

Evaluation of the quality of prenatal care based on the recommendations Prenatal and Birth Humanization Program

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Abstract *The Prenatal Care and Birth Humanization Program (PHPN) establishes a minimum number of procedures to be provided to all pregnant women during prenatal care. This study aimed to analyze the quality of prenatal care in Sergipe based on the PHPN recommendations. This is a cross-sectional study, with a descriptive and analytic approach, using survey data from the Birth in Sergipe research, conducted from June 2015 to April 2016 with 768 puerperae proportionally distributed among all state maternity hospitals (n = 11). Data were collected from face-to-face interviews and patients' prenatal care cards. The results showed a high coverage of prenatal care (99.3%; n = 763), but little more than half of these women started their prenatal care within 16 weeks of gestation (57%; n = 435), and 74.7% (n = 570) had six or more visits. We noted that 16.6% (n = 127) of pregnant women were at high risk for complications and almost half continued monitoring prenatal care with professional nurses. Around 61.3% were advised about the maternity care service of reference for delivery, and 29.4% sought more than one health service for childbirth. We concluded that there was a high prenatal care coverage in Sergipe, however, with issues concerning its adaptation to the PHPN.*

Key words *Pregnant Women, Prenatal care, Women's Health*

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Introduction

Prenatal care includes a set of measures designed to lead to the delivery of healthy newborns without adverse effects on women's health, including the psychosocial aspects and educational and preventive activities in this process¹. It includes health promotion and prevention actions, as well as diagnosis and appropriate treatment of eventual issues², and is therefore effective in reducing morbimortality related to the pregnancy-puerperal cycle for mothers and their newborns³.

In this regard, the Ministry of Health, through the Prenatal Care and Birth Humanization Program (PHPN)⁴, establishes a minimum package of procedures and tests to be provided to all pregnant women during prenatal care: (a) care until the fourth month of gestation (16th week); (b) a minimum of six visits, preferably one in the first trimester, two in the second and three in the third; (c) routine laboratory exams and vaccination; (d) educational activities; and (e) puerperal visits.

It is worth emphasizing that prenatal care is often the first contact of women with health services, and should, therefore, be organized in order to meet their real needs, by using technical and scientific knowledge and resources in a humanization² context. However, studies have identified flaws that interfere with their quality and effectiveness, such as low coverage⁶, late onset, inadequate distribution of or insufficient visits⁷, incomplete implementation of recommended procedures⁸ and lack of information on maternity hospital⁹ of reference.

There is also a shortage of national studies evaluating prenatal care at the state level. In Sergipe, information from the Live Birth Information System (SINASC) shows that there is significant access to prenatal care, but only a little more than half of the pregnant women (52.1%) performed more than six prenatal visits in 2014¹⁰. However, as observed by Viellas et al.⁹, this system only allows the analysis of the number of visits performed, besides being restricted to the pregnancies that resulted in a live birth. Similarly, the Prenatal Care and Birth Humanization Program Monitoring System (SISPRENATAL), a software developed to provide essential information for planning, monitoring and evaluation of actions developed by the PHPN, evidences underreporting issues, with flaws in the recording of minimum procedures recommended by the Program in pregnant women care compared to other sources of information¹¹.

Thus, the limited availability of data on maternal and child health care in the state is a relevant hurdle to its evaluation and planning and hinders the implementation of effective and resolute measures. Thus, we aimed to analyze the quality of prenatal care provided to users of public or private health services in Sergipe from the recommendations of the PHPN⁴, and their organization with the state maternal and child health services.

Methods

This is a cross-sectional, quantitative study with descriptive and analytic approaches linked to the *Birth in Sergipe* research, conducted from June 2015 to April 2016 with 768 puerperae with concepts proportionally distributed among all public, private and mixed maternity hospitals of the State of Sergipe ($n = 11$). The *Birth in Brazil*¹² research method was carried out, with the training of the local team by researchers from the Oswaldo Cruz Foundation (Fiocruz) who participated in the national study.

