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Could Labor Be Considered Outside of a Medical Environment in Africa? Case of the Maternity Hospital in Yopougon Attié/Abidjan/Ivory Coast/West Africa

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Abstract

Introduction: Developing countries are characterized by a high maternal mortality rate, particulary related to the management of childbirth. The author describes in this work 588 childbirth labors that took place without any medical supervision. **Method:** All patients who reached the hospital with a full cervix dilation were included in the study. The outcomes of those childbirth labors without medical supervision were evaluated at the maternal and neonatal level. **Results and Discussion:** The average age of the patients was 28.1 ± 13 years with 47% nulliparous and 30% pauciparous. These patients represented 14% of all births; 59% of the patients had had three and five prenatal consultations. 71% of them came straight from home and had meconium-stained amniotic fluid. The APGAR score was greater than 6 in 94% of newborns, and 66.7 of them weighed between 2500 and 3500 g. Only 0.9% of patients coming from home needed a caesarean section. **Conclusion:** Home birth is not yet possible in Africa because it is not supervised by professionals who know the risks of childbirth, its complications and recognize the warning signs; however, the results of this preliminary study show that the issue of home childbirth in Côte d'Ivoire can be reconsidered subject to greater involvement of medical staffs.

Keywords

Cervix Dilation Stage, Childbirth Labor, Medical Supervision, Neonatal Prognosis, Côte d'Ivoire

1. Introduction

The high maternal mortality rate in developing countries is multifactorial. Pregnancy monitoring and childbirth management are the main reasons. Can the course of labor outside the medical field be incriminated? This study tries to answer the question.

2. Methodology

This is a retrospective and prospective study that took place at the delivery room of Yopougon Attié hospital from April 29 to November 30, 2022. It involved 4166 deliveries. After selection of medical files, 588 patients were selected for the final analysis (**Figure 1**).

Patients are greeted by a nurse's aide at the entrance to the delivery room and placed on a examination table.

The obstetrical examination including the measurement of the uterine height, listening to the sounds of the heart of the fetus and the vaginal examination, is carried out.

When cervix full dilation status is established, the patient is moved to a birthing bed. We explain the principle of the study to her and ask her if she agrees to participate in the study.

For the retrospective part, the data was collected from the birth register.

2.1. Inclusion Criteria

- Patients with at least 22 weeks of pregnancy or a 500-gram fetus
- Patients who gave birth in the hospital delivery room
- Patient with full cervix dilation on admission

2.2. Exclusion Criteria

- Patients who came to the delivery room at full cervix dilation, but who had to be evacuated to another center
- Patients who refused to participate in the study

2.3. Non-Inclusion Criteria

- Patients who came to the delivery room before full cervix dilation
- Patients who gave birth on arrival without prior vaginal examination

3. Epidemiology

3.1. Birth Rate

The maternity ward where the study took place has an intense activity, because independently of reflecting the activity of maternity wards in developing countries, it was completely renovated and made available to the populations in April 2022. In seven months, there were 4166 deliveries, an average of 20 deliveries per day.

The birth rate is high in Côte d'Ivoire: the crude birth rate in 2022 in Côte d'Ivoire is 33.5% according to the World Data Atlas; the fertility rate is 4.3

Figure 1. Overview of the sample.

children per woman according to data from the last general population census conducted in 2021.

Between 1990 and 2014, the global rate of assisted deliveries was 59% to 71%), which contributed to reducing maternal mortality by 45% for the same period (2015 Report, MDGs). Despite this progress, maternal mortality remains high in sub-Saharan Africa and one in two women does not give birth in an institution, particularly in the Sahel [1].

3.2. Age and Parity

The Ivorian population remains very young because, again according to population census data, 75.6% are under 35 years old.

The average age of our study population is 30 years, with a maximum of 47 years (**Figure 2**).

Childbirth at late age is the consequence of the conception of fertility in Africa: Motherhood is social criterion of valuation and it is often menopause that marks the end of motherhood.

