ORIGINAL ARTICLE

REVISTA ENFERMAGEM ATUAL IN DERME

CHARACTERIZATION OF WOMEN ATTENDED IN AN OBSTETRIC EMERGENCY UNIT OF A PUBLIC HOSPITAL IN PORTO ALEGRE

CARACTERIZACIÓN DE MUJERES ATENDIDAS EN UNA EMERGENCIA OBSTÉTRICA DE UN HOSPITAL PÚBLICO DE PORTO ALEGRE

CARACTERIZAÇÃO DE MULHERES ATENDIDAS EM UMA EMERGÊNCIA OBSTÉTRICA DE UM HOSPITAL PÚBLICO DE PORTO ALEGRE

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ABSTRACT
Introduction: The reduction of maternal morbidity and mortality requires the implementation of protocols such as the User Embracement and Obstetric Risk Classification. It is crucial to characterize emergency obstetric care to ensure personalized care. **Objective:** To analyze the characteristics of women residing in Porto Alegre, Rio Grande do Sul, who were attended to in an Obstetric Emergency unit of a public hospital. **Method:** A quantitative, cross-sectional, and retrospective study with document analysis. All attendances that occurred at the emergency obstetric unit of a public hospital between January and September 2021 of women residing in Porto Alegre were included. Attendances of women who did not show up to their medical appointment after their risk classification were excluded. Data collection was retrospective, with the application of a structured instrument using electronic medical records. For analysis, chi-square and linear trend tests were used, considering a significance level of 5%. The study was approved by the Research Ethics Committee. **Results:** A total of 1,343 attendances were analyzed. We found a predominance of women aged 20-29, self-identified as white, Brazilian, with a gestational age <37 weeks, >6 prenatal consultations, and classified as green clinical priority. Most attendances occurred within the recommended average times. **Conclusion:** The results highlight the predominance of green clinical priority (low urgency) attendances at the studied location. There is a need for strengthening Primary Health Care as a strategy to address this demand. It also calls attention to the vulnerability of non-white and immigrant women and reinforces the importance of the User Embracement and Obstetric Risk Classification protocol in organizing obstetric services and reducing maternal morbidity and mortality.
Keywords: User Embracement; Obstetrics; Obstetric Nursing; Triage.

RESUMEN
Introducción: La reducción de la morbimortalidad materna exige la implementación de protocolos como el Acogida y Clasificación de Riesgo en Obstetricia, siendo crucial caracterizar la atención en la emergencia obstétrica para garantizar una atención personalizada. **Objetivo:** Analizar la caracterización de las mujeres residentes en Porto Alegre/RS atendidas en Acogida y Clasificación de Riesgo en Obstetricia en un hospital público. **Método:** Estudio cuantitativo, transversal y retrospectivo, con análisis documental. Se incluyeron todas las atenciones realizadas en la emergencia obstétrica de un hospital público, entre enero/2021 y septiembre/2021, de mujeres residentes en Porto Alegre. Se excluyeron las atenciones de mujeres que no asistieron a la consulta médica tras la clasificación de riesgo obstétrico. La recolección de datos fue retrospectiva, utilizando un cuestionario estructurado aplicado en los registros del prontuario electrónico. Para el análisis, se utilizaron las pruebas de ji-cuadrado y de tendencia lineal, considerando un nivel de significancia del 5%. Estudio aprobado por el Comité de Ética en Investigación. **Resultados:** Se analizaron 1.343 atenciones. Se observó una predominancia de mujeres de 20-29 años, autoidentificadas como blancas, brasileñas, con una edad gestacional <37 semanas, más de 6 consultas de prenatal y clasificadas con prioridad clínica verde. La mayoría de las atenciones se realizaron dentro de los tiempos promedio recomendados. **Conclusión:** Los resultados destacan la predominancia de atenciones de prioridad clínica verde (poco urgente) en el lugar estudiado y el fortalecimiento de la Atención Primaria en Salud como estrategia para atender esta demanda. También señalan la vulnerabilidad de las mujeres no blancas e inmigrantes, y refuerzan la importancia del Acogida y Clasificación de Riesgo en la organización de los servicios obstétricos y en la reducción de la morbimortalidad materna.
Palabras clave: Acogimiento; Obstetricia; Enfermería Obstétrica; Triaje.

