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Prenatal care according to professional records from the pregnant woman's book

Assistência pré-natal segundo registros profissionais presentes na caderneta da gestante

Asistencia pre-natal segundo registro profesional presentes en la caderneta de la gestante

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Abstract: Objective: To describe prenatal care according to the professional records from the pregnant woman's book. **Method:** A quantitative study carried out with postpartum women of a philanthropic maternity located in a municipality in the inland of the State of Ceará. The sociodemographic data were collected in an interview and the prenatal information was obtained from the pregnant woman's book. Data was analyzed by descriptive statistics. **Results:** 52 women between 15 and 40 years old participated in the study. There were flaws in the recording of information, the most serious being related to laboratory tests and nutritional evaluation of the pregnant woman. **Final Considerations:** A change in professional conduct is necessary, through qualification about prenatal care and frequent monitoring by the municipal health managers, since recording of information obtained during health care visits makes it possible to carry out appropriate follow-up during childbirth and the postpartum period.
Keywords: Prenatal Care; Nursing Assessment; Maternal and Child Health; Nursing

Resumo: Objetivo: descrever a assistência pré-natal segundo registros profissionais presentes na caderneta da gestante. **Método:** estudo quantitativo, realizado com puérperas de uma maternidade filantrópica, localizada em um município do interior do Estado do Ceará. Os dados sociodemográficos foram coletados em entrevista e as informações do pré-natal por meio da caderneta da gestante. Os dados foram analisados com base na estatística

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descritiva. **Resultados:** participaram 52 puérperas que possuíam de 15 a 40 anos. Observaram-se falhas no registro de informações do pré-natal, sendo as mais graves no que diz respeito aos exames laboratoriais e à avaliação nutricional da gestante. **Considerações Finais:** faz-se necessário uma mudança na conduta dos profissionais, por meio de qualificação acerca da assistência pré-natal e acompanhamento frequente por parte dos gestores de saúde do município, pois por meio do registro correto das informações obtidas durante a consulta é possível realizar acompanhamento adequado durante o parto e puerpério.
Descritores: Cuidado pré-natal; Avaliação em enfermagem; Saúde materno-infantil; Enfermagem

Resumen: **Objetivo:** describir la asistencia prenatal según registros profesionales presentes en el cuadernillo de la embarazada. **Método:** estudio cuantitativo realizado con puérperas de una maternidad filantrópica ubicada en un municipio del interior del estado de Ceará. Los datos sociodemográficos se recolectaron por medio de entrevistas y las informaciones del prenatal por medio del cuadernillo de la embarazada. Los datos se analizaron por medio de estadística descriptiva. Resultados: participaron 52 puérperas de entre 15 y 40 años de edad. Se observaron fallas en el registro de la información, las más graves relacionadas con los exámenes de laboratorio y con la evaluación nutricional de la mujer embarazada. **Consideraciones finales:** se hace necesario un cambio en la conducta profesional, por medio de cualificación acerca de la asistencia prenatal y acompañamiento frecuente por parte de los administradores municipales de salud puesto que,. por medio del registro de las informaciones obtenidas durante la consulta, es posible realizar un seguimiento adecuado durante el parto y el puerperio.
Descriptores: Atención Prenatal; Evaluación en Enfermería; Salud-Materno-Infantil; Enfermería

Introduction

In Brazil, prenatal care is provided to ensure a healthy pregnancy and risk reduction for both mothers and children. Such care should be based on humanization, thus consisting of a service that provides women with the help required to improve their feeling of safety during this stage of life, from essential tests to information aimed at promoting mother's and baby's health.