Teenage pregnancies are a real public health problem in Côte d'Ivoire. For the 2012-2013 school year, there were 5076 early pregnancies. These pregnancies

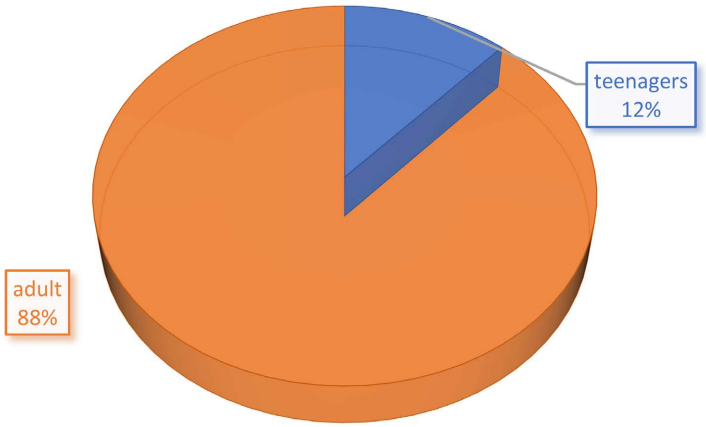

Figure 2. Age of parturients.

constitute a real social drama insofar as they are the frequent cause of dropping out of school, rejection by the family (Official portal of the government of Côte d'Ivoire, April 2, 2014).

In general, it remains a public health problem in many developing countries, where prevalence can sometimes reach 20% of deliveries [2] [3].

These teenagers represent 12% of our sample with extremes at 14 years old.

Apart from medical complications, teenage pregnancy faces psychosocial challenges [4].

Childbirth outside the medical service in these cases are either the consequence of a pregnancy that has been hidden from parents (these often arrive at gynecological emergencies for pelvialgia), or the consequence of an underestimation of the duration of labor. About one-third of our study population is nulliparous (**Figure 3**).

One can imagine that the patients did not recognize the labor contractions in time and were surprised. But as we know the socio-cultural environment of the primipara in Africa, we know that primipara are supervised from the end of the pregnancy by her mother or more experienced women. Ignorance of the contractions is therefore unlikely; indeed, the primipara is recognized for having a long labor even in the profane environment. While these hypotheses can be advanced for labor conditions in adolescents and nulliparous women, they cannot be valid for adult women (88%) and for those who have given birth at least once (70%). They sometimes rely on their experience of childbirth to judge the appropriate time to 5 go to the maternity ward. All these hypotheses were also mentioned by Nkurunziza in Burundi [5].

It is still appropriate to mention, in the face of the reluctance of parturients, their perception of childbirth in the maternity ward: the concept of obstetrical violence, which is an emerging concept [6].

The time spent in the delivery room is considered too long, away from the family, in these moments when family delicate attention is essential, a situation that also fits into the concept of obstetrical violence; all this explains why parturients are always looking for ways and means to shorten the time spent in

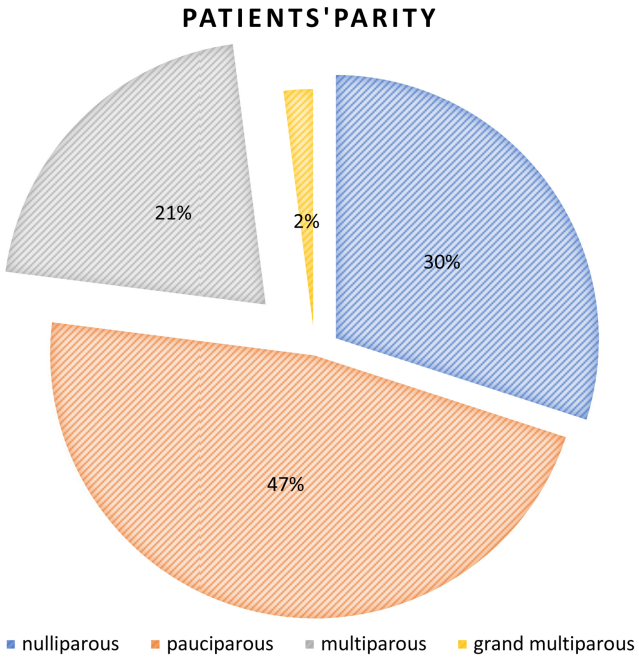

Figure 3. Patients' parity.

maternity, when they do not avoid maternity outright [6].

