

DETERMINANTS OF DELAYANCE IN THE FIRST ANTENATAL CONSULTATION IN A DISTRICT HOSPITAL IN SUB SAHARAN AFRICA

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ABSTRACT

Background: Pregnancy is not a disease, but a period of vulnerability for the mother and her fetus, requesting appropriate supervision. This monitoring is done through antenatal consultation, which must be early and regular.

Objective: To identify the factors associated with the delay of the first antenatal consultation at the Deido District Hospital

Population and Methods: We conducted a cross-sectional study from February 10 to May 28, 2017 at the Deido District Hospital, in the economic capital of Cameroon. Women who came for their first antenatal consultation of the current pregnancy and have agreed to participate in our study were subjected to a pre-tested questionnaire. We considered the first antenatal consultation to be late if it was done at a gestational age ≥ 14 weeks + 1 day. The factors related to delay in the first antenatal consultation were investigated using the logistic regression method in uni and multivariate analysis. The threshold of significance was a value $P < 0.05$.

Results: Two hundred and ninety-three women participated in our study. The average age was 27 ± 5 years. 52.5% were not married, 49.1% had a higher level of education, the average household size was 3, and 63.8% were multigravida. Mean gestational age was 14 weeks ± 5 days and 44% of antenatal visits were late. Factors related to delay in the first antenatal consultation were: the household size ≥ 4 and distance from home to health facility > 10 kilometers.

Conclusion: We recommend at the operational level the reduction of prenatal exam fees, the sensitization of women on the importance of early antenatal consultations and the evaluation of health facilities in health areas on the actual and timely practice of basic obstetric and neonatal care.

Keywords: Determinants, Factors associated, Late Antenatal consultation, Sub-Saharan Africa

INTRODUCTION

Antenatal consultation (ANC) refers to all the quality care a woman receives during pregnancy according to her individual situation, with a view to ensuring a favorable outcome for herself and her newborn [1]. ANC contributes to the reduction of maternal mortality through the prevention, treatment of infections and nutritional deficiencies; it also intervenes in the communication for the behavioral change and the elaboration of the plan of

delivery. The earlier the intervention, the most effective the ANC which is fundamental and decisive for the monitoring of pregnancy. Hence the interest of the first ANC before the 14th week as recommended by WHO. In addition to confirming pregnancy, it helps identify those who are at risk in order to take consistent follow-up measures [2, 3, 4]. The delay of the first ANC is common in sub-Saharan Africa; it mortgages the entire ANC

process and is associated with an increase in the maternal mortality rate [5, 6]. In 2011 in Cameroon, 66% of women started ANC late [7]. This has contributed to the increase in the maternal mortality rate from 430 in 1998 to 782 deaths per 100,000 live births in 2011[7, 8]. The objective of our study was to determine the prevalence of delay in the first prenatal visit and to identify the factors associated with this delay in a District Hospital (the Deido District Hospital).

POPULATION AND METHODS

Study setting and design

We conducted a 4-month cross-sectional analytical study from February 1 to May 30, 2017 at the Deido District Hospital (DDH). The health district of Deido is located in the economic capital of Cameroon and includes 12 health areas. The DDH is a health institution classified in the 4th category that provides comprehensive obstetric and neonatal care and serves as a reference for health facilities in charge of health areas. The Obstetrics and Gynecology Department is headed by an Obstetrician Gynecologist assisted by an ANC Manager and a Maternity Officer. There is a workroom with a capacity of four beds and a delivery room; two hospitalization rooms with a capacity of eight beds each, three outpatient rooms including ANC, a family planning room, a waiting room and settings. ANCs are attended by a midwife and are held from Monday to Friday between 8 am and 12 noon, preceded by a Behavior Change Communication session.

Data collection and analysis

Our target population consisted of all women received for the first ANC of current pregnancy regardless of gestational age and who consented to participate in the study. We performed a consecutive sampling, with a minimum sample size obtained from the LORENTZ formula:

$$N = \frac{t^2 * p(1 - p)}{m^2}$$

N = Minimum sample size for obtaining significant results for an event and a fixed level of risk
 t = Confidence level (the standard value of the 95% confidence level will be 1.96)
 P = Prevalence of delay at the first ANC in South-West Cameroon = 84.5% in 2014 [15].
 m = Standard error set at 5% or 0.05 either in numerical application $N = (1.96)^2 \times 0.845 \times (1-0.845) / (0.05)^2$ N = 201 women. Excluded were those who had already received an ANC for the

current pregnancy and those whose date of the last rule was unknown. The pre-tested questionnaire focused on socio-demographic characteristics and obstetric history.