During pregnancy, all women have the right to undergo several tests required for this period, to immunization, and to good quality gynecologic and obstetrical clinical examination, as recommended by the Brazilian Ministry of Health. These practices make it possible to prevent or identify complications and to promote early treatment.[1] For instance, there has been a decrease in low birth weight rates over recent decades due to the provision of high-quality prenatal care. In addition to other benefits, prenatal care has allowed for detection and treatment of morbidities, sharing of information, and promotion of practices such as breastfeeding.[2-3]

Therefore, prenatal care favors the provision of comprehensive and individualized care, meeting maternal and infant health needs.[4] Additionally, it consists of a low-cost practice that

promotes women's physical and mental health, especially of those belonging to vulnerable groups, which *per se* already face disparities in the pursuit of health.[5]

In Brazil, prenatal visits are provided for free in Primary Health Care (PHC) services and may be conducted both by physicians and nurses.[1] These professionals often work on a rotation basis in order to provide interdisciplinary care.

With the aim of helping in the communication among the professionals involved in prenatal care and in the collection of information about previous visits, women have the right to the pregnant woman's book, a document designed to record maternal and infant information during pregnancy, enabling to follow-up fetal development and results of the requested tests. Proper recording of information allows for continuity of maternal and infant care.[6] Therefore, it is relevant to assess how professionals have recorded data on pregnant women's books, as well as the quality of records, in order to identify possible gaps, such as lack of crucial notes for continuity of care by the multidisciplinary team, covering from care provided in PHC services to childbirth at the referred maternity hospital.

In view of this issue, the following research question was asked: Do records taken during prenatal care provide complete information to ensure a high quality service? Therefore, the present study aimed to describe prenatal care according to professional records from the pregnant woman's book.

Method

A descriptive and quantitative study was conducted from December 2014 to April 2015 in a philanthropic maternity hospital in Ceará, a state of Northeastern Brazil, which receives pregnant women living in the municipality where the hospital is located and in neighboring cities. The study population comprised postpartum women, and the sample consisted of those admitted to the joint accommodation sector of the institution at the time of the research. Those who did not have a pregnant woman's book were excluded.

Data was collected using a questionnaire covering both women's sociodemographic characteristics and data from the pregnant woman's book. Subsequently, the data from the pregnant woman's book were assessed and recorded. Thus, the collection was conducted in two phases: firstly, data were obtained from a primary source consisting of interviews with postpartum women, in which it was possible to evaluate aspects inherent to the sociodemographic profile of the study participants, such as income, years of study, and occupation, among others; then, the pregnant woman's book was assessed as a secondary source, in order to verify the recording of prenatal care information from the participants. The collection was conducted from Monday to Friday in the morning and afternoon shifts.

The criteria of the Prenatal and Birth Humanization Program addressed in this study were the following: attendance to at least six medical visits during pregnancy; execution of all basic tests at the first visit and at week 30 of pregnancy; immunization against tetanus, Hepatitis B, and influenza; and attendance to educational activities. This study did not address attendance to the first visit up to week 20 of pregnancy because, according to the new guidelines of the Brazilian Ministry of Health, the first visit should occur before week 12 of pregnancy. The requirement of attending to at least one visit during the postpartum period was not investigated, since this research aimed to describe prenatal care.

The data obtained from the interviews and pregnant woman's books were tabulated using Microsoft Excel Office 2010 for the analysis of the frquency of the records. The following values were adopted as parameters for the classification of the recording indexes: ≥70% (adequate); from 50% to 70% (intermediate); ≤50% (low).

The study complied with Resolution 466/12 of the National Health Council, which addresses the ethical aspects of research involving human beings, was submitted to the Research Ethics Committee and approved under Certificate of Submission for Ethical Appreciation with number 33807014.0.0000.5576 and opinion number 857,445. Thus, after the researchers introduced

themselves, invited women for the studies and explained the research objectives, the postpartum women who accepted to contribute to the investigation signed the Free and Informed Consent Form. Participants aged below 18 years old signed the Assent Form, and their legal guardians signed the Consent Form. The participants' rights, such as anonymity, exemption from financial burden, and possibility of withdrawing consent from the research at any time, were ensured.

Results

The study included 52 postpartum women between 15 and 40 years old. The interviews showed that 36 (69.2%) of the sample were farmers and housewives, and that 27 (51.9%) were single but lived with other relatives. With regard to the women's level of schooling and family income, it was found that 37 (71.1%) had from 11 to 15 years of study and that 44 (84.6%) had a monthly income from one to two minimum wages.

