

Birth centers in Brazil: scientific production review

CENTROS DE PARTO NO BRASIL: REVISÃO DA PRODUÇÃO CIENTÍFICA

CENTROS DE NACIMIENTO EN BRASIL: REVISIÓN DE LA PRODUCCIÓN CIENTÍFICA

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ABSTRACT

This article is a narrative review with the aim of identifying the Brazilian scientific production related to the care process and maternal and perinatal outcomes in birth centres (BC). The papers were recovered in the databases and portals PubMed/MEDLINE, CINAHAL, SciELO and REVENF. There were also included one book and the non published studies from a researcher group. There were selected eight descriptive, two cross-sectional and two case-control studies conducted with 5,407 women and 5,395 newborns, which were reported in the period from 2005 to 2009. These studies analyzed socio-demographic and obstetric outcomes in childbirth and maternal and neonatal transfers to the hospital setting. BC scientific production presents data about seven services, from the last decade. There are mainly descriptive studies, with focus on obstetric practices and maternal outcomes, with less emphasis on neonatal care.

KEY WORDS

Nurse midwives.
Birthing Centers.
Natural childbirth.
Perinatal care.

RESUMO

Este artigo consiste em uma revisão narrativa com o objetivo de identificar a produção científica brasileira relacionada ao processo assistencial e aos resultados maternos e perinatais em centro de parto normal (CPN). As publicações foram recuperadas nas bases de dados e portais de periódicos PubMed/MEDLINE, CINAHAL, SciELO e REVENF. Incluíram-se, também, publicação em livro e produção não publicada de grupo de pesquisa. Foram selecionados oito estudos do tipo descritivo, dois transversais e dois casos-controle, realizados com 5.407 mulheres e 5.395 recém-nascidos, divulgados entre 2005 e 2009. Os estudos analisaram variáveis sócio-demográficas e obstétricas, práticas na assistência ao parto e nascimento e remoções maternas e neonatais para o hospital. A produção científica sobre CPN apresenta dados da última década, relativos a sete serviços. São, principalmente, estudos descritivos, com foco nas práticas obstétricas e nos resultados maternos, com ênfase menor na assistência neonatal.

DESCRIPTORIOS

Enfermeiras obstétricas.
Centros Independentes de Assistência à Gravidez e ao Parto.
Parto normal.
Assistência perinatal.

RESUMEN

Este artículo es una revisión narrativa, con el objetivo de identificar la producción científica brasileña relacionada con la atención y los resultados maternos y perinatales en centros de nacimiento (CN). Las publicaciones fueron recuperadas en las bases de datos y portales PubMed/MEDLINE, CINAHAL, SciELO y REVENF. Fueron incluidos también libro publicado y los trabajos no publicados de un grupo de investigadores. Fueron seleccionados ocho estudios de tipo descriptivo, dos transversales y dos casos-control, realizados con 5.407 mujeres y 5.395 recién-nacidos, divulgados en el período de 2005 a 2009. Los estudios analizaron variables socio-demográficas y obstétricas, prácticas en la atención al parto y nacimiento y el traslado materno y neonatal hacia al hospital. La producción científica sobre CN presenta datos de la última década, relativos a siete servicios. Son estudios principalmente descriptivos, con enfoque en las prácticas obstétricas y en los resultados maternos, con menos énfasis en la atención neonatal.

DESCRIPTORIOS

Enfermeras obstétricas.
Centros Independientes de Asistencia al Embarazo y al Parto.
Parto normal.
Atención perinatal.

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INTRODUCTION

The XXI century brought significant challenges to Brazilian nurse-midwives and midwives to provide healthcare to women during pregnancy, childbirth and postpartum. These challenges started in the 90's when the healthcare providers and users' movement resulting from the transformation of the care offered in childbirth became more widespread and incisive. The criticisms to the traditional hospital-centered care model had increased due to inappropriate use of technology, an increase in the number of cesarean sections and stagnation of high rates of maternal and perinatal mortality in the country. Despite the increasing use of technology in the care provided to mothers and newborns, the impact on the healthcare indicators would not show positive results in the same proportion⁽¹⁻²⁾.