The statistical analysis of the data was made from SPSS software version 20.0. The results were expressed as frequencies and counts for the qualitative variables, means and standard deviations for the quantitative variables. The search for factors associated with late ANC was performed using the logistic regression method. The threshold of significance was a value $P < 0.05$. Qualitative variables were: educational level, women's occupation, partner's profession, place of residence and reasons for the delay of the first ANC. Quantitative variables were mainly gestating age, gestational age, and household size.

Operational Definition: The first ANC was late if done at a gestational age ≥ 14 weeks + 1 day.

RESULTS

Two hundred and ninety-three pregnant women were recruited. They had an average age of 27 ± 5 years (range: 14-44 years). The most represented age group was 20 to 34 years old, 82.9% (Figure 1). Singles were the most represented, 52.2% (Figure 2). The highest level of schooling was the most represented, 49.1% (Figure 3). Female students were the most represented, 28% (Table 1). The monthly individual savings for pregnancy monitoring was low for all professional classes, on average: 18.97 Euros, in our context where the minimum cost of the prenatal assessment is: 153.84 Euros (Table 2). Medium-sized households (between 2 and 5 people) were the most represented with 70.3% (Table 2I). Multigravida and nulliparous were the most represented, respectively 63.8% and 43% (Table 1V). The Mean gestational age was 14 ± 5 days (range: 7 + 3 days and 26 weeks + 1 day). 44% of women had started their ANC late, after 14 weeks + 1 day (Figure 4). Household size ≥ 4 persons (OR 2 CI 95%: 1.25-3.19, P = 0.004) and distance ≥ 10 km (OR 1.84 CI 95%: 1.1-3.07; P = 0.020) were the socio-demographic factors associated with the delay of the first ANC as revealed by univariate analysis (Table 5). After logistic regression adjustment of significant associated factors in our study (multivariate analysis), household size (ORa = 1.75, CI: 1.04-2.95, P = 0.036) and distance (ORa = 1, 93, CI: 1.20-3.1, P = 0.006) were independently associated with late arrival at the first ANC (Table 5I). We did not find any obstetric factors associated with the delay of the first ANC.