RESUMO
Introdução: a redução da morbimortalidade materna requer a implementação de protocolos como o de Acolhimento e Classificação de Risco em Obstetrícia, sendo crucial caracterizar os atendimentos, na emergência obstétrica, para garantir um cuidado singular. **Objetivo:** analisar a caracterização das mulheres, residentes em Porto Alegre/RS, atendidas no Acolhimento e Classificação de Risco em Obstetrícia, em um hospital público. **Método:** estudo quantitativo, transversal e retrospectivo, com análise documental. Foram incluídos todos os atendimentos realizados, na emergência obstétrica, de um hospital público, entre janeiro/2021 e setembro/2021, de mulheres que residiam em Porto Alegre. Foram excluídos atendimentos de mulheres que não compareceram à consulta médica após classificação de risco obstétrico. A coleta de dados foi retrospectiva, com utilização de questionário estruturado para registros do prontuário eletrônico. Para análise, utilizou-se teste qui-quadrado e de tendência linear, considerando nível de significância de 5%. **Resultados:** foram analisados 1.343 atendimentos. Observou-se predominância de mulheres com 20-29 anos de idade, autodeclaradas brancas, brasileiras, com idade gestacional <37 semanas, com >6 consultas de pré-natal e classificadas como prioridade clínica verde. A maioria dos atendimentos ocorreu dentro dos tempos médios preconizados. **Conclusão:** os resultados destacam a predominância de atendimentos de prioridade clínica verde (pouco urgente); o fortalecimento da Atenção Primária em Saúde pode ser estratégia para atendimento dessa demanda. Observou-se também vulnerabilidade de mulheres não brancas e imigrantes o que reforça a importância do Acolhimento e Classificação de Risco na organização dos serviços obstétricos e na redução da morbimortalidade materna.
Palavras-chave: Acolhimento; Obstetrícia; Enfermagem Obstétrica; Classificação de Risco.

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INTRODUCTION

Maternal mortality is an important health indicator that reflects the level of development of a society. It is necessary to do an in-depth analysis of the issue in order to reduce it.[1] Most cases of maternal mortality in the world are preventable, and their prevention require a multifaceted approach, which includes strategies to improve the care provided in health services with the adoption of standardized care protocols.[2] In Brazil, the Manual for User Embracement and Risk Classification in Obstetrics (*A&CRO*), published by the Ministry of Health, has been adopted as a strategy to ensure quality access to entry-level services that treat obstetric emergencies.[3]

The *A&CRO* manual is a clinical decision-making support tool that helps identify the most seriously ill patients and provides fast and safe care according to their potential risk. The recommended average waiting time between registration and risk classification should be less than 10 minutes, while the average total classification time should be less than 5 minutes. The manual is composed of flowcharts assigned to the most frequent complaints presented by users. The women are classified by colors/clinical priority and it determines the average waiting time for medical care: red (immediate); orange (up to 15 min); yellow (up to 30 min); green (up to 120 min) and blue (up to 240 min or referral to another service). The search for optimizing these times reflects on the quality of care provided in obstetric emergency services.[3]

Implementing the *A&CRO* manual requires important changes, including timely medical and nursing obstetric care. This ensures that users are cared for according to their clinical severity, and not in the order in which they arrive at the service, in addition to optimizing spaces to speed up care.[3] The care provided in an obstetric emergency involves interdisciplinary practice, demands a proactive stance from professionals, active listening and response to the specific needs of each woman treated in the health service.[3] In nursing, risk classification is an activity reserved for nurses, who must be trained to perform this function in accordance with institutional protocol. Nurses who work in risk classification must practice qualified listening, apply critical clinical judgment to assess women's complaints, and make appropriate referrals based on the risk presented.[4]

From prenatal care to the hospital environment, knowledge of sociodemographic characteristics is essential to provide comprehensive health care for pregnant women seeking obstetric emergencies. This care involves issues related to the physiological and emotional changes suffered by women during pregnancy, as well as fetal development[5], and must follow the principles of promoting equity and respect for cultural, ethnic, and racial diversity[6].

Given the relevance of the topic and its implications for maternal and neonatal morbidity and mortality rates, this study aimed to analyze the characteristics of women residing in Porto Alegre, Rio Grande do Sul, who were attended

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to in an Obstetric Emergency unit of a public hospital.

METHODS

This is a cross-sectional, analytical and retrospective study, which is part of a larger project developed by the research group entitled *Grupo de Estudos da Linha de Cuidado Mãe-Bebê*. The sample size calculation for the main study was performed using the PSS Health® tool, and took in consideration the study location and the 95% occurrence rate of the hospitalization outcome in patients with red or orange obstetric risk classification. It resulted in a sample of 1,652 consultations. The Wald method was used, with a 10% amplitude for the confidence interval, a 95% confidence level and an increase of 10% for possible losses[7]. Thus, the number of consultations for this study was estimated at 1,210. All consultations of women residing in the city of Porto Alegre (RS), whose risk classification was recorded in electronic medical records and that occurred from 01/01/2021 to 04/09/2021, were included in the research. Consultations of those who did not show up to their medical appointment after their obstetric risk classification were excluded from the study.