The sample calculation, with a confidence level of 95%, had a two-stage probabilistic design. The first concerned the health facilities and the second, the puerperae. All maternity hospital units in the state that registered at least 500 yearly births, totaling seven inland and four capital institutions – five public, four mixed and two private – were eligible. The puerperae were selected by simple random sampling from a list of daily admission, where all women with a live fetus and stillbirth deliveries with birth weight ≥ 500 g or gestational age ≥ 22 weeks (data obtained by consulting the records of newborns and parturients) were eligible. Women who did not speak or understood the language (Portuguese) and who had severe mental disorders were excluded. We emphasize that we used an allocation proportional to the size of the institution to distribute the calculated sample number ($n = 768$).

The interviewers stayed at least 7 days in each institution. If the number of puerperal women could be reached before this period, a random draw was made with a limited number of daily respondents to reach the 7 days. Face-to-face interviews were carried out with the puerperae with a minimum interval of 6 hours after delivery, and data were extracted from the women's and the newborns' records after discharge (or death). The prenatal care cards were photographed, and the information entered into the database only fol-

lowing authorization by the participants. More detailed information on the collection is also reported in Leal et al.¹³.

The variables studied for the evaluation of prenatal care were those included in the PHPN: prenatal care coverage (at least one visit); early onset (within the 16th gestational week); number of visits; receipt of the prenatal care card; tests recorded in the card (glycaemia and ultrasonography) and receiving information during this process (knowledge about labor, signs of risk in pregnancy and breastfeeding). For women who had the pregnant women card (n = 599), we considered gestational age at the first prenatal care visit and the total number of registered visits. For women without a card (n = 169), we used the information obtained during the interview¹⁴.

The maternal sociodemographic variables investigated were age, ethnicity/skin color, level of education, paid work, marital status, and place of residence. The planning of pregnancy, the satisfaction of women in discovering it and abortive attempts were also investigated.

In the analysis of prenatal care-related variables, the frequency of women's follow-up (n = 763) was considered, and associations of this process with sociodemographic and gestational characteristics were evaluated.

We also verified the structuring of prenatal care services by payment source (public or private), type of health facility where women performed most prenatal care visits (primary care or hospital outpatient clinic), the professionals who provided prenatal care in most visits (doctors or nurses) and continuity of care (same professionals throughout prenatal care or not). Guidance provided to women during prenatal care was evaluated by the number of visits (≤ 5 visits or ≥ 6 visits).

The following proportions assessed the integration of prenatal care to other health network services: pregnant women considered to be at risk referred to and cared for in services of reference; pregnant women advised on the place of admission for childbirth; pregnant women who were attended to in these services and the need to search for more than one service at the time of admission (referred to as "pilgrimage").

Variables related to the planning of the current gestation (wanted/did not want to get pregnant/wanted to wait longer) and the level of satisfaction of pregnant women with this pregnancy (satisfied/more or less satisfied/dissatisfied) were also used to analyze the outcomes "prenatal care coverage" and "early onset".

We employed the convention elaborated by the World Health Organization to determine the age group, in which adolescence ranges from 10 to 19 years of age¹⁵.

The statistical analysis used univariate and bivariate techniques to obtain the distribution of absolute and relative frequency values. Pearson's Chi-square test of independence was adopted to evaluate associations between categorical variables with significance < 0.05 . The IBM® SPSS – Statistical Package for the Social Sciences, version 20.0 was the package used in this case.

The Research Ethics Committee of the Federal University of Sergipe approved this study. All care was taken to ensure privacy and confidentiality of information, as per Resolution No 466/2012¹⁶, which updates Resolution No 196/1996¹⁷ of the National Health Council of the Ministry of Health, Brasília (DF). The puerperae signed the Informed Consent Form with the assurance of refusal at any time, without suffering damages.