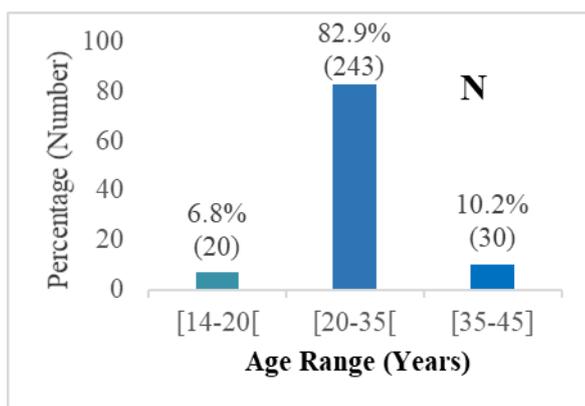


Figure 1: Distribution of the study population by age group

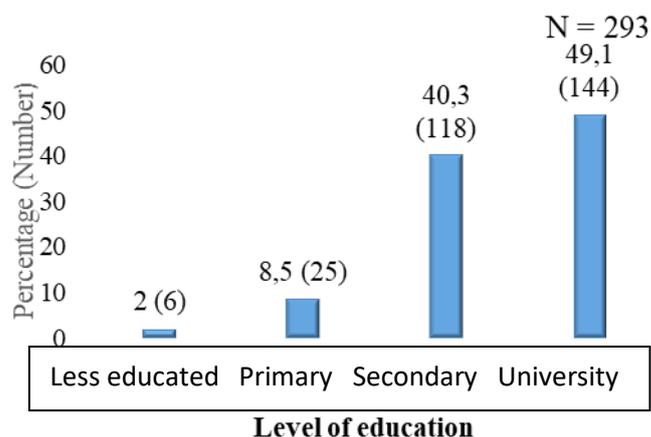


Figure 3: Distribution of the population by level of education

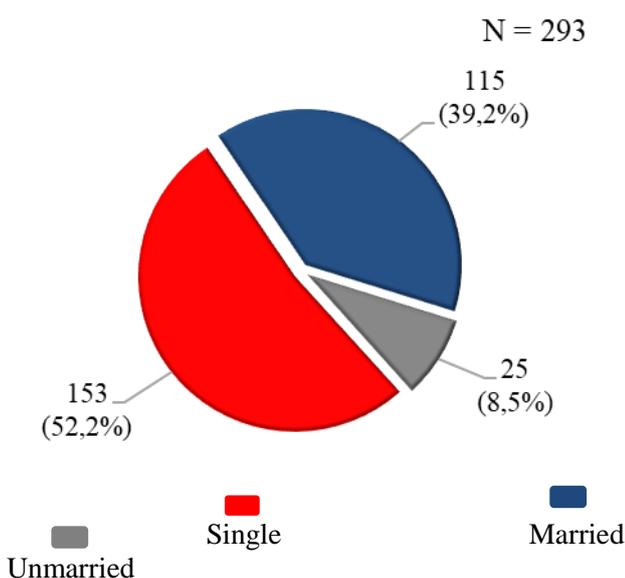


Figure 2: Distribution of the population by marital status

Table 1. Population partition according to profession

Profession	Number (n)	Percentage (%)
Student	82	28,0
Private sector	57	19,5
Housewife	49	16,7
Informal sector	38	13,0
Public sector	35	11,9
Pupil	32	10,9
Total	293	100

Table 2: Monthly savings for pregnancy monitoring (MSPM in EURO)

Profession	Number	MSPM EURO
Pupil – Student – Housewife	163	15.38 Euro and 18.46 Euro
Public and private sector	92	23.07 Euro and 30.76 Euro
Informal sector	38	18.46 Euro and 23.07 Euro

Table 3: Population partition by household size

Household Size	Number	Percentage (%)
1	37	(12,6)
2-5	206	(70,3)
6-9	49	(16,7)
9+	1	(0,3)
Total	293	(100)

Table 4: Population partition according to gravidity and parity

Gravidity and Parity	Number (n)	Percentage (%)
Gravidity		
1	106	36,2
2-4	152	51,9
≥ 5	35	11,9
Parity		
0	126	43,0
1-2	124	42,3
3-4	38	13,0
≥ 5	5	1,7
Total	293	100

Table 5: Univariate Analysis of Factors Associated with Late ANC1

Variables	1 st ANC		Odds Ratio (IC: 95%)	P
	≤ 14 Weeks N=164(n=%)	> 14 Weeks N=129 (n =%)		
Years ≤ 25	55 (33.5)	49 (38)	1.21 (0.75-1.96)	0.430
Marital status				
Married	64 (39)	50 (38.8)	0.99 (0.62-1.59)	0.963
Unmarried	100 (61)	79 (61.2)	1.01 (0.63-1.62)	0.963
Academic level				
Primary	14 (8.5)	11 (8.5)	1	1
Secondary	62 (37.8)	56 (43.4)	1.26 (0.79-2.02)	0.33
University	87 (53)	57 (44.2)	0.701 (0.44-1.11)	0.132
Profession				
Housewife	25 (15.2)	24 (18.6)	1.27 (0.69-2.35)	0.445
Unemployed spouse	0 (0)	2 (1.6)	-	-
Household size ≥ 4	66 (40.2)	74 (57.4)	2 (1.25-3.19)	0.004
Gravidity				
G1	63 (38.4)	43 (33.3)	0.80 (0.50-1.30)	0.369
G2-4	79 (48.2)	73 (56.6)	1.40 (0.88-2.23)	0.153
G5+	22 (13.4)	13 (10.1)	0.32 (0.35-1.50)	0.383
Parity				
P0	77 (47)	49 (38)	0.69 (0.43-1.11)	0.124
P1-2	63 (38.4)	61 (47.3)	1.44 (0.90-2.30)	0.128
P3-4	22 (13.4)	16 (12.4)	0.91 (0.46-1.82)	0.798
P5+	2 (1.2)	3 (2.3)	1.93 (0.32-11.72)	0.476
Distance to place Of ANC ≥10km				
	37(22.6)	45(34.9)	1.84(1.1-3.07)	0.020

DISCUSSION

Mean gestational age at first visit was 14 weeks ± 5 days (range: 7weeks + 3 days and 26 weeks + 1 day). This average is lower than that of Halle *et al.* in Cameroon in 2015 who found an average gestational age of 19 weeks (range: 8 weeks and 31weeks) [9]; the fact that their study was conducted in a semi-rural area and the fact that our study consisted mainly of young people with a higher level of education (41.9%) could explain this difference. This result is also lower than that of Lamina in Nigeria in 2004 and Khan *et al.* in Congo in 2005 who found respectively 21 weeks + 4 days and 24 weeks + 3 days [10, 11]. This difference could be explained by a high rate of non-schooling in their study compared to ours. These results are also lower than those of Kissule *et al.* in Uganda in 2013 who had found a gestational age of 27weeks+ 9 days; this is probably due to the fact that their study population consisted of pregnant women whose gestational age was greater than 20 weeks [12].

