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Quality of intrapartum care for healthy women with spontaneous onset of labour in Rwanda: A health facility-based, cross-sectional study

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ABSTRACT

Objective: To investigate the quality of intrapartum care provided at Rwandan healthcare facilities to women undergoing normal pregnancy and spontaneous full-term labour.

Methods: A cross-sectional study was conducted over eight weeks during 2014–2015 in 18 healthcare facilities in Kigali City and the Northern Province: eight health centres, seven district hospitals, one provincial hospital, one private hospital, and one referral hospital. Data were collected from medical records and a questionnaire including the Bologna score with its five variables: presence of a companion, use of partograph, no augmentation of labour, birth in a non-supine position, and skin-to skin contact.

Results: Among the 435 women who fulfilled the inclusion criteria during the study period, mean age was 27.4 years and 41.8% were primiparous. The assisting healthcare professionals were midwives (49.4%), nurses (28.8%), and physicians (22%), and birth occurred at health centres (29%), district hospitals (40%), and the referral hospital (31%). Mean Bologna score was 2.03 of the maximum 5 (range: 0–4). Only one woman (0.2%) had a companion present (her husband). A partograph was used for the majority (84.8%), and 88.0% had no augmentation of labour with oxytocin. Few (6.2%) gave birth in a non-supine position, and few (12.4%) had early skin-to-skin contact with their newborn.

Conclusion: There are several areas for improving childbirth care according to the Bologna score. Healthy newborns should be placed skin-to-skin with their mothers shortly after birth, non-supine birthing positions should be encouraged, and the importance of a companion during labour and birth should be considered.

Introduction

Improving maternal and neonatal health is a global challenge. One of the key priorities in achieving this is to ensure a high quality of intrapartum care, especially by optimizing a spontaneous vaginal birth with a minimum of medico-technical interventions [1,2]. Most developed countries have high-quality care around childbirth, although there are still areas needing improvement [3]. However, in low-to-middle income settings, most women and newborns do not receive care of the required quality during or around birth [4,5].

Although medical technical interventions are needed in high-quality intrapartum care, they can also cause distress, disability, and morbidity for mothers and/or babies, and so their routine use should be carefully considered [6]. The World Health Organization (WHO) stresses this aspect in recommending the implementation of evidence-based high-quality healthcare which includes minimizing the use of ineffective, harmful, and uncertain medical and technical interventions, especially when managing labour and birth for a healthy woman with a spontaneous labour start [7,8]. The WHO has developed a Safe Childbirth Checklist to ensure the delivery of essential maternal and perinatal care practices around the time of childbirth, and has also specified which practices should be avoided [9]. Recently, the WHO published recommendations for intrapartum care for a positive childbirth experience [7], and Tuncalp et al. developed a quality care framework for pregnant women [10]. Still, this area needs to be highlighted and studied in order to translate these guidelines into policies and practice in Rwanda.

The presence of a skilled assistant is important in high quality intrapartum care. A midwife or other birth attendant possessing basic midwifery and obstetric skills will promote and contribute to high-quality care of mother and neonate around labour and birth [11].

Rwanda is one of the few African countries that have managed to fulfil the 5th Millennium Development Goal of reducing maternal mortality by over 75% during 1990–2015 [5,12,13]. Possible

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explanations for this achievement include the government's commitment to make healthcare facilities more accessible, the increase in women's attendance at antenatal care, childbirth assistance from a skilled birth attendant [14,15], and the community health insurance schemes which have enabled access to affordable healthcare. The introduction of a performance-based financing system and the involvement of community health workers in maternal health have also contributed to this success [16]. However, maternal mortality and morbidity still remains too high. The study reported in this article investigated the quality of intrapartum care provided in healthcare facilities in Rwanda to women undergoing normal pregnancy and spontaneous start of a labour at gestational term, with the aim of identifying areas that need improvement for this important group of birthing women. The study is part of the Maternal Health Research Program in Rwanda (MatHeR) undertaken by the University of Rwanda in collaboration with the University of Gothenburg and Umea University in Sweden.

