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# Maternity assessment: an integrative literature review

Evaluación de la maternidad: revisión integradora de la literatura

Avaliação de maternidades: uma revisão integrativa da literatura

## ABSTRACT

**Objective:** To analyze a scientific production on the evaluation of maternity hospitals including elements of structure, processes and results. **Methods:** integrative literature review based on MEDLINE, SciELO, CINAHL and LILACS between 2008 and 2018. The descriptors used were: delivery rooms; maternal and child health; hospital maternity; birth centers; program evaluation; health services; outcome assessment (health care). **Results:** The final sample consisted of 17 scientific articles. Most studies have assigned a structure as a form of assessment through domains such as availability, availability of equipment, medicines and trained human resources and assessment of neonatal environments. Second, the quality of maternity hospitals was attributed to women's satisfaction. **Conclusion:** indicators of structure, processes and results are constitutive elements of health assessment in maternity hospitals, which can be taken in a multidimensional way and consider women's satisfaction.

**DESCRIPTORS:** Maternal and Child Health; Maternity; Delivery Rooms; Birthing Centers; Program Evaluation.

## RESUMEN

**Objetivo:** analizar una producción científica sobre la evaluación de las maternidades incluyendo elementos de estructura, procesos y resultados. **Métodos:** revisión integradora de la literatura basada en las bases de datos MEDLINE, SciELO, CINAHL y LILACS entre 2008 y 2018. Los descriptores utilizados fueron: salas de parto; Salud maternal e infantil; hospital de Maternidad; centros de maternidad; Programa de Evaluación; servicios de salud; evaluación de resultados (atención médica). **Resultados:** La muestra final estuvo compuesta por 17 artículos científicos. La mayoría de los estudios han asignado una estructura como forma de evaluación a través de dominios como disponibilidad, disponibilidad de equipos, medicamentos y recursos humanos capacitados y evaluación de ambientes neonatales. En segundo lugar, la calidad de las maternidades se atribuyó a la satisfacción de las mujeres. **Conclusión:** los indicadores de estructura, procesos y resultados son elementos constitutivos de la evaluación de la salud en las maternidades, que se pueden tomar de forma multidimensional y considerar la satisfacción de las mujeres.

**DESCRIPTORES:** Salud Materno-Infantil; Maternidades; Salas de partos; Centros de asistencia al embarazo y al parto; Evaluación de Programas y Proyectos de Salud.

## RESUMO

**Objetivo:** Analisar a produção científica sobre a avaliação das maternidades incluindo elementos de estrutura, processos e resultados. **Métodos:** revisão integrativa da literatura a partir das bases MEDLINE, SciELO, CINAHL e LILACS entre os anos de 2008 e 2018. Os descritores utilizados foram: delivery rooms; maternal and child health; hospital maternity; birthing centers; program evaluation; health services; outcome assessment (health care). **Resultados:** A amostra final foi constituída por 17 artigos científicos. A maioria dos estudos atribuíram a estrutura como forma de avaliação por meio de domínios como infraestrutura adequada, disponibilidade de equipamentos, medicamentos e recursos humanos capacitados e avaliaram ambientes neonatais. Em segundo lugar, a qualidade das maternidades foi atribuída à satisfação das mulheres. **Conclusão:** indicadores de estrutura, processos e resultados são elementos constitutivos da avaliação em saúde nas maternidades, que podem ser avaliados de forma multidimensional e considerar a satisfação das mulheres.

**DESCRIPTORES:** Saúde Materno-Infantil; Maternidades; Salas de Parto; Centros de Assistência à Gravidez e ao Parto; Avaliação de Programas e Projetos de Saúde.

