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ORIGINAL ARTICLE

EVALUATING THE QUALITY OF SISPRENATAL REGISTRATION: A COMPARISON WITH MEDICAL RECORDS

AVALIAÇÃO DA QUALIDADE DO REGISTRO DO SISPRENATAL: UMA COMPARAÇÃO COM OS DADOS DO PRONTUÁRIO

EVALUACIÓN DE LA CALIDAD DEL REGISTRO DEL SISPRENATAL: UNA COMPARACIÓN CON LOS DATOS DEL PRONTUARIO

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ABSTRACT

Objective*:** to evaluate the quality of the records of the Prenatal Information System. ***Method*:** cross-sectional study that related information from records of 107 pregnant women attending the Family Health Unit with the SISPRENATAL database between 2011 and 2012 in Recife, Pernambuco. Information from both sources were compared using the Binomial test for two proportions (α = 5%). The project was approved by the Research Ethics Committee, under protocol no. 384.156. ***Results*:** the coverage of the Program for Humanization of Prenatal and Childbirth was 66.7%, according to medical records, and 33.3% according to SISPRENATAL. There was a lack of registration in SISPRENATAL in 4 of the 7 indicators of the program. ***Conclusion*:** SISPRENATAL did not reflect the actual health status of pregnant women evaluated in this study, when information was compared to findings of the medical records. ***Descriptors: Information Systems; Prenatal care; Program Evaluation and Health Projects.

RESUMO

***Objetivo*:** avaliar a qualidade dos registros do Sistema de Informação do Pré-natal. ***Método*:** estudo transversal, onde se relacionaram informações dos prontuários de 107 gestantes atendidas na Unidade de Saúde da Família com a base de dados do SISPRENATAL, entre os anos de 2011 e 2012, em Recife, Pernambuco. As informações das duas fontes foram comparadas utilizando o Teste Binomial para duas proporções (α=5%). O projeto foi aprovado pelo Comitê de Ética em Pesquisa, sob o Protocolo nº 384.156. ***Resultados*:** a cobertura do Programa de Humanização do Pré-natal e Nascimento foi de 66,7%, segundo o prontuário, e 33,3%, segundo o SISPRENATAL. Verificou-se ausência de registro no SISPRENATAL em 4 dos 7 indicadores do programa. ***Conclusão*:** o SISPRENATAL não refletiu a real situação de saúde das gestantes avaliadas neste estudo, ao comparar com os achados dos prontuários. ***Descritores*:** Sistemas de Informação; Cuidado Pré-Natal; Avaliação de Programas e Projetos de Saúde.

RESUMEN

Objetivo: evaluar la calidad de los registros del Sistema de Información del Prenatal. **Método**: estudio transversal, donde se relacionaron informaciones de los prontuarios de 107 gestantes atendidas en la Unidad de Salud de la Familia con la base de datos del SISPRENATAL, entre los años de 2011 y 2012, en Recife, Pernambuco. Las informaciones de las dos fuentes fueron comparadas utilizando el Test Binomial para dos proporciones (α=5%). El proyecto fue aprobado por el Comité de Ética en Investigación, bajo el Protocolo nº 384.156. **Resultados**: la cobertura del Programa de Humanización del Prenatal y Nacimiento fue de 66,7%, según el prontuario, y 33,3%, según el SISPRENATAL. Se verificó ausencia de registro en el SISPRENATAL en 4 de los 7 indicadores del programa. **Conclusión**: el SISPRENATAL no mostró la real situación de salud de las gestantes evaluadas en este estudio, al comparar con los hallados de los prontuarios. ***Descriptores***: Sistemas de Información; Cuidado Prenatal; Evaluación de Programas y Proyectos de Salud.