Data collection took place in a high-complexity Obstetric Unit of a federal public hospital in Porto Alegre, Rio Grande do Sul, Brasil. It was done by nurses who worked in that unit. A structured and pre-coded questionnaire was used, prepared by the authors, using data from the electronic medical records of the women included in the sample. To ensure the rigor of data collection, the data collectors were trained to administer the instrument. Data were collected retrospectively between November 2022 and May 2023.

The exposure variables were defined as those related to the sociodemographic and obstetric characteristics of the sample. The sociodemographic variables analyzed were: age at the time of care in complete years (>14 to 19; 20 to 29; 30 to 39; >40); race/skin color (white; black; mixed race/yellow); nationality (Brazilian; Venezuelan; Haitian; others); and marital status (single; married/stable union; other). The obstetric variables included were: location of prenatal care (health centers; high-risk prenatal outpatient clinic [HRPOC]; others); number of pregnancies (1; 2; >3); number of vaginal deliveries (0; 1; 2; >3); number of cesarean sections (0; 1; 2; >3); number of abortions (0; 1; >2); number of ectopic pregnancies (0; >1); gestational age [GA] at the time of *A&CRO* in complete weeks (<37; >37); and number of prenatal consultations (<6 consultations; >6 consultations).

Variables related to time markers and health care were included: time elapsed between the patient's registration in the Obstetric Unit and the start of medical care (<10min; >10min); total time of *A&CRO* consultation (<5min; >5min); and time between the end of A&CRO consultation and the start of medical care according to clinical priority (adequate; exceeded).[3] The flowcharts used in the Obstetric Risk Classification[3] were used as variables in the analysis: fainting/general malaise; abdominal/lower back pain/uterine contractions;

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headache/dizziness/vertigo; shortness of breath/respiratory symptoms; fever/signs of infection; nausea and vomiting; vaginal fluid loss/vaginal secretions; vaginal blood loss; urinary complaints; cessation/reduction of fetal movements; seizures report; and other complaints/situations.

The outcomes assessed include clinical priority/color (blue; green; yellow; orange; red), clinical decision after the first medical consultation (discharge/released; tests/procedures/medication; hospitalization; referral to other services) and clinical decision after the second medical evaluation (discharge/released; tests/procedures/medication; hospital admission; referral to other services).

The data were analyzed using SPSS® version 22.0. Numerical variables were expressed as mean and standard deviation, and categorical variables were presented as absolute number and percentage. To assess the association between categorical variables and outcomes, the chi-square test and the linear trend test were used - for categorized numerical variables, considering a significance level of 5% ($p<0.05$). The research was approved by the Research Ethics Committee of the institution studied, according process no. 5.682.438 and CAAE no. 63328122.7.0000.5530.

RESULTS

After applying the inclusion and exclusion criteria, the final study sample consisted of 1,343 consultations. Regarding the socio demographic data of the sample, the mean age was 27.0 years (SD±0.7), with a predominance of Brazilian women (n=1,277; 95.1%) who self-declared themselves as white (n=867; 64.6%) (Table 1).

Regarding their obstetric history, 37.5% (n=503) of the women in the sample had been pregnant three or more times, 55.1% (n=740) had no previous births, and 27.9% (n=205) had had at least one previous cesarean section. Furthermore, 23.8% (n=320) of them had a history of at least one previous abortion, and 1.3% (n=17) had a history of at least one previous ectopic pregnancy. Gestational age of most women in the sample was <37 weeks (n=740; 55.1%), and most of them had >6 prenatal consultations (n=832; 62.0%) carried out, mostly at health centers (n=809; 60.2%) (Table 1).

Table 1 - Characterization of sociodemographic and obstetric data of care provided at an obstetric center, Porto Alegre/RS, Brazil, 2023 (n = 1,343).

