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Research Article

Assessment of the quality of the management of childbirth by vaginal delivery in 5 reference maternity clinics in Dakar, Senegal

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ABSTRACT

Background: The current strategy to fight maternal and perinatal mortalities is mainly based on three pillars: family planning, skilled delivery and emergency obstetric and neonatal cares. The objective of the study was to assess the quality of the management of low-risk deliveries in 5 reference maternity clinics in the region of Dakar.
Methods: This is an observation-based multicentric, prospective and descriptive study, carried out over a four-month period, from September 1st to December 31st, 2012, in 5 reference maternity hospitals in the region of Dakar. For each delivery, the focus was put on parturient socio-demographic features, the surveillance techniques of the labour, the handling of the exit and delivery phases, materno-fetal complications but also on the new-born care. To assess the quality of childbirth management, a comparison between the practices was made and observed on the field and the World Health Organization's recommendations which fall into 4 categories (A, B, C and D) depending on the appropriateness or not of their use. For data input and analysis, we used the 13.0 version of the SPSS software.
Results: During the study period, 200 childbirths were observed. The epidemiologic profile used for this study was that of a literate woman with a low record of childbirth who was 27 on average with a mean parity of 3. Forty seven percent of childbirth deliveries were observed in Roi Baudouin hospital centre. The A-category recommendations of the World Health Organization, such as the consumption of drinks, mobility during labour, the use of a partograph, the active management of the third stage of labour (AMTSL) and the examination of the placenta were applied in 22.5%, 86.2%, 23.4%, 100% and 23.4% of cases respectively. As for the B-category recommendations, which recommend the removal of those practices deemed harmful such as the back position during labour, the placement of an intravenous line and the oxytocin infusion, they were carried out in 91.84%, 98.08% and 7.28% of cases respectively. C and D categories which deal with non-recommended practices such as the use of abdominal expressions during labour and episiotomy were used in 47.6% and 39.7% of cases respectively.
Conclusions: In our study, the most followed A-category recommendations from the WHO are: encouraged mobility, the use of single-use equipment, AMTSL and skin-on-skin contact. However, some B, C and D-category practices are still widely used in our maternity hospitals. The health authorities should make sure that the WHO recommendations are followed.

Keywords: Labour, Quality, Humane care, World Health Organization directives

INTRODUCTION

Like the other sub-Saharan African countries, Senegal is experiencing high infant and maternal mortalities with respectively 392 and 38 out of every 1000 births, according to EDS.[1] The current strategy to fight maternal and perinatal mortalities is mainly based on three pillars: family planning, skilled delivery and emergency obstetric

and neonatal cares. It is in such a framework that the World Health Organization developed, in 1997, a series of recommendations on the management of normal deliveries.[2]

In Senegal, 35% of deliveries are performed by staff deemed non-skilled by the World Health Organization.[1] However, there have been very few studies conducted on the quality of deliveries in the country. This study is aimed at assessing the quality of the management of normal deliveries performed in five reference maternity hospitals in the region of Dakar. More specifically, the aim was to determine to which extent the WHO guidelines are applied but also to shed light on the frequency of the practices forbidden by WHO during childbirth by vaginal delivery.

METHODS

Nature of the study

This is an observation-based multicentric, prospective and descriptive study, carried out over a four-month period, from September 1st to December 31st, 2012 in five (5) reference maternity hospitals in the region of Dakar.

Inclusion criteria

Any parturient who, at that moment of the study, was admitted into the hospital during the active phase of her labour, was bearing a head-on normal monofetal intra-uterine pregnancy, was willing to take part in the study and whose labour was a eutocic one.

Exclusion criteria

Any parturient who presented a dystocia for which an urgent intervention was needed.

Data collection and analysis

Collected data was entered in a recorder form.