Results

In total, 768 postpartum women participated in the study, with a mean age of 25.3 ± 6.5 years, of which 21.4% (n = 164) were adolescents and 9.4% (n = 72) were aged ≥ 35 years. Brown was the most reported ethnicity/skin color (75%; n = 576), with a small proportion of yellow and indigenous in the total sample (3% and 0.4%, respectively). Regarding schooling, 53.6% (n = 412) had secondary or higher education. More than half performed unpaid work (55.5%, n = 426), lived with their partner (63.2%, n = 485) and resided in Sergipe's capital city (57.8%, n = 444). Planned pregnancy was reported by 41.1% (n = 316) and 35.9% (n = 276) felt unsatisfied upon discovery. Abortive attempts were reported by 4.9% of the women interviewed (n = 38) (data not shown in the table).

Prenatal care coverage in Sergipe was 99.3%, always higher than 90% regardless of maternal characteristics. The lowest percentages are related to the adolescents, those who did not want to get pregnant, those who were not satisfied with the pregnancy and those who reported abortive attempts ($p < 0.05$) (Table 1).

More than half of the pregnant women who underwent prenatal care started this follow-up before the 16th gestational week (57%; n = 435), especially among those who had high school level, with a partner, who wished to become preg-

Table 1. Proportional distribution of maternal characteristics according to prenatal care coverage (n = 768), early onset, receipt of the pregnant woman's card and number of visits performed (n = 763). Sergipe, Brazil, 2015/2016.

Exposure/Outcome	Prenatal care	p	Early onset	p	Received prenatal care card	p	Number of prenatal care visits			P
							1-3	4-5	≥ 6	
Municipality	%		%		%		%	%	%	
Aracaju	99.1		54.3		93.7		4.5	15.3	80.2	
Capela	100		51.7		100		3.4	13.8	82.8	
Estância	100		66.1		100		9.7	27.4	62.9	
Glória	100		45.5		100		9.1	18.2	72.7	
Itabaiana	98.8	0.939	69.8	0.085	97.7	0.265	4.7	12.8	82.6	0.058
Lagarto	100		50		100		3	15.2	81.8	
Propriá	100		62.9		100		2.9	25.7	71.4	
Socorro	100		54.2		95.8		16.7	25	58.3	
Age (years)										
10 – 14	92.9		42.9		92.9		0	7.1	92.9	
15 – 19	99.3		55.3		98.7		8	20.7	71.3	
20 – 34	99.4	0.022	57.1	0.723	95.5	0.020	5.3	16.5	78.2	0.068
35 or more	100		58.3		94.4		0	12.8	87.5	
Ethnicity/skin color	100		58.9		98.2		7.1	10.7	82.1	
White	100		60		95.4		4.6	13.8	81.7	
Black	100		58.9		98.2		7.1	10.7	82.1	
Brown	99.3	0.201	56.9	0.894	95.8	0.458	5.2	17.9	76.9	0.253
Yellow	95.7		47.8		95.7		0	17.4	82.6	
Indigenous	100		66.7		100		33.3	33.3	33.3	
Maternal schooling										
None	100		40		100		30	10	60	
Primary School	99.1		55.8		98.8		7.5	21.1	71.4	
Secondary School	99.4	0.912	61.9	0.025	97.4	<0.001	3.2	16.5	80.3	<0.001
Higher Education	100		45.5		81.2		1	4	95	
Marital Status										
Without a partner	99.5		52		96.2		12.7	14.1	73.1	
With a partner	99.4	0.630	58.6	0.016	97.9	0.009	5.6	18.1	76.3	0.691
Number of previous pregnancies										
None	99		59.1		95.5		2.7	15.5	81.8	
1	100		58.8		96		6	13.1	80.9	
2	100	0.256	50.9	0.282	94.6	0.124	8	17	75	0.004
3 or more	98.3		52		98.4		7.9	26	66.1	
Wished to get pregnant										
Wanted to get pregnant	100		61.1		96.5		1.6	12	86.4	
Wanted to wait more	100	0.023	52.5	0.032	95.6	0.099	8.8	18.2	72.9	<0.001
Did not want to get pregnant	98.1		53.4		95.5		7.1	20.7	72.2	
Feelings about pregnancy										
Satisfied	100		60.4		96.1		3.7	13.8	82.5	
More or less satisfied	98	0.026	52	0.021	95.1	0.104	9.8	23.5	66.7	<0.001
Unsatisfied	98.6		45.1		97.2		2.8	18.3	78.9	
Attempted to interrupt pregnancy										
No	99.7		57.9		96.2		4.9	16.3	78.7	
Yes	92.1	<0.001	34.2	0.008	92.1	<0.001	10.5	26.3	62.2	0.221
Total	99.3		57		96.6		*5.2	*16.9	*74.7	

