

# *Inconsistencies in the completeness of the pregnant woman's card: a systematic review*

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**Abstract: Introduction:** The pregnant woman's card is one of the instruments used to evaluate prenatal care. It is an important source of data for epidemiological survey, being essential to ensure the flow of information and contribute to the continuity of care. **Objective:** Analyze studies that focused on the evaluation of the completeness of the pregnant woman's card. **Methods:** A systematic review was carried out in the Scielo, Virtual Health Library, EMBASE, and Web of Science databases and the checklist based on the Preferred Reporting Items for Systematic Reviews (PRISMA) guideline was used. **Results:** Forty-three studies were identified, resulting in seven analyzed. The studies showed methodological differences, especially regarding the fields of the pregnant woman's card selected for analysis, method of presentation and interpretation of results, ranging from relative frequency with different categories to classification by Romero & Cunha score. This divergence limited the comparison of findings. Even so, all studies observed poor completeness in important fields of the maternity card. **Conclusion:** It is extremely important that professionals and managers value the full completion of the pregnant woman's card, favoring the assessment of care and decision-making during prenatal care.

► **Keywords:** Prenatal care. Data accuracy. Delivery of health care. Quality of health care. Systematic review.

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## Introduction

The evaluation of prenatal care can be carried out from different data sources, one of which is the pregnant woman's card. The complete record is essential to portray the state of health and provide quality indicators for the assessment and formulation of public policies aimed at decision-making to meet the needs of women (Silva *et al.*, 2018; Souza *et al.*, 2020).

There are numerous quality assessment indicators, such as accessibility, timeliness, methodological clarity, consistency and integrity. Some studies assess quality of the pregnant woman's card records based on completeness (Carvalho *et al.*, 2004; Cristofaro, 2017), understood as "*the degree to which the records of a Health Information System present non-null values*" (Lima *et al.*, 2009, p. 2096), resulting from the inclusion of all basic data to answer a question about a given problem. Thus, completeness aims at the availability of data for wide access (Feliciano *et al.*, 2019).

In a systematic review that aimed to assess the completeness of data in Health Information Systems in Brazil, the authors observed that the term completeness was the most used to define this dimension and the Romero & Cunha (2006) score was the method most common evaluation (Correia *et al.*, 2014).

The analysis of the completeness of the fields on the pregnant woman's card allows the assessment of adherence to the procedures recommended by the Ministry of Health (MS). Thus, the use of the card as a recording instrument is guided by the MS through the Prenatal Care Manuals since 1988 until the last version of 2012 (Brasil, 1988; 2012).

In general, in Brazil, prenatal care is offered in primary care and births in hospitals. The pregnant woman's card must be carried by the woman at each visit, being the only instrument used across all services, favouring reference, and counter-reference through health care levels. Thus, this instrument favours communication between professionals involved in women's care and between professionals and pregnant women (Santos Neto *et al.*, 2012; Brasil, 2012).

The MS emphasizes the need to provide and fill out the pregnant woman's card at each visit to the health service, in order to encourage continuity of care and guide the team not to repeat or neglect procedures recommended by the MS, in addition to providing data for the assessment of prenatal care (Brasil, 2012).

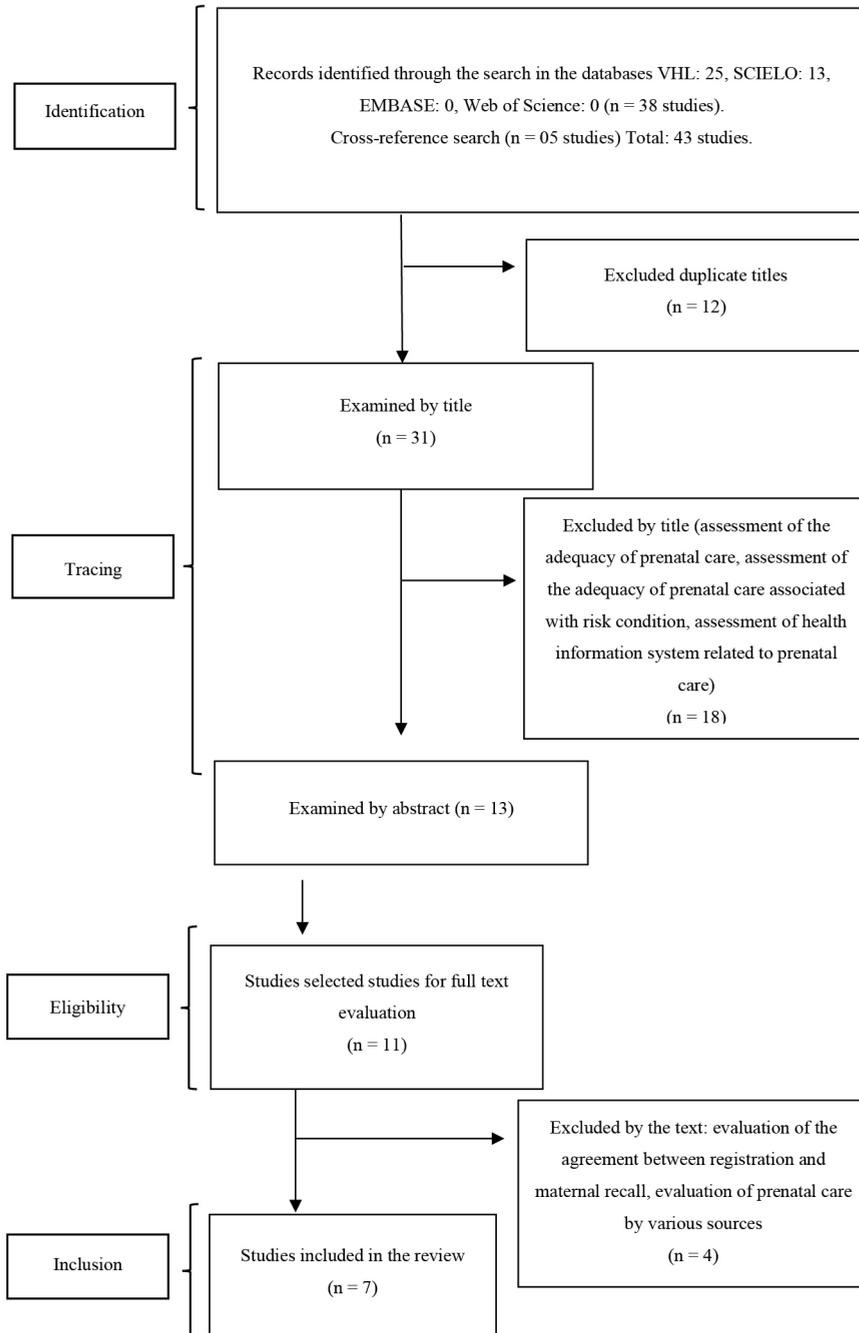
Despite the relevance of filling out the pregnant woman's card, few studies have assessed the completeness of filling out this instrument. Therefore, this systematic review objective to analyze the studies that focused on evaluating the completeness of the pregnant woman's card.