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INTRODUCTION

Legitimized by the Brazilian Constitution of 1988, SUS must ensure through public policies, actions and comprehensive care services to women's health including the right to safe pregnancy, childbirth and postpartum care. One example of this is the National Policy for Integral Attention to Women's Health, which arose initially as a program in 1983[1] and in 2000 had the line 'reproductive health' strengthened by the implementation of the Program for Prenatal and Birth Humanization (PPBH) through the decree/GM nº 569.[2] This latter decree decides on the minimum requirements of prenatal care and assistance to the pregnant woman which were refined in 2005 by the National Policy on Obstetric and Neonatal Care.[3-5]

Given this context and the need to review this program, the Department of SUS (DATASUS) developed the Prenatal Information System (SISPRENATAL), an important instrument in favor of improving prenatal and postpartum care, allowing for the evaluation of compliance required by PPBH.[6]

However, since its implementation, PPBH indicators reflect low coverage with variation across the country.[2,6-10] A study points that the registration of information in the SISPRENATAL is always incomplete when compared to other sources of information (hospital records, interviews with mothers or institutional statistics), showing a probable underreporting. When checking process indicators, SISPRENATAL showed lower proportions (7.25%) when compared to other sources of records and the indicator 'proportion of pregnant women with six or more queries' is one of those with higher discrepancy of information between the record obtained in the system (26.8%) and records obtained from other sources (56.1%).[11]

Despite this, the SISPRENATAL has expanded record information over the years.[11] The number of pregnant women registered in the Sisprenatal in Recife increased by 15.23% in the period 2001-2008 and there was an increase in the record of 8 out of the 11 indicators of process.[12]

Taking into account that studies on this topic are scarce in Recife, that the PPBH has already more than 10 years of deployment in the city and that the power of this system is one of the actions foreseen in the Stork Network[13] adhered by Recife in 2011, it is clear that there is a need for further studies in order to assess the quality of recording these indicators of the process in the system, contributing to its advance. Thus, this study aims to evaluate the overall quality of SISPRENATAL records.

METHOD

This is a descriptive cross-sectional study held at the Family Health Unit (FHU) Chico Mendes/Ximboré located in the city of Recife, capital of Pernambuco state. The city of Recife is divided into six Political Administrative Regions (PARs) and the referred unit is located in the territory of the Sanitary District V. This FHU consists of two health teams called Chico Mendes and Ximboré, covering respectively 1,113 and 1,017 families.

The study population consisted of all women who received prenatal care in this FHU in 2011 and 2012. Initiation of prenatal care in this FHU in 2011 or 2012 and birth until December 31, 2012 were adopted as criteria for inclusion. Displacement of the pregnant woman to outsides of the area covered by the FHU during prenatal care and interruption of pregnancy up to 22 weeks of gestational age were adopted as criteria for exclusion.

Data were collected from FHU medical records and from the SISPRENATAL based on an instrument containing information on indicators of the Policy of the Program for Prenatal and Birth Humanization (Ordinance n°569 of 2000 and Ordinance n°1067 of 2005).[3,5]

Variables used to standardize the comparison between the two sources of information include: gestational risk classification, prenatal initiation up to 120 days of pregnancy, six or more consultations for prenatal, puerperal consultation within 42 days of postpartum, first and second results of routine laboratory tests (Tables 1 and 2).

Collection was carried out in the period of December 2013 to January 2014 and was initiated at FHU Chico Mendes/Ximboré from the list of 245 pregnant women by number of medical records who underwent prenatal care in the period 2011-2012. One hundred and thirty eight pregnancies did not meet the criteria for inclusion and exclusion of this research, resulting in a population of 107 pregnant women. After collecting data from medical records, a nominal search for these 107 women in SISPRENATAL database provided by the Municipal Department of Health of Recife was held.

The search on the system was obtained in a disaggregated manner by the identification of the Health Unit, typing the SISPRENATAL registration number in the database,

confirmation of the name and date of birth of the mother and confirmation of her mothers' name.

The number of live births was collected from the Primary Care Information System database (PCIS) as this system provides such information disaggregated for the studied locations.

Data were processed and analyzed using Epi Info for Windows, version 3.5.4. Central tendency and dispersion measures were estimated as quantitative variables. The normality of quantitative variables was checked with Kolmogorov Smirnoff test adopting a significance level of 5%. A binomial test for two proportions with statistical significance of 5% was performed to evaluate the percentage differences between indicators of process measured in both data sources. Data are presented in tables.

This study complied with the ethical issues contained in Resolution 466/2012[14] and was approved by the Ethics Committee of the Federal University of Pernambuco (CEP/CCS/UFPE) on 04.09.2013, under opinion no. 384.156.

