



Original Article

Evaluation of Obstetric Kit Strategy in the Regional Hospitals of Ngaoundere and Garoua

Evaluation de la stratégie des kits obstétricaux dans les Hôpitaux Régionaux de Ngaoundere et Garoua

Ngaroua^{*1&2}, Djibrilla Yaouba², Housseini Zourmba² Dah'Ngwa Dieudonné², Eloundou N. Joseph³

ABSTRACT

Introduction. The reduction of maternofetal mortality constitute one of the major challenges of developing countries. To reduce this mortality rate, measures have been taken since June 2011 in the northern regions of Cameroon to initiate the strategy of obstetric kits so as to render the cost of childbirth and caesarean sections reasonable. **Objectives.** The objective of this design study was to evaluate the impact of the utilization of obstetric kits on mother and child health. **Methodology.** We carried out a descriptive retrospective study in the regional hospitals of Ngaoundéré and Garoua going from June 1st 2008 to May 31st 2014. The study interest was mainly concerned by women who gave birth in the given hospitals of Ngaoundéré and Garoua. **Results.** The utilization of obstetric kits increased the rate of childbirth. Birth rate passed from 27.6% to 72.4%. Therefore, there was a link between delivery kits and the number of childbirth. The number of births was greater during the period of kits utilization compared to the period where the kits were not in use. **Conclusion.** The rate of mortality dropped from 33% to 6.3% since the outcome of obstetric kits. Hence this study bring out the necessity to encourage prenatal consultations and to reduce delay periods disparaged.

1 Regional Hospital of Ngaoundéré-Cameroun
2 Department of Biomedical Sciences, University of Ngaoundéré-Cameroun
3 Faculty of Medicine and Biomedical Sciences, University of Yaoundé I

Author's correspondence:
Dr Ngaroua, Tel: (237) 699 978 351; email: mdngaroua2007@yahoo.fr

Key words: obstetrical kits, caesarean section, impact, evaluation

Mots clés : kit obstétrical, césarienne, impacte, évaluation

RÉSUMÉ

Introduction. La réduction de la mortalité materno-foetale constitue l'un des défis majeurs des pays en voie de développement. Pour réduire cette mortalité il a été instauré depuis Juin 2011 dans les hôpitaux du septentrion du Cameroun la stratégie kits obstétricaux rendant le coût d'accouchement et de césarienne abordable. **Objectif.** L'objectif de la présente étude était d'évaluer l'impact de l'utilisation des kits obstétricaux sur la santé de la mère et de l'enfant. **Méthodologie.** Il s'agissait d'une étude descriptive rétrospective qui s'est déroulée aux hôpitaux régionaux de Ngaoundéré et de Garoua. Les données recueillies ont concerné la période du 1^{er} Juin 2008 au 31 Mai 2014. Elle concerne les femmes ayant accouché dans les hôpitaux suscités. **Résultats.** L'utilisation des kits a permis une augmentation du taux d'accouchement de 44.8%. Le taux d'accouchement est passé de 27,6% à 72,4%. Il y avait un lien entre l'utilisation du kit d'accouchement et le nombre d'accouchements, ce nombre a été plus important pendant la période d'utilisation des kits, comparé à la période précédant les kits obstétricaux. **Conclusion.** Le taux de mortalité est passé de 33% avant les kits à 6,3% pendant les kits obstétricaux. Cette étude a par ailleurs fait ressortir la nécessité d'encourager la fréquentation de la consultation prénatale et de réduire le 3^e retard tant décrié.

INTRODUCTION

Maternal and neonatal death is a worry to many countries in the world and international organizations as well [1]. Every year, more than half a million women dies due to pregnancy and birth even though some of the causes may be avoided. One of the indicators of mother health that is maternal mortality is not only high in the world but witness some gaps within regions even in the same country [2]. Hence, the risk of maternal death is greater in developing countries than in industrialized countries. The number of maternal death in 2008 was 358 for 100 000 births in the world [3,4]. Among this number, we count

190 deaths for 100 000 births in Africa. In Cameroon, in 2008, we had 600 deaths for 100 000 births. To meet up with these worrying figures, 189 head of states including the head of state of Cameroon adopted in September 2000 the declarations of the united nation for development under the millennium objectives for development as a campaign fixed to be achieved in 2015. Among these objectives, three are in direct relation with health. Precisely the 5th objective that aims to reduce by ¾ in 2015 maternal mortality rate. Indicators every country most watch carefully are amongst others: maternal and neonatal

death rate, proportion of assisted childbirth by a qualified personnel. These millennium goals correspond to engagement taken both by developed and developing countries.