## Methods

A systematic literature review was carried out, involving the search for studies that assessed the completeness of the pregnant woman's card in Brazil, delimited by the research question: "Are there inconsistencies in filling out the pregnant woman's card in Brazil?" The clinical research methodology, PICO, did not include the study design.

We used the checklist based on the Preferred Reporting Items for Systematic Reviews guidelines (PRISMA) which helps authors to improve reports of systematic reviews. The summary of the stages of the selection process of the articles was arranged in flowchart (Figure 1). The studies were selected through Scielo, Virtual Health Library (VHL), EMBASE and Web of Science databases. For the search strategy, we used the descriptors "health assessment" AND "prenatal card" AND "pregnant". We also conducted a second search in the reference list of the studies initially evaluated to identify eligible publications not captured by the initial examination. The survey was conducted between April 18 and 22, 2021 by two independent researchers. The protocol is registered in the PROSPERO database (International Prospective Register of Ongoing Systematic Reviews), under the number CRD42021242322. The critical evaluation of the studies was carried out, by the two researchers, taking into account the Joanna Briggs Institute (JBI) Critical appraisal checklist for Analytical cross-sectional studies tool, for systematic reviews.

**Figure 1:** Flowchart of the selection process of the studies included in the systematic review on the evaluation of completeness of filling the pregnant woman's card in Brazil



To avoid the loss of any potentially eligible publication, the studies were initially analyzed through their titles and abstracts. All publications centred in the objective of this review were selected for full reading. Data extraction and final classification regarding inclusion in the review were performed independently, results were compared and disagreements resolved by consensus among two reviewers, thus, a third reviewer was not necessary. There was no delimitation of the publication period. As the study aims to observe the completeness of the pregnant woman's card, proposed by the MS, Brazilian studies were sought. Thus, studies that focused on assessing the card's completeness were included, and studies that assessed the adequacy of prenatal care, the association between registration agreement and maternal recall, or analysis of only one field on the card were excluded.

For completeness analysis, information on authors, year and city of publication, data collection period, type of unit (public/private), sample size, eligibility criteria, filling evaluation criteria, card model, fields of the card analyzed and main results were included. In addition to these, the main results were compiled (personal and obstetric history, clinical and laboratory examination performed during the current pregnancy).

The dimension of quality analyzed was completeness, which is understood as the absence of completion (Lima *et al.*, 2009). It is essential to guarantee the quality of health information, as this lack of completion makes it impossible to assess other dimensions of quality, such as consistency.

To standardize the results of the selected studies, all the variables presented in the present review were categorized based on the criteria of Romero & Cunha (2006). This criterion categorizes findings based on relative frequency (total absence of filling of each field contained in the pregnant woman's card by the total number of cards evaluated) and subsequent categorization of completeness (Excellent (incompleteness < 5%), Good (incompleteness of 5% to 10%), regular (incompleteness of 10% to 20%), bad (incompleteness of 20% to 50%), very bad (incompleteness > 50%).

## Results

The bibliographic search resulted in 43 studies (31 articles, six Ph.D. theses, two Master of Science dissertations, three *Open Educational Resources* and one the Medical Undergraduate Research Thesis). Of those, 25 were found in the

VHL and 13 in Scielo databases, and five studies from the reference lists of the read articles. None was found in the EMBASE and the Web of Science databases. Duplicate studies (12) were excluded, and seven studies were selected (four articles, two master’s dissertations and one the Medical Undergraduate Research Thesis).

The main characteristics of the seven studies were detailed by year of publication in descending order (Table 1). Regarding the study location, four were carried out in the Southeast, two in the Northeast and one in the South. Six studies were carried out in a public health unit and one in a private health unit. The number of cards for pregnant women evaluated in the studies ranged from 19 to 1,006.

**Table 1.** Summary of articles that evaluated the completeness of filling out the pregnant woman’s card in Brazil, 2001 to 2017.

| AUTHORS                        | Santos <i>et al.</i>                | Coelho <i>et al.</i>  | Santos Neto <i>et al.</i>  | Carvalho <i>et al.</i>                                | Carrilho   | Cristofaro   | Zago  |
|--------------------------------|-------------------------------------|---|--|---|--|--|---|
| <b>Study type</b>              | Cross-sectional                     | Cross-sectional   | Cross-sectional  | Cross-sectional                                       | Cross-sectional  | Cross-sectional  | Cross-sectional                                 |
| <b>Study Place</b>             | Terresina, Piauí                    | Santa Cruz, RN  | Great Vitória, ES  | São Paulo, SP   | Belo Horizonte, MG   | Rio de Janeiro, RJ   | Florianópolis, SC                               |
| <b>Data Collect</b>            | Oct. – Nov. 2014                    | July- Nov. 2011   | Apr. - Sept. 2010  | Feb. 2001   | Oct.2012 - Jan. 2013   | Jan. – May 2017  | Feb. 2008                                       |
| <b>Type of health facility</b> | Maternity public of reference state | Federal University Hospital   | Public Maternity or affiliated to the SUS  | Private Maternity                                     | Federal University Hospital  | Municipal Public Maternity   | Federal University Hospital                     |
| <b>Sample Size</b>             | 241                                 | 81  | 1006   | 19  | 185  | 805  | 115   |
| <b>Eligibility criteria</b>    | Pregnant women, older than 18 years | Puerperal women, older than 18 years, prenatal care performed in basic health units | Puerperal women, prenatal care carried out in public units located in Great Vitória    | Puerperal women from the second day of the puerperium | Puerperal women, low-risk prenatal care carried out in the metropolitan region of Belo Horizonte | Puerperal women prenatal care in the family health units of the municipality of Rio de Janeiro | Puerperal women, prenatal care in Florianópolis |
| <b>Exclusion Criteria</b>      | Not available                       | Risk and/or psychiatric disease pregnancy   | Pre-natal care, complete or partial in the private system or outside the Great Victory | Not available   | Preterm delivery   | Not in good clinical condition and giving birth before 37 weeks                                | Preterm delivery                                |