The data obtained in the second phase of collection using the pregnant woman's book are shown in the following table:

Table 1 – Distribution of postpartum women according to the prenatal characteristics, Redenção, state of Ceará, Brazil, 2014-2015

Variables	N	%
	52	100
GA at first visit		
Up to 12 weeks	30	57.7
From 12 weeks and 1 day	19	36.5
Not recorded	3	5.8
Number of visits		
Up to 5	10	19.2
6 or more	42	80.8
Folic acid		
Yes	44	84.6
No	8	15.4
Ferrous sulphate		
Yes	45	86.5
No	7	13.5
Immunization		
Recorded	50	96.2
Not recorded	2	3.8

Professional responsible for prenatal care		
Physician or nurse	42	80.8
Only nurse	8	15.4
Only physician	2	3.8

*GA- Gestational Age.

Most of the respondents met the criteria established by the Brazilian Ministry of Health that require recording of the Gestational Age (GA) at the first visit and attendance to at least six visits for the provision of good quality prenatal care. It was also revealed that most women started prenatal care as early as in the first trimester of pregnancy.

Iron and folic acid supplementation was provided to most postpartum women, according to the records. With respect to the Immunization variable, 96.1% of the respondents had records of this activity, and 75% updated their vaccination schedule during pregnancy. Two participants (3.8%) had no records on immunization.

IN all the pregnant women's books there records of the professionals who provided care, and 80.8% of the women were seen both by physicians and by nurses. The recording of laboratory tests is presented in Table 2.

Table 2 – Distribution of the postpartum women according to the records on the laboratory tests performed, Redenção, state of Ceará, Brazil, 2014-2015

Variables	N	%	Variables	N	%
	52	100		52	100
Hematocrit at first visit			Indirect Coombs		
Recorded	28	53.8	Not necessary	49	94.2
Not recorded	24	46.2	Not performed	3	5.8
Hemoglobin at first visit			Other tests at first visit*		
Recorded	28	53.8	Recorded	23	44.2
Not recorded	24	46.2	Not recorded	29	55.8
Fasting glycemia at first visit			Hematocrit at week 30 of pregnancy		
Recorded	33	66.5	Recorded	8	15.4
Not recorded	19	36.5	Not recorded	44	84.6
Anti-HIV at first visit			Hemoglobin at week 30 of pregnancy		
Recorded	31	59.6	Recorded	8	15.4
Not recorded	21	40.4	Not recorded	44	84.6

VDRL			Fasting glycemia at week 30 of pregnancy		
Recorded	41	78.8	Recorded	10	19.2
Not recorded	11	21.2	Not recorded	42	80.8
Urine test at first visit			Anti-HIV at week 30 of pregnancy		
Recorded	24	46.1	Recorded	4	7.7
Not recorded	28	53.9	Not recorded	48	92.3
Blood type			VDRL at week 30 of pregnancy		
Recorded	49	94.2	Recorded	10	19.2
Not recorded	3	5.8	Not recorded	42	80.8
Rh factor			Urine at week 30 of pregnancy		
Recorded	49	94.2	Recorded	9	17.3
Not recorded	3	5.8	Not recorded	43	82.7
Indirect Coombs			Other tests at week 30 of pregnancy*		
Not necessary	49	94.2	Recorded	3	5.8
Not performed	3	5.8	Not recorded	49	94.2
Other tests at first visit*					
Recorded	23	44.2			
Not recorded	29	55.8			

*Urine summary; **Cytomegalovirus, HbsAg, Toxoplasmosis, Rubella, Ultrasound

At first check-up testing, there was a high rate of records on blood type, Rh factor, Venereal Disease Research Laboratory (VDRL); intermediate rate of records on tests for hemoglobin, hematocrit, fasting glycemia, and anti-HIV; and low rates of urine testing. Totaling these rates, a variation maybe observed in the pattern of recording, ranging from intermediate to high. With regard to indirect Coombs, it was not requested in 49 (94.2%) of the cases because the women's Rh factor was positive, and there was no record in 5.8% of the cases.