In Cameroon, in spite of government efforts and its technical and financial partners, the level of principal health indicators witnessed no amelioration between years 1991 and 2006. As such, the amelioration of the state of health of populations duels more than ever a development goal for social and economic growth. Cameroon count to attain these goals through an inter-sectorial synergy, necessary for the put in place of the sectorial strategy of health taken for horizon 2015 in conformity with the millennium objectives for development. Infrastructures in terms of health have been ameliorated and the number of health personnel increased in favor of specialization. Delivery constitutes an important phase in the reduction of maternal and infant mortality rates. Hence, to break the obstacle of accessibility to maternal health, it have been put in place since June 2011 a strategy of obstetric kits. The aim of the study was to evaluate the influence of the utilization of obstetric kits on mother and child health. Our **specific objectives were threefold: to** establish the rate of use of kits in the two hospitals, to evaluate the maternal morbidity before and during the implementation of the kits and to determine the rate of maternal and neonatal mortality rates three years before and three years during kits implementation.

METHODOLOGY

Setting

Regional hospital of Garoua in the North region and the regional hospital of Ngaoundéré in the Adamawa region of Cameroon.

Design

Retrospective descriptive study

Period

Study period took three months

Population

Were included in this design all parturient admitted in the hospitals of Garoua and Ngaoundéré from June 2008 to May 2014 for childbirth with a complete file whereas our non-inclusion criteria to this study concerned women with incomplete files and those that put to birth at home but registered in the files of the hospital services.

Sample

A non-randomized sample concerning all enrolled women, all patients' files and hospital register of the concerned services consulted.

Population size

Given that the study is a non-randomized sample, the size of the population was collected exhaustively.

Data collection

Materials used for data collection were data slip and childbirth records/registers from June 2008 to May 2014. We collected childbirth data by counting the numbers of births from different registers of the concerned services physically.

Data analysis

Data collected have been analyzed by Epi Info 2000. English version 3.5.4 2012 and Microsoft Excel 2010. Comparison of different proportions were analyzed using the Khi Carré test for a significant threshold value of $p=5$.

Limits of the study

Data of files of the period before the implementation of kits are almost incomplete, thus difficulties during this period to establish a perfect relationship between variables of this two periods taking equally into account the fact that the reduced number of observable cases during this period influenced our analysis.

RESULTS

Number of registered births

We collected at large a number of 24 701 childbirths in the two hospitals of Garoua and Ngaoundéré. We registered 15 701 childbirth during the period of the implementation of the obstetric kits, either a rate of 63.60%. The regional hospital of Ngaoundéré registered a rate of 54.44% against 45.56% registration for the regional hospital of Garoua.

Table 1: Representation of childbirth in the regional hospitals of Ngaoundéré and Garoua from June 1st 2008 to May 31st 2014

	Garoua	Ngaoundéré	Total
Before kits	5 357	3 636	8 993
During kits	6 168	9 540	15 708
$X^2=946,27$. $p=0,0000000$			

Results reveals that, there exist a relationship between the utilization of obstetric kits and the number of childbirth. The number of births is more important during kits period than the period before kit implementation.

Number of births in the regional hospital of Ngaoundéré

Table 2: Number of childbirth in the regional hospital of Ngaoundéré from June 1st 2008 to May 31st 2014

	N	%
Before kits	3 636	27,6
During Kits	9 540	72,4
Total	13 176	100,0

13 176 childbirths registered during this period. An increased birth rate of 72% was observed with kits implementations.

Table 3: Number of childbirth in the regional hospital of Garoua from June 1st 2008 to May 31st 2014

	N	%
Before Kits	5 357	46,5
During Kits	6 168	53,5
Total	11 525	100,0

Garoua regional hospital registered 11 525 births. The birth rate during kits implementation period is 53.5%.

Caesareans

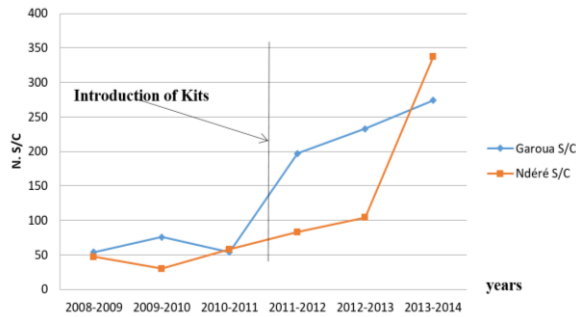


Figure 1: The evolution of caesarean sections in the hospitals of Garoua and Ngaoundéré from June 1st 2008 to May 31st 2014

The number of caesarean sections have been increased in these hospitals where the kits have been implemented.