Within this context, some policies of the Ministry of the Health were important to guide and regulate the transformation in the scenario of the care provided in childbirth. In this sense, the inclusion of childbirth assisted by nurse-midwives in the remuneration schedule⁽³⁾ of the Brazilian healthcare system (SUS) and the creation of birth centers (BC)⁽⁴⁾ stand for a technical and political landmark in the insertion of nurse-midwives and midwives in maternal and child care and to stimulate physiological childbirth offered at basic healthcare level.

A BC is an unit that provides healthcare to low risk pregnant women inserted in the local healthcare system, which works complementarily to the other healthcare units and can work in an intra- or extra-hospital way; the hospital environment works as reference for transfers within an one-hour maximum distance. It allows the presence of companions and it can work as a midwifery-led unit. It has different characteristics from those in the hospital environment and it creates a structure allowing the adoption of a less intervening model that actually takes childbirth as a physiological process.

Based on a funding of the Ministry of the Health to build the BCs and equip them, new services have been implemented in São Paulo, Minas Gerais, Rio de Janeiro and the Federal District. In other countries, such as the United States, Germany, the United Kingdom, Italy, France, Sweden, Japan, Australian and New Zealand, this model has been mainly adopted since the 80's⁽⁵⁾.

The name BC varies in the literature and the name most broadly used in English is *birth center* or *birth centre*, which in Portuguese can be understood as a normal childbirth center; the expressions *in-hospital*, *alongside birth center* (an *intra-* and *peri-hospital unit* in Portuguese, respectively) or *free-standing birth center* (an *extra-hospital unit* in Portuguese) can also be found, depending on where a birth center is located. There are other names, such as *maternity home* in Norway, or *geburtshaus* in Germany. The review of the Cochrane Library on birth centers used the

expression *home-like settings* to indicate generically these alternative home-like environments⁽⁶⁾.

A systematic review of the place where childbirth takes place conducted in the United Kingdom pointed out the need of standardizing the definition in order to determine precisely the type of birth center and to facilitate the comparison among studies. According to the definition proposed by the authors⁽⁷⁾,

Birth Centre is an institution that offers care to low-risk pregnant women and where midwives are in charge of that care. During labor and childbirth, medical care, including neonatology, obstetrics and anesthesia, are available if required, but they should be located in a separate place or in another building, which involves transferring patients by car or ambulance.

In Brazil, although BC is the name adopted by the Ministry of the Health to designate alongside birth centers or free-standing birth centers, the latter are broadly known as *Casa de Parto*.

Although the place where a child is delivered stands for a fundamental element of the care model, among us sometimes it is understood as its main definer, or even as an equivalent name. However, when one considers the models of care in childbirth, it is important to stress their different components, such as the healthcare system's funding and regulations, service network, physical structure and equipment, the healthcare providers involved, the practices adopted, in addition to users' participation. All these elements should be continuously monitored and assessed by taking into account their outcomes, safety, costs and satisfaction of the population assisted.

OBJECTIVE

To identify the Brazilian scientific production related to the care process and maternal and perinatal outcomes in BCs.

METHOD

A narrative review of articles about researches conducted in Brazil retrieved from databases and portals of the journals PubMed/MEDLINE, CINAHAL, SciELO and REVENF. The search was conducted by using Descriptors in Ciências da Saúde-DeCS of BVS-BIREME in Portuguese (*enfermeiras obstétricas, centros independentes de assistência à gravidez e ao parto, centro de parto normal, parto normal, parto humanizado, assistência perinatal, recém-nascido*) and in English (*nurse midwives, birthing centres, childbirth, perinatal care*). The descriptors in English were associated to the Boolean operator AND *brasil*. It was also included the only publication in a book available, in addition to the unpublished production of the Research Group *Nursing and Childbirth Care: Models, Agents and Practices*,

of the Nursing School of the University of São Paulo. Only research papers on the process and outcomes of care provided to women and newborns in BCs have been included. The articles selected were analyzed and systematized considering the BC's type and place, the design and sample of the study and the main results.