Low rates (44.2%) were observed for requests and records of other tests. The Brazilian Ministry of Health advocates that routine mandatory testing should include tests for more diseases, e.g., hepatitis, cytomegalovirus, rubella, and toxoplasmosis, in order to complement the search of possible diseases that may affect fetal health.

At the second check-up test routine, which should be conducted at week 30 of pregnancy, there was a decrease in the requests for all tests, compared to those requested at the beginning of prenatal care. Table 3 shows records on women's physical examination.

Table 3 – Distribution of postpartum women according to the anthropometric variables, Redenção, state of Ceará, Brazil, 2014-2015

Variables	N	%
	52	100
Height		
Recorded	47	90.4
Not recorded	5	9.6
Pre-gestational weight		
Recorded	43	82.7
Not recorded	9	17.3
Pre-gestational BMI*		
Recorded	40	76.9
Not recorded	12	23.1
Weight at the end of pregnancy		
Recorded	41	78.8
Not recorded	11	21.2
Weight gain according to BMI		
Recorded	2	3.8
Not recorded	50	96.2
BMI at the end of pregnancy		
Recorded	5	9.6
Not recorded	47	90.4
FHR** at the visits		
Recorded in all visits	44	84.6
Recorded in some visits	1	1.9
Not recorded	7	13.5
B.P*** in the visits		
Recorded in all visits	49	94.3
Recorded in some visits	2	3.8
Not recorded	1	1.9

*BMI- Body Mass Index;** FHR- Fetal Heart Rate; ***B.P- Blood Pressure.

With regard to the anthropometric data, there was a high rate of records on height, pre-gestational weight and BMI, and weight at the end of pregnancy. A slight majority of the women had an appropriate BMI during pregnancy. However, there was a decrease in records on weight gain according to BMI and in BMI classification at the end of pregnancy.

The percentage of records on Fetal Heart Rate (FHR) during the prenatal visits presented a high rate of 86.5% of filling-ins. However, nearly half of the records did not include the number of FHRs. As for the recording of blood pressure, it was found that only one pregnant woman's book did not report this information. There was no analysis of records on Fundal Height, presence of edema, and fetal movements, because these data were not included in the data collection instrument, which is a limitation of the present study.

Discussion

It was observed that, although the rates have varied from intermediate to high in relation to the percentage of the records of the number of visits and of GA at the first prenatal visit, most of the respondents were assessed according to the procedures proposed by the Brazilian Ministry of Health. Therefore, their prenatal care followed the practices included in the ten steps for a good quality prenatal care in PHC, which also recommend that, to ensure a high quality follow-up, these essential prenatal procedures should be thorough and early.[1]

With regard to the high rate of postpartum women who started follow-up after week 12 of pregnancy and attended to less than six visits, a similar Brazilian study found that this delay was associated with a low level of schooling, living without a partner, a higher number of previous pregnancies, undesired pregnancy, and dissatisfaction with the ongoing pregnancy.[7] This findings corroborate the data obtained in the present study, since most of the participants reported living in the rural area and having multiple births.

In general, there was a high number of records on supplementations. Several authors of Brazilian studies conducted in Rio de Janeiro, Botucatu, in the central-southern region of the state of São Paulo, and in Paraíba, respectively, find rates above 70%, showing a focus on preventing anemia and problems related to non-supplementation.[8-10] During pregnancy, women are likely to present physiological anemia, which may be corrected with iron supplementation.

In turn, folic acid helps to prevent fetal neural tube defects.[11-12] Despite the high number of records, it is important to increase the supplementation rates, covering 100% of the followed-up pregnant women, because this supplementation is essential, due to its influence on women's and fetuses' health.