For each case, the socio-demographic features of the parturient was focused, the surveillance techniques of labour, the management of the exit and delivery phases, materno-fetal complications and the cares to the new-born. To assess the quality of childbirth management, we compared observed practices with the World Health Organization's guidelines which fall into 4 categories;

- A-category guidelines refer to practices with a proven usefulness and that should consequently be encouraged including the presence of a relative of the parturient during labour, encouraged mobility, the use of single-use equipment, the active management of the third phase of labour, skin-on-skin contact, placenta examination, partograph-monitored labour, the authorisation to consume drinks and/or food during labour and early breastfeeding.
- B-category guidelines refer to apparently harmful or inefficient practices that should consequently be banned including vulva-shaving during labour, perineum-massage, systematic dorsal position, the systematic placement of a venous catheter and the use of oxytocin infusion;
- C and D-category guidelines refer to those practices on which there are not enough information to justify their formal recommendation but also the practices that are often used erroneously. They include the systematic use of episiotomy and abdominal expressions.

For data input and analysis, 13.0 version of the SPSS software was used.

RESULTS

Frequency

During the study period, 200 out of 1628 labours (12.3%) were observed. Almost half of childbirth deliveries (45%) were performed in Roi Baudouin Hospital Center as showed in Table 1.

Table 1: Distribution of labours along the different maternity hospitals (n=200).

Name of the health structure	Staff	Percentage (%)
Roi Baudoin hospital center	90	45
Gaspard kamara medical center	28	14
Nabil choucair medical center	36	18
Philippe maguilen senghor medical center	24	12
Pikine national health center	22	11
Total	**200**	**100**

Socio-demographic features

Parturients were 27 years old on average with 15 for the youngest and 45 for the eldest one. The most represented age group was people between 20 to 30 years old. Eleven parturients were teenagers (5%) and 5% of our study group were above 40 years old. Parity was between 1 and 10 with an average of 3. The majority of parturients was made of women that had rarely given birth (55%). Ninety-two (92%) of parturients were married women and 65% of them had undergone at least 4 antenatal care consultations.

The level of applications of the WHO guidelines in the 5 maternity hospitals.

A-category guidelines

The most appropriately applied A-category guidelines in the five maternity hospitals are: encouraged mobility (86.2%), the use of single-use equipment (98.9%), the active management of the third stage of labour (100%) and skin-on-skin contact (96.8%) as showed in Table 2. Among the recommendations that were poorly applied, there were placenta examination (23.6%), partograph-monitored labour (23.4%), the authorisation to consume drinks and/or food during labour (22.5%) and early breastfeeding (6.9%), (Table 2).

No health structure allowed parturients to be accompanied by a relative in the maternity ward during their labour.

Table 2: Level of application of A-category guidelines in the different health structures.

Health structure/ guidelines A	Roi baudoin hospital center %	Gaspard kamara medical center %	Nabil choucair medical center %	Philippe maguilen senghor medical center %	Pikine national health center %
Accompanying people	0	0	0	0	0
Drinks/food	18	35.7	18.9	12.5	27.3
Encouraged mobility	95.5	89.3	89.2	75	81.8
Partograph	0	64.3	10.8	41.7	0
Single-use equipment	94.4	100	100	100	100
AMTSL	100	100	100	100	100

Table 3: The use of B-category practices in the 5 maternity hospitals.

Health structures/ practices B	Roi baudoin hospital center %	Gaspard kamara medical center %	Nabil choucair medical center %	Philippe maguilen senghor medical center %	Pikine national health center %
Perineum massage	46,1	10,7	10,8	58,3	9,1
Systematic dorsal position	92,1	100	83,8	83,3	100
Vulva-shaving	0	0	0	0	0
Venous catheter	97,8	100	94,6	100	98
Oxytocin infusion	1,1	0	5,4	20,8	9,1

Table IV: Level of use of grade C and D practices in the 5 maternity hospitals.