Still born

The number of stillborn in the two hospitals got two phases in their evolution within this six years study of obstetrical activities.

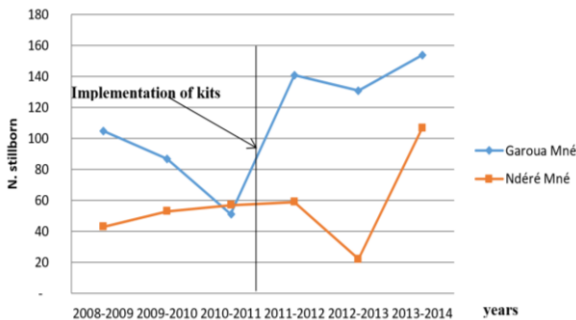


Fig 2: Distribution of stillborn at the hospitals of Garoua and Ngaoundéré from June 1st 2008 to May 31st 2014

The curve shows a decrease in the number of stillborn in Garoua regional hospital during kits implementation. We notice then an exponential increase after the period of implementation.

Maternal mortality in the hospitals

The number of maternal death inside of hospital remains in constant increase (Figure 3). On the other hand we notice a net decrease in the rate of maternal mortality after the implementation of obstetric kits.

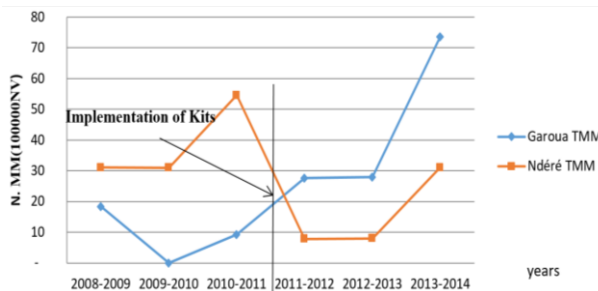


Figure 3: Evolution of maternal mortality rate at the hospitals of Garoua and Ngaoundéré from June 1st 2008 to May 31st 2014

Neonatal mortality

The number of neonatal death increased with increase number of births in the two hospitals. The figure below shows its distribution.

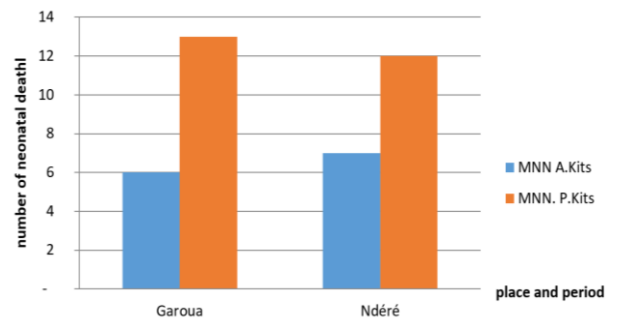


Figure 5: Distribution of neonatal death in the hospitals of Garoua and Ngaoundéré from June 1st 2008 to May 31st 2014

The number of neonatal mortality remained in increase in the two hospitals during the period of implementation of obstetrical kits in regard to the period before implementation

DISCUSSION

Use of kits on sanitary formation establishment capacities of welcome

This design study reveals that, the number of childbirth in the two hospitals are in constant increase since the implementation of obstetric kits in comparison to the periods before kits implementation. Yet, this amelioration in the quality of reception of hospitals can't only be due to the use of this kits. This study draws near to that of Benin in 2012 where we observe an increase (+7%) without any clear attribute to obstetric kits [5].

Rate of caesarean sections

The rate of caesarean section have been greatly increased by the coming of obstetric kits in the two hospitals compared to the period we didn't yet have kits. The same report was made in Benin in 2013 where an increase in the annual rate of caesarean sections was remarkable (48.54%) after the implementation of all caesarean section for free of charge [6].

Prematurity

The number of premature birth have slightly decreased with the coming of kits in the regional hospital of Garoua. This may be as a result of nearly care of parturient with obstetric kits. The number of premature birth on the other hand increased with kits in the regional hospital of Ngaoundéré. We may equally attribute to this situation, the non-frequentation of prenatal consultation in the region.

Neonatal mortality

In the two hospital, we realize an increase in neonatal mortality during the period of kits, more important than the period before the implementation of kits. This may be as a result of late transfer of patients to hospitals or delayed care received by women and most importantly the absence of prenatal consultation.

Maternal mortality

The evolution of maternal mortality rate in the two hospitals during this study period is marked by higher rates of maternal mortality before implementation of kits. The implementation of obstetric kits reduced the rate of maternal mortality to 1% as for the regional hospital of Ngaoundéré during the first two years of implementation. Results obtained draws near that of Senegal in 2008 where maternal lethality rate was reduced to 5.5% after kits implementation [7]. Elsewhere in Garoua, the rate remains in increase. This may probably be as a result of the fact that kits do not take into account some elements as blood transfusion for example. Results obtained here are different from that of Benin in 2012 where a reduction of 24.14% maternal mortality rate was observed.

