Yes	169	72.2
No	65	27.8
Pathology discovered in pregnancy		
Yes	48	20.5
No	186	79.5
Type of pathology		
Diabetes	2	0.9
Hepatitis B	4	1.7
Hypertension	34	14.5
Malaria	7	3.0

*ANC = Antenatal care; **IPT = Intermittent preventive treatment for malaria.

3.2.3. Process of Delivery

With regard to the course of delivery, nearly three-quarters were full-term (73.9%), while 24% were premature, including 3.0% very premature, 3.4% moderately premature and 17.5% slightly premature. Post-term births were observed in 3.4% of cases. Analysis of delivery methods shows an almost equal proportion of vaginal deliveries (49.2%) and caesarean sections (50.8%). Among the indications for caesarean section, multiple uterine scars were the most common (16.7%), followed by severe pre-eclampsia or eclampsia (9.8%) and foetal distress (6.8%). Other causes included third-trimester haemorrhage (3.9%), macrosomia on scar tissue (3.4%) and malpresentation (2.6%). These results highlight the significant burden of maternal and foetal morbidity and the high rate of caesarean section, reflecting the obstetric vulnerability of geriatric pregnancies (see Table 4).

Table 4. Distribution of participants according to the course of pregnancy and childbirth (N = 234).

Variables	Number (n)	Percentage (%)
Term at delivery (WA)		
22 - 28 very preterm	7	3.0
28 - 32 moderately preterm	8	3.4

Continued

33 - 36 slightly preterm	41	17.5
37 - 41 term	173	73.9
≥42 post-term	8	3.4
Mode of delivery		
Vaginal delivery	115	49.2
Caesarean section	119	50.8
Indication of caesarean section		
Non-reassuring foetal status	16	6.8
Multiple uterine scars	39	16.7
Severe pre-eclampsia/eclampsia	23	9.8
Third-trimester haemorrhage	9	3.9
Malpresentation	6	2.6
Other	18	76.9
Macrosomia on scar tissue	8	3.4

4. Discussion

4.1. Frequency of Late Pregnancies

In our cohort, the frequency of so-called "late" pregnancies (advanced maternal age) is 29.32% (234/798), which is significantly higher than reported in most recent African studies. For example, in a large multicentre survey covering 359 facilities in 29 countries in Africa, Asia and Latin America, the prevalence of pregnancies at advanced maternal age (AMA, ≥35 years) was estimated at only 12.3% [5]. In northern Ethiopia, one study reported a LMA frequency of 37.5%, close to our value, suggesting significant contextual variations depending on region and local socio-demographic characteristics [11]. In South Africa, the prevalence of AGO pregnancies was reported to be 17.5%, and in a study conducted in Cameroon (Yaoundé), women aged 40 and over represented a significant proportion of the cases treated, with these women at increased risk of obstetric and perinatal complications (caesarean section, low Apgar score, neonatal mortality) [12]. In addition, a more recent South African study highlighted a prevalence of 17.7% for AMA pregnancies (average age = 38.1 years), confirming the trend towards increasing maternal age in developing countries [13]. This high frequency of 29.32% in our series could be explained by several contextual factors: cultural acceptance of late motherhood, less use of contraception, and a higher proportion of women with higher levels of education [14].

4.2. Socio-Demographic Characteristics

In our series, the majority of geriatric pregnancies occurred in women aged 35 to 39 (67.9%), which is consistent with observations made in other African contexts

where this age group represents the vast majority of pregnant women of advanced age [11] [12]. Beyond the age of 45, the frequency remained low (3.4%), which contrasts with high-income countries, where access to assisted reproductive technology (ART) allows for a significant extension of late motherhood [15]. The socio-demographic profile of our participants highlights a high proportion of single women (61.1%), probably reflecting socio-cultural changes in maternity choices and the decline in formal marriage, already reported in other African cohorts [16].