VARIABLES	N	%
SOCIODEMOGRAPHIC		
Age (in full years)		
14 to 19	141	10,5
20 to 29	747	55,6
30 to 39	399	29,7
≥40	56	4,2
Race/skin color		

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White	867	64,6
Black	284	21,1
Brown/yellow	192	14,3
Nationality		
Brazilian	1.277	95,1
Haitian	49	3,6
Venezuelan	12	0,9
Others	5	0,4
Marital status		
Single	1167	86,9
Married / Stable Union	146	10,9
Others	30	2,2
OBSTETRICS		
Number of pregnancies		
1	453	33,7
2	387	28,8
≥ 3	503	37,5
Number of previous births		
0	740	55,1
1	325	24,2
2	145	10,8
≥ 3	133	9,9
Number of previous cesareans		
0	968	72,1
1	205	15,3
2	74	5,5
≥3	96	7,1
Gestational age (full weeks)		
< 37	740	55,1
≥ 37	603	44,9
Prenatal care location		
Health Centers	809	60,2
HRPOC	268	20,0
Others	266	19,8
Prenatal care - Number of consultations		
≥ 6 consultations	832	62,0
< 6 consultations	511	38,0

Most women in the sample received care within the recommended times for registration and initial assessment of *A&CRO* (n=829; 61.7%) and for the duration of *A&CRO* consultation (n=873; 65%). Regarding the care provided in *A&CRO*, the most frequent clinical priority in the sample was green (n=863; 64.3%), the most frequent initial clinical decision was

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"Exams/procedures/medications" (n=666; 49.6%), and the most frequent final clinical decision was "Discharge/released" (n=422; 73.0%) (Table 2).

Table 2 - Characterization of services provided at *A&CRO* in an obstetric center, Porto Alegre/RS, Brazil, 2023 (n = 1,343).

VARIABLES	N	%
Time between registration and *A&CRO*[a]		
< 10 minutes	829	61,7
≥ 10 minutes	514	38,3
Total time of *A&CRO*[a]		
< 5 minutes	873	65,0
≥ 5 minutes	470	35,0
Flowchart of Risk Classification in Obstetrics		
Abdominal/lower back pain/uterine contractions	571	42,5
Other complaints/situations	391	29,1
Vaginal blood loss	146	10,9
Vaginal fluid loss/ vaginal secretions	105	7,8
Headache / Dizziness / Vertigo	44	3,3
Cessation / reduction of fetal movements	28	2,1
Nausea and vomiting	25	1,9
Urinary complaints	17	1,3
Shortness of breath / Respiratory symptoms	10	0,7
Fever / Signs of infection	4	0,3
Fainting / General malaise	2	0,1
Seizure report	0	0,0
Clinical Priority of Risk Classification in Obstetrics		
Blue	3	0,2
Green	863	64,3
Yellow	406	30,2
Orange	67	5,0
Red	4	0,3
Initial Clinical Decision		
Exams / Procedures / Medication	666	49,6
Discharged / Released	422	31,4
Hospitalization	242	18,0
Referral to other services	13	0,9
Final Clinical Decision		
Discharged / Released	981	73,0
Hospitalization	340	25,3
Referral to other services	12	0,9
Exams / Procedures / Medication	10	0,7

[a]*A&CRO* = User Embracement and Risk Classification in Obstetrics.

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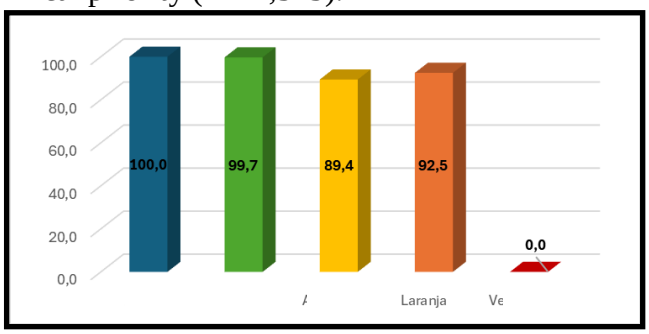
Regarding the waiting time for the start of medical care, 95.9% (n=1,288) of the sample was attended to within the recommended time. The highest percentage of time adequacy between the end of *A&CRO* consultation and medical care was for women classified as clinical priority blue (n=3; 100%), followed by green priority (n=860; 99.7%) (Graph 1).

Graph 1 - Percentage of time adequacy between User Embracement and Risk Classification in Obstetrics and medical care by clinical priority (n = 1,343).



Source: created by the authors.

Regarding clinical priority, for the Venezuelan population, there was a higher frequency of the color green (n=11; 91.7%), and a lower occurrence of yellow (n=1; 8.3%) in comparison to other nationalities (p<0.001). In the marital status category, single women had a higher frequency of green classification (n=758; 65.0%) in comparison to the other groups (p=<0.001) (Table 3).

The analysis also showed that the number of previous births was inversely proportional to the percentage of green classifications (p=0.038). Regarding the number of previous cesarean sections, pregnant women with >3 cesarean sections had a higher frequency of yellow classification (n=41; 42.7%) than women who had <2 previous cesarean sections (p=0.016) (Table 3).