Methods

Design and setting

A cross-sectional study was conducted at selected health facilities in two of the five provinces in Rwanda: Kigali City and the Northern Province. The Rwandan healthcare system has a pyramidal structure, with health programs and services under the authority of the Ministry of Health. At the time of the study, a referral and teaching hospital was at the top of the pyramid, with a district hospital, health centres, and health posts in descending order below. At grass-roots level, community health workers inform and encourage pregnant women to seek antenatal care services and accompany them if needed when seeking care for giving birth. The healthcare system recommends that healthy women experiencing uncomplicated pregnancies should give birth at health centres assisted by midwives or nurses. The labour ward at a health centre usually has one birthing room with three to five beds separated by curtains, and usually only one nurse or midwife on duty at a time to manage all the women in labour simultaneously. There is no place for the husband or partner. When required, women with complicated pregnancies or labour progress are referred from the health centres to a higher care level, which could be a district or referral hospital depending on the severity of complications. Care at district hospitals is overseen by general physicians or a gynaecologist, while at referral hospitals gynaecologists are responsible for the care [15,17].

Recruitment

During the study period, Kigali City and the Northern Province together had 138 health centres, ten district hospitals, four referral hospitals, and one private hospital. Of these, 18 health facilities were selected: ten hospitals (seven district hospitals, one provincial hospital, one private hospital, and one referral hospital) which reported a high number of vaginal births (i.e. more than 600) during 2013 (the year before data collection began), and eight health centres that reported a high number of births in 2013, one from each of the eight districts of Kigali and Northern Province. More details on the recruitment procedure are given elsewhere [18].

Inclusion and exclusion criteria

The criteria for inclusion of participants were based on an expected normal birth: pregnant women with an uncomplicated singleton full-term pregnancy (gestational week 37–42) with a cephalic position, spontaneous start of labour, and normal foetal heart rate (110–150 beats per minute) on arrival at the labour ward. The exclusion criteria were: maternal age < 20 or ≥ 40 years, previous caesarean section, induction of labour, being HIV positive, severe bleeding in third trimester or on arrival, hypertension or preeclampsia, diabetes mellitus, and having been transferred to a hospital other than the 18 selected facilities after starting labour and before giving birth. Of the 817 women who gave birth during the study period, 435 fulfilled the inclusion criteria and were included in this study.

Measurements

The study used a structured protocol that had been used in an earlier research project in Nepal [19], including questions on the quality of intrapartum care. The protocol was slightly revised, translated from English to Kinyarwanda, and piloted in one non-selected district hospital and two health centres located in the Southern Province of Rwanda. Only small changes were made.

Data were collected including age, education, occupation, marital status, health insurance, household income per month, parity, number of visits to an antenatal care unit, distance from home to the nearest healthcare facility, healthcare facility category, and transfer to and from another healthcare facility. Further variables were related to progress of labour and birth, such as cervical dilation, contractions, and length of labour. Variables related to management, including interventions, were: healthcare professional who assisted, pain relief, traditional treatment, amniotomy, fundal pressure, episiotomy, mode of birth, birthweight, Apgar score, and postpartum haemorrhage. Five variables were part of the Bologna score questionnaire [20]: presence of a companion, use of partograph (with a 4-hour action line), absence of oxytocin for administration labour augmentation, a non-supine position at birth, and skin-to-skin contact of mother and child ≥ 30 min within 1 h after birth. Each participant assessed their own health status at discharge; they also rated their overall childbirth experience, but this will be reported elsewhere.

Conduct of the study

Data were collected from medical records by eight data collectors and from the participating women in a self-reported questionnaire over an eight-week period (December 2014 to January 2015).

The eight data collectors were female nurses, midwives, or clinical psychologists recruited by the School of Public Health at the University of Rwanda. They received five days of training, including one day of fieldwork for a pre-test of the protocol and fieldwork procedures and debriefing with feedback after the pre-test fieldwork.

The heads of the selected healthcare facilities contacted the heads of their labour wards, who orally informed women who had given birth about the study and invited them to participate in the study before discharge. All those invited agreed to participate in the study and gave their written consent.