RESULTS

The 12 articles⁽⁸⁻¹⁹⁾ included in the review have been organized chronologically as to their publication date and are presented in Chart 1.

Chart 1 - Scientific production in BCs in Brazil - Brazil - 2005-2009

Author	BC; period studied	Design; sample	Main results
Fernandes, Kimura ⁽⁸⁾	In-hospital BC, São Paulo (SP); 2003	Cross-sectional; n=100 RN	Upper airway aspiration=47%; nasal O ₂ =21%; admission in the Neonatal Unit=6%; reason: respiratory discomfort
Machado, Praça ⁽⁹⁾	In-hospital BC, Itapecerica da Serra (SP); 2000-2003	Case-control; n=51 women (17 cases and 34 controls)	Percentage of re-admission for puerperal infection=0.16%; duration of labor as an event related to puerperal infection (p=0.031)
Fernandes ⁽¹⁰⁾	Free-standing BC, Juiz de Fora (MG); 2001-2002	Descriptive; n=178 women and newborns	Education: ≥8 years=69.3%; nulliparous=48.9%; amniotomy=30.6%; oxytocin=34.8%; episiotomy=24.7%; perineal integrity*=60.6%; non-lithothomic position=100%; breastfeed=53.4%; companion=93.8%; Apgar 5° min ≥7=99.4%; skin-to-skin contact=89.3%; transfer rate: maternal=10.1%; neonatal=4.5%
Koiffman et al. ⁽¹¹⁾	Free-standing BC, São Paulo (SP); 1998-2005	Descriptive; n=32 newborn transferred to the hospital	Transfer rate=1.1%; main reason: respiratory discomfort; neonatal mortality=1:1.000
Schneck, Riesco ⁽¹²⁾	In-hospital BC, Itapecerica da Serra (SP); 2001	Descriptive; n=830 women and newborns	Education: ≥8 years=49%; nulliparous=38.7%; amniotomy=75.1%; oxytocin=44.5%; episiotomy=26.5%; non-lithothomic position=69%; Apgar 5° min ≥7=99.6%
Campos, Lana ⁽¹³⁾	Alongside BC, Belo Horizonte (MG); 2002-2003	Descriptive; n=2.117 women and newborns	Education: ≥8 years=54.8%; nulliparous=48.8%; maternal transfer rate =11.4%; reasons: long labor; request for analgesia; Apgar 5° min ≥7=99.2%; admission in Neonatal Unit=4.5%; reasons: respiratory depression; infection; jaundice; neonatal mortality=1.9:1.000
Koiffman et al. ⁽¹⁴⁾	Free-standing BC, São Paulo (SP); 1998-2005	Case-control; n=96 newborns (32 cases and 64 controls)	Risk factors associated to neonatal transfer: smoking during pregnancy (OR=4.1); complication at delivery (OR=5.5); Apgar 1° min ≤7 (OR=7.8)
Lima, Schneck, Riesco ⁽¹⁵⁾	Alongside BC, São Paulo (SP); 2006-2007	Descriptive; n=72 newborns transferred to the hospital	Neonatal transfer rate=12.7%; reasons: jaundice=46%; PIG/GIG=11.5%; breastfeeding problems=9.2%; Apgar 5° min ≥7=98.6%; AVAS=11.1%; nasal O ₂ =8.3%; admission in the Neonatal Unit=11.1%
Lobo ⁽¹⁶⁾	Alongside BC, São Paulo (SP); 2003-2006	Descriptive; n=991 women and newborns	Education: ≥8 years=75.4%; nulliparous=46.3%; amniotomy=48.3%; episiotomy=24.8%; perineal integrity*=64.6%; deambulation=47.6%; massage=29.8%; immersion bath=21.9%; companion=92.2%; Apgar 5° min ≥7=98.9%; Upper airway aspiration=9.3%; nasal O ₂ =3.4%; admission in the Neonatal Unit=1.4%
Paixão, Silva, Oliveira ⁽¹⁷⁾	Free-standing BC, São Paulo (SP); 2006-2008	Descriptive; n=778 women and newborns	Education: ≥8 years=70.3%; nulliparous=46.8%; amniotomy=51.9%; oxytocin=33.7%; episiotomy=16.2%; perineal integrity*=72.9%; non-lithothomic position=100%; oral intake=95.4%; companion=93.3%; deambulation=70%; massage=64%; immersion bath=33%; Apgar 5° min ≥7=100%; Transfer rate: maternal=2,1%; neonatal=0,8%
Rocha et al. ⁽¹⁸⁾	In-hospital BC, Itapecerica da Serra (SP); 2004-2005	Cross-sectional; n=233 women and newborns	Nulliparous=39.5%; amniotomy=52.8%; oxytocin=46.3%; episiotomy=35%, non lithothomic position=100%; deambulation=88%; amniotomy and oxytocin more used in zones II and III of the partogram, respectively (p<0.05); Apgar 5° min ≥7=98.7%
Schneck et al. ⁽¹⁹⁾	Free-standing BC, São Paulo (SP); 1998-2008	Descriptive; n=229 women transferred to the hospital	Transfer rate: intra-partum=5,5%; post-partum=0,3%; reasons: abnormality of the pelvis or the fetus; abnormal fetal cardiac rate, labor failure; postpartum hemorrhage