RESULTS

Among the 107 women receiving prenatal care in the FHU, 102 were registered at SISPRENATAL according to medical records. Eighty one pregnant women were located at SISPRENATAL, 62 out of these had registration forms and 63 had daily record forms filled. Prenatal component was completed in 61 of the forms, the puerperal component, in 8 forms and childbirth, in 2 forms.

Table 1 has the prenatal and puerperal care coverage comparing data on medical records and data on SISPRENATAL.

Table 1. Prenatal and postpartum care coverage, according to minimum requirements set by the Program for Prenatal and Birth Humanization, organized by source of information. Recife-PE, 2011-2012.

Minimum requirements	Medical record		SISPRENATAL		Descriptive statistics
	n	%	n	%	
Quarter of prenatal initiation					
First	57	53.3	29	46.8	
Second	48	44.9	29	46.8	p=0.42
Third	2	1.9	4	6.5	
Prenatal initiation up to 120 days	84	78.5	42	67.7	p=0.12
Total	107	100	62*	100	
Puerperal consultation	80	74.8	8	12.7	p<0.001
Basic exams 1° routine					
Blood typing / Rh Factor	99	92.5	17	27	p<0.001
Hb and Ht	100	93.5	23	36.5	p<0.001
HIV Test	88	82.2	20	31.7	p<0.001
Fasting glycemia	98	91.6	26	41.3	p<0.001
EAS	91	85	23	36.5	p<0.001
VDRL	99	92.5	26	41.3	p<0.001
Toxo – IgM	72	67.3	18	28.6	p<0.001
Basic exams 2nd routine (30th week)					
Fasting glycemia	51	47.7	3	4.8	p<0.001
AES	45	42.1	2	3.2	p<0.001
VDRL	51	47.7	2	3.2	p<0.001
HBsAg	74	69.2	22	34.9	p<0.001
All basic examinations	23	21.5	0	0	
Total	107		63**		
Gestational risk					
Usual	82	76.6	10	12.3	p<0.001
High	25	23.4	1	1.2	p<0.001
Ignored	0		70	86.4	
Total	107	100%	81	100%	

PN: Prenatal; Hb: Hemoglobin; Ht: Hematocrit; AES: Abnormal elements and sediments in the urine; VDRL: Syphilis Serology; HBsAg: Serology for hepatitis B, Toxo-IgM: Serology for toxoplasmosis.
* Among the 81 pregnant women registered in SISPRENATAL, only 62 had registration forms.
** Among the 81 pregnant women registered in SISPRENATAL, only 63 had a daily record forms.

Based on information collected from medical records of pregnant women, 53.3% began prenatal care in the first trimester (up to the 12th week), 78.5% had the first prenatal consultation up to 120 days of gestation and 74.8% had one puerperal consultation within 42 days post childbirth. The SISPRENATAL data show that 46.8% of pregnant women began prenatal care in the first trimester, 67.7% started prenatal care up to 120 days of gestation and 12.7% had consultation within 42 days after childbirth.

Regarding the basic examinations of first and second routine present in the records, stand out, respectively: toxoplasmosis (IgM), with 67.3%; Hb/Ht, with 93.5%; and AES, with 42.1%; and HBsAg, with 69.2%. In turn, regarding laboratory tests of first and second

routine recorded in SISPRENATAL there is highlight for, respectively, blood typing, with 27%; fasting glycemia and VDRL, with 41.3% each; and AES and VDRL, with 3.2% each; and HBsAg, with 34.9%.

As for the realization of all the above mentioned laboratory tests, this date was observed in 21.5% according to medical records, and 76.6% had usual risk pregnancy and 23.4% had high risk. In turn, the SISPRENATAL has no record of any woman with the completion of all tests, and 12.3% had usual gestational risk and 1.2% high risk. There was a statistically significant difference in the percentage of routine tests between information registered in medical records and records in SISPRENATAL for almost all variables.

Table 2 shows indicators of process of the Program for Prenatal and Birth Humanization based on the comparative analysis of information collected in medical records and information from SISPRENATAL.

Table 2. Distribution of indicators of process of the Program for Prenatal and Birth Humanization by source of information, Recife-PE, 2011-2012.