Prevalence of the delay of the first ANC

According to WHO guidelines on refocused ANCs, 44% of women came late to their first ANC. This

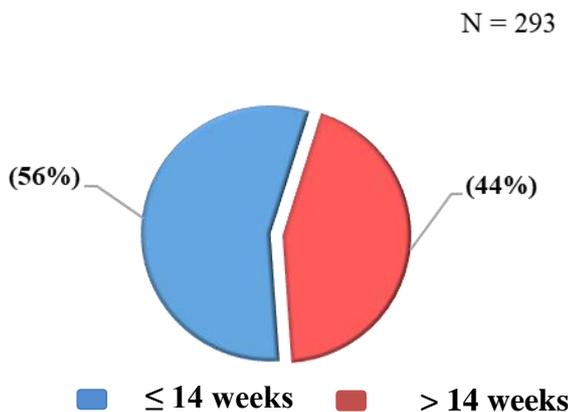


Figure 4: Prevalence of late ANC

TABLE 6: Multivariate Analysis of Risk Factors Associated with Late ANC1

Variables	ORa (IC: 95%)	P
Household ≥4	1.75 (1.04-2.95)	0.036
Distance ≥10 Km	1.93 (1.20-3.1)	0.006

high prevalence of late-onset women may be explained by the fact that women prefer to be certain of having a pregnancy before going to the health facility for ANC [13]. Another possible reason is that some women are not familiar with counting their menstrual cycles and that proof of pregnancy can only be made when the uterus reaches a visible size [13]. This prevalence is lower than the 65% of the 2011 Demographic Health Survey (DHS) in Cameroon. This could be explained by our reduced sample [14]. This prevalence is close to the 42% found by Gulema *et al.* in 2010 in Addis Ababa (Ethiopia) which is an urban and cosmopolitan area like ours [11]. However, it is lower than the 68% found by Ndiaye *et al.* in Senegal in 2005 [13]. This difference could be explained by a high rate of women out of school in their study compared to ours (respectively 19.5% and 67%); non-enrollment of girls as an obstacle to attendance at health facilities and information.

Factors associated with the delay of the first ANC

The size of the household, ≥ 4 persons, was a factor associated with the late arrival at the first ANC. This result is consistent with that of Mafuta *et al.* in Congo who found that the household size of more than 4 persons was the determinant of late attendance at antenatal care services [15]. A study conducted by Mburano *et al.* in Cameroon found that belonging to a household of average standard of living or to a wealthy household was a factor facilitating access to ANC services and that, on the other hand, belonging to a large household size was a factor limiting access to ANC services [16]. In large households, parental support is generally low, and furthermore, according to the Haque study in Bangladesh, decisions on the use of modern care services are not available, not generally taken into account by individuals who thus resort to traditional care [47]. Physical accessibility to health infrastructure is good in Cameroon since on average 80.4% of households are located within 5 km of a health facility; despite the fairly marked disparity between rural and urban areas, the proportion of households living less than 5 km from a health facility is 69.3% in rural areas compared to 99.3% in urban areas [18]. In our study, 57.5% of women resided at a distance greater than or equal to 10 km from DDH. Consequently, between their places of residence and the DDH, there were health structures covering health areas and supposed to ensure high quality ANCs; but they were not solicited. This could be explained, among other things, by the fact that women were not satisfied with the care provided by these structures, or it was a free option on their part. But we think, subject to further investigation,

that the cost of transportation and care could justify their delay at the first ANC because of their low purchasing power based on monthly savings. Individual units for prenatal monitoring (Table 2). The age of the mother was not a determinant of the delay of the first ANC. This result is consistent with a study conducted by Banda in Zambia that showed that the mother's age did not significantly influence the delay of the first ANC [19]. On the other hand, this result is different from that of Ndiaye *et al.* in Senegal who found a significant influence of age on the delay of the first ANC. This could be explained by the fact that their study population consisted of girls out of school in 67% of cases, who resided in rural areas and were held at home for housework or early marriages [13]. Parity and out-of-school did not have a significant influence on the delay of the first ANC. These results are different from those found by Ndiaye *et al.* This could be explained by their sample which was superior to ours [13].

CONCLUSION

A high prevalence of the delay of the first prenatal consultation was found at the DDH with 44%. This could be associated mainly with household size (≥ 4 persons) and distance from hospital (≥ 10 Km) among women with low purchasing power. We recommend at the operational level the reduction of antenatal examination fees, the sensitization of women on the importance of early prenatal consultations and the evaluation of health facilities in health areas on the actual practice of basic obstetric and neonatal care.

Limitations of the study

We proceeded by individual interviews. The individual interviews chosen for this study have the advantage that they allow to gather the pure knowledge of the participants, without any outside influence as in the discussion groups. In addition, they do not require organizing a group of people; the participants were interviewed at the location where they were waiting to be received by ANC. However, group discussions have the advantage of complementarity of interventions which gives us a wider field of information than in individual interviews. The study was conducted in a single hospital which limited our sample size.

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