These studies were conducted at seven BCs – three in-hospital, two alongside and two free-standing BCs – located in the States of São Paulo and Minas Gerais, which offer care exclusively through the Brazilian healthcare system. The researches are descriptive (eight), cross-sectional (two) and case-control (two) studies. As to the population, the sample analyzed in the studies included 5,407 women and 5,395 newborns from 1998 to 2008.

Generally speaking, the studies include socio-demographic and obstetric outcomes to characterize the population assisted at the BCs. The data indicate prevalence of women with at least primary schooling and a high number of nulliparous women.

Related to the practices used in childbirth, such as amniotomy, infusion of oxytocin and episiotomy, the main results suggest a careful, non-routine use (amniotomy: 30.6-75.1%; oxytocin: 33.7-46.3%; episiotomy: 16.2-35%). Practices known as beneficial in childbirth according to evidence-based can be highlighted such as the care provided at the BCs. Among the outcomes analyzed there are free oral intake (53.4-95.4%) and deambulation (46.7-88%) during labor and the use of non-pharmacological methods for comfort and pain relief (massage: 29.8-64%; immersion bath: 21.9-33%). In addition to those practices, the non-lithothomic positions during delivery, the partogram and the presence of a companion chosen by the woman are also broadly adopted at the BCs. First-degree perineal laceration is an outcome that is usually grouped with perineal integrity since it does not impact negatively on postpartum morbidity. The data from the studies analyzed show high percentage of perineal integrity, ranging from 60.6% to 72.9%. The only study that deals with puerperal infection reported a 0.16% rate considering the women re-admitted in a BC for treatment.

Regarding newborn care, outcomes are concentrated in newborn initial condition at childbirth and neonatal reanimation practices, such as aspiration of upper airways and use of nasal oxygen, among others. High rates of intervention can be found among the newborns at BCs where the pediatrician was in charge of receiving the baby⁽⁸⁾ and in one of the them about newborn transfers to the hospital⁽¹⁵⁾.

A relevant outcome to analyze the safety of the BC model is maternal and neonatal transfers to a hospital, which varied from 5.8% to 11.4% and from 1.1% to 12.7%, respectively. Protocols and guidelines, reference system, transportation conditions and nurse-midwives skills to assess maternal and neonatal conditions are the main important aspects involved in the transfer process.