Structures/ practices C and D	Roi baudoin hospital %	Gaspard kamara healthcare center %	Nabil choucair healthcare center %	Philippe senghor healthcare center %	Pikine national hospital %
Fundal pressures	43,8	32,1	40,5	62,5	59,1
Episiotomy/Primiparous	40,4	35,7	43,2	29,2	50
Nipple stimulation	0	0	0	0	0
Peridural anaesthesia	0	0	0	0	0

B-category guidelines

Our findings show that no health structured practiced vulva-shaving during labour. However, as indicated in Table 3, perineum massage was practiced in 27% of cases. It was also find out that the use of dorsal position and the placement of a venous catheter was almost systematic in all the reference maternity hospitals with percentages of 91.84% and 98.8% respectively.

Oxytocin infusion was used in 7.8% of cases on average.

C and D-category recommendations

Those practices which are deemed harmful such as the use of abdominal expressions and systematic episiotomy during the exit phase were observed in 47.6% and 39% of cases respectively (Table 4). The majority of parturients were subject to abdominal expressions. The highest rate of episiotomy was observed in Pikine national health

centre (50%). No parturient was given epidural analgesia during the labour and there was no case of nipple stimulation during the delivery phase.

DISCUSSION

Sociodemographic aspects

The profile of the parturient woman was that of an average 27-year-old pauciparous and married housewife, with a primary school level. The profile corresponds to that of the maximum fertility time in Senegal which ranges from 20 to 29 years.[1] The study of the socio-demographic profile in our series revealed that 131 (65.5%) of them were housewives. Our data are similar to those of a study conducted in Mali which found 71.7% housewives.[3]

As for pregnancy follow-up, more than half of parturient women (55.5%) had undergone at least 4 antenatal consultations, which is in line with WHO guidelines.[2,4-6] This rate is higher than the findings in Mali, in district VI of Bamako Commune, where parturient women who underwent at least four antenatal consultations account for 33.7%.[3]

Level of implementation of WHO guidelines

Grade A recommendations

Within the framework of the humanized childbirth, the main care practices recommended by WHO during delivery are the presence of an accompanying person, the encouragement to change position, patient hydration through drinking and the use of disposable equipment.[2]

Presence of an accompanying person

No structure in our sample allowed any accompanying person in delivery room. Many sociocultural taboos, especially as regards the presence of the husband (spouse), are persistent in today's societies. Nevertheless, it is proven that the presence of an accompanying person has positive effects on the reduction of analgesic requirements and the reduction of instrumental deliveries, thanks to their continuous support.[7] The full implementation of this WHO recommendation requires training for nursing staffs and changes in the layout of our delivery rooms so as to preserve the parturient women's intimacy.

Encouraging mobility

The woman's position during labour often depends on her culture. Indeed, in societies which are not influenced by the Western culture, women often stand vertically during labour and change their position as they wish.[8] Studies proved that the traditional prone position causes a bad transmission of push forces, a maximum perineal stretching in the anteroposterior direction, a reduced or delayed expulsive reflex resulting in a longer expulsive phase.[9-11]

In our series, 90% of the parturient women were encouraged to move during the first phase of labour. This includes mainly the standing position with ambulation and the non made-up side-lying position. In the Lepleux, series the rate was 43.4%.[12] This high rate of position change practice could be due, on the one hand, to the current practice of ambulation during labour in our society and, on the other hand, to the sensitizing of many health-care providers to humanized delivery, especially with its introduction in Senegal a few years ago.

However, such strategies should take into account the other required interventions during the first phase of labour, such as the presence of an accompanying person and free liquid ingestion with a view to avoiding systematic intravenous line insertion.