The relatively high level of education (nearly 70% had at least completed secondary school) confirms that late motherhood is often associated with longer schooling and sometimes delayed entry into the labour market [17]. However, the high proportion of women who are unemployed (31.6%) or working in the informal sector (37.6%) reflects the difficulties women face in integrating into the economy in our context. Data from Sub-Saharan Africa confirm that the informal sector remains the main place of work for women, even those who are educated, and can be a factor in socio-economic vulnerability during pregnancy [18].

These results highlight the dual specificity of our cohort: on the one hand, educated but economically disadvantaged women, and on the other hand, a high proportion of geriatric pregnancies compared to other African series. This reality reinforces the need for enhanced prenatal care for these patients, as several recent studies have shown that advanced maternal age is associated with an increased risk of obstetric and neonatal complications, particularly in resource-limited settings [5] [13].

4.3. Personal History

In this cohort, the majority of women were multiparous (73.9%), while nulliparous (10.6%) and primiparous (15.5%) women represented a minority. This distribution is characteristic of African contexts where fertility remains high despite a downward trend in urban areas [19]. In Sub-Saharan Africa, several studies show that multiparity is a risk factor for adverse obstetric outcomes, including postpartum haemorrhage, dystocia and hypertensive complications, especially at the extremes of parity [20] [21].

With regard to medical history, 15.4% of women had a chronic condition. This proportion is significant and highlights the growing importance of maternal comorbidities in low- and middle-income countries, in line with the epidemiological transition [22]. HIV infection was the most common medical history (6.8%), which is consistent with data from Cameroon, where prevalence among pregnant women is estimated at between 5% and 8% depending on the location [23] [24]. Enhanced prenatal care and access to antiretroviral drugs now explain the substantial reduction in mother-to-child transmission, but obstetric care remains complex [25].

Chronic high blood pressure (3.4%) and diabetes (0.9%) also appear in this series. These comorbidities are increasingly common with advanced maternal age and obesity, and are major determinants of obstetric complications such as pre-

eclampsia, intrauterine growth restriction and prematurity [26] [27]. Obesity, present in 0.9% of cases here, is also a recognised risk factor for metabolic complications and post-caesarean morbidity [28].

Sickle cell disease (0.9%) and hepatitis B (0.9%) are less common, but their impact on pregnancy is significant. Sickle cell disease is associated with an increased risk of vaso-occlusive crises, severe anaemia, prematurity and perinatal mortality [29]. Hepatitis B, which is common in Central Africa, poses a risk of mother-to-child transmission, hence the need for systematic screening and neonatal prophylaxis through vaccination and immunoglobulins [30].

The surgical history was dominated by caesarean sections (26.5%). This rate is higher than the WHO recommendations (10% - 15%) and reflects a growing trend in resource-limited countries, particularly in urban referral centres such as Douala and Yaoundé [31] [32]. The main indications for caesarean section (scarred uterus, foetal distress, severe pre-eclampsia) explain this high proportion [33]. Uterine scarring is a risk factor for placental abnormalities and severe haemorrhage in subsequent pregnancies, requiring close monitoring and counselling on the mode of delivery [34].

In summary, this maternal profile (high multiparity, significant chronic comorbidities, and a high proportion of scarred uteri) highlights the need for appropriate prenatal care, combining early screening for chronic conditions, prevention of obstetric complications, and strategies to reduce the rate of repeat caesarean sections.

4.4. Prenatal Care

In our series, prenatal coverage was generally satisfactory, with more than 95% of pregnant women receiving at least one monthly consultation and iron and folic acid supplementation. These results are consistent with WHO recommendations, which advocate a minimum of eight prenatal contacts to improve maternal and neonatal outcomes [35]. Recent studies conducted in Sub-Saharan Africa also report good adherence to iron and folic acid supplementation, ranging from 85% to 95%, reflecting efforts to integrate this intervention into national maternal health programmes [36] [37].