Pregnant women in the sample with GA <37 weeks were classified as green more frequently than pregnant women with GA >37 weeks (n=551 vs n=312; 74.5% vs 51.7%; p<0.001). Furthermore, pregnant women with GA >37 weeks were more frequently classified as yellow (n=258; 42.8%) than those with GA <37 weeks (n=148; 20.0%) (Table 3).

There was a higher frequency of classifications with the color green among pregnant women who had prenatal care in the HRPOC, when compared to those with prenatal care at health centers or in other locations (n=206 vs n=490 vs n=167; 76.9% vs 60.6% vs 62.8%; p<0.001). Regarding the number of prenatal consultations, pregnant women with <6 consultations were classified with the green color more frequently than pregnant women with >6 consultations (71.0% vs 60.1%; p<0.001) (Table 3).

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Table 3 - Analysis of sociodemographic and obstetric variables in relation to the clinical priority assigned in the Obstetric Risk Classification in an obstetric center, Porto Alegre/RS, Brazil, 2023 (n = 1,343).

	Clinical priority n(%)					
Variables	**Green**	**Yellow**	**Orange**	**Red**	**Blue**	**P value**
SOCIODEMOGRAPHICS						
Age						0,542[a]
14 - 19	88 (62,4)	45 (31,9)	7 (5,0)	1 (0,7)	-	
20 - 29	467 (62,5)	242 (32,4)	33 (4,4)	3 (0,4)	2 (0,3)	
30 - 39	273 (68,4)	103 (25,8)	22 (5,5)	-	1 (0,3)	
≥40	35 (62,5)	16 (28,6)	5 (5,8)	-	-	
Race/skin color						0,292[a]
White	567 (65,4)	257 (29,6)	41 (4,7)	2 (0,2)	-	
Black	179 (63,0)	88 (31,0)	15 (5,3)	1 (0,4)	1 (0,4)	
Brown/Yellow	117 (60,9)	61 (31,8)	11 (5,7)	1 (0,5)	2 (1,0)	
Nationality						<0,001[a]
Brazilian	818 (64,1)	368 (30,2)	67 (5,2)	4 (0,3)	2 (0,2)	
Venezuelan	11 (91,7)	1 (8,3)	-	-	-	
Haitian	32 (65,3)	17 (34,7)	-	-	-	
Others	2 (40,0)	2 (40,0)	-	-	1 (20,0)	
Marital status						<0,001[a]
Single	758 (65,0)	349 (29,9)	55 (4,7)	2 (0,2)	3 (0,3)	
Married/ Stable Union	88 (60,3)	48 (32,9)	10 (6,8)	-	-	
Others	17 (56,7)	9 (30,0)	2 (6,7)	2 (6,7)	-	
OBSTETRICS						
Number of pregnancies						0,088[a]
1	290 (64,0)	145 (32,0)	16 (3,5)	2 (0,4)	-	
2	236 (61,0)	131 (33,9)	19 (4,9)	-	1 (0,3)	
≥3	337 (67,0)	130 (25,8)	32 (6,4)	2 (0,4)	2 (0,4)	
Number of vaginal births						0,038[b]
0	482 (65,1)	224 (30,3)	31 (4,2)	2 (0,3)	1 (0,1)	
1	211 (64,9)	97 (29,8)	16 (4,9)	-	1 (0,3)	
2	89 (61,4)	48 (33,1)	7 (4,8)	1 (0,7)	-	
≥3	81 (60,9)	37 (27,8)	13 (9,8)	1 (0,8)	1 (0,8)	
Number of cesareans						0,016[a]
0	627 (64,8)	293 (30,3)	44 (4,5)	3 (0,3)	1 (0,1)	
1	134 (65,4)	58 (28,3)	13 (6,3)	-	-	

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2	54 (73,0)	14 (18,9)	5 (6,8)	-	1 (1,4)	
≥3	48 (50,0)	41 (42,7)	5 (5,2)	1 (1,0)	1 (1,0)	
GA[c] in *A&CRO*[d]						<0,001[a]
<37 weeks	551 (74,5)	148 (20,0)	39 (5,3)	1 (0,1)	1 (0,1)	
≥37weeks	312 (51,7)	258 (42,8)	28 (4,6)	3 (0,5)	2 (0,3)	
Prenatal care location						<0,001[a]
Health centers	490 (60,6)	272 (33,6)	44 (5,4)	2 (0,2)	1 (0,1)	
HRPOC	206 (76,9)	52 (19,4)	8 (3,0)	-	2 (0,7)	
Others	167 (62,8)	82 (30,8)	15 (5,6)	2 (0,8)	-	
Prenatal care - Number of consultations	363 (71,0)	116 (22,7)	32 (6,3)	-	-	<0,001[a]
<6						
≥6	500 (60,1)	290 (34,9)	35 (4,2)	4 (0,5)	3 (0,4)	

[a] Chi-square test.
[b] Linear trend test.
[c] Gestational age
[d] *A&CRO* = User Embracement and Risk Classification in Obstetrics.