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| <b>Criterion for evaluation of completeness</b> | Relative frequency | Relative frequency and classification by Romero & Cunha criteria | Relative frequency and classification by Romero & Cunha criteria | Relative frequency | Relative frequency  | Relative frequency and classification by Romero & Cunha criteria | Relative frequency                     |
|---|--------------------|--|--|--------------------|---|--|--|
| <b>Evaluated Card Model</b>                     | Not available      | Not available  | Not available  | Not available      | Standardized by the Ministry of Health, a model of Belo Horizonte and the health insurance plan | Not available  | Card from the Municipality secretariat |

All studies analyzed completeness by relative frequency, and three interpreted the results using the Romero & Cunha (2006) score. Zago (2008), Carvalho *et al.* (2004) and Santos *et al.* (2015) analyzed the completeness of each field using two categories (“yes” or “no”) and presented the results in relative frequencies. Santos Neto *et al.* (2012) and Coelho *et al.* (2015) differed from the above-mentioned articles and classified the results according to the Romero & Cunha (2006) score. Carrilho (2014) and Cristofaro (2017) presented the results into three categories: “yes”, “no” and “partial” in relative frequencies. The study of Cristofaro (2017) grouped the categories “no” and “partial” and categorised the results using the Romero & Cunha (2006) score.

The studies also differed in terms of the selection of fields on the pregnant woman’s card, given that among the various fields on the card, each study selected them heterogeneously (Table 2). Most of the studies described the completion of fields related to last menstrual period date (LMP), estimated due date (EDD) and first round of routine exams.

The association of the type of health unit with the completeness of the pregnant woman’s card, was reported by Carvalho *et al.* (2004), Santos Neto *et al.* (2012) and Cristofaro (2017). Carvalho *et al.* (2004) found that 84% of the pregnant women had they prenatal care at a primary health facility, 5.0% in the Family Health Program (FHP) and 11% at the private network. Santos Neto *et al.* (2012)

reported that from the 1006 cards evaluated, only 46.6% of had this field filled out, especially in the FHP. Cristofaro (2017) had as inclusion criteria only women who had prenatal care in the FHP of Rio de Janeiro, and in this scenario, found 22.46% of 'systematic' filling of the field "Type of health unit" (Table 2).

**Table 2.** Comparison between studies on filling out fields of the pregnant women's card related to access, bond, identification, family, personal and obstetric history and laboratory examination performed during the current pregnancy: percentage of incompleteness and categorization by Romero & Cunha score

| Authors  | Santos<br><i>et al.</i> | Coelho<br><i>et al.</i> | Santos<br>Neto <i>et al.</i> | Carvalho<br><i>et al.</i> | Carrilho | Cristofaro | Zago |
|--|-------------------------|-------------------------|------------------------------|---------------------------|----------|------------|------|
| Percentage of incompleteness                                   |                         |                         |                              |                           |          |            |      |
| Access, bond, identification                                   |                         |                         |                              |                           |          |            |      |
| Type of health unit  | NA                      | NA                      | 46,7%                        | 0%                        | NA       | 22,46%     | NA   |
| Professional who made the first consultation                   | 34%                     | NA                      | NA                           | NA                        | NA       | NA         | NA   |
| Professional who made the sixth consultation                   | 63,50                   | NA                      | NA                           | NA                        | NA       | NA         | NA   |
| Name   | NA                      | NA                      | NA                           | 37%                       | NA       | 0,53%      | NA   |
| Age  | 6,60%                   | 43,20%                  | 23,90%                       | 16%                       | NA       | 33,42%     | NA   |
| Marital status   | 11,6%                   | NA                      | 45,60%                       | NA                        | NA       | 18,69%     | NA   |
| Identification (name, age and address and/or telephone number) | NA                      | NA                      | NA                           | NA                        | 20,50%   | NA         | NA   |
| Schooling  | 14,10%                  | NA                      | 45,30%                       | NA                        | NA       | 23,51%     | NA   |
| FAMILY, PERSONAL AND OBSTETRIC HISTORY                         |                         |                         |                              |                           |          |            |      |
| Family history of diabetes mellitus                            | 10,30%                  | NA                      | NA                           | NA                        | NA       | NA         | NA   |
| Personal history   | NA                      | NA                      | 76,90%                       | 21%                       | 39,5%    | 21,05%     | NA   |
| Personal history Hypertension                                  | 12,80%                  | NA                      | NA                           | NA                        | NA       | NA         | NA   |
| Personal history of diabetes mellitus                          | 12,50%                  | NA                      | NA                           | NA                        | NA       | NA         | NA   |
| Obstetric history  | NA                      | NA                      | NA                           | NA                        | 4,3%     | 13,91%     | 2,6% |
| Number of pregnancies  | 8,30%                   | NA                      | NA                           | NA                        | NA       | NA         | NA   |
| Number of abortions  | 34%                     | NA                      | 46%                          | NA                        | NA       | NA         | NA   |
| Number of deliveries   | 24,10%                  | NA                      | 27,20%                       | NA                        | NA       | NA         | NA   |
| Number of vaginal deliveries                                   | 43,20%                  | NA                      | 49,40%                       | NA                        | NA       | NA         | NA   |
| Number of caesarean deliveries                                 | 60,60%                  | NA                      | 72,90%                       | NA                        | NA       | NA         | NA   |
| Number of children born alive                                  | 61,80%                  | NA                      | 53,20%                       | NA                        | NA       | NA         | NA   |
| Number of stillbirths  | 79,30%                  | NA                      | 90,00%                       | NA                        | NA       | NA         | NA   |
| Number of children living                                      | NA                      | NA                      | 60,20%                       | NA                        | NA       | NA         | NA   |
| Number of neonatal deaths (first week)                         | NA                      | NA                      | 94,80%                       | NA                        | NA       | NA         | NA   |
| New-born weight < 2,500g                                       | 67,2%                   | NA                      | 78,60%                       | NA                        | NA       | NA         | NA   |
| Date of last period  | 10%                     | 0-10%                   | 24%                          | NA                        | NA       | 10,64%     | 2,6% |