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**INTRODUCTION**

Until the 18th century, childbirth involved high rates of maternal and fetal morbidity and mortality, so the practice of health care for women began to organize. From the 19th century, medicine developed surgical and anesthetic techniques capable of combating the high rates of puerperal infection, making childbirth a hospital event. Since then, new techniques have emerged and improved and hospital delivery has been culturally incorporated by society.<sup>(1)</sup>

In Brazil, its institutionalization was fully expressive only after the Second World War. This fact brought a considerable drop in infant mortality, which was an important factor for there to be strong adherence and acceptance of hospitalization. Currently, although the rates of hospital coverage for childbirth are high, the country faces problems of access, lack of physical structure and trained human resources, in addition to an evident disorganization in the distribution of obstetric and neonatal beds.<sup>(2)</sup>

With the advances in maternal and child health in recent decades, improvements in health rates have been observed thanks to government efforts and social movements. Infant mortality has dropped dramatically due to actions developed in the post-neonatal component, but with persistent challenges in the neonatal component. Evidence

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shows that most of these deaths, especially maternal deaths, are preventable and occur within hospitals.<sup>(3)</sup>

In addition to the fact that the most advanced hospital structures are concentrated in the capitals, many still have weaknesses in the provision of tools and equipment for quality care during labor and birth. However, it cannot be attributed to the still high rates of mortality in maternal and fetal health only at the expense of the hospital structure. It is necessary to expand the spectrum to the level of care offered during the entire process of pregnancy, childbirth and the puerperium by the obstetric team.<sup>(4)</sup>

However, it is worth mentioning that, regardless of pregnancy risk, pregnant women must be accompanied by qualitatively trained professionals. The health professional's role is to ensure maternal and fetal monitoring, intervene when necessary and refer the pregnant woman to more complex levels when indicated. Women look for safe places to have their children alive and go to places where they value respect, qualified professionals and an adequate structure. It can be said, therefore, that elements of the structure and processes have a direct impact on the occurrence of maternal and perinatal deaths.<sup>(5)</sup>

The objective of this research was, therefore, to analyze scientific production in relation to the evaluation of maternity hospitals, in terms of structure, processes and results.

## METHOD

An integrative review was carried out based on the scientific literature on the evaluation of maternity hospitals worldwide between the years 2008 and 2018 in the MEDLINE, SciELO, LILACS and CINAHL databases. For the elaboration of the study, six steps were taken: identification of the hypothesis or research question for the elaboration of the integrative review; establishment of criteria for inclusion and exclusion of studies or sampling or search in the literature; definition of the information to be extracted from the selected studies or categorization of studies; evaluation of the studies included in the integrative review; interpretation of results; presentation of the review or synthesis of knowledge.

Data were collected between November and December 2018 and a ten-year panorama for the search was outlined. Studies that included the evaluation of care services for women and newborns during childbirth and birth were included, publications in full available in Portuguese, English and Spanish.

Theses, dissertations, works published in the annals of events, duplicates and articles available only in summary were excluded.

The research question was structured as follows: how are structural, process and results aspects being addressed in maternity assessments in scientific investigations?

For the MEDLINE, SciELO, LILACS and CINAHL databases, the terms used were: "Delivery rooms" OR "salas de parto" OR "salas de parto" OR "maternal and child health" OR "saúde materno-infantil" OR "salud materno-infantil" OR "hospital maternity" OR "maternidades" OR "maternidades" OR "birthing centers" OR "centros de assistência à gravidez e ao parto" OR "centros de asistencia al embarazo y al parto" AND "program evaluation" OR "avaliação de programas e projetos de saúde" OR "evaluacion de programas y proyectos de salud" AND "health services" OR "serviços de saúde" OR "servicios de salud" AND "outcome assessment (health care)" OR "avaliação de resultados (cuidados de saúde)" OR "evaluacion de resultado (atención de salud)".

The initial sample consisted of 9,340 articles, 7,719 of which (MEDLINE); 1,089 (SciELO); 453 (CINAHL) and 79 (LILACS).