DISCUSSION

The initial data available about the care provided at the BCs come from technical reports of services and reports of experiences at meetings and scientific events. An important event related to the BCs was the 1st Meeting of

Birth Centers in the City of São Paulo held in 2005, where changes in paradigms and policies in the care provided in childbirth, scientific evidence and legal and social issues related to childbirth at BCs were discussed, in addition to presentations of experiences and results of seven BCs in the southeastern region of the country.

As to the first researches published, the authors are mainly nurse-midwives who work with the services studied and researcher professors. The studies were conducted to describe socio-demographic characteristics, obstetric conditions in the admission of women assisted at BCs and care practices in childbirth. As limitations we can point out that those are studies based on secondary data with gaps in the information obtained.

The knowledge about women's and care characteristics is preliminary since it points out important outcomes for other designs, particularly to investigate the safety of a birth care model in an out of hospital environment. Once the women assisted at BCs are those considered low-risk, one of the challenges of a research is to ensure comparability of the findings with the services offered to the population in general. That comparison can be made with pregnant women assisted in any healthcare service, as long as they are eligible to receive care in a BC.

Therefore, the descriptive researches conducted in Brazil up to now configure an important exploratory phase for studying the place and model of care in childbirth. Based on this preliminary phase the need of creating more appropriate tools and indicators to analyze and assess safety and viability of the BCs came up. So, the next researches started to include new outcomes which initially were not considered in the outcomes, such as practices of non-pharmacological comfort and pain relief, permanence of a newborn with the mother, breastfeeding duration, maternal stress and women's satisfaction with the care provided.

The need of incorporating new variables in the studies results from the very object being built – childbirth in the BC model -, which extrapolates the hegemonic tradition in the investigation of care in childbirth. In addition to the classical outcomes related to maternal and perinatal morbidity and mortality, the focus is now directed to the care in childbirth as a physiological, socio-cultural and family event considering a specific population of low-risk women. Within this scenario a methodological challenge comes up as to broadening the study of the outcomes in their relations with the model performed in a BC, such as women's bodily and emotional integrity.

This construction moves beyond the assumptions of the modern thinking inspired in physics, which conceives childbirth as a *mechanical* process, with the exact description of the uterus' contraction, pelvic anatomy and fetal head. The new perspective overcomes the pretension of correcting the childbirth process and understands childbirth as a complex object that develops itself according to its own physiological dynamics, unrelated to any disease⁽²⁰⁾.

When interpreting the results presented, whether they converge or not, one should consider their limited external validity and the limitation of the design used – descriptive studies with retrospective data collection from secondary sources. So, the magnitude of the events and outcomes in the care provided in childbirth in a BC would be better assessed in prospective, cross-sectional studies with standardized variables in the different studies.

It is worth highlighting that the authors of this article have been conducting studies that look for comparing results in BCs and in hospitals and to analyze healthcare providers' perception and that of the users of those services, mainly related to women's satisfaction.

Resuming the challenge of contributing to transforming the model of the care provided in childbirth, nurse-midwives and midwives need to keep their commitment to increasing their knowledge and to using it in their practice. To do that, the BCs stand for a privileged space to develop and strengthen their own care model, both under a conceptual standpoint and related to the

healthcare team and in the alliance with women and their family⁽²¹⁾.

Therefore, the authors restate their defense of the model of care provided in childbirth in BCs once they teach, research and provide care guided by the concept of childbirth as a physiological and socio-cultural process. Additionally, they think that childbirth is an event particular to each woman, who is entitled to choose the place to give birth and the healthcare provider who is going to assist her.

CONCLUSION

The scientific production related to the BCs has been written by a limited number of researchers linked to the nursing area. It has data produced during a decade, but limited to seven centers. The studies are mainly descriptive and their variables have not been standardized. Researchers' predominating focus is directed towards obstetric practices and maternal results; neonatal care is less emphasized.

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