This is how they will use oxytocics from the traditional pharmacopoeia, which will have the effect of hastening labor.

More than half of our study population has at least three children; but the mode which designates the most frequent parity is 1; we can therefore relate primiparous to nulliparous who may have a long labor or who do not have much experience in recognizing uterine contractions.

4. Pregnancy and Childbirth Care

4.1. Pregnancy

Prenatal Visits

The majority of our patients had between 3 and 6 prenatal visits during their pregnancy (**Figure 4**).

This number is below the 2016 WHO recommendations which require 8 ANC (antenatal consultation) during pregnancy to lower the maternal mortality rate. The average number of ANC was 3.9 with a mode of 3; whereas in the Bénié Bi Vroh study, the average was 2.89 for a standard at the time of 4 ANC according to the WHO.

The mismatch between the rate of unassisted deliveries and that of prenatal follow-up is a frequent problem that has long been decried in Africa and multiparous women are often affected by these unassisted deliveries [7].

4.2. Childbirth

4.2.1. Prevalence of Unsupervised Labor

Among the births in this maternity ward, 16% took place without any medical

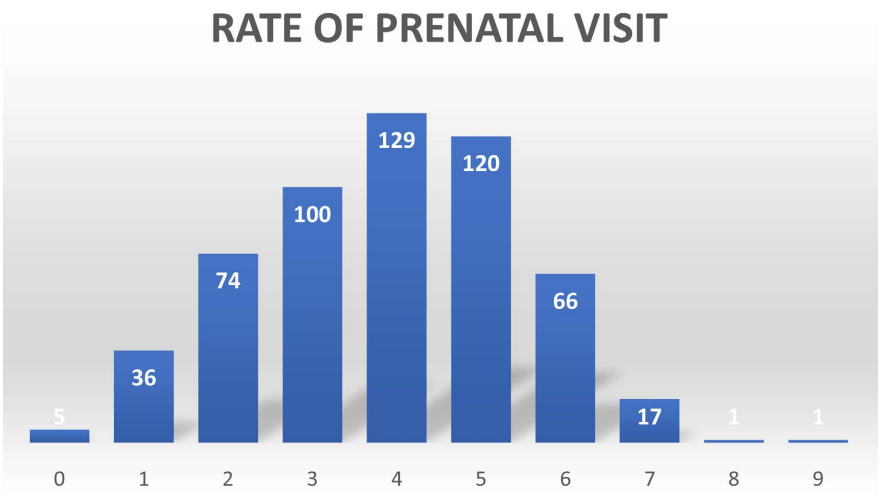

Figure 4. Rate of prenatal visit.

supervision: 14% of patients were examined in the last stage of labor and 2% had a home birth (**Figure 5**).

This home birth rate is higher than that of Mali despite the relatively younger age of its study population [8].

In Mali as in Côte d'Ivoire, primiparity is estimated at around the same age according to demographic and health studies in Côte d'Ivoire (2011-12) and Mali (2018): respectively 19, 6 and 19.2 years old. In some countries, this home birth rate can exceed 50% [7] [9].

In a study carried out in Côte d'Ivoire in 2009, there were 17% home births 10% of women had given birth during transport to the maternity ward. Almost all of the patients had gone to the maternity ward after childbirth in order to establish the administrative papers necessary after any birth.

It should be noted that the Bénié study was conducted in the same municipality of Abidjan: Yopougon [10].