Neonatal mortality

The global neonatal mortality in the two hospitals remains insignificant (1 for 1000 new birth). This may be as a result of our interest to immediate neonatal deaths only. This rate will be greater during kits utilization than before kits use. Also our weak hospital skills may be contributive.

Childbirth complications

Fetal distress (reanimated infants)

The regional hospital of Ngaoundéré registered 10.14% fetal distress which is relatively less than that registered in the regional hospital of Garoua with 11.39%. In both hospitals the number of cases increased with kits use. Here, we may evoke late transfer of patients to the hospitals

Post-partum hemorrhage

Ngaoundéré regional hospital registered 634 cases whereas Garoua regional hospital registered 502 post-partum hemorrhage. In both hospitals, the rates are relatively high in periods during kits use than in the period before kits implementation. This may equally be as a result of the fact that post-partum hemorrhage is related to the greater number of births registered during kits use.

CONCLUSION

This study aimed at evaluating the utilization of obstetric kits on mother and new born babies in the regional hospitals of Garoua and Ngaoundéré. The design permitted us to compare obstetrical activities in both hospitals within similar periods of equal time. It is a study of 6 years either 3 years before kits implementation and 3 years during implementation.

At the level of these hospitals, it is important to note that obstetric kits are in use. We realize an increase capacity welcome in terms of childbirth during the period of kits than before. For these hospitals, Khi-2 test proves that an increase frequentation is correlated to the implementation of kits with a p. value=0. Hence, we may deduce that the implementation of obstetric kits was of great importance to the beneficiaries.

RÉFÉRENCES

- 1- UNICEF, *La situation des enfants dans le monde*, 2009, la santé maternelle et néonatale, décembre 2008,
- 2- Agence Française de Développement, *Le C2D Santé dans l'Extrême-Nord et le Nord*, 2012
- 3- OMS, UNICEF, UNFPA et Banque Mondiale, *Tendance de la mortalité maternelle sur la période 1990-2008*, 2011
- 4- CARMMA *Réduction de la Mortalité Maternelle en Afrique*, 2011
- 5- Fabien W. N'TIA, Diplôme Universitaire de l'Université de Cocody Abidjan, *Evaluation de l'utilisation du kit D'accouchement dans la zone sanitaire de Djougou-coparg0-ouake (benin), de juillet 2009 à juin 2012* .2012.
- 6- Marcel D. KOUNNOU, Gildas GBAGUIDI, Armand N. EKAMBI, Jacob NAMBONI, Béatrice ADIMI. *RAPPORT D'ETUDE DE RECHERCHE Evaluation de la mise en œuvre de la gratuité de la césarienne dans le département de la Donga* .2013
- 7- Moreau J. C., A. H. Sylla, T. Dieng, F. Diadihou., *Nouvelles initiatives en santé maternelle kit de césarienne* Expérience de la Clinique Gynécologique et Obstétricale (CGO) et du Centre Régional de Formation et de Recherche en Santé de la Reproduction (CEFOREP). 2008.
- 8- OMS, UNICEF, UNFPA et Banque mondiale *mortalité maternelle en 2005, estimation*, organisation mondiale de la santé, 2007.
- 9- MERGER R, LEVY J, MELCHIOR J. *précis d'obstétrique* Masson, Paris 1989 :618-627.
- 10- OMS, Bureau régionale de l'Afrique : le rapport de la santé de la femme dans la région africaine, *Relever le défi de la santé de la femme en Afrique*, 2012.
- 11- UNDAF_ Cameroun 2007-2017, *Pour une croissance inclusive et protection des personnes vulnérables*, 2013
- 12- François Tekam, *Afrique, internationale, opinion santé*, Editorial, Juin 2013.
- 13- OMS, 2011, *Rapport OMD 2013*, 2013.
- 14- MINSANTE Cameroun, *RAPPORT DE SYNTHÈSE, Atelier national sur le rôle des mutuelles de santé dans la couverture sanitaire universelle au Cameroun*, Kribi (Hôtel le Paradis), les 10 et 11 juillet 2012.
- 15- UNFPA Cameroun, lettre d'information trimestrielle n°2 *Mot de Monsieur Alain Sibenaler Représentant de l'Unfpa* Avril-juin 2011.
- 16- Faculté de Médecine de Marseille, *Résumé d'Embryologie*, cours 2004/2005.