Statistical analysis

Three trained persons recruited at the School of Public Health College of Medicine and Health Sciences, the University of Rwanda, entered the data into version 24.0 of the SPSS software package. Means and standard deviations (SD) were used to describe continuous variables while numbers and proportions were used for categorical variables. For comparison between two groups, Fisher's exact test was used for dichotomous variables, the Mantel-Haenszel chi square test for ordered categorical variables, and the Mann-Whitney *U* test for continuous variables. When comparing healthcare facilities (three groups), the chi square test was used for non-ordered categorical variables and the Kruskal-Wallis test for continuous and ordered variables. All tests were two-sided with alpha of 0.05.

Ethical approval

The research protocol and study protocol were approved by the

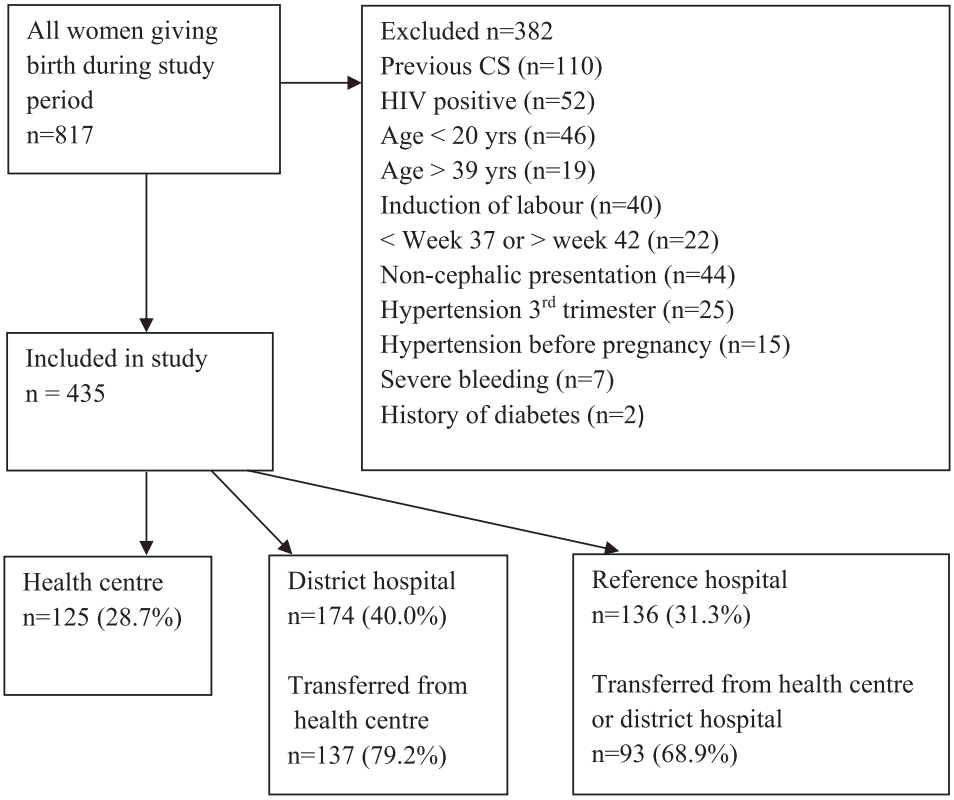

Fig. 1. Flow diagram of study population and number of births.

Institutional Review Board at the College of Medicine and Health Sciences, University of Rwanda (ref: 010/UR/CMHS/SPH/2014). Authorisation to conduct the study was also obtained from the Rwandan Ministry of Health (ref: 20/4029/MCH/2014).

Results

Maternal characteristics

The 435 participants had a mean age of 27.4 years (± 4.8 SD) and 41.8% were primiparous (Fig. 1); 28.7% of them gave birth at a health centre, 40% at a district/private hospital, and 31.3% at a referral hospital. About a quarter (25.8%) had fully completed primary school, 3% had never entered school, 17.5% had completed secondary school, and 10.4% had studied at university level. Almost all (91.7%) were married or cohabiting, and 88.7% had health insurance. A majority (53.7%) lived less than 1 km from a healthcare facility. Less than one-third (30.6%) had accomplished the mandatory four antenatal visits during pregnancy, and 7.2% had been taking traditional drugs before arrival at the healthcare facility. More details are given in Table 1.