It was observed that most of the prenatal visits were conducted by the physician and the nurse on an interleaved basis. This finding may be explained by the fact that this is a very common practice in PHC services. A study conducted in the city of Goiânia, Brazil, showed that only 45.4% of the visits were carried out by physicians and nurses.[13] Another research developed in several regions of Brazil[7] found that the Northeastern region had rates more similar to those of the reality assessed in the present study.

During prenatal care, it is important that pregnant women are assisted by a multidisciplinary team, i.e., when follow-up care is provided by more than one higher level professional. A quantitative analysis of this variable showed that a considerable proportion of PHC users had access to a multidisciplinary approach during prenatal follow-up, which allows for the analysis of several aspects, such as cultural and economic characteristics from mothers and children.[14]

A variation was observed in the first laboratory check-up, but there was a high rate of requests and records on mandatory tests recommended by the Brazilian Ministry of Health. In relation to the other tests, a 44.2% rate of requests and records was evidenced, in line with results from another research.[8] Conversely, a Brazilian nationwide study found a high rate of requested and performed tests in the first routine check-up.[7] It is known that laboratory records are very important in the mother's and fetus' health follow-up and in guiding the professionals who are providing care to pregnant women. Indirect Coombs is an important test that detects maternal antibodies and is pivotal for a healthy fetal growth; therefore, health care professionals should be aware of the matter.

At the second check-up testing, there was a decrease in requests and records on the mentioned tests, which reveals a vulnerability in women's follow-up. Similar studies conducted in all of the Brazilian states addressing laboratory tests records also found that most routine laboratory tests are inappropriately requested/performed (only 25.4% of these tests were adequate) and that there is a decrease in the number of tests in the second routine check-up.[7,15]

These low rates may be associated with the difficulty to access the laboratories in the public network, with the long waiting time for the release of reports from laboratories linked to the Municipal Health Secretariat, and to a late start of prenatal care, thus delaying the requests of tests. This is an alarming fact, because failure to perform these tests or delayed reports are directly related to high rates of vertical transmission of syphilis and HIV infection and to the occurrence of preventable perinatal deaths. The laboratory tests must be requested in the first visit and should be repeated at week 30 of pregnancy.[7- 8,14,16]

Such repetition provides health care professionals clinically relevant information, because these tests may indicate changes that were unnoticed at the beginning of pregnancy. This stage is as equally important as the first one, especially concerning tests for HIV and VDRL.

A low rate of records often masks changes and severe diseases that are harmful to the mother and the fetus, particularly at the time of childbirth. Absence and low percentages of records on some tests are detrimental to the professionals as well, because they will not be provided with updated information on the patient's clinical history.

It is important that the professionals responsible for prenatal care record pre-gestational height, weight, and BMI and update these data at every visit, thus allowing for the assessment of the women's nutritional status and weight gain. In the present study, there was a high rate of records on the above parameters and on weight at the end of pregnancy.

However, there were few records on weight gain according to BMI (only 3.8% of interviewed women) and BMI classification at the end of pregnancy. A study conducted in

São Paulo with 712 pregnant women found a significant association between BMI at the beginning of pregnancy and newborn (NB) weight, and between the total weight gain classification of the mother and the NB's weight classification. In pregnant women with excessive weight, a higher prevalence of NBs with adequate weight was observed. In contrast, women with insufficient weight gain had 2.15 times higher risk of underweight NBs and 2.85 times higher risk of low weight NBs.[17]

These data are important for the follow-up of fetal weight gain and of maternal and child health. The absence of records hinders the follow-up of these parameters, because changes in BMI (either downwards or upwards) require the implementation of measures to prevent alterations in glucose and blood pressure levels and in fetal health.

Still focusing on preventive actions, immunization is known to be crucial in protecting women and, passively, their fetuses against some severe diseases during pregnancy.[1] The present study notoriously showed that postpartum women were positively engaged in this practice.