In our department, for the study period, 77 births (2%) took place at home. This is a clear evolution of practices, of course, but the renovation of the maternity ward as mentioned can explain this enthusiasm for giving birth in the maternity ward.

If we take into account the patients whose labor took place entirely outside a health service and the patients who gave birth at home, we get 16% of the patients who had an unassisted labor; 84% therefore had a birth attended. This rate is stable given the figures for Bénié, which had 83% of deliveries in the maternity ward.

This constancy of rates has both institutional and social causes: forms of obstetrical violences are always mentioned and this violence is perceived by women in all countries, whether they are from the North or the South [11].

Among the patients who had reached full cervix dilation, it is necessary to point out a few special cases, which should in principle be subtracted from the statistics; indeed, these are patients who reached full dilation out of hospital not

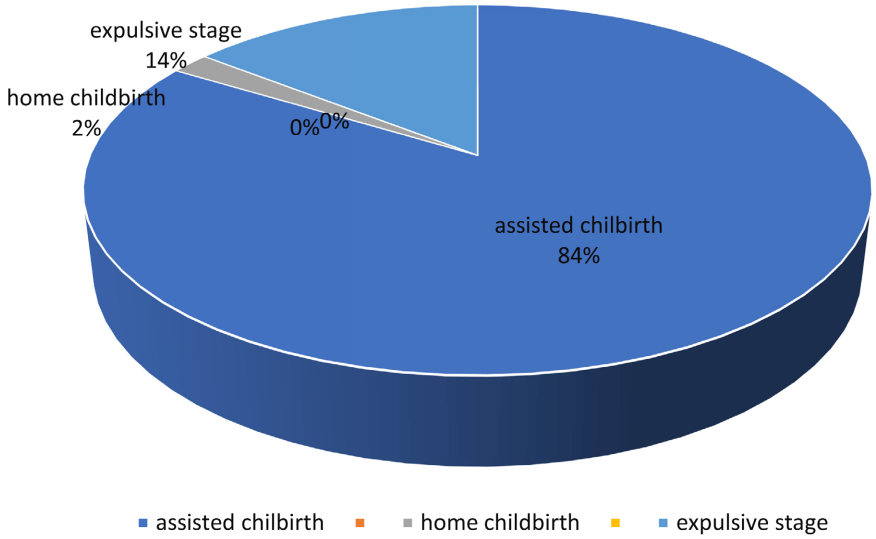

Figure 5. Types of deliveries.

because of a personal choice, but rather because of their obstetrical status.

It was about:

- Two patients evacuated for retention of the second twin.
- One with uterine rupture after obstructed labor.
- One on her way to the maternity ward had actually delivered one of the triplets in the taxi..
- Three came from unit of pathological pregnancies, where they were hospitalized for threat of premature delivery.
- Three carried pregnancies with fetal malformation; the late arrival at the hospital responded to the logic that a child they had already given up, did not require supervision; likewise, it was unbearable for them to come and spend a long time in the delivery room in the midst of newborns and other women waiting for a happy event.

Similarly, for the majority of patients with a child of less than 1800 g birth weight, it was an unexpected labor on a non-term pregnancy or a severe threat of premature delivery that resulted in inevitable childbirth during transfer from another hospital.

These patients should rather be considered as treatment failures.

4.2.2. Mode of Arrival

Most of our patients came on their own, straight from home (**Figure 6**).

29% (161/588) of patients were evacuated from a peripheral health center. Our health center being a reference center, it seems logical that the patients referred from a peripheral center should be the most numerous. But, the care circuit in obstetrics as in other specialties, does not obey the rules of the health pyramid. Patients have the possibility of choosing their place of delivery themselves, even when it is eutocic; which contributes to the overload of maternities having to take care of obstetric emergencies, with obviously a delay in their care.