The almost universal use of intermittent preventive treatment (IPT) for malaria observed in our cohort (93.6%) demonstrates the effectiveness of awareness campaigns and free distribution in healthcare facilities, with results comparable to those reported in Cameroon and Ghana, where coverage exceeds 90% [38] [39]. On the other hand, the low use of aspirin (8.1%) and calcium (72.2%) reflects a significant gap in the implementation of recent WHO and FIGO recommendations, which emphasize the systematic administration of aspirin and calcium to high-risk women, particularly those of advanced maternal age, to prevent pre-eclampsia [40] [41]. These shortcomings have already been highlighted in several African studies, where irregular access to medicines, cost and low awareness among healthcare providers are major obstacles [42] [43].

Furthermore, the discovery of a pregnancy-related condition in 20.5% of cases,

predominantly high blood pressure (14.5%), is consistent with observations made in other contexts where advanced maternal age is a major risk factor for hypertensive complications [5] [13]. The lower prevalence of gestational diabetes (0.9%) and hepatitis B (1.7%) in our cohort can be explained by low systematic screening rates, a situation already reported in Cameroon and other West African countries [44].

These results highlight the need to strengthen targeted prevention strategies among elderly pregnant women, in particular the systematic introduction of aspirin and calcium, while consolidating achievements in iron/folate supplementation and malaria control.

4.5. Process of Delivery

In this cohort, the majority of deliveries were at term (73.9%), while 24% were premature births, including 3% very preterm and 3.4% moderately preterm. These figures reflect a worrying situation, as prematurity remains one of the leading causes of neonatal morbidity and mortality in Sub-Saharan Africa [45]. Several regional studies, notably in Cameroon and Nigeria, confirm that prematurity rates range from 10% to 20%, often linked to hypertensive disorders, infections, and obstetric complications [46] [47].

The proportion of post-term births (3.4%) remains relatively low and is consistent with recent African data, where increased prenatal monitoring and the use of induction have helped to limit pregnancies lasting beyond 42 weeks of gestation [48].

In terms of mode of delivery, there is almost parity between vaginal deliveries (49.2%) and caesarean sections (50.8%). This high caesarean section rate far exceeds the WHO recommendation (10% - 15%) and probably reflects a high-risk obstetric profile in this population [49]. In Africa, hospital rates can reach 30% - 50% in urban tertiary centers, in connection with the management of complicated pregnancies [32] [33].

Analysis of the indications for caesarean section reveals that multiple uterine scars were the leading cause (16.7%), followed by fetal distress (6.8%) and severe hypertensive complications (9.8%). These results are consistent with data in the literature, which show that repeat caesarean sections and the increasing prevalence of hypertensive syndromes account for the majority of indications in African facilities [33] [50]. The weight of surgical history (scarred uterus) highlights the challenge posed by the spiral of caesarean sections, with an increased risk of placental abnormalities and postpartum hemorrhage [34].

Malpresentations (2.6%), third-trimester hemorrhage (3.9%) and macrosomia on a scarred uterus (3.4%) are less frequent but well-documented indications for caesarean section in Sub-Saharan Africa [51]. All of these data point to a high-risk obstetric profile in which prematurity, hypertensive complications and a history of caesarean section converge to increase the use of obstetric surgery.

4.6. Study's Limitations

This study, having been conducted in a single referral hospital, presents certain

bias, notably its low representativeness of the general population, and the fact that the findings in terms of complication rates are difficult to generalize.

5. Conclusion

Late pregnancies are not uncommon at Laquintinie Hospital in Douala. They mainly occur in single, multiparous, educated women without high financial incomes. Although these pregnancies are monitored, complications are quite common and the caesarean section rate is high, highlighting the need to place greater emphasis on prevention and preparation for childbirth when monitoring these pregnant women.

Authors' Contributions

All authors participated in the development of this work. Astrid Ruth Ndolo Kondo and Michèle Florence Mendoua: Data collection, statistical analysis and writing. Gertrude Moukouri Same: Data collection. Michel Ekono: Writing. Charlotte Tchente Nguefack and Emile Mboudou: Supervision.

Conflicts of Interest

The authors declare no conflicts of interest.

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