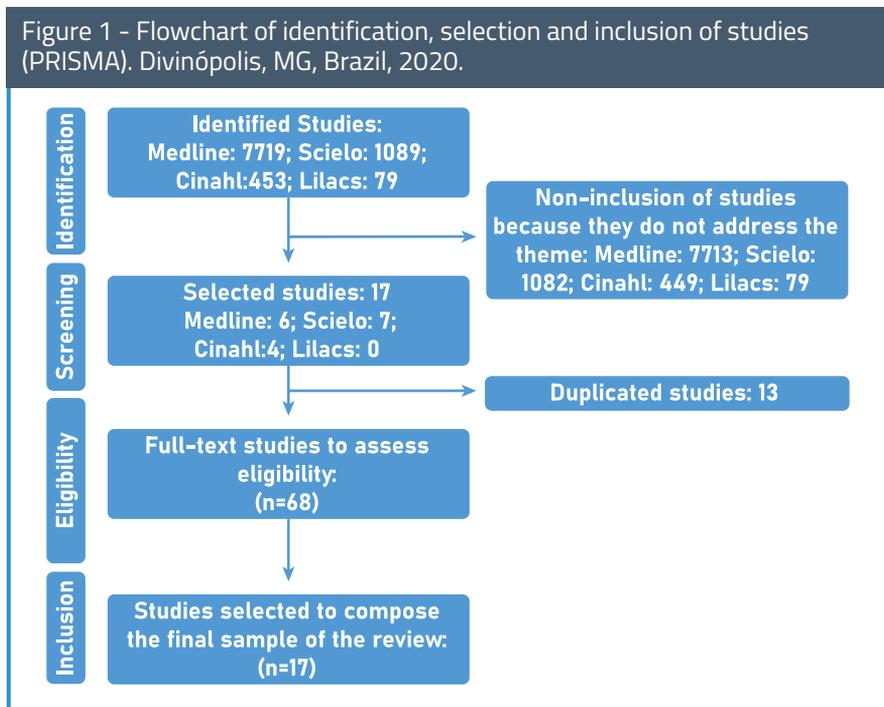
The selection of articles was carried out independently by two reviewers and conducted using the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) protocol, as shown in the study selection flowchart (Figure 1). After reading titles and abstracts, 68 studies were chosen for complete reading. Disagreements between the two reviewers were clarified by a third reviewer. A methodological instrument was created by the authors themselves to extract the following information: identification of the study, authors, source of information, journal, year of publication, objective, type of study, sample studied, category of study and level of evidence, method and variables used.

Thus, the selected studies were classified according to the following levels of evidence: Level I: the evidence comes from a systematic review or meta-analysis of all relevant randomized controlled clinical trials or from clinical guidelines based on systematic reviews of randomized controlled clinical trials; Level II: evidence derived from at least one well-designed randomized controlled clinical trial; Level III: evidence obtained from well-designed clinical trials; Level IV: evidence from well-designed cohort and case-control studies; Level V: evidence from systematic review of descriptive and qualitative studies; Level VI: evidence derived from a single descriptive or qualitative study; and Level VII: evidence from the opinion of authorities and / or the report of expert committees.

Then, the data obtained were grouped according to the theoretical framework of the Donabedian triad with thematic nuclei in the evaluation of maternity hospitals.<sup>(6)</sup>

## RESULTS

The search resulted in 17 articles.



Nine were developed in Brazil (52,9%), two in Uganda (11,7%), and one study in the following countries: Scotland (5,8%); New Zealand (5,8%); Indonesia (5,8%), Senegal (5,8%); Bangladesh, Haiti and Malawi (5,8%); Tanzania and Senegal (5,8%); Nigeria (5,8%).