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| Authors   | Santos<br><i>et al.</i> | Coelho<br><i>et al.</i> | Santos<br>Neto <i>et al.</i> | Carvalho<br><i>et al.</i> | Carrilho | Cristofaro | Zago  |
|---|-------------------------|-------------------------|------------------------------|---------------------------|----------|------------|-------|
| Expected Due Date   | 14,25%                  | 0-10%                   | 28,6%                        | NA                        | NA       | 7,75%      | 7,7%  |
| Smoking   | 67,2%                   | 40-50%                  | 24%                          | NA                        | NA       | NA         | NA    |
| Weight  | NA                      | 1,20%                   | NA                           | 69%                       | 25,9%    | 3,61%      | NA    |
| Gestational age/weight curve                                  | NA                      | 80,20%                  | NA                           | NA                        | NA       | 97,75%     | NA    |
| Pre-pregnancy weight  | NA                      | 10-20%                  | 49,90%                       | NA                        | NA       | NA         | 33,3% |
| Height  | NA                      | 20-30%                  | 54,10%                       | NA                        | NA       | NA         | 41,9% |
| LABORATORY EXAMINATION PERFORMED DURING THE CURRENT PREGNANCY |                         |                         |                              |                           |          |            |       |
| First Routine: Glycaemia                                      | 10,80%                  | NA                      | 27,40%                       | 16%                       | 24,3%    | 46,7%      | 29,1% |
| First Routine: HIV serology                                   | 12%                     | NA                      | 34%                          | 5%                        | 32,4%    | 28,4%      | 39,3% |
| First Routine: Serology for syphilis                          | 14,50%                  | 70-80%                  | 28,20%                       | NA                        | 23,2%    | 27,7%      | 28,1% |
| First Routine: Urine (ASE)                                    | 16,60%                  | NA                      | 32,90%                       | NA                        | 22,2%    | 44,3%      | 30,8% |
| Second routine: serology for syphilis                         | NA                      | NA                      | 65,50                        | NA                        | NA       | NA         | 49,6% |
| Second routine: Urine (ASE)                                   | NA                      | NA                      | 65,10%                       | NA                        | NA       | NA         | 41,9% |
| Second routine: glycaemia                                     | NA                      | NA                      | 63,90%                       | NA                        | NA       | NA         | 55,6% |
| Second Routine: HIV serology                                  | NA                      | NA                      | 74,8%                        | NA                        | NA       | NA         | 76,1% |
| Readability   | NA                      | NA                      | NA                           | 37%                       | 4,9%     | NA         | NA    |

ASE- Abnormal Sediment Elements NA- not applicable

It was observed that the 'name' field was evaluated differently by the selected studies, with divergence in the data presentation methodology. The 'name' field was evaluated by only two studies, with very discrepant results. Carvalho *et al.* (2004) identified a 'bad' score (37% not filled out), while Cristofaro (2017) identified an 'excellent' score (only 0.53% not filled out). Carrilho (2014) presented 20.5% blank fields, however the way the results were presented made the comparison with previous studies unfeasible, because 'name' was grouped under 'maternal identification', where 'name, address, and/or telephone/age' were evaluated.

Socioeconomic data such as marital status and schooling were described by less than half of the studies. Santos *et al.* (2017) and Cristofaro (2017) observed a "regular" score (11.6% and 18.6% respectively) and Santos Neto *et al.* (2012) observed a "bad" score (45.6% not filled) in the marital status field). Regarding 'schooling', Cristofaro (2017) found 'regular' filling (23.51%), Santos *et al.* (2017), 'bad' (34% not filled out) and Santos Neto *et al.* (2012), 'very bad' (43.3% not filled out).

Furthermore, the field 'obstetric history' was analyzed by five studies. Above all, only one study described all the fields of the card that fully contemplate the obstetric history of women, observing score variation between the fields.

Regarding the daily consultation record data, the 'weight' field was evaluated by four studies and found inconsistent results: Coelho *et al.* (2015) - 1,2%, Carvalho *et al.* (2004) - 69%, Carrilho (2014) - 25,9% e Cristofaro (2017) - 3,61%. The 'weight/gestational age curve' was evaluated only by Cristofaro (2017) e Coelho *et al.* (2015), with 'very bad' score in both studies (80,20% e 97,75% not filled out, respectively).

The field 'smoking' was evaluated by only three studies, that used different methods to present their results: Santos Neto *et al.* (2012) - 24% not filled 'bad score'; Coelho *et al.* (2015) - 40-50% not filled out 'bad score'; Santos *et al.* (2017) - 67,2% not filled out 'very bad score'.

Only the study by Santos *et al.* (2017) described the field regarding 'breastfeeding' guidance with a very bad score (77,2% not filled out).

## Discussion

Assessing the card's completeness precedes the measurement of the indicators of consistency and accessibility. Therefore, the incompleteness of filling out a field of the pregnant woman's card makes it unfeasible to be evaluated and weakens the quality of prenatal care (Cristofaro, 2017).

This present systematic review was based exclusively on Brazilian studies that evaluated the completeness of the pregnant woman's card. We observed important methodological differences that hindered the comparison between such studies mainly regarding the type of card model of the pregnant woman, selected fields, and method used to present the results and to interpret completeness (Romero & Cunha (2006) score or relative frequency categorized in different ways). Therefore, the review observed that these methodological differences resulted in inconsistent information, which made it impossible to assess the completeness of a given field and, in particular, made it impossible to comparison of findings between studies.

The document analyzed is the pregnant woman's card, which must contain the health professional's records regarding the health status of the pregnant woman, the growth of the newborn and the results of the exams. In addition to favoring communication between health services, ensuring compliance with the principle of the Unified Health System (SUS) of the Right to Health Information and compliance with the Longitudinal Care Coordination guidelines provided for by the PNAB (Brasil, 2014). The MS reiterates the value of using the card and proposes the

use of a model that includes the minimum list of prenatal care procedures (Correia *et al.*, 2014).