Process indicators	Medical record		SISPRENATAL		Descriptive statistics
	n	%	n	%	
Percentage of pregnant women who did the 1st PN consultation within 120 days in relation to the number of live births in the period.	84/126	66.7	42/126	33.3	p<0.0001
Percentage of pregnant women with six or more PN consultations	63	58.9	1	1.2	p=0.0002
Six or more PN consultations and the puerperal consultation.	47	43.9	0	0	
Six or more PN consultations and all basic exams.	22	20.6	0	0	
Six or more PN consultations, puerperal consultation and all basic exams.	16	15	0	0	
Percentage of pregnant women with the immunizing dose of antitetanus vaccine.	90	84.1	50	61.7	p=0.0005
Six PN consultations, the puerperal consultation, all basic exams, HIV testing, the immunizing ATV dose.	15	14	0	0	
Total	107		81		

PN: Prenatal; ATV: Antitetanus Vaccine.

Pregnant women who underwent the 1st prenatal consultation within 120 days in relation to the number of live births in the study period were 66.7%, according to the medical chart, and 33.3%, according to SISPRENATAL. It was also found that 58.9% of pregnant women registered in the medical record and 1.2% registered in the SISPRENATAL made at least six prenatal consultations during these two years of study. According to what is registered in medical charts, 43.9% had six or more NP consultations and the puerperal consultation; 20.6% had six or more NP consultations and all basic exams; and 15% had six visits or more PN consultations, the puerperal consultation and all basic exams. However, there is not a single record in SISPRENATAL of any woman who did all consultations or examinations as recommended by the PPBH.

The immunizing dose of tetanus vaccine was recorded at 84.1% in the medical records whereas this percentage reached 61.7% in SISPRENATAL. By analyzing all these indicators (six prenatal visits, the puerperal consultation, all basic exams, anti-HIV test and immunizing dose of ATV), it was observed that 14% of women were in this condition in the medical records, whereas there was no record in SISPRENATAL.

There were significant differences between the two data sources in almost all indicators. However, test could not be performed for those that were null in SISPRENATAL.

DISCUSSION

The findings of this study show low coverage in the registration of the minimum requirements and process indicators stablished by the PPBH in the two data sources, medical records and SISPRENATAL. Apart from initiation of prenatal care within 120 days of gestation, all other requirements failed to represent health situation indicated in medical charts.

Regarding the early identification of pregnant women in prenatal care, the registered information in SISPRENATAL (67.7%) corresponds to the one found in medical records (78.5%). However, studies show higher proportions in the registration of this criterion in the referred information system: 86.2% women began prenatal in up to 120 days in San Carlos (Sao Paulo),[9] and 75.5% in Cuiaba (Mato Grosso)[15]. By analyzing this requirement in medical records, this also proved to be lower than expected, despite the majority (53.3%) of the women in this study have started prenatal care in the first trimester. As shown in a study realized in a family health unit in São Paulo, 82% of pregnant women

began prenatal care in the 1st trimester and 18% in the 2nd trimester.[16]

There was statistical difference between the record of information about puerperal consultation, the realization of basic exams, the gestational risk identification and PPBH process indicators obtained in the two data sources. Access to prenatal care has increased in recent years, with an increase of 125% in from 2003 to 2010[17], but this care has been offered in greater volume than that recorded in SISPRENATAL.[18] The variable 'puerperal consultation within 42 days postpartum', in the present study, showed an important deficiency in the SISPRENATAL registration (12.7%) significantly discrepant from the information found in medical records (74.8%) and corroborating the findings of other studies.[6,8-9,15,19] Puerperal consultation plays an important role in detecting, as soon as possible, obstetric and gynecological complications that can affect this period, in addition to providing relevant guidance on breastfeeding, maternal health and newborn care, contraception and sexuality.[8]

On the completion of the first routine laboratory tests, SISPRENATAL notably had poor quality level of record (27.0% - 41.3%) when compared with the information the medical charts (67.3% - 93, 5%). An even greater decrease in the system registration (3.2% - 34.9%) in relation to the second routine laboratory tests was observed when compared to medical charts (42.1% - 69.2%). Tests that showed better record in SISPRENATAL were: fasting glycemia, VDRL (1st routine) and HBsAg. Studies show that carrying out the second routine tests is always less than expected, with lower proportions than the first routine exams.[9,15,20-21]

With regard to carrying out all laboratory tests, 21.5% of pregnant women had information on realization of all laboratory tests in medical records, however, SISPRENATAL had not a single record on this information.