Practices during labour and birth

All the women received skilled professional assistance at birth, from a midwife (49.4%), nurse (28.8%), or physician (21.8%). The vaginal examination performed on arrival at the labour ward revealed that 71.7% of the women arrived with a cervical dilation of 4 cm or more and 43.7% arrived with a dilatation of 6 cm or more. About half (48.2%) spent less than 4 h on the ward before giving birth.

Slightly more than half of the women (53%) were transferred to another healthcare facility during or before active labour; of these, 28.3% were transferred before and 69.6% after labour was established. Reasons for transfer were not reported, but 78.7% of those who gave birth at a district hospital had been referred from a health centre, and 68.9% of those who gave birth at a referral hospital had been transferred from either a health centre or a district hospital.

Very few women received pain relief: 1.8% received pharmacological pain relief and 1.4% received non-pharmacological pain relief (such as massage). Amniotomy was performed in 32.9% of the women, due to routine care (17.2%), insufficient contractions (6.9%), delayed labour progress (1.4%), insufficient foetal descent (1.1%), and unspecified reasons (6.2%).

Episiotomy was performed in 18.6% of all the women, 29.7% of the primiparous women, and 10.7% of the multiparous women ($p < 0.0001$). The main reason was to protect the perineum.

Mean Bologna score was 2.03 points (range: 0–4). Only one woman (0.2%) was accompanied by her husband/partner. A partograph was used in a majority of cases, and in most cases (88%) labour was not augmented with oxytocin. Few women gave birth in a non-supine position during birth (6.2%), and only 12.5% of the women had early skin-to-skin contact with their newborn within 1 h after birth. More details are given in Table 2.

Outcomes of birth in relation to levels of healthcare facilities

A majority of the women (> 90%) gave birth spontaneously and vaginally at the referral hospital, the district hospital, and health centres. Emergency caesarean section was performed in 6.0% of the total group, 10.9% of those at district hospitals, and 5.1% of those at the referral hospital. Normal blood loss (≤ 500 ml) was seen in 95.8% of the women. Around three-quarters (69.7%) of the women reported good or very good health status at discharge. Among the babies, a weight of < 2500 g was seen in 12.2% of the total group, 18.4% of those at the referral hospital, 14.6% of those at the district hospital, and 2.4% of those at health centres. Almost all the newborns (88.5%) had a good health status at birth. More details are given in Table 3.

Table 1
Characteristics of study participants, n = 435.

Variable	
Mean age, years	27.4 (4.8)
Age, years	
20–24	137 (31.5%)
25–29	143 (32.9%)
30–34	116 (26.7%)
35–39	39 (9.0%)
Highest level of completed education (in years)	
Never attended school	13 (3.0%)
Primary level but not complete (less than 6)	125 (28.8%)
Primary level complete (8 years)	112 (25.8%)
Secondary school, but not completed (1–5)	36 (8.3%)
Secondary school, complete (6 years)	76 (17.5%)
University level	45 (10.4%)
Vocational training	27 (6.2%)
Occupation	
Student	18 (4.3%)
Non-skilled worker (shop-keeper, farmer, agriculture)	262 (62.5%)
Skilled worker (clerk, carpenter, plumber, bus driver)	41 (9.8%)
Civil servant (teacher, nurse, medical doctor, law, company/ business, banking)	12 (2.9%)
Other	21 (5.0%)
No occupation	65 (15.5%)
Marital status	
Married	189 (43.6%)
Cohabiting	210 (48.5%)
Separated/divorced	3 (0.7%)
Widowed	2 (0.5%)
Not married, single	29 (6.7%)
Health insurance	
Community based	385 (88.7%)
Public	39 (9.0%)
Private	2 (0.5%)
No health assurance	8 (1.8%)
Household income per month	
Less than 17,500 FRW	17 (4.1%)
17,500–35,999 FRW	32 (7.7%)
36,000–99,999 FRW	143 (34.6%)
100,000–199,999 FRW	120 (29.1%)
200,000–499,999 FRW	90 (21.8%)
More than 500,000 RWF	11 (2.7%)
Parity	
Primiparous	182 (41.8%)
Multiparous	253 (58.2%)
Number of visits to antenatal care	
1 visit	28 (6.5%)
2 visits	91 (21.1%)
3 visits	158 (36.7%)
4 visits	132 (30.6%)
More than 4 visits	22 (5.1%)
Distance from home to reach the nearest health facility	
≤1 Km	233 (53.7%)
2–5 Km	149 (34.3%)
6–10 Km	45 (10.4%)
> 10 Km	7 (1.6%)
Cervical dilation grade at arrival at health facility	
≤3 cm	119 (28.3%)
4–5 cm	118 (28.0%)
≥6 cm	184 (43.7%)
Cervical dilation at 4 h after arrival at health facility	
≤3 cm	1 (0.8%)
4–5 cm	7 (5.4%)
≥6 cm	121 (93.8%)