Regarding the selected fields to assess the completeness of the pregnant woman's card, since only four studies showed the reference used for their choice. Carvalho *et al.* (2004) evaluated 19 women's cards assisted in the private network of the city of São Paulo and selected the fields according to the MS. However, the authors did not report which version of the MS publication was used. Carrilho (2014) evaluated 185 puerperal women cards from two public units in Belo Horizonte and described that the card fields were selected based on the prenatal care manual of the MS in force at the time of the research.

Santos Neto *et al.* (2012) evaluated 1006 pregnant women's cards assisted in public maternity hospitals or commissioned by the SUS, located in the Metropolitan Region of Greater Vitória and the study by Cristofaro (2017) evaluated 805 pregnant cards in public maternity hospitals in the city of Rio de Janeiro. Both studies evaluated completeness of filling based on the minimum PHPN (BRASIL, 2002). Three other studies (Zago, 2008; Coelho *et al.*, 2015; Santos *et al.*, 2017) did not mention the reference used for the selection of the fields analyzed in the public network. It is recommended that other studies that focus on evaluating the completeness the pregnant woman's card, delimit the variables from technical conducts recommended by the MS, such as the minimum package proposed for prenatal care throughout Brazil by PHPN (Brasil, 2002).

The disparity was also evident in the way the selected studies presented their results. All studies presented results based on relative frequency, with three categorizing the frequencies found using the Romero & Cunha (2006) score.

It is noteworthy that a standardised format that allows categorisation is extremely important for comparing studies as it enables the comparison between studies and interpretation of results (Lima *et al.*, 2009). However, in relation to the private health network, it should be noted that it was only in 2014 that technical note nº 703 was issued by the National Supplementary Health Agency to expand the right to information and the mandatory use of a pregnant woman's card (Brasil, 2014). And yet, this document did not include the importance of using the MS standardizes model. This issue is of paramount importance, because the content of this card model is aligned with the actions recommended by the Antenatal and Delivery Humanization Program (PHPN) (Brasil, 2002) and the Technical Manual

(Correia *et al.*, 2014) allowing the standardization of the card fields and enables the analyses and comparison of studies focused on the evaluation of this tool. In this scenario, we observed that several card models were used only two (Zago, 2008; Carrilho, 2014) reported which model was evaluated.

The use of the pregnant woman's card is lower in the private sector compared to the public network (Domingues *et al.*, 2015). Although only one selected study was conducted in a private health unit, the authors observed that among the 44 eligible women, only 19 (43%) of the women presented some model of the pregnant woman's card, without stating which type of model (Carvalho *et al.*, 2004).

The limited presentation of the pregnant woman's card in the private sector was also reported in a national study, where the public service concentrated the cards in the model proposed by the MS (92.8%) (Melo, 2020).

Despite the relevance of evaluating the type of service and the valuation of filling in the card, only three studies described the completeness of the field "type of health unit." Again, we reiterate the importance of the use of pregnant woman's card by health units to enable the guidelines of the PNAB as it establishes the relationship between women and the prenatal care unit a condition for its effectiveness. It enables co-responsibility, continuity, and longitudinal quality of the prenatal care (Brasil, 2017). For this reason, it is of great importance to evaluate the prenatal location field to allow the evaluation of the completion of the prenatal card according to the type of unit.

The 'signature' field was explored only by Santos *et al.* (2017) in the first and sixth consultations. The filling of the field was "bad" in the first consultation and declined to very bad in the sixth consultation. Filling out the signature field and information about the professional category (nurse and/or doctor) is important to enable the observation of the quality of completion of the prenatal card according to the professional category. It also allows the verification of compliance with the orientation of the MS to regularly switch consultations between the nurse and the doctor (Brasil, 2012).

The Ministry of Health specified all the components of the clinical history that need to be addressed in the first prenatal consultation in the field of identification (name, national health card number, age, colour, place of birth, current address, reference unit) (Brasil, 2012). Calling women by their name is one of the humanising professional attitudes among the initiatives preconised by the MS as good practise

during prenatal consultations (Brasil, 2012). In addition, correct identification is essential to ensure patient safety. However, data on identification among selected studies were inconsistent.

Among the selected studies, five evaluated the completeness of the age field. The study conducted by Santos *et al.* (2017) found an 'excellent' score (6.6% not filled out), Carvalho *et al.* (2004), 'regular' score (16% not filled out) and Santos Neto *et al.*, (2012), Coelho *et al.* (2015) and Cristofaro (2017) had a 'poor' fill out score (23.9%, 43.2% and 33.42%, respectively). These results revealed the devaluation of filling out this field, even though it is considered extremely important due to its association with negative perinatal results and reduced prenatal access (Brasil, 2012). Silva *et al.* (2019) and Silva *et al.* (2020) state that the woman's age has a fundamental epidemiological role in the interpretation of the data collected from the pregnant woman's card, as they observed that pregnancy in groups found at the extremes of reproductive life (adolescents under the age of 15 and women aged 35 and over) was more associated with less efficient prenatal care, and also with negative obstetric and perinatal outcomes, such as low birth weight, prematurity and inhibited intrauterine growth, among others.

The socioeconomic data 'marital status' and 'education' must also be included in the script of the first consultation (Brasil, 2012). Even so, 'marital status' was described by only three studies with unsatisfactory completion. Marital status is important to characterise the social support network in the gestational and puerperal period, as well as it is regarded as one of the risk factors during pregnancy and mental suffering in the puerperium (Brasil, 2012).

The 'Schooling' was described by two studies, with 'poor' completion. This field deserves more attention in its completeness, since low schooling is associated with inadequate prenatal care and negative perinatal outcomes, such as LBW (Araújo *et al.*, 2017).

Personal history is also extremely relevant, since diseases such as hypertension and diabetes mellitus may indicate the need for referral to a high-risk prenatal care and are considered frequent causes of maternal and perinatal morbidity and mortality in Brazil (Brasil, 2017). However, the fields 'personal history of diabetes mellitus' and 'personal history of arterial hypertension' were evaluated separately only by Santos *et al.* (2017) who observed a 'regular' score for both questions.

The personal antecedent fields, which includes the registration separately of 'personal history of diabetes mellitus' and hypertension', was evaluated only by Santos *et al.* (2017) that observed a 'regular' score of both questions.