Drinking

In our survey, only 42 parturient women, that is to say 21%, were allowed to take drinks during labour. The highest rate (35.7%) was found in Gaspard Kamara Health Center which boasts of having a humanized delivery room. We noticed that most midwives extended the liquid restrictions to the latent period, which lengthens significantly the fasting time. Indeed, since Mendelson works in 1946, obstetric teams forced a strict fast on women in labour in order to lower bronchial inhalation risk in the event of general anesthesia. Today, this rule is challenged by the majority of learned institutions (World Health Organization, Société Française d'anesthésie et de Réanimation, American Society of Anesthesiologists) and we witness a progressive oral fluid replenishment during labour.[13] In 1997, the World Health Organization classified the proposal of drinks (water, fruit juice without pulp, carbonated drinks, light tea, black coffee, drinks for sportsmen) during labour among the practices to be encouraged in the absence of certain risk factors such as diabetes, obesity and caesarean possibility.[4,10-12] Our implementation rate for this WHO recommendation is weak compared to the one reported by Floris in France.[4] Indeed, a survey conducted among French midwives had revealed that 76% of them used to allow drink during the active phase of labour. 93% of them limited the quantity while 82% authorized only water.[4]

Labour monitoring by partograph

Only 47 parturient women, accounting for 23.4%, profited from labour monitoring with partograph. The usefulness of this decision support tool is proven. WHO considers it as a necessary tool in labour care and recommends its universal use during labour insofar as it is a simple, cheap and cost-effective means.[10-12,14]

Active management of third phase of delivery

The postpartum hemorrhage prevention is a WHO grade A guideline. The AMTSL is the only WHO guideline in this category which was applied to all deliveries. This technique is also recommended by the majority of learned institutions (International Federation of Gynaecology and Obstétrics, International Confederation of the Midwives, African Society of the Obstetricians Gynecologist) for prevention of postpartum hemorrhage caused by uterine atony. Some studies showed that the strict observance of the different AMTSL stages was noticed only in 0.5 to 32% of the childbirth surveyed owing to many shortcomings in practices.[15] The same remark was made in our series, especially with the placenta being examined only in 23.4% cases.

Grade A Guidelines

Our survey revealed that some practices deemed ineffective by WHO such as the venous line insertion and the systematic dorsal position were persistent in our maternity hospitals.

Systematic venous line with oxytocin perfusion

A venous line was set up in 98% of the cases. However, the oxytocin administration with a view to leading labour care was noted only in 7.3% of the cases. This WHO recommendation not to systematically insert a venous catheter still remains controversial and seldom implemented.[2] As a matter of fact, much of experts regard it as a safety measure once in delivery room in order not to delay a possible vascular filling if need be.

Position of the parturient women

We noted that most of parturient women were in a systematically supine position (91.8%) during fetal expulsion. In the Lepleux series, the gynecological position also remained the majority practice, whether traditional (66.8%) or adjusted (21.7%).[12] Only a few women could deliver in lateral recumbence (10.8%) or on all fours (< 1%).

In our series, almost half of the parturient women (47.6%) sustain fundal pressures during expulsive efforts. Besides, the French Haute Autorité de Santé (High Authority of Health) recommends the abandonment of this practice, albeit with very weak evidence.[16] Fundal pressure should be prohibited in our labour rooms as it is potentially dangerous with the risk of postpartum hemorrhages associated with uterine rupture and the cervical-vaginal lesions.

Grade C and D guidelines

These are practices still performed in our maternity hospitals.

Fundal pressure and episiotomy

Its typical example consists of the resort to a systematic episiotomy for first-time mothers. Our series showed a 39.7% rate. The Collège National des Gynécologues et Obstétriciens Français (National College of French Gynecologists and Obstetricians) recommends a rate under 30%.[17]

This high frequency of episiotomies noticed in our practice could be accounted for, on the one hand, by the impatience of some obstetricians and, on the other hand, by their fear of a surprising perineal tear in case they let the perineum stretch, especially with primiparous women. Tayrac study revealed that first-time mother incur a risk of third- and fourth-degree perineal tear.[17] In China, Lai Y et al found a bigger risk of perineal lesion for primiparous mothers (43.4% against 13.8% with p <0,001).[18]

CONCLUSION

Improving labour-care quality is a sine qua non condition for the reduction of maternal and antenatal morbidity and mortality (or reducing maternal and antenatal morbidity and mortality requires). The WHO guidelines in this respect are a good reference our structures should draw on to offer high-quality emergency obstetric and newborn care.

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