There was a good percentage of records on vaccination schedule update, revealing that most women conducted this update during prenatal follow-up, and only two respondents had no records on immunization. This high rate of adherence to immunization reduces possible risks and shows that health care professionals are taking good measures to encourage pregnant women to update their vaccination schedule and to promote the importance of this practice. A research on prenatal care quality found percentages of records on vaccination schedule ranging from 50 to 89%, i.e., a result which is lower than that obtained in the present study.[18]

Conducting an obstetric clinical examination during prenatal visits is important for the follow-up of concept development and health, besides being recommended by the Brazilian Ministry of Health. There was a high rate of recorded FHRs during prenatal visits; however, 46.2% of the pregnant women's books did not have records on the number of fetal heart beats,

thus neglecting possible changes in this parameter and showing that heart rate measurement was performed incompletely.

These records are essential in infant assessment, and the presence of changes should motivate the woman's referral to specialized care. The percentage of missing FHRs (13.9%), as well as the 46.2% in which the rate frequencies were not recorded, may mask possible changes and lead to fetal complications. However, these data may not be reliable because, in prenatal care, FHR is usually assessed after week 16 of pregnancy and, sometimes, heart beats cannot be heard yet using the ultrasound sensor and can only be heard approximately on week 20 of pregnancy.

A study with 560 medical records conducted Fortaleza found a rate similar to that of the present study in terms of satisfactory records on FHR during follow-up (70.3% of adequacy of the records).[15] In the city of Rio de Janeiro, another study also showed a high rate of records, ranging from 50 to 89%.[18] Both studies provide evidence for a high quality prenatal care due to the high rates of recorded FHRs.

Blood pressure measurement is also relevant to detect changes in blood pressure levels and to prevent pregnancy complications; therefore, it should be performed in every visit. In this study, a high number was verified of this record in the cared for women, varying from normal blood pressure, oscillating blood pressure, and hypotension, which was similar to other studies addressing satisfactory rates and a parameter classified into satisfactory, good, and excellent, and conducted in Rio de Janeiro and Fortaleza.[8,14,18]

The measurement of vital signs aims at preventing damages and at previously detecting events that could impair the quality of care; thus, it should be performed in all the visits.[19] Absence or flaws in recording vital signs may compromise maternal and infant care and may contribute to the risk of comorbidities.

Although the programs implemented by the Brazilian Ministry of Health ensure pregnant women's rights, the prenatal records in Brazil are still worrying, because basic information that

has great influence on fetal development and women's health is not recorded adequately. However, it is known that underreporting of the clinical and obstetric records does not mean that the procedure was not performed. Recording health data is a way to ensure continuity of care, because these data can be used as a parameter to evaluate the clinical and diagnostic outcome of care and can be the secondary source of investigations that will foster knowledge on that reality;[15] however, the findings of this study and of others studies showing similar results strongly point out to weaknesses in the quality of prenatal records in Brazil. This issue should be corrected, given the importance of providing complete information for a good multi-professional follow-up and for early interventions, if necessary.

Final considerations

The findings of the present study were similar to those observed in other studies, with high rates of missing records in the pregnant woman's book. This fact has an influence on the care mother-child binomial should receive during childbirth and the postpartum period, requiring urgent changes in the practice of the professionals responsible for prenatal care.

In the context of the laboratory tests, it is necessary to investigate the waiting time for the results, because this may compromise prenatal, childbirth, and postpartum care and is out of the scope of the professionals who conduct prenatal visits. This requires a dialog with managerial spheres, the Municipal Health Secretariat in this case, which is responsible for establishing agreements with laboratories that issue test reports. Therefore, it is crucial to understand the reality of these professionals, in order to identify strategies that qualify their practice towards excellence in prenatal care, as recommended by the Brazilian Ministry of Health.

This study is limited by its low sample size. However, it was found that there was a constant for misreporting in the records obtained. The reduced number of postpartum women also points to the fact that they did not stay long in the institution, which hampers data collection.

As PHC demands are identified, it is suggested that prenatal care professionals should be trained and monitored on a frequent basis by municipal health managers. Further studies are also suggested to assess prenatal care in the municipality, including Basic Health Units located in large urban centers, in order to investigate whether the reality observed in this study is specific to the context of inland municipalities of the state.

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