Regarding obstetric history, three studies showed results grouping these variables, Zago (2008) and Carrilho (2014) score 'excellent' and Cristofaro (2017) score 'regular'. Again, the presentation of the result made it difficult to identify the completeness of each field of this block and made it impossible to compare the findings. The study by Santos *et al.* (2017) was the only one who described obstetric antecedents using the information of the various fields that show the relationship between pregnancy and parity separately. The authors observed a "good" score (8.3% not filled out) in the field "number of pregnancies", a 'bad' score in the field 'number of deliveries' and 'number of abortions' (24.1% and 34% not filled out, respectively).

The difference in completeness between the fields included in the 'obstetric history' group showed the lack of continuity of the filling, as well as the need to value these data to improve the quality of care and planning of actions. It is essential to fill out all fields concerning obstetric history to understand the relationship between pregnancy versus parity. These are also required to identify and classify risk factors of nulliparity, multiparity, habitual abortion or intrauterine or perinatal death in previous pregnancies, particularly those of unknown causes (Brasil, 2012).

Regarding neonatal death, it was observed that only the study by Santos Neto *et al.* (2012) analyzed this field in the categories of early or late neonatal death, with a 'very poor' result (not filled out 94.8% and 94.9%, respectively).

The fact that only one study evaluated this information demonstrates a great lack of data so relevant for the classification of obstetric risks (Brasil, 2012). Observational study that aimed to assess the impact of prenatal, delivery and newborn care programs on neonatal mortality, carried out by Lima *et al.* (2020), concluded that the strengthening of this network of programs can contribute to reducing this outcome.

The field 'newborn weighing less than 2,500g' was observed by Santos *et al.* (2017) and Santos Neto *et al.* (2012) that concurred with the 'very bad' evaluation (67.2% and 78.6% of not filled out, respectively). The field 'newborn with higher weight' was quite different between the two studies, with the study by Santos *et al.* (2017) identified an 'excellent' score with 0.8% of gaps, while Santos Neto *et al.*

(2012) verified 77% ('very bad' score). This result could be partially explained by the study site, given that Santos *et al.* (2017) was conducted in Piauí, one of the poorest states in Brazil, and Santos Neto *et al.* (2012) in Vitória. In his study, Mello (2020) concluded that the completeness of filling in all regions of the country was bad or very bad. However, the South and Southeast regions performed better. As stated before, these fields portray negative neonatal outcomes in previous pregnancies and this information domain allows the classification of risk and backbones the risk assessment in the current pregnancy (Brasil, 2012).

The field 'smoking', which portrays cigarette use during pregnancy, has great relevance for prenatal care due to the deleterious effects caused by nicotine both for the mother and the newborn indicated in the Low-Risk Prenatal Care Manual, namely: foetus' increased heartbeat, lower weight, shorter stature, important neurological alterations, and risk of "miscarriage" (Brasil, 2012). Despite the relevance of filling out this information, smoking was evaluated by only three studies (Santos Neto *et al.*, 2012; Coelho *et al.*, 2015; Santos *et al.*, 2017).

The MS recommends that the instructions on advantages and management of breastfeeding should start in the prenatal period, ensuring guidance in this period (BRASIL, 2012). This field was examined only by Santos *et al.* (2017). Through the pregnancy until she can concretely breastfeed her child, as well as during prenatal consultations one should start preparing the woman for breastfeeding, whether in consultations or group educational activities that provide the exchange of experiences (Brasil, 2012).

The completeness of the field "date of the last menstruation" (LMP) estimated due date (EDD) (Santos Neto *et al.*, 2012; Zago, 2008; Coelho *et al.*, 2015; Cristofaro, 2017; Santos *et al.*, 2017) showed scores ranging from 'excellent' to 'bad'. Despite being a serial and essential information for prenatal care, the result varied even in the same study, given that Zago (2008) obtained an 'excellent' score in the LMP field (2.6% empty) and a score 'good' in the EDD field (7.7% of not filled out). The correct filling of fields linked to the definition of gestational age at the beginning of pregnancy is fundamental for monitoring fetal growth and for reducing interruptions of pregnancy by post-dating (either by inducing delivery or caesarean sections) resulting from errors in the estimation of gestational age (Rio de Janeiro, 2020).

Despite the need to monitor weight during pregnancy as recommended by the MS (Brasil, 2012), the card fields of weight, pre-pregnancy weight, height, and the

registration of the data in the 'nutritional follow-up chart' were only observed by Coelho *et al.* (2015). Yet it resulted in different classification of each field (weight was 'excellent', 'pre-gestational weight' 'regular', height 'bad' and the 'pregnant woman's nutritional monitoring chart 'very bad'). These results revealed discontinuity of filling and possible under rating of anthropometric parameters to assess the adequacy of weight gain during pregnancy. This evaluation aims to warn against and prevent unfavourable maternal and neonatal outcomes, such as gestational diabetes mellitus, hypertension, macrosomia, perinatal death, LBW, among others (Araújo *et al.*, 2017).

The fields of the card that portraying routine testing during pregnancy were also evaluated in different ways by the authors. The studies selected few tests for this analysis, with no information on the selection criterion. Considering the first routine tests within the minimum package proposed by the Prenatal and Birth Humanization Program (PHPN) (glycemia, serology for syphilis, HIV serology, urine (Abnormal Sediment Elements)) and in the second (glycaemia, serology for syphilis, serology for HIV), only Zago (2008) and Santos Neto *et al.* (2012) evaluated the completeness of these fields. The authors found "bad" filling in all the tests included in the first routine and 'very bad' in the second one.

In addition to be filled out by the professional, this result is dependent on the quality of the reference and counter-reference flows. Nevertheless, the relevance of these fields in prenatal care remains high as low completeness suggests either sub-registration or nonattendance to an examination, hindering the continuity of care. Considering that the pregnant woman's card is a fundamental source of data for epidemiological survey, it is essential to standardize the method that allows comparison of the result found, enabling the application of the SUS principle of use of epidemiology to establish priorities (Brasil, 2017).

It is recommended that further studies proposing to evaluate the completeness of the pregnant woman's card in Brazil be carried out based on official documents that guide the actions of prenatal care, such as the minimum package of services to be offered to pregnant women throughout the national territory instructed by the PHPN (Brasil, 2014).