For categorical variables n (%) is presented.
For continuous variables Mean (SD) is presented.

Discussion

In this study, we investigated the quality of intrapartum care provided in Rwandan healthcare facilities to women experiencing uncomplicated pregnancy and spontaneous start of labour at term. We chose this group as they have the best potential to have a normal labour and spontaneous vaginal birth with a minimum of medical interventions and few complications.

According to the WHO, receiving the recommended four antenatal care visits is indicative of good quality care, and critical to identify risk factors for poor maternal and newborn outcomes [21]. This is also a recommendation in Rwanda [15,23]. Thus, it is remarkable that only one third (35.7%) of the women in our study had attended four standard antenatal care visits, which is in line with a recent study in Rwanda [22].

It is surprising that a low rate of births occurred in health centres compared to district and referral hospitals, especially as the Rwandan Ministry of Health states that women who expect a normal birth should give birth at a health centre [24]. There are always risks connected with giving birth, and throughout history women have sought a safe and secure place to give birth [25]. It is possible that women do not consider the health centre a safe place to give birth. The issue of women's care-seeking behaviours and where they really want to give birth in Rwanda needs to be further studied.

All women in our study were assisted by a skilled professional birth attendant, which is a very positive result in accordance with WHO recommendations [14]. The Rwandan national rate during the same period was 91.8%, which can be explained by the fact that a proportion of women in Rwanda give birth at home [26].

The use of pain relief was very low in our study; only around 3% of the women received pharmacological or non-pharmacological pain relief. Several studies have investigated factors related to a low level of pain relief use in low-income countries. One major explanation reported in a study from Bangladesh is that both caregivers and the women themselves think that a woman should endure the natural pain [27]. Women's lack of knowledge was also found as a reason in a Nigerian study [28], while a Ugandan study identified a gap between the desire for labour analgesia and its availability [29]. Further explanatory and complementary studies are needed on the use of both pharmacological and non-pharmacological pain relief methods in Rwandan labour ward settings.

Continuous support from someone other than a health professional has been found to have several benefits for women during labour. A Cochrane review found that this may improve outcomes for both women and infants, including increased rate of spontaneous vaginal birth, shorter duration of labour, fewer babies with low five-minute Apgar score, decreased risk of negative feelings about childbirth experiences, and decreased rates of caesarean birth, instrumental vaginal birth, use of any analgesia, and use of regional analgesia [30]. Nevertheless, in our study it was very rare for a companion to be present during labour and birth. Our earlier qualitative study on women's poor childbirth experiences in Rwanda described the need of the husband to be close and how the healthcare providers denied this. Similar examples of the absence of husband and companions when the woman is giving birth are found elsewhere in the Sub-Saharan setting. A study in Ghana found that most healthcare providers did not want companions to watch and misinterpret their activities [31].

Our study revealed a high use of a partograph to monitor the labour, which is in line with WHO recommendations [32]. Oxytocin offers a way to treat a prolonged labour progress, but there is much overuse and misuse of oxytocin for labour augmentation, especially in high-income countries such as Sweden [33]. Our study showed a low use of labour augmentation with oxytocin, which is a very promising finding. It is our hope that the suboptimal practice of overusing oxytocin for augmentation of labour will not reach Rwanda, although it needs to be available for use in those rare cases of slow labour.