Note: % = Relative frequency. *Participants who did not fully answer the questions were excluded from the analysis.

nant, were satisfied with pregnancy and did not attempt to interrupt it ($p < 0.05$). Regarding the number of visits, 74.7% ($n = 570$) had the six minimum visits recommended by the Ministry of Health, especially among women with higher schooling, primigravidae or secundigravidae who wished to become pregnant and who were satisfied with the discovery, ($p < 0.05$). It is worth mentioning that the proportion of women with early prenatal care initiation and a sufficient number of visits was not similar to that observed for prenatal coverage (Table 1).

Receipt of the prenatal care card was mentioned by 96.6% ($n = 733$) of respondents, and 81.7% ($n = 599$) of them showed it at hospital admission for delivery. Most of the analyzed cards had a record of the first glycaemia (85%; $n = 504$) and first ultrasound (88.3%; $n = 529$), and the second glucose score was 53.6% ($n = 270$) of those who had the first (data not shown in the table).

Regarding guidance during prenatal care, 37.4% ($n = 275$) of the women were informed about the activities to facilitate delivery and 43.5% ($n = 320$) of the signs of labor onset. Likewise, a little more than half of the women received information about the clinical changes that would indicate pregnancy risk (56.9%, $n = 419$) and the relevance of breastfeeding in the first hour of life of newborns (59.6%; $n = 439$) (Table 2).

It is worth noting that guidance on the signs of the onset of labor, clinical changes that would

indicate pregnancy risk, and relevance of breastfeeding in the first hour of life were more frequent among women who had 6 or more prenatal visits ($p < 0.05$) (Table 2).

Most of the visits were performed in public services (71.6%, $n = 546$), mainly by younger women with lower schooling and with a companion ($p < 0.05$). These visits occurred mainly in primary care facilities (64.9%, $n = 495$) ($p < 0.05$). Regarding professionals with whom pregnant women performed prenatal visits, no significant difference was observed between the categories, since 49.4% ($n = 377$) of women were followed by doctors and 48% ($n = 366$) by nurses (Table 3).

When analyzing the continuity of prenatal care, we found that 11.9% ($n = 91$) of the women reported not having been followed by the same professionals during the gestation period. The highest proportion of continuity with the same professionals was identified in older women ($p < 0.05$) (Table 3).

Regarding gestational risk, 16.6% ($n = 127$) of the puerperae reported that gestation was classified as high obstetric risk, especially among those who belonged to age extremes ($p < 0.05$). Of these, 55.1% ($n = 70$) were referred to services of reference and, while most reported they were attended, 21.4% ($n = 15$) stated that they achieved it with difficulty (Table 4).

More than half (61.3%, $n = 468$) received information about maternity of reference for

Table 2. Associations between guidance provided to women during prenatal care and the number of visits performed ($n = 763$). Sergipe, Brazil, 2015/2016.