In relation to the year, there was a predominance of the year 2017 with seven articles (41,1%), followed by 2008 with three (17,6%), 2015 and 2014 with

two articles each (11,7%) and the years of 2018, 2016 and 2010 with one article (5,8% each). As for the design of the studies, fourteen are quantitative studies (82,3%) and three are qualitative studies (17,6%). Of the quantitative studies, seven are cohorts, four are cross-sectional and two surveys. Analyzing the evidence level of the articles, eight (47,0%) had level V, seven level IV (41,1%), one level III (5,8%) and one level VI (5,8%).

With regard to quality assessment, six studies (35,2%) evaluated maternal and child services according to the structure, four (23,5%) according to the processes and three (17,6%) used result indicators. Four articles (23,5%) used women's perception as a way to assess maternity wards.

Most studies attributed the structure as a form of evaluation and focused on the quality of care for newborns

Chart 1 - Characterization of scientific production on the evaluation of maternity hospitals in terms of structure, processes and results.

INDICATORS	AUTHORS/YEAR	METHODS	VARIABLES USED IN THE EVALUATION
Structure	Almeida et al/2008	Cross-sectional study	Human resources and equipment needed for neonatal resuscitation.
	Silva et al/2010	Cross-sectional study	Neonatal and adult ICU, teaching activity, reference for high risk and delivery volume.
	Bittencourt et al/2014	Hospital-based cohort - Born in Brazil	Maternal and neonatal ICU, equipment, support and medication sectors, reference for high risk, trained managers.
	Bittencourt et al/2015	Hospital-based cohort - Born in Brazil	Human resources, medicines, equipment.
	Bittencourt et al/2016	Cross-sectional, national hospital-based study.	Human resources, medications, emergency care equipment.
	Winter et al/2017	Survey in Bangladesh, Haiti, Malawi, Senegal and Tanzania	Running water, electricity, privacy, equipment, medicines, staff training and supervision.
Processes	Faye et al/2004	Cross-sectional study	Assessment of antepartum and postpartum maternal and fetal vital signs.
	Oliveira et al/2008	Cross-sectional study	Obstetric and fetal evaluation, good practice indicators, presence of a companion.
	Leal et al/2008	Cross-sectional study	Número de consultas de pré-natal, peso, realização de exames e entrega em tempo oportuno e peregrinação.
	Mawarti, Utarini/2017	Retrospective cohort	Waiting time for screening, use of oxytocin, medications and type of delivery.
Results	Barros et al/2008	Cohort study	Apgar, hemorrhage, admission to the neonatal unit, birth weight, morbidity and mortality.
	Denham, et al/ 2017	Cross-sectional study	Perineal trauma, transfer, birth weight and cesarean section.
	Grigg et al/2017	Cross-sectional study	Apgar, hemorrhage, admission to the neonatal unit, birth weight, morbidity and mortality.
Women's perspectives	Okonofua et al/2017	Focus group discussions	Satisfaction with service quality
	Kyaddondo et al/2017	Focus groups with puerperal women	Survival of the newborn, competence of midwives and equipment.
	Bohren et al/2017	Focus groups with pregnant women	Effective communication, respect, dignity and human resources.
	Almeida et al/2018	Cross-sectional study	Accessibility and patient/health professional relationship.

Fonte: Elaborado pelos autores, 2020.

and the reduction of neonatal mortality through domains such as adequate infrastructure, availability of equipment, medicines and trained human resources. <sup>(3,10-14)</sup>

## DISCUSSION

This integrative review investigated the scientific production related to the evaluation of maternity hospitals according to the criteria of structure, processes and results. Most of the selected studies evaluated the quality of services according to the structure of the maternity hospitals. The elements of structure and processes are closely linked to the quality of health services, especially obstetric and neonatal care services. <sup>(3)</sup> The term quality was not used as a descriptor in this bibliographic search, which could have made the “search key” more effective in the primary search and in the final phase of inclusion of the articles.