Physical position when giving birth can influence the outcome. A meta-analysis indicated higher rates of episiotomies and instrumental births among women giving birth in a supine position [34]. In our study, only 6.2% of the women gave birth in a non-supine position, in line with studies from other Sub-Saharan countries such as Tanzania [35] and Malawi [36]. There seems to be a need for pre-clinic and in-clinic education about how to assist women in labour and birth,

Table 2
Practices during labour and birth in primiparous and multiparous women.

Variable	Total (n = 435)	Primiparous (n = 182)	Multiparous (n = 253)	p-value
Health provider assisting birth				< 0.0001[a]
Nurse	123 (28.8%)	35 (19.6%)	88 (35.5%)	
Midwife	211 (49.4%)	80 (44.7%)	131 (52.8%)	
Doctor	93 (21.8%)	64 (35.8%)	29 (11.7%)	
Pharmacological pain relief	8 (1.8%)	4 (2.2%)	4 (1.6%)	0.72[b]
Non-pharmacological pain relief	6 (1.4%)	1 (0.6%)	5 (2.0%)	0.41[b]
Traditional drugs	31 (7.2%)	11 (6.1%)	20 (7.9%)	0.57[b]
Amniotomy	143 (32.9%)	50 (27.5%)	93 (36.9%)	0.049[b]
Fundal pressure	66 (16.6%)	28 (16.7%)	38 (16.6%)	1.00[b]
Episiotomy	81 (18.6%)	54 (29.7%)	27 (10.7%)	< 0.0001[b]
Outcomes on Bologna score				
Total score (Mean ± SD)	2.03 ± 0.67	1.96 ± 0.76	2.08 ± 0.58	0.05
Presence of a companion during labour and birth	1 (0.2%)	1 (0.5%)	0 (0.0%)	0.42[b]
Use of partograph	369 (84.8%)	142 (78.0%)	227 (89.7%)	0.017[b]
Absence of labour augmentation with oxytocin	383 (88.0%)	156 (85.7%)	227 (89.7%)	0.23[b]
Non-supine position	27 (6.2%)	15 (8.2%)	12 (4.7%)	0.16[b]
Skin-to-skin contact between mother and child	54 (12.4%)	21 (11.5%)	33 (13.0%)	0.77[b]

For categorical variables n (%) is presented.
[a] = Chi Square test was used for non-ordered categorical variables.
[b] = Fisher's Exact test (2-sided) for comparison between groups was used for dichotomous variables.

including birthing position.

Episiotomy is a surgical cut to the perineum used to prevent severe tearing and facilitate the birth. Research supports the view that episiotomy should be performed only on specific criteria, not routinely [37]. In our study, 18.6% of women underwent episiotomy, and around 30% of these were primiparous. In order to further develop optimal routines that promote normal physiological birth including a minimisation of unnecessary interventions [6] in Rwanda, there is a need for deeper understanding of what the healthcare professionals consider to be indications for episiotomy. Professionals should also be provided with the latest scientific evidence in this area.

Skin-to-skin contact between mother and baby is an essential practice for promoting neonatal health. The scientific evidence supports early (within 1 h) skin-to-skin contact for at least 30 min [38]. Our study showed a low rate (12.5%) of skin-to-skin contact between mother and baby early after birth. These low rates are in line with other Sub-Saharan countries; for example, a Nigerian study showed a skin-to-skin contact rate of only 10% [39]. A study in India found lack of personnel and time constraints to be the major barriers to improving skin-to-skin contact after birth [40]. Our research team has previously found that skin-to-skin contact was one of five factors predicting a positive childbirth experience in a population based cross-sectional Rwandan study [41]. A Cochrane review on early skin-to-skin contact between mothers and healthy newborns provided further evidence to support the practice, but revealed inadequate evidence with respect to timing of initiation and dose. It is noteworthy that this intervention, which takes only a short time at birth, has measurable breastfeeding effects one to four months later [42]. An increase in skin-to-skin practice early after birth is thus another important routine to be further implemented in Rwanda.