Guidance provided to women during prenatal care	Number of visits		p	Total N (%)
	≤ 5 (n= 169)	≥ 6 (n= 566)		
	N (%)	N (%)		
Activities to facilitate delivery				
No	116 (25.2)	345 (74.8)	0.051	461 (62.6)
Yes	52 (18.9)	223 (81.1)		275 (37.4)
Signs of onset of labor				
No	115 (27.7)	300 (72.3)	0.001	415 (56.5)
Yes	54 (16.9)	266 (83.1)		320 (43.5)
Clinical alterations that would indicate pregnancy risk				
No	92 (29)	225 (71)	0.001	317 (43.1)
Yes	77 (18.4)	342 (81.6)		419 (56.9)
Importance of breastfeeding in the first hour of life				
No	82 (27.5)	216 (72.5)	0.012	298 (40.4)
Yes	86 (19.6)	353 (80.4)		439 (59.6)

Note: N = Absolute frequency; %= Relative frequency. Participants who did not fully answer the questions were excluded from the analysis.

Table 3. Proportional distribution of maternal characteristics according to the payment source and the profile of the care provided in most prenatal visits in a state sample of puerperae (n=763). Sergipe, Brazil, 2015/2016.

Exposure/ Outcome	Payment source		p	Type of health facility		p	Professional category		p	Monitoring by the same professional	
	Public	Private		Primary Care	Hospital outpatient clinic		Doctor	Nurse		%	p
Municipality	%	%		%	%		%	%			
Aracaju	65.3	33.6		61.7	38.3		59	41		83.5	
Capela	86.2	13.7		65.5	34.5		44.8	55.2		86.2	
Estância	93.5	6.4		75.8	24.2		22.6	77.4		98.4	
Glória	90.9	9		81.8	18.2		9.1	90.9		86.4	
Itabaiana	52.3	47.3	<0.001	59.3	40.7	0.001	45.3	54.7	<0.001	93	<0.001
Lagarto	80.3	19.7		50	50		47	53		87.9	
Propriá	91.4	8.6		97.1	2.9		14.3	85.7		97.1	
Socorro	95.8	4.2		79.2	20.8		45.8	54.2		100	
Age (years)											
10 – 14	78.6	21.4		71.4	28.6		50	50		71.5	
15 – 19	84	16		68.6	31.4		38	62		85.4	
20 – 34	68.8	31.2	0.001	63.7	36.3	0.050	50.4	49.6	0.010	89.1	0.029
35 or more	59.7	40.3		59.7	40.3		62.5	37.5		83.3	
Ethnicity/skin color											
White	59.6	40.4		62.4	37.6		52.3	47.7		87.2	
Black	71.4	28.6		71.4	28.6		46.4	53.6		83.9	
Brown	73.1	26.9	0.273	63.5	36.5	0.159	48.8	51.2	0.979	87.7	0.124
Yellow	73.9	26.1		78.3	21.7		47.8	52.2		91.3	
Indigenous	100	0		100	0		33.3	66.7		100	
Maternal schooling											
None	80	20		90	10		30	70		80	
Primary School	88.2	11.8		75.1	24.9		35	65		88.5	
Secondary School	67.7	32.2	<0.001	62.9	37.1	<0.001	54.5	45.5	<0.001	86.1	0.899
Higher Education	21.8	78.2		29.7	70.3		83.2	16.8		89.1	
Marital Status											
Without a partner	60.9	39.1		47.5	52.5		64.2	35.8		83.4	
With a partner	77.1	22.9	<0.001	70.1	29.9	<0.001	42.9	57.1	0.018	87.4	0.650
Number of previous pregnancies											
None	68.2	31.8		61.8	38.2		51.5	48.5		86.6	
1	66.3	33.7		62.3	37.7		52.3	47.7		89.4	
2	75.9	24.1	0.053	67.9	32.1	0.154	49.1	50.9	0.050	87.5	0.412
3 or more	81.9	18.1		71.7	28.3		37.8	62.2		86.6	
Total	*71.6	*22		64.9	35.1		*49.4	*48		88.1	

Note: %= Relative frequency. *Participants who did not fully answer the questions were excluded from the analysis.