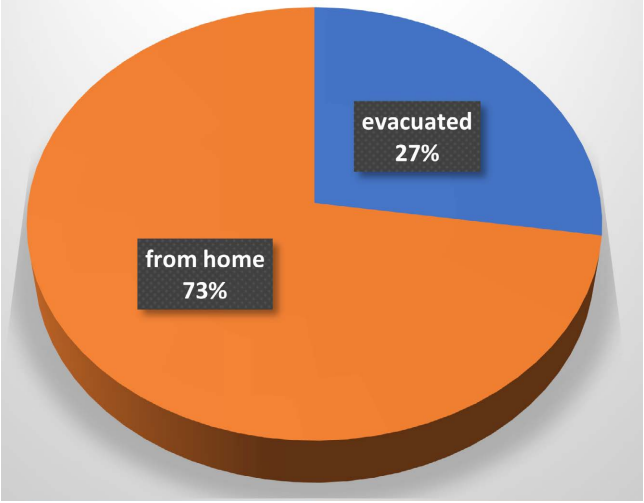

Figure 6. Mode of arrival at the maternity ward.

Even when the patients follow the normal procedure by consulting in first intention in a center of lower level, the evacuation towards a center of 3rd level is badly accepted by the family because it announces a possible cesarean section; the caesarean is still poorly received culturally because it is a sign of incomplete femininity: women have to give birth in pain to better establish the relationship with their child. This causes controversies with the nursing staff that the family tries to convince not to transfer the patients. We must also mention the traditional "recipes" that are tried at home where they make a last detour before desperately going to the hospital; our medical team has already shown that those traditional medications that are not without maternal and fetal complications [12].

4.2.3. Risk Factors

1) Amniotic fluid

Amniotic fluid being mixed with blood, it was not possible in 135 patients to assess the color of the amniotic fluid 21% of patients (97/453) had a meconium-stained amnioc fluid (MSAF), which represents a factor of fetal anoxia. (**Figure 7**). These women should in principle be under strict supervision; in many maternities in our country where cardiotocography is not available, MSAF is a sign of fetal asphyxia and leads to a caesarean section; although many studies have shown that the presence of meconium is not as important a predictor of neonatal outcome as a change in amniotic fluid color during labor [13] [14].

It is the APGAR score at five minutes that was taken into consideration in our study, because it is the one that best reflects the fetal outcome [15].

We considered that the APGAR score was good when it was at 7 at 5 minutes of live, and above. It was considered low below 7.

APGAR score alone should not be interpreted as evidence of asphyxia and its significance in outcome studies often inappropriate; this may explain why there is a disparity between the rate of tinted amniotic fluids which is 21% and that of

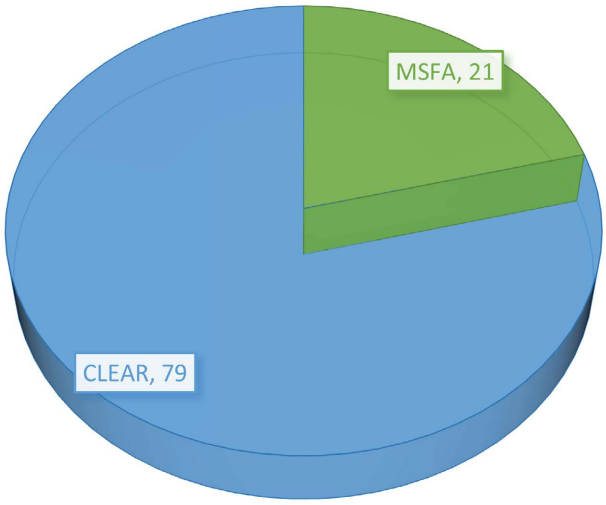

Figure 7. Amniotic fluid color.

cerebral suffering at birth which is 15% (69/453) (**Figure 8**).

The inability to determine the color of amniotic fluid when it is mixed with blood could even contribute to increasing the gap between these two rates. However, the difference between the prevalence of low APGAR score during deliveries with MSAF (42.2%) and that during deliveries with clear liquid (3.7%) still shows that amniotic fluid stained remains significantly related to poor fetal well-being ($p < 0.001$).