Although there were methodological differences between the selected studies, the seven studies concluded that the completeness of the pregnant woman's card was unsatisfactory. This result reflects that actions necessary for prenatal care are no

longer performed, which can cause damage to the woman and the newborn, or even that actions performed are no longer recorded.

The record in the pregnant woman's card is essential for the construction of indicators for the evaluation of prenatal care. Thus, it is essential that health managers and professionals are qualified in order to use this instrument for the evaluation and planning of actions and prenatal care policy.

In view of this situation, it is recommended to value the use and filling out the pregnant woman's card in the model proposed by the MS. It is worth considering that the pregnant woman's card in Brazil is presented in several models with different layouts and often the space destined to fill in may not be enough for the record, which may cause illegible records, making it difficult to interpret the data.

Therefore, the completeness and importance of filling out the pregnant woman's card in Brazil needs reinforcement. It enables the provision of data to support the formulation of public policies, the certification of reliability and continuity of care provided for in the SUS and PNAB. It also contributes to protect pregnant women against repetition of routine procedures or neglect, circumstances that may weaken prenatal care throughout the pregnancy- puerperal cycle.<sup>1</sup>

## References

- ARAÚJO, R. G. P. S. *et al.* Validade de peso, estatura e IMC referidos por puérperas do estudo Nascer no Brasil. *Rev. Saúde Pública*, v. 51, n. 115, 2017. Available at: <https://doi.org/10.11606/S1518-8787.2017051006775>. Access on: 23 Apr. 2021.
- AROMATARIS, E.; MUNN, Z. (Ed.). *JBI Manual for Evidence Synthesis*. JBI, 2020.
- BRASIL. Agência Nacional de Saúde Suplementar. *Nota técnica 703/2014*. Direito de informação da gestante e obrigatoriedade do cartão da gestante, carta de informação e partograma na saúde suplementar, 2014. Available at: [http://www.ans.gov.br/images/stories/Particitacao\\_da\\_sociedade/consultas\\_publicas/cp5556/nota703.pdf](http://www.ans.gov.br/images/stories/Particitacao_da_sociedade/consultas_publicas/cp5556/nota703.pdf). Access on: 09 Mar. 2021.
- BRASIL. Ministério da Saúde. *Assistência pré-natal*. Série A. Normas e manuais técnicos, n. 36. Brasília, DF: Ministério da Saúde, 1988.
- BRASIL. Ministério da Saúde. *Atenção ao pré-natal de baixo risco*. Série A. Normas e Manuais Técnicos, n. 32. Brasília, DF: Ministério da Saúde, 2012.
- BRASIL. Ministério da Saúde. Portaria nº 2.436, de 21 de setembro de 2017. *Diário Oficial [da] República Federativa do Brasil*, Brasília, DF, v. 183, p. 68, 22 nov. 2017. Seção 1, pt. 1.

- BRASIL. Ministério da Saúde. Secretaria Executiva. *Programa Humanização do Parto: humanização no pré-natal e nascimento*. Reimpressão. Brasília, DF: Ministério da Saúde, 2002.
- CARRILHO, J. M. *Avaliação dos dados do cartão de pré-natal e registro da rotina prevista na assistência pré-natal de baixo risco em uma coorte de gestantes em Belo Horizonte*. 2014. Dissertação (Mestrado) – Universidade Federal de Minas Gerais, Belo Horizonte. Available at: <https://repositorio.ufmg.br/handle/1843/BUOS-9PFK8X>. Access on: 19 Sept. 2022.
- CARVALHO, G. M. *et al.* Análise dos registros nos cartões de pré-natal como fonte de informação para a continuidade da assistência à mulher no período gravídico-puerperal. *Rev. Min. Enf.*, v. 8, n. 4: p. 449-454, 2004. Available at: <http://www.reme.org.br/artigo/detalhes/704#:~:text=Apesar%20do%20pequeno%20tamanho%20amostral,a%20assist%C3%AAncia%20no%20per%C3%ADodo%20grav%C3%ADdicopuerperal>. Access on: 19 Sept. 2022.
- COELHO, T. T. G. *et al.* Avaliação do grau de completude do cartão da gestante de puérperas atendidas em um hospital universitário. *Rev. bras. ciênc. saúde.*, v. 19, n. 2: p. 117-122, 2015. Available at: <https://periodicos.ufpb.br/ojs2/index.php/rbcs/article/view/22098>. Access on: 19 Sept. 2022.
- CORREIA, L. O. S.; PADILHA, B. M.; VASCONCELOS, S. M. L. Métodos para avaliar a completude dos dados dos sistemas de informação em saúde do Brasil: uma revisão sistemática. *Cien Saúde Coletiva*, v. 19, n. 11, p. 4467-4478, 2014. Available at: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=s141381232014001104467&lng=en](http://www.scielo.br/scielo.php?script=sci_arttext&pid=s141381232014001104467&lng=en). Access on: 19 Sept. 2022.
- CRISTOFARO, M. A. G. *Avaliação da assistência pré-natal à luz do cartão da gestante*. 2017. Dissertação (Mestrado em Saúde da Família) – Universidade Estácio de Sá, Rio de Janeiro, 2017.
- DOMINGUES, R. M. S. *et al.* Adequação da assistência pré-natal segundo as características maternas no Brasil. *Rev. Panam. Salud. Pública*, v. 37, n. 3, p. 140-147, 2015. Available at: <http://portaldeboaspraticas.iff.fiocruz.br/wp-content/uploads/2018/07/v37n3a03.pdf>. Access on: 09 Mar. 2020.
- FELICIANO, M. *et al.* Avaliação da cobertura e completude de variáveis de Sistemas de Informação sobre orçamentos públicos em saúde. *Saúde Debate*, v. 43, n. 121, p. 341-353, 2019. Available at: <https://doi.org/10.1590/0103-1104201912104>. Access on: 19 Sept. 2022.
- LIMA, C. R. A. *et al.* Revisão das dimensões de qualidade dos dados e métodos aplicados na avaliação dos sistemas de informação em saúde. *Cad Saúde Pública*, v. 25, n. 10, p. 2095-2109, 2009. Available at: [http://www.scielo.br/scielo.php?pid=S0102311X2009001000002&script=sci\\_abstract&tlng=pt](http://www.scielo.br/scielo.php?pid=S0102311X2009001000002&script=sci_abstract&tlng=pt). Access on: 19 Sept. 2022.