Significant difference was also observed in gestational risk classification, since SISPRENATAL ignored a proportion of 86.4% of the record on this criterion, not corroborating the PPBH requirements. This percentage is quite high, as literature informs that 15.2% of pregnant women were registered in the system without proper detection of risk factor.[15] This statistic could have better results if there was a national registration standard for classification of gestational risk in medical records and prenatal booklet, encouraging health professionals to review this requirement, necessarily in each prenatal consultation.

As for process indicators in SISPRENATAL, this study found no record in 4 of the 7 indicators, and large deviation from the information contained in medical records. SISPRENATAL data in this study shows a reduced registration of pregnant women in PPBH (33.3%), whereas this was 66.7% according to medical records. Different findings were found by Andreucci and Cecatti[11] who saw a proportion of women in relation to the number of live births in SISPRENATAL (23.05%) superior to that found in other sources of information (15.94%). However, despite the failure in registration, a study in Recife verified an increase in the registration of this indicator from 2001 to 2008, going from 1.52% to 23.82%.[12]

Regarding antitetanus vaccine (ATV), 84.0% of pregnant women received the immunizing dose (second dose recommended of the scheme) or the extra dose (previously immunized women), as registered in medical records. In turn, SISPRENATAL registers a proportion of 61.7%. Results of other studies have found percentage of ATV in 78.5%[22] women according to medical records and 64.6%[15] and 67.5%[9]according to SISPRENTAL.

Regarding minimum requirements of the PPBH and process indicators, except for the requirement "prenatal initiation within 120 days", there were also differences between the SISPRENATAL and FHU medical records. However, records about realization of anti-HIV test, both the medical records (82.2%) and the system (31.7%) showed percentages above those found in literature. During the year of 2004, in Recife (PE), of the nearly 612 mothers were assisted in two public hospitals, only 36.1% of them had undergone at least one anti-HIV test during prenatal.[4] Other studies conducted with SISPRENATAL database noted that only 21.1% of pregnant women were subjected to anti-HIV tests in Ceará in 2004[8] and only 17.6% in Salvador in 2002.[7]

In the present study, most of the women had attended at least six consultations during prenatal care as appointed in medical records, but only one pregnant woman had fulfilled this requirement according to SISPRENATAL data. The completion of at least six consultations during prenatal period helps to identify possible obstetric and perinatal complications as well as gestational risk classification. It also provides the formation of bond with the pregnant woman and the family, bringing more security and autonomy for the woman in order to make her the protagonist of this process.[8]

A study that assessed the registration of PPBH indicators of process in Brazil, based on SISPRENATAL data during the first two years of the program (2001 and 2002), found that by combining this criterion - six PN consultations - with the puerperal consultation and/or required exams, this percentage is reduced by half; besides, in the evaluation of all recommended care activities, only 2% in 2001 and 5% in 2002 of registered women had these procedures executed.[6] These results are consistent with the findings in the present study, showing significant reduction when combined with other criteria. It is highlighted that only 14.0% of pregnant women were able to meet all minimum requirements. However, there are no records for these indicators in SISPRENATAL.

CONCLUSION

Findings of this study reinforce the need for ongoing assessments in the prenatal information system in order to allow better monitoring of prenatal care in the country. Assessments carried out with the data produced by health information systems contribute to improving the quality of information, allowing more trustworthy analysis.[15] Scientific evidence pointing weaknesses and potential of the SISPRENATAL contribute to its strengthening, and allows for a reflection on the real health condition of the Brazilian mother and population.[11,18,23]

On the national scenario, there is already an investment to qualify the information produced by SISPRENATAL, with the implementation of the online version. This will ensure agility in the delivery of information and improved data registration, decentralizing and feeding to the sites of town nearest to pregnant women and new mothers. This type of strategy will facilitate the use of this system by health teams, enabling better monitoring of care provided to women.

It is acknowledged that this study refers to a restricted location, however, we believe that the results obtained here reflect a national reality and, therefore, deserve attention. Additionally, the use of data from medical records as the gold standard may also be a methodological limitation of this study, given that these sources are also not able to demonstrate absolute reality. Nevertheless, it can be said that the findings raised here prove that the records may serve as a reference for evaluating the coverage of SISPRENATAL regarding process indicators, thus contributing to the improvement of quality of information of this system and allowing its accurate and reliable use.

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