Listening to the sounds of Pinard's heart during uterine contractions can eliminate this anoxia [16] [17].

One of our studies showed that intermittent auscultation is possible in our country with a good predictive factor for fetal asphyxia [18].

But once again, the work overload plays against parturients.

In fact, intermittent listening to the heart of the fetus requires a certain availability from the midwife, which is difficult to obtain given the influx of patients.

2) Birth weight

More than the gestational age, we have rather taken into account the birth weight, because the gestational age is often approximate, due to the high prevalence of late consultations and therefore of approximate dating ultrasounds.

The "fear" of the medical community obstructs the perception of obstetrical risk; in fact, 5.6% (33/588) of the patients gave birth to newborns weighing less than 1700 grams (**Figure 9**).

About half (27/52 patients) performed unattended labor on a multiple pregnancy (26 twin pregnancies, 1 triple pregnancy). 25 patients had singleton pregnancies with birth weights less than 1700 g. All of these 52 patients had shown signs of threatened childbirth or abortion, and had not had time to reach the hospital.

On the other hand, 2.7% (16/588) gave birth to macrosome babies with therefore a risk of dystocia. If twin pregnancies are generally known by patients, macrosomia often remains a surprise. Among these 16 macrosomes, only one was

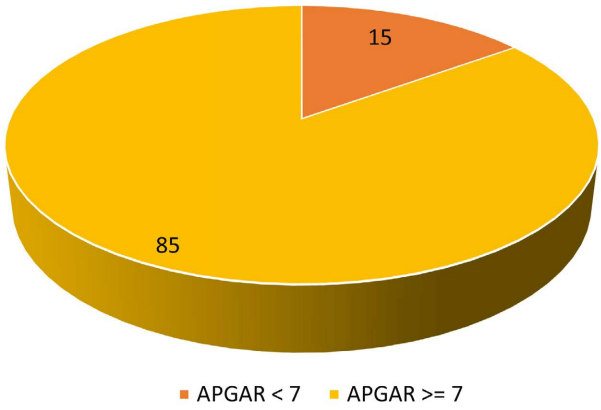

Figure 8. APGAR score.

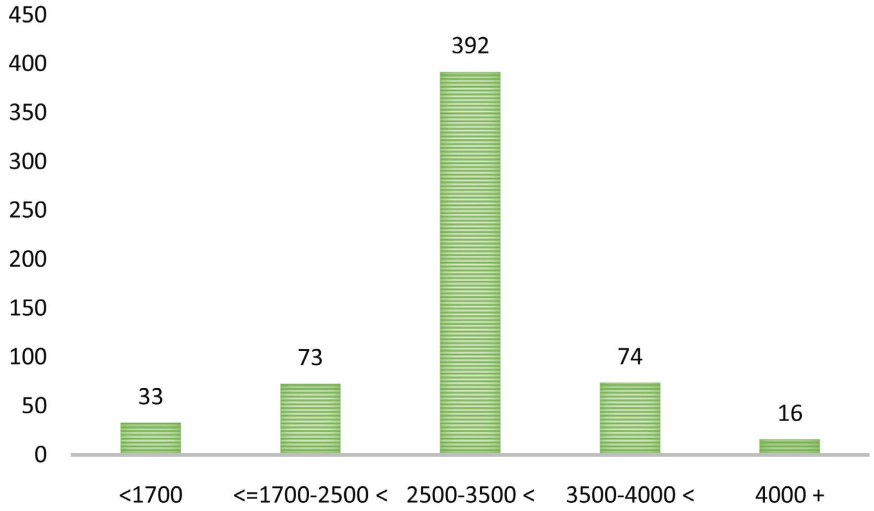

Figure 9. New borns weight (grams).

born by caesarean section.