The systemic model proposed by Donabedian has been a reliable method for evaluating maternal and child care services, sometimes used in isolation, sometimes articulating their elements. <sup>(6)</sup>

Studies have shown that access to safe places for childbirth and birth, assistance from qualified professionals and availability of adequate structure and equipment reduce maternal and neonatal mortality. <sup>(7)</sup> But although the isolated relationship between the structure and some perinatal indicators may indicate a good performance of the health service, it cannot be guaranteed that it is of quality without evaluating other relevant aspects related to the assistance offered to the mother-baby binomial. <sup>(3)</sup>

On the other hand, the evaluation based on care processes used as a methodology deserves to be highlighted, since it evaluates the maternity hospitals through the activities developed by health professionals and managers for adequate obstetric and neonatal care from hospitalization to discharge. <sup>(8)</sup>

Evidence shows that the improve-

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ment in care provided in maternity hospitals reduces maternal and neonatal morbidity and mortality rates. The length of service, the appropriate risk classification, the timely administration of drugs in urgent and emergency obstetric cases and the use of appropriate technologies at delivery and birth are indicators that reflect the quality of the service. Therefore, care must be safe, effective, timely, efficient and patient-centered. <sup>(9,10)</sup>

The concern with quality at birth has gained relevance, especially in Brazil, due to the persistence of bad perinatal indicators even with the universalization of hospital delivery and assistance provided by doctors in 90% of births. In a national scenario marked by an excess of unnecessary interventions and violence at the time of delivery, a world record for cesarean sections; preventable maternal, fetal and neonatal deaths; it is essential to evaluate the work processes for safe assistance in childbirth and birth. <sup>(11)</sup>

Outcome indicators are commonly used by municipalities, states and countries to measure the functioning of health services, especially maternal and child establishments that attend births. In Brazil, monitoring perinatal indicators stimulated by international agendas and commitments has become mandatory and is linked to the release of investments and financial resources. Therefore, the data analyzed in this study used result indicators to compare safety and efficacy between maternal and child care centers in childbirth care. <sup>(12,13)</sup>

Describing the experiences and expectations of women in relation to their delivery was mentioned in four studies in this review. The articles selected here gave voice to women who translate their assessment in the form of respectful attitudes, qualified care and a safe place with an adequate structure to have their children in good condition. Although the World Health Organization recently published its manual on positive experiences in childbirth, most women

in the world do not have the assistance of qualified professionals during birth. In addition, user satisfaction is also a form of assessment and represents a way to improve the quality of health services and discuss patient care. <sup>(14,15)</sup>

Therefore, it is necessary to propose new studies that explore results from different data sources and methodologies, in order to better assess the quality of obstetric and neonatal services, providing an expanded view of the health care offered to women and newborns in their childbirth places.

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## CONCLUSION

The synthesis of the studies analyzed shows that the evaluation of maternity hospitals can be done in a multidimensional way and still remains a challenge for the evaluators. However, there is no definition of specific methods that express greater solidity for the evaluation of maternity hospitals, or that elements of structure, processes or results stand out from each other during an evaluation. ■