The analysis of the initial clinical decision in the sample showed that Brazilian women were more frequently "Discharged/released" (n=407; 31.9%) when compared to women of other nationalities (p=0.006). Venezuelans (n=8; 66.7%) and Haitians (n=28; 57.1%) were more frequently sent to "Exams/procedures/medication" compared to the others (p=0.006). It was observed that women with full-term pregnancies were hospitalized more frequently than women with GA <37 weeks (n=179; 29.7% vs n=63; 8.5%; p<0.001). Women who had prenatal care at the HRPOC were more frequently sent to "Exams/procedures/medication" (n=174; 64.9%; p<0.001) than the other groups in this variable. Regarding the number of prenatal consultations, pregnant women with <6 consultations were "Discharged/released" in greater proportion than those with >6 consultations (n=252; 49.3% vs n=170; 20.4%; p<0.001) (Table 4).

Table 4 - Analysis of sociodemographic and obstetric variables in relation to the initial clinical decision in an obstetric center, Porto Alegre/RS, Brazil, 2023 (n = 1,343).

Variables	Clinical decision n(%)				P value
	Discharged/ Released	Exams/Procedures/ Medication	Hospitalization	Referral to other services	
SOCIODEMOGRAPHICS					
Age					
14 - 19	44 (31,2)	74 (52,5)	21 (14,9)	2 (1,4)	0,034[a]
20 - 29	258 (34,5)	352 (47,1)	130 (17,4)	7 (0,9)	

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30 - 39	105 (26,3)	213 (53,4)	77 (19,3)	4 (1,0)	
≥40	15 (26,8)	27 (48,2)	14 (25,0)	-	
Race/skin color					
White	295 (34,0)	407 (46,9)	157 (18,1)	8 (0,9)	0,084[b]
Black	73 (25,7)	151 (53,2)	57 (20,1)	3 (1,1)	
Brown/Yellow	54 (28,1)	108 (56,2)	28 (14,6)	2 (1,0)	
Nationality					
Brazilian	407 (31,9)	628 (49,2)	230 (18,0)	12 (0,9)	
Venezuelan	3 (25,0)	8 (66,7)	1 (8,3)	-	0,006[b]
Haitian	11 (22,4)	28 (57,1)	10 (20,4)	-	
Others	1 (20,0)	2 (40,0)	1 (20,0)	1 (20,0)	
Marital status					
Single	362 (31,0)	586 (50,2)	208 (17,8)	11 (0,9)	0,872[b]
Married/ Stable Union	48 (32,9)	67 (45,9)	29 (19,9)	2 (1,4)	
Others	12 (40,0)	13 (43,3)	5 (16,7)	-	
OBSTETRICS					
Number of pregnancies					
1	150 (33,1)	219 (48,3)	78 (17,2)	6 (1,3)	0,612[b]
2	110 (28,4)	195 (50,4)	79 (20,4)	3 (0,8)	
≥3	162 (32,2)	252 (50,1)	85 (16,9)	4 (0,8)	
Number of vaginal births					
0	224 (30,3)	375 (50,7)	132 (17,8)	9 (1,2)	
1	105 (32,3)	165 (50,8)	54 (16,6)	1 (0,3)	0,656[b]
2	53 (36,6)	63 (43,4)	28 (19,3)	1 (0,7)	
≥3	40 (30,1)	63 (47,4)	28 (21,1)	2 (1,5)	
Number of cesareans					
0	319 (33,0)	463 (47,8)	176 (18,2)	10 (1,0)	
1	54 (26,3)	117 (57,1)	33 (16,1)	1 (0,5)	0,546[b]
2	22 (29,7)	39 (52,7)	12 (16,2)	1 (1,4)	
≥3	27 (28,1)	47 (49,0)	21 (21,9)	1 (1,0)	
GA[c] in *A&CRO*[d]					
<37 weeks	314 (42,4)	352 (47,6)	63 (8,5)	11 (1,5)	<0,001[b]
≥37 weeks	108 (17,9)	314 (52,1)	179 (29,7)	2 (0,3)	
Prenatal care location					
Health center	265 (32,8)	378 (46,7)	159 (19,7)	7 (0,9)	<0,001[b]
HRPOC	52 (19,4)	174 (64,9)	40 (14,9)	2 (0,7)	
Others	105 (39,5)	114 (42,9)	43 (16,2)	4 (1,5)	
Prenatal care - Number of consultations					
<6	252 (49,3)	196 (38,4)	55 (10,8)	8 (1,6)	<0,001[b]
≥6	170 (20,4)	470 (56,5)	187 (22,5)	5 (0,6)	

[a] Chi-square test.
[b] Linear trend test.
[c] Gestational age
[d] *A&CRO* = User Embracement and Risk Classification in Obstetrics.