3) The delivery route

We resorted to caesarean section for only 7% of patients (12/161) evacuated from the periphery versus 1% of caesareans in patients who came on their own. This seems normal because there are more high-risk pregnancies in peripheral hospitals and those who had a labor beginning at home go to hospital when labor didn't go as expected. Why such a low proportion of caesarean sections for deliveries supposed to be at risk? Knowing the practises of medical cares, we can explain the situation by the fact that in health facilities where surgery rooms are not available, midwives evacuate to another center, so that patients can receive oxytocin.

Should the transfer indication issued by the health center of origin be called into question? The proportion of evacuated women who gave birth vaginally does not hide the fact that some midwives, who are insufficient in number for deliveries rate, do not take the time necessary to diagnose a dynamic dystocia which is merely transitory. Each labor is unique and progresses at a different

pace. This earlier standard of one centimeter per hour progression has been deemed unrealistic for some women, unable to predict an unfavorable labor outcome. The overload of work in our delivery rooms is also explains a certain level of impatience among midwives in face of parturients at the end of labor who do not provide enough expulsive efforts. The availability of extraction instruments could help alleviate this problem.

The caesarean sections that were performed in these patients were related to:

- Lack of engagement of the fetus at full dilation of the cervix
- Disproportions between fetus and maternal pelvis.

Evacuated patients remain patients at obstetrical risk because they are the ones who increase the rate of caesareans; in fact, 75% of caesarean patients (12/16) were evacuated.

5. Analysis of the Situation

Childbirth remains a happy event in Africa. Even if a newborn belongs to a couple, everyone feels concerned by his arrival. The pregnant woman and more particularly the woman who gives birth is very well surrounded by her relatives.

The structuring of care in Africa means that the attention to which the pregnant woman is accustomed in her environment is brutally broken by the demands of medical care. Indeed, parturients have their labor away from the gaze of relatives, in an environment where the stress linked to the work overload, the risk of complications and the inadequacy of the technical platform, burdens the human gaze and the empathy for these parturients. This lack of comfort has been taken into account in the quality of care for women in labor with the concept of obstetric violence.

Maternity is no longer seen as a place that guarantees the safety of childbirth, but rather as an appendage of the administration; one has to give birth there in order to guarantee the administrative recognition of his newborn. Above all, women seek listening and consideration of their expectations [19].

The results of this study confirm the words of Doctor Princess Nothemba Simelela, Deputy Director-General of WHO, in charge of the Family, Women, Children and Adolescents Group, who said in her press release of February 15, 2018 to WHO: "If labor is progressing normally and the woman and child are doing well, they don't need any additional interventions to speed up labor."

The example of women could serve as an example for many women who denounce obstetrical violence in maternity wards.

However, this work alone does not make it possible to point out obstetrical violence as the cause of labor or childbirth itself without any medical supervision, or to evoke the simple desire to obtain administrative papers. Indeed, the majority of patients had 4 prenatal consultations. Even if this number remains insufficient according to the new standards of the World Health Organization, it demonstrates a certain willingness of patients to remain in contact with the nursing staff and also a certain recognition of their ability to ensure safety for

pregnancy and childbirth.

Unlike births at home or in the birthing center that happen in northern countries, here, births outside the hospital are impromptu and the good results are linked to nature, to physiology. Risk factors are not detected. Culture still has an important impact on attitudes and practices, which explains why it is appropriate to involve traditional birth attendants. But the example of Haiti shows us that implementation can be difficult [20].

6. Conclusion

Death is a drama that still lurks around a happy event which is the childbirth. The millennium goals are to reduce the mortality rate, especially in developing countries where this health indicator represents a health emergency. The obstetrical violence to which pregnant women feel subjected alters the quality of the patient-doctor relationship in general, in developing countries particularly. The cultural perception of pregnancy and childbirth still encourages many pregnant women to seek second-line medical care. In this context, it will be difficult to reduce maternal mortality without an in-depth analysis of this obstetrical violence. Indeed, the obstetrical violence that can explain this estrangement from the medical environment can be circumvented by personalized support, perhaps making it possible to ensure follow-up in the maternity ward.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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