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Why are caesarean section rates so high in facilities in Mali and Benin?

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ABSTRACT

Objective: To assess new estimates of caesarean section (c-section) rates in facilities in two sub-Saharan countries using the Robson classification.

Methods: This study is a retrospective study. Workshops were organized in Mali and Benin in 2017 to train health care professionals in the use of the Robson classification. Nine health facilities in Mali and Benin were selected to participate in the study. Data for deliveries performed in 2014, 2015, and 2016 were included.

Results: A total of 12,472 deliveries were included. The overall c-section rate was high in facilities in both countries: 31.0% in Mali and 43.9% in Benin. Women classified as high-risk (groups 6–10) were small relative contributors to the overall c-section rate (19.3% in Mali and 25.3% in Benin), while low-risk women (groups 1–4) were high relative contributors (55.4% in Mali and 45.2% in Benin). C-section rates in women who had undergone a previous c-section were especially high in both countries (84.0% in Mali; 82.5% in Benin). This group was the largest contributor to the overall c-section rates in both countries.

Conclusions: We found high c-section rates in facilities in Mali and Benin, particularly for low-risk women and for women with a previous c-section. Further investigations should be carried out to understand why the c-section rates are so high in these facilities. Strategies must be implemented to avoid unnecessary c-sections, which potentially lead to further complications, particularly in countries with high fertility rates.

Introduction

Population-based caesarean section (c-section) rates are increasing globally [1] but remain low (under the recommended 5%) in most African countries [2]. However, facility-based c-section rates have increased in most countries worldwide, including sub-Saharan African countries [3]. In Kenya, Nigeria, Uganda, Democratic Republic of the Congo, and Niger, facility-based c-section rates increased between 4.3 and 9.2% per year between the two WHO surveys in 2004–2005 and 2010–2011. Low-risk nulliparous women with a single foetus and cephalic presentation accounted for approximately one-third of all c-section rates in 2004–2005 [3]. However, in 2010–2011, the group of women who had previously had a c-section became the largest contributor [3].

Increasing c-section rates in low-risk women raise questions about the medical justification for all c-sections. A significant proportion of these women may not require the procedure, while some women who need c-section do not undergo it. A c-section without medical indications is associated with adverse maternal outcomes [4] that may be worse in countries with resource constraints. Therefore, there is a clear need to improve guidelines for intra-partum care on a global scale, to avoid unnecessary c-sections and to provide c-sections to women in need [5].

Mali and Benin introduced a free c-section policy in the 2000s to improve access to c-sections to address the high maternal mortality rates in these countries. Mali introduced its reform in January 2005 at the national level for the public sector and is committed to covering all direct c-section costs. In Benin, the policy, which was introduced in April 2009, involves both the public and private sectors. These structures in Benin receive 100,000 FCFA (180 USD) for each c-section they perform.

Based on demographic and heath surveys, the population-based c-

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section rates increased in both countries after the policy was introduced; in Mali, the rate increased from 1% to 3% between 2001 and 2012–2013 [6], and in Benin, the rate increased from 4% to 5% between 2006 and 2011–2012 [7]. However, facility-based data to assess c-section rates in health care facilities are lacking. The aim of the Robson classification is to group women based on their past and current obstetric history. This tool is useful to measure the contribution of each c-section group separately to the overall c-section rate and, therefore, to allow the development of strategies to limit or to reduce the rates of unnecessary and potentially harmful c-sections. In this article, we describe how we implemented the WHO-recommended classification of csections [8], analysed the characteristics of the obstetric populations in a sample of nine health care facilities in Mali and Benin and assessed the absolute and relative contributions of specific groups of high- and low-risk women to the overall c-section rates.

Methods

This retrospective epidemiological study was conducted in Mali and Benin from January to July 2017. Nine public and private health facilities in Mali and Benin were personal convenience-selected and invited to participate in the study. All of them agreed. They are major maternity hospitals and private clinics in both countries where contacts with the health teams had already been established.

Five of the health facilities were located in Mali (the district hospitals of Sikasso, Segou and Mopti and one public hospital and one private clinic in Bamako), while the remaining four were in Benin (the district hospitals of Parakou and Dassa and one public hospital and one private structure in Cotonou). Fig. 1 summarizes the geographical position and number of deliveries performed per year in each maternity ward.

Workshops were organized in Mali and Benin in January and March 2017 to train two health care professionals per hospital (one doctor and one midwife) in the use of the Robson classification [9]. We selected health care facilities taking into account various contexts (capital and province; private for-profit and public non-profit facilities). The Robson classification was presented along with definitions of the core variables. Guidance was provided to adequately classify women into the 10 groups, and tools were provided to collect data on deliveries and c-sections.

Data were then collected by these trained birth practitioners at the participating health facilities from February to May 2017 in Mali and from March to July 2017 in Benin. In public facilities with a high number of annual deliveries, the first 500 deliveries were selected for the years 2014, 2015 and 2016, while in private facilities with fewer than 500 deliveries per year, all deliveries performed in 2014, 2015, 2016 were included. Deliveries before 28 weeks' gestation and deliveries of newborns with birth weights less than 1000 g were considered late-term abortions and were excluded.

The variables needed for the Robson classification were collected and applied according to the standard methods defined by the WHO. The following data were extracted from birth registries and patient medical records: parity, history of previous c-section, onset of labour, term of pregnancy, birth presentation, single or multiple pregnancy. Term births were defined as births occurring at or after 37 weeks' gestation. When gestational age was not noted in the available data, the birth was classified as at term if the newborn weighed 2500 g or more.

As recommended by Robson, we determined the c-section rate for each group, the relative size of each group, the absolute contribution to the overall c-section rate (the c-section rate of each group among all deliveries) and the relative contribution of each group to the overall csection rate (percentage of the overall c-sections accounted for by a particular group).

Restitution workshops were organized in both countries in July 2017 with the same participants that attended the initial training workshop. Feedback was provided regarding the study findings and their possible interpretations and led to discussions among the participants of their practices regarding c-sections.



Fig. 1. Facilities involved in the study in Mali and Benin.

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