## REFERENCES

- Rodrigues DP, Alves VH, Vieira RS, Leão DCMR, Paula ED, Pimentel MM. A violência obstétrica no contexto do parto e nascimento. *Rev Enferm UFPE on line*. 2018; 12(1):236-46. doi: <https://doi.org/10.5205/1981-8963-v12i01a23523p236-246-2018>
- Diniz SG, Salgado HO, Amdrezza HFA, Carvalho PGC, Carvalho PCA, Aguiar CA, et al. Abuse and disrespect in childbirth care as a public health issue in Brazil: origins, definitions, impacts on maternal health, and proposals for its prevention. *Rev Bras Crescimento Desenvol Hum*. 2015; 25(3):377-84. doi: <http://dx.doi.org/10.7322/jhgd.106080>
- Leal MC, Theme-Filha MM, Moura EC, Cecatti JG, Santos LMP. Atenção ao pré-natal e parto em mulheres usuárias do sistema público de saúde residentes na Amazônia Legal e no Nordeste, Brasil 2010. *Rev Bras Saúde Matern Infant*. 2015; 15(1):91-104. doi: <http://dx.doi.org/10.1590/S1519-38292015000100008>
- Kyaddondo D, Mugerwa K, Byamugisha J, Oladapo OT, Bohren MA. Expectations and needs of Ugandan women for improved quality of childbirth care in health facilities: A qualitative study. *International J Gynecol Obstetr*. 2017; 139:38-46. doi: <https://doi.org/10.1002/ijgo.12405>
- Winter R, Yourkavitch J, Wang W, Mallick L. Assessment of health facility capacity to provide newborn care in Bangladesh, Haiti, Malawi, Senegal and Tanzania. *J Glob Health*. 2017; 7(2). doi: <https://doi.org/10.7189/jogh.07.020509>
- Donabedian A. The definition of quality: a conceptual exploration. Explorations in quality assessment and monitoring. Michigan: Health Administration Press, 1988.
- Bittencourt DAS, Gurgel RQ, Menezes MAS, Bastos LS, Leal MC. Neonatal care in Brazil: hospital structure and adequacy according to newborn obstetric risk. *Paediatr Int Child Health*. 2015; 35(3):206-12. doi: <https://doi.org/10.1179/2046905515Y.0000000028>
- Bittencourt DAS, Domingues RMSM, Reis LNC, Ramos MM, Leal MC. Adequacy of public maternal care services in Brazil. *Reprod Health*. 2016; 13(3):120. doi: <https://doi.org/10.1186/s12978-016-0229-6>
- Bohren MA, Titiloye MA, Kyaddondo D, Hunter EC, Oladapo OT, Tunçalp O, et al. Defining quality of care during childbirth from the perspectives of Nigerian and Ugandan women: A qualitative study. *International J Gynecol Obstetr*. 2017; 139(1):4-16. doi: <https://doi.org/10.1002/ijgo.12378>
- Mawarti Y, Utarini A, Hakimi M. Maternal care quality in near miss and maternal mortality in an academic public tertiary hospital in Yogyakarta, Indonesia: a retrospective cohort study. *BMC Pregnancy Childbirth*. 2017; 17(1):149. doi: <https://doi.org/10.1186/s12884-017-1326-4>
- Leal MC, Pereira APE, Domingues RMSM, Theme-Filha MM, Dias MAB, Pereira NM, et al. Intervenções obstétricas durante o trabalho de parto e parto em mulheres brasileiras de risco habitual. *Cad Saúde Pública*. 2014; 30(1):17-32. doi: <https://doi.org/10.1590/0102-311X00151513>
- Denham S, Humphrey T, Taylor R. Quality of care provided in two Scottish rural community maternity units: a retrospective case review. *BMC Pregnancy Childbirth* 2017; 17(1):198. doi: <https://doi.org/10.1186/s12884-017-1374-9>
- Grigg CP, Tracy SK, Tracy M, Daellenbach R, Kensington M, Monk A, et al. Evaluating Maternity Units: a prospective cohort study of freestanding midwife-led primary maternity units in New Zealand—clinical outcomes. *BMJ open*. 2017; 7(8). doi: <https://doi.org/10.1136/bmjopen-2017-016288>
- Almeida KJQ, Roure FN, Bittencourt RJ, Santos RMDB, Bittencourt FV, Gottens LBB, et al. Ouvidoria ativa em saúde: avaliação da qualidade da atenção ao parto e nascimento. *Rev Saúde Pública*. 2018; 52-76. doi: <https://doi.org/10.11606/S1518-8787.2018052017291>
- Okonofua F, Ogu R, Agholor K, Okike O, Abdus-salam R, Gana M, et al. Qualitative assessment of women's satisfaction with maternal health care in referral hospitals in Nigeria. *Reprod Health*. 2017; 14(44). doi: <https://doi.org/10.1186/s12978-017-0305-6>