Table 4. Proportional distribution of maternal characteristics according to gestational risk and the delivery care network in a state sample of puerperae (n = 763). Sergipe, Brazil, 2015/2016.

Exposure/ Outcome	Risk pregnancy	Attendance in a service of reference			p	Oriented on reference maternity	p	Pilgrimage for delivery		p
		No	Yes, with difficulty	Yes, without difficulty				%	%	
	%									
Municipality		%	%	%						
Aracaju	22.1	9.1	25.5	65.5		66.4		30.6		
Capela	17.2	0	33.3	66.7		58.6		41.4		
Estância	6.5	0	25	75		38.7		37.1		
Glória	9.1	0.001	100	0	0	45.5	0.070	22.7	0.001	
Itabaiana	4.7		0	0	100	61.6		22.1		
Lagarto	15.2		0	0	100	59.1		40.9		
Propriá	11.4		100	0	0	60		5.7		
Socorro	12.5		50	0	50	54.2		8.3		
Age (years)										
10 – 14	57.1		20	20	60	64.3		35.7		
15 – 19	19.3	<0.001	6.2	31.2	62.5	51.3	0.003	42	0.001	
20 – 34	13.2		16.7	19.4	63.9	61.5		27.1		
35 or more	31.9		0	20	80	81.9		19.4		
Ethnicity/skin color										
White	11		16.7	16.7	66.6	67		26.6		
Black	16.1		0	0	100	60.7		17.9		
Brown	18.1	0.428	10.5	24.6	64.9	60.6	0.941	30.6	0.115	
Yellow	17.4		33.3	33.3	33.3	60.9		39.1		
Indigenous	33.3		0	0	100	33.3		66.7		
Maternal schooling										
None	30		50	0	50	60		40		
Primary School	19.7		10.8	21.6	67.6	53.5		38.7		
Secondary School	14.8	0.250	7.7	30.8	61.5	63.9	<0.001	25.5	<0.001	
Higher Education	12.9		14.3	0	85.7	82.2		8.9		
Marital Status										
Without a partner	23.1		6.9	20.2	72.9	67.2		26.5		
With a partner	16.9	0.679	12.2	17.1	70.7	59.2	<0.001	31.1	0.174	
Number of previous pregnancies										
None	16.1		13.3	10	76.7	60.6		32.1		
1	14.1		5.3	36.8	57.9	61.3		29.1		
2	20.5	0.320	20	20	60	59.8	0.389	23.2	0.346	
3 or more	20.5		11.1	27.8	61.1	65.4		28.3		
Total	16.6		11.4	21.4	67.2	61.3		29.4		

Note: % = Relative frequency.

admission to labor. Women between 15 and 19 years of age, with a partner and lower educational level were the ones who reported to receive this guidance the least ($p < 0.05$) (Table 4). Of those surveyed, 83.3% ($n = 390$) had their delivery attended in the maternity ward indicated (data not shown in the table).

Before achieving hospitalization where the delivery occurred, 29.4% ($n = 226$) of the women sought care in another maternity hospital, especially younger women and lower schooling ($p < 0.05$) (Table 4). Most of these women sought only one service before the current one (87.6%; $n = 198$); however, 12.4% ($n = 28$) reported having searched for two or three establishments before being admitted to the hospital for delivery (data not shown in the table).

Graph 1 shows the main inadequacies of prenatal care in the state of Sergipe vis-à-vis the recommendations of the PHPN.