Table 3
Outcomes related to different levels of health facilities.

Variable	Total (n = 435)	Health centre (n = 125)	District hospital (n = 174)	Reference hospital (n = 136)	p-value
Mode of delivery					< 0.0001 [a]
Spontaneous vaginal birth	402 (92.4%)	119 (95.2%)	154 (88.5%)	129 (94.8%)	
Vacuum extraction	7 (1.6%)	6 (4.8%)	1 (0.6%)	0 (0.0%)	
Emergency caesarean section	26 (6.0%)	0 (0.0%)	19 (10.9%)	7 (5.1%)	
Newborn baby weight (grams)	3102 (4 5 2)	3203 (4 1 4)	3097 (5 0 4)	3015 (3 9 6)	0.0021[b]
< 2500 g	53 (12.3%)	3 (2.4%)	25 (14.6%)	25 (18.4%)	0.0002[a]
≥ 2500 g	378 (87.7%)	121 (97.6%)	146 (85.4%)	111 (81.6%)	
Apgar score at 5 min					0.0001[a]
< 7	13 (3.0%)	0 (0.0%)	2 (1.2%)	11 (8.1%)	
≥ 7	420 (97.0%)	125 (100.0%)	170 (98.8%)	125 (91.9%)	
Postpartum haemorrhage					0.38[a]
< 500 ml	413 (95.8%)	119 (95.2%)	161 (94.7%)	133 (97.8%)	
500–1000 ml	11 (2.6%)	6 (4.8%)	4 (2.4%)	1 (0.7%)	
> 1000 ml	7 (1.6%)	0 (0.0%)	5 (2.9%)	2 (1.5%)	
Oxytocin 10 IU iv/im post-partum to prevent PPH	416 (95.6%)	123 (98.4%)	166 (95.4%)	127 (93.4%)	0.52[a]
Mother overall self-reported health status at discharge					0.059[a]
Very good	69 (15.9%)	25 (20.0%)	27 (15.5%)	17 (12.5%)	
Good	323 (74.2%)	89 (71.2%)	135 (77.6%)	99 (72.8%)	
Neither good nor bad	28 (6.4%)	9 (7.2%)	10 (5.7%)	9 (6.6%)	
Bad	13 (3.0%)	0 (0.0%)	2 (1.1%)	11 (8.1%)	
Very bad	2 (0.5%)	2 (1.6%)	0 (0.0%)	0 (0.0%)	

For categorical variables n (%) is presented.
PPH = postpartum haemorrhage.
[a] = For comparison between groups Chi Square test was used for non-ordered categorical variables.
[b] = Kruskal-Wallis test was used for continuous variables.

Strengths and limitations of the study

This study has both strengths and weaknesses. The validity of the results is strengthened by the use of a developed protocol validated in other settings by international experts in the intrapartum field [19]. After we had developed our questionnaire and collected the data, the WHO published new standard checklists for intrapartum care [8], which could be useful in future studies of quality of childbirth care. We assess it as a strength that all our data were collected by nurses, midwives, and psychologists, and that all data collectors were female, which made the women more comfortable responding to their questions.

Conclusion

This study on quality of intrapartum care in Rwanda showed that all women with an expected normal childbirth were assisted during birth by a skilled health professional. There was a high use of partograph and a low use of oxytocin augmentation, in compliance with international standards and recommendations, and a high rate of spontaneous vaginal births.

However several areas for improving childbirth care were identified, as practices in these areas were not in accordance with evidence-based quality care in women. Use of non-supine positions for birth should be encouraged, but may require training of health professionals. Healthy newborns should be placed skin-to-skin with their mothers shortly after birth, including in cases of caesarean section, as this is a simple and cost-free routine that is beneficial especially for the baby but also for the mother. Last, but not least, health facilities should be adjusted to allow the presence of a woman's choice of companion during labour and birth.

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Appendix A. Supplementary material

Supplementary data to this article can be found online at https://doi.org/10.1016/j.srhc.2019.01.002.

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