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DISCUSSION

This study found that pregnant women residing in Porto Alegre, Brazil, who were attended to at an obstetric unit of a public hospital were predominantly aged 20 to 29, single, with more than three previous pregnancies and over six prenatal visits. Most presented with a gestational age of less than 37 weeks and were classified as green priority (less urgent) cases. In terms of sociodemographic characteristics, the sample aligns with national trends indicating a decline in marriage rates among women compared to previous years[8], along with an increasing tendency to postpone pregnancy.[9]

The literature shows that the health of pregnant women may be related to sociodemographic aspects[10]. The analysis carried out in this study showed that the increase in the age range of people treated at the service was directly proportional to the hospitalization rate. Hospitalizations may occur more frequently in older pregnant women, since they tend to have high-risk pregnancies, either due to pregnancy-specific comorbidities or previous pathologies that are exacerbated during pregnancy[11,12]. On the other hand, adolescents may have a higher number of premature births, considering risk factors such as lower education levels and fewer prenatal consultations[13].

Most participants in the study self-identified as White, followed by those identifying as Black. In contrast to the overall Brazilian population—where the majority self-identifies as Brown (Pardo)—in the state of Rio Grande do Sul, the majority of the population self-identifies as White. Therefore, the sample was representative of the studied population in terms of race/skin color.[14] Although no statistically significant association was observed in the sample regarding race/skin color, women who identified as Black, Brown (Parda), or Yellow were more frequently referred for "Exams/procedures/medication" compared to those who identified as White.

Studies that address the relationship between race and access to health care indicate that Black, Brown and Asian people have more limited access to health care, prenatal care, and childbirth than White individuals.[15,16] This disparity may be related to the racial and social inequities faced by non-White populations in accessing and receiving adequate healthcare in Brazil. Thus, these groups of people may seek hospital health services more frequently to undergo tests and procedures that could be performed in primary health care (PHC). They may also present to obstetric emergency services with more severe health conditions, requiring a greater number of complementary tests and procedures than the rest of the population.[17]

Venezuelan women were also referred more often for "Exams/procedures/medication" than Brazilian women and received a green classification more frequently than other nationalities. The Venezuelan population has generally migrated to Brazil in a context of conflict, lack of human security, and limited opportunities in their country of origin. As a result, this population has a significant history of vulnerability, which may lead to increased use of

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obstetric emergency services, even in less urgent situations.[18]

Regarding the characteristics of the care provided, most of the sample was classified as green. Studies on user embracement and obstetric risk classification have shown a predominance of green classifications in obstetric emergency units.[19-21] A study conducted in Fortaleza, which analyzed 365 medical records, found that 57.5% of the women who sought care at a public maternity hospital's obstetric emergency unit were classified as low urgency.[19] It is understood that patients classified as green can often be managed at other points within the Health Care Network (*RAS - Rede de Atenção em Saúde*) rather than in an obstetric emergency service, as they do not present an immediate risk of clinical deterioration, unlike those classified as yellow, orange, or red. Therefore, the high number of green classifications may reflect weaknesses in the RAS and contribute to the overburdening of obstetric emergency services.[21] This excessive demand for emergency services may also be influenced by cultural factors and by the open-door nature of these services.[22] On the other hand, PHC plays a key role as the main access point to the Brazilian health system and as the coordinator of care.[23] Thus, reducing the overload on obstetric emergency services necessarily involves improving communication between PHC and other components of the RAS.[21]

The overload of the service studied may also be represented by the fact that pregnant women with no previous vaginal deliveries, preterm births, and/or fewer than six prenatal consultations were more frequently classified as green compared to others. Furthermore, in the sample, pregnant women with GA <37 weeks and those with fewer than six prenatal visits were more frequently discharged after the initial medical assessment without requiring further interventions. These findings reiterate the importance of a strengthened PHC system, which should be capable of managing low-urgency demands and providing effective prenatal care, as this can reduce maternal and infant morbidity and mortality rates.[24] According to the Brazilian Ministry of Health, adequate prenatal care should include at least six consultations, initiated early, and must provide participation in educational activities regarding signs of labor onset, strategies to facilitate childbirth and recognition of clinical changes that may indicate pregnancy-related risks.[25] The lack of educational activities has been highlighted as one of the main inadequacies in prenatal care, since adequate follow-up has the potential to reduce unnecessary visits to obstetric emergency services for non-urgent complaints.[5,26,27]