Discussion

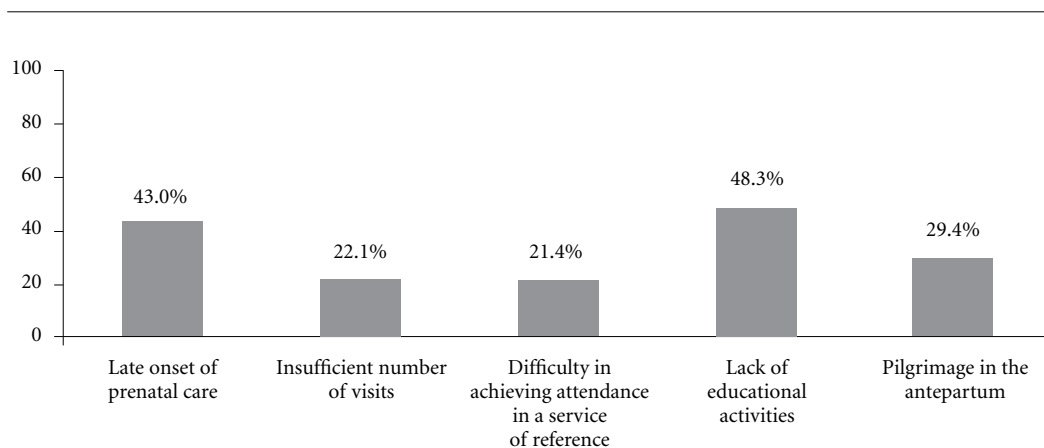
The prenatal care coverage in Sergipe was practically universal, with elevated values in all municipalities of the state, regardless of the women's demographic, social and reproductive characteristics. However, the adequacy of this care is still low compared to the recommendations of the PHPN⁴, since 43% of the respondents start-

ed prenatal care after the 16th gestational week and 22.1% did not have the minimum number of visits planned for the gestational age, which indicates late search of this care and insufficient number of attendances, situations also found in other national studies conducted in Rio de Janeiro (RJ) with 2,422 pregnant women (cross-sectional study)⁸, Juiz de Fora (MG), with 370 and 1,200 pregnant women (multiple time series study)¹⁸ and, at the national level, in a descriptive study using data from the SISPRENATAL¹⁹.

Besides, when comparing with the results of *Born in Brazil*⁹, a national survey with 23,894 women evaluated the adequacy of prenatal follow-up to PHPN and returned a higher percentage of Sergipe women with late onset of this care. It is known that younger age, lower educational level and difficult access are some factors associated with this problem^{9,20}.

A typical pattern of women with lower schooling, unplanned pregnancy, unsatisfied with the discovery of gestation and who tried to interrupt it in evidencing lower prenatal coverage or later onset of this care occurred. Other studies also identify these characteristics as factors influencing prenatal care^{9,20,21}.

Adolescent pregnant women, especially those who were aged ≤ 14 years had lower coverage of prenatal care, a result that has also been previously shown^{9,20,22}. Such conduct may be related to the lack of knowledge about available prenatal



Graph 1. Major inadequacies of prenatal care in Sergipe regarding the recommendations of the PHPN ($n = 763$ for all variables, except "Difficulty in the attendance in a service of reference", whose sample is 70). Sergipe, Brazil, 2015/2016.

services, lack of decision-making autonomy and social stigmas²³, since gestation in adolescence is associated with unmarried marital status²⁴, thus evidencing the need for differentiated strategies for this group age.

Pregnant women at high obstetric risk had lower prenatal care coverage, which is also discussed by Leal et al.²⁵, who point out the relevance of early identification of these women as the primary element in the prevention of maternal and infant morbimortality. It is known that although these patients require greater access and care from health services, they are precisely those that are least seen in the institutions responsible for them.

The proportion of women who received a prenatal care card during their follow-up was high, similar to that found in the National Demographic and Health Survey (PNDS) 2006²⁶. The frequency of showing a prenatal care card at admission for delivery was similar to that observed in a national study⁹, which also identified lower percentages in admission to parturition.

Although the first glucose score was high, it did not achieve 100% in any of the municipalities in the state. It should be emphasized that this test should be requested from all pregnant women at the first prenatal care visit, such as a screening test for gestational diabetes mellitus (GDM), regardless of the presence of risk factors, interpreted according to the schedule provided by the Ministry of Health². There was also a high coverage of ultrasonography, which is relevant to reveal the baby's health conditions, to reduce parental concerns and to promote the construction of one's motherhood²⁷.