LIMA, S. S. *et al.* Avaliação do impacto de programas de assistência pré-natal, parto e ao recém-nascido nas mortes neonatais evitáveis em Pernambuco, Brasil: estudo de adequação. *Cad de Saúde Pública*, v. 36, n. 2, e00039719, 2020. Available at: <https://doi.org/10.1590/0102-311X00039719>. Access on: 19 Sept. 2022.

MELLO, L. R. *Avaliação da completude de preenchimento do cartão da gestante em âmbito nacional*. Dissertação (Mestrado em Saúde Coletiva) – Instituto Nacional de Saúde da Mulher, da Criança e do Adolescente Fernandes Figueira, FIOCRUZ, Rio de Janeiro, 2020. Available at: <https://www.arca.fiocruz.br/handle/icict/47331>. Access on: 19 Sept. 2022.

RIO DE JANEIRO. Secretaria Estadual de Saúde. Protocolo estadual de atenção ao pré-natal de risco habitual [livro eletrônico]. Documentos Norteadores para a Atenção Primária à Saúde, 1. ed. Rio de Janeiro: Secretaria de Estado de Saúde, 2020.

ROMERO, D. E.; CUNHA, C. B. Avaliação da qualidade das variáveis socioeconômicas e demográficas dos óbitos de crianças menores de um ano registrados no Sistema de Informações sobre Mortalidade do Brasil (1996/2001). *Cad Saúde Pública*, v. 22, n. 3, p. 673-681, 2006. Available at: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S0102-311X2006000300022](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-311X2006000300022). Access on: 19 Sept. 2022.

SANTOS NETO, E. T. *et al.* O que os cartões de pré-natal das gestantes revelam sobre a assistência nos serviços do SUS da Região Metropolitana da Grande Vitória, Espírito Santo, Brasil? *Cad Saude Publica*, v. 28, n. 9, p. 1650-62, 2012. Available at: <https://www.scielo.br/j/csp/a/D4D4Xtqyzy5S3tXF4ZHyBf/?format=pdf&lang=pt>. Access on: 19 Sept. 2022.

SANTOS, T. M. M. G.; ABREU, A. P. S. B.; CAMPOS, T. G. Avaliação dos registros no cartão de pré-natal da gestante. *Rev. Enferm UFPE online*, v. 11, n. 7, p. 2939-2945, 2017. Available at: 10.5205/reuol.11007-98133-3-SM.1107sup201715. Access on: 19 Sept. 2022.

SILVA, E. P. *et al.* Avaliação do pré-natal na atenção primária no Nordeste do Brasil: fatores associados à sua adequação. *Rev. Saúde Pública*, v. 53, n. 43, 2019. Available at: [http://www.scielo.br/scielo.php?script=sci\\_arttext&pid=S003489102019000100238&lng=en&mp;nrm=iso](http://www.scielo.br/scielo.php?script=sci_arttext&pid=S003489102019000100238&lng=en&mp;nrm=iso). Access on: 22 aApr. 2021.

SILVA, M. A. *et al.* Cartão da gestante e depoimentos das puérperas: correspondência das informações. *Rev Saúde & Comunidade*; v. 1, n. 1, p. 42-50, 2018. Available at: <https://periodicos.unespar.edu.br/index.php/saudecomunidade/article/view/6312>. Access on: 19 Sept. 2022.

SILVA, P. C. *et al.* Influência da idade materna nas condições perinatais em nascidos vivos de São Luís, Maranhão. *Rev Fun Care Online*, v. 12, 2020. Available at: <http://dx.doi.org/10.9789/2175-5361.rpcfo.v12.8618>. Access on: 19 Sept. 2022.

SOUZA, R. A. *et al.* Avaliação de qualidade da assistência pré-natal prestada pelo enfermeiro: pesquisa exploratória. *Braz J Nurs*; v. 19, n. 3, 2020. Available at: <https://doi.org/10.17665/1676-4285.20206377>. Access on: 19 Sept. 2022.

ZAGO, F. E. *Análise do Cartão da Gestante de pacientes no puerpério imediato atendidas na Maternidade Carmela Dutra*. 2008. (Trabalho de Conclusão de Curso) – Graduação em Medicina; Universidade Federal de Santa Catarina; Santa Catarina, 2008. Available at: <https://repositorio.ufsc.br/handle/123456789/119420>. Access on: 19 Sept. 2022.

## Note

<sup>1</sup> L. de R. de Mello, D. Marano and M. E. L. Moreira: article design, systematic literature review, data analysis and interpretation, article writing, final review of the manuscript and approval of the final version to be published; responsible for all aspects of the work and ensuring the accuracy and integrity of any part of the article

# Resumo

## *Inconsistências na completitude do cartão da gestante: uma revisão sistemática*

**Introdução:** O cartão da gestante é um dos instrumentos utilizados para avaliar o pré-natal. É importante fonte de dados para levantamento epidemiológico, sendo fundamental para garantir fluxo de informações e contribuir para a continuidade do cuidado. **Objetivo:** Analisar estudos que se detiveram na avaliação da completitude do cartão da gestante. **Métodos:** Realizou-se revisão sistemática nas bases de dados Scielo, Biblioteca Virtual em Saúde, EMBASE e Web of Science e utilizou-se a checklist com base na diretriz Preferred Reporting Items for Systematic Reviews (PRISMA). **Resultados:** Quarenta e três estudos foram identificados, resultando em sete analisados. Os estudos apresentaram diferença metodológica, sobretudo quanto aos campos do cartão da gestante selecionados para análise, método de apresentação e interpretação de resultados, variando da frequência relativa com diferentes categorias à classificação pelo score de Romero & Cunha. Essa divergência limitou a comparação dos achados. Ainda assim, todos os estudos observaram completitude ruim em campos importantes do cartão da gestante. **Conclusão:** É extremamente importante que profissionais e gestores valorizem o preenchimento integral do cartão da gestante, favorecendo a avaliação da assistência e a tomada de decisão durante o pré-natal.

► **Palavras-chave:** Cuidado pré-natal. Qualidade dos dados. Avaliação em saúde. Qualidade da assistência à saúde. Revisão sistemática.