Another strategy that contributes to reducing hospital overcrowding is the implementation and continuous improvement of the *A&CRO*, which ensures timely care, avoids early hospitalization, and reduces obstetric interventions.[27] Despite the high percentage of less urgent complaints, it is important that the *A&CRO* fulfills its role in resolving the demands presented by the users and making appropriate

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referrals to reduce the unnecessary circulation of users across healthcare services.[28,29]

In the analysis of prenatal care locations, it was observed that women receiving care through the high-risk prenatal outpatient clinic were more frequently referred for exams and procedures compared to the other groups, despite being more often classified as green clinical priority. A more in-depth analysis is needed to understand the reasons for this difference, as well as to investigate whether the exams and procedures requested could have been resolved in outpatient settings. A more robust analysis is also required to assess the relationship between the number of previous births and cesarean sections and the clinical priorities assigned, given that participants with more than three previous births had a higher proportion of orange classifications, and those with more than three previous cesarean sections had a higher proportion of yellow classifications compared to other categories.

Regarding waiting times for the start of *A&CRO* process, initiation of medical care and overall duration of visits, most participants were attended to within the average times recommended by the Ministry of Health. Delays beyond the recommended timeframe may be caused by the unnecessary use of obstetric emergencies services and the lack of professional training within these units.[29]

A study conducted in Recife showed that the average duration of risk classification and waiting time for medical care were within the parameters set by the Ministry of Health, except for the time between patient registration and the start of risk classification, and the waiting time for users classified as red clinical priority.[20] As indicated in the literature, in this study, women classified as red were not attended to within the recommended timeframe. This may be related to the lack of adequate clinical protocols or, even, to delays in care documentation[30]. The studied institution's workflow often involves stabilizing the clinical/obstetric condition of pregnant women with severe complaints before electronically registering the care provided.

Time-related indicators serve as a basis for evaluating access to emergency units, defining patient referral flows, and monitoring service effectiveness and organization to ensure safe and humanized care.[3] Therefore, the adequacy of waiting and assistance times is a key indicator for assessing and planning improvements in for *A&CRO* processes.

CONCLUSIONS

The study analyzed the characteristics of care provided to women residing in Porto Alegre, RS who were attended in the obstetric unit of a public hospital through the *A&CRO* protocol. The results showed that the sample was representative of the population studied. The women who accessed the study setting presented sociodemographic, clinical, and obstetric diversity, which highlights the relevance of *A&CRO* as a key tool for identifying inequities and their impact on the social determinants of health. The findings suggest possible vulnerability among non-White and immigrant women, as they were more frequently referred

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for exams/procedures/medications. These results underscore the need to reduce inequities in access to healthcare, improving services provided by the Brazilian Unified Health System (SUS) in alignment with the principles of equity, universality, and comprehensiveness.

Regarding the obstetric variables analyzed, most women in the sample were referred from primary health care centers located in the state capital, had more than three pregnancies, attended more than six prenatal consultations, and sought care with GA <37 weeks compared to the other groups evaluated. Green classification (less urgent) was predominant among the cases attended, reinforcing the need to strengthen the PHC to ensure quality prenatal care as well as improving communication across services within the *RAS*. Although the obstetric emergency service in question was found to be overloaded with non-urgent demands, most of the assistance times were within the standards recommended by the Ministry of Health.

The limitations of the study include the retrospective nature of data collection and the use of secondary data from medical records. It was not possible to collect information on the educational level of part of the sample due to missing entries in the electronic records during the study period. Another limitation concerns the predefined categories for the "marital status" variable in the electronic records, which did not allow identifying whether participants had a steady partner. The study also did not group women who had more than one visit to the *A&CRO* during the data collection period.

The strengths of the study include the relevance of the topic, which remains under-researched, the sample size, and the potential to strengthen care practices within the *RAS* and at the study site. The findings highlight social inequities in the sample and emphasize the importance of organizing *A&CRO* through protocols aimed at providing timely and effective care in maternity hospitals across the country.

Further research is needed to explore other sociodemographic aspects such as education, income, and occupation of women attended to at the A&CRO, as well as to assess their obstetric and neonatal outcomes. A broader data collection instrument and a more robust analysis would be necessary to better understand the relationship between race/skin color variables and access to health care. Finally, the use of *A&CRO* in Brazilian maternity hospitals is highlighted as a key strategy to ensure quality health care for pregnant women and to reduce maternal and neonatal morbidity and mortality rates.

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Nothing to declare.

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