The low level of guidance provided to women during prenatal care in Sergipe shows the lack of preparation of health professionals working in the empowerment of women for childbirth and breastfeeding, and only guidance on signs of pregnancy risk is prioritized. The biomedical nature of health care justifies this type of priority. Thus, it is expected that, in the scope of interdisciplinarity, biomedical knowledge be more articulated with other sciences²⁸.

Concerning the organization of prenatal care, the use of public services is predominant, especially primary care facilities. Only 35.1% of the respondents were followed up in hospital facilities. This seems appropriate since only patients with higher risk should be followed in units of a higher level of complexity. A nationwide study also showed a higher prevalence of prenatal care in public services⁹.

It was noticed that prenatal care in the state of Sergipe is performed at the same frequency by both professional, medical and nursing categories. This result corroborates a national study⁹ that identified an equivalent performance of these professionals in the North and Northeast regions of the country. It is noteworthy that prenatal care and puerperium visits can be performed by the medical or nursing professionals, when at low risk².

Most puerperae (88.1%) reported a follow-up by the same professional during prenatal care, indicating the continuity of this care. This is essential for the establishment of bonds and trust between professionals and the pregnant women, as well as better monitoring of pregnancy⁹.

Concerning the articulation of prenatal care with other services of the state health network, there was evidence of issues reported by high-risk pregnant women referred to services of reference. It is also worth mentioning that almost half (45.7%) of women with high obstetric risk continued their prenatal follow-up with professional nurses. This characterizes problems in the organization of this care, since pregnant women at risk are the ones who would benefit most from specialized care and, thus, it is up to the nurse to refer them to the medical professionals².

Another prenatal care flaw concerns guiding pregnant women regarding the maternity hospital of reference, which was reported by only 61.3% of the respondents. Pilgrimage for the search for childbirth care was also high (29.4%), higher than that found in the 2006 PNDS²⁶, especially among women with lower age and schooling. It is known that this finding poses risks to the health of women and their babies since according to Menezes et al.²⁹, these women seek care in another establishment on their own. In their study, conducted in Rio de Janeiro with 6,652 puerperae, only 1/5 of the women were transported by ambulance.

In this context of risk to maternal and child health, it is worth mentioning that the Northeast region between 2000 and 2009 had the highest maternal mortality rates in the country³⁰. This shows the need for interventions in the pregnancy-puerperal period, mainly aimed at prevention, to obtain satisfactory indicators in this area.

The limitations of this study are related to the reliability of data obtained through the reports of the mothers who were interviewed, such as the guidance provided by the professionals during prenatal care, the antepartum pilgrimage, and the difficulty to obtain care in high-risk services of reference.

This study allowed us to affirm that Sergipe reached a good coverage of prenatal care, reaching practically all pregnant women in the state. However, several data indicate that there are insufficient quality and adequacy to the PHPN. The main issues identified were late prenatal onset; an insufficient number of visits; poor guidance, including on maternity hospital of reference for childbirth; antepartum pilgrimage; lack of prioritization of pregnant women at higher risk and

problems in articulation with other maternal and child health services. It should be emphasized that reduced maternal and child morbimortality requires an early onset of prenatal care follow-up and the use of resources recommended by the Ministry of Health, from health promotion and prevention actions to the diagnosis and appropriate treatment of problems that may occur in the pregnancy-puerperal period.

Collaborations

RB Mendes, MJ Santos and RQ Gurgel: contributed in the conception and planning, analysis and interpretation of data; drafting and critical review of the content; and participated in the approval of the final version of the manuscript. DS Prado, FD Bezerra and RQ Gurgel: contributed in the drafting and critical review of the content; and participated in the approval of the final version of the manuscript.

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