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Original article

Sociodemographic characterization of the population from the maternity ward of a differentiated perinatal hospital in Portugal

Rafael Inácio[1], Joana Glória[1], Carolina Castro[1], Sandra Valente[1,2], Margarida Abrantes[1,2], Joana Saldanha[1,2]

[1]Neonatology Unit, Department of Pediatrics, Hospital Santa Maria, Centro Hospitalar Universitário Lisboa Norte, Lisbon, Portugal

[2]Faculty of Medicine, University of Lisbon, Lisbon, Portugal

Abstract

Introduction: Recently in Portugal, several social and demographic changes have been observed with an emphasis on the increasing number of foreign citizens. The linguistic, cultural and social barriers cause challenges to maternal and child health care. This study aimed to characterize the sociodemographic and obstetrical data of mothers and newborns hospitalized in the maternity ward of a tertiary hospital in the southern region of Portugal.

Methods: Cross-sectional observational study. A questionnaire was applied in the postpartum period to women admitted to the maternity ward of a tertiary hospital in Lisbon from 1 March 2021 to 30 June 2021.

Results: 347 surveys were obtained from a total of 785 hospitalizations. The average maternal age was 31.8 years and the average paternal age was 33.7 years. Most mothers (79.1%) and fathers (77.3%) reported having, at least, secondary education. 19.5% of mothers and 7.7% of fathers were students or unemployed, 18.9% of parents were unqualified workers and 32.0% of mothers and 23.4% of fathers were professionals in the group of intellectual and scientific activities. More than a quarter of our population were migrants (27.6% of mothers and 26.2% of fathers) and, of these, 14.9% of mothers and 11.2% of fathers were not fluent in Portuguese. 7.9% of pregnancies did not meet the criteria for adequate prenatal care defined at the national level. There was an association ($p < 0.01$) between inadequate pregnancy surveillance and lower maternal age and lower educational level. There was no difference between the migrant and non-migrant population regarding the completion of the prenatal care program.

Conclusions: The percentage of the migrant population is currently very expressive, with a non-negligible number of parents not fluent in Portuguese, which requires an adaptation of health resources to optimize the care provided. Lack of adequate prenatal care was expressive and was associated with lower maternal age and lower level of education.

Keywords

Sociodemographic data, maternity ward, migrant population, pregnancy surveillance, prenatal care.

Corresponding author

Rafael Inácio, Neonatology Unit, Department of Pediatrics, Hospital Santa Maria, Centro Hospitalar Universitário Lisboa Norte, Lisboa, Portugal; email: rafael.inacio94@gmail.com.

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Introduction

Prenatal care is considered a key factor in improving maternal health and birth outcomes [1]. Together with perinatal and postpartum care, it is an important instrument to reach the targets defined as part of the Millennium Development Goals [2], such as reducing child mortality which continues to be a priority in the Sustainable Development Goals [3]. Prenatal care has many dimensions, such as the time of the initial visit, follow-up and quality of the care provided and compliance of the future mother. Throughout the 20th century, improved accessibility to specialized care in pregnancy, childbirth and postpartum translated into a decisive advance in the reduction of maternal, fetal and child morbidity and mortality [4]. In Portugal, in the last 35 years, the introduction of a national pregnancy surveillance program and the articulation of primary health care with hospital care were decisive for the success achieved. These resources, allied with the improvement of public health measures such as vaccination, nutrition and welfare contributed to the reduction of maternal and child morbi-mortality [5].

In Portugal, in 2019, there were 86,579 live births to mothers living in national territory, a slight decrease of 0.5% compared to the previous year [6]. In that same year, the number of foreigners with resident status in Portugal (with a native population of around ten million people) was 588,976, an increase of 23.4% in relation to the previous year and the highest number ever registered [6]. In this context, there has been a change in society that challenges maternal and child health care with special relevance for the increase in foreign citizens. The linguistic, cultural and social barriers that arise may compromise the correct monitoring of pregnancy and child health and, consequently, the standards of maternal and child health considered ideal for the population.

This study aimed to characterize the socio-demographic and obstetrical data of mothers and newborns hospitalized in the maternity ward of a tertiary hospital in the southern region of Portugal.

Materials and methods

We conducted a cross-sectional observational study. A questionnaire was applied after informed consent to postpartum women, in rooming-in with their newborns, admitted to the maternity ward of a tertiary hospital (Hospital Santa Maria, Centro Hospitalar Universitário Lisboa Norte) in Lisbon, Portugal, from 1 March 2021 to 30 June 2021.

The survey contained questions concerning maternal and paternal sociodemographic data (age, level of education, occupation, number of people in the household, number of household members with fixed income, economic need of government support, health insurance and parents cohabitation), current pregnancy and delivery outcomes (adequate prenatal care as recommended by national guidelines [5], history of tobacco or drug habits during pregnancy, type of delivery, gestational age and birth weight). For the migrant population (mother, father or both), the questionnaire included questions about the country of origin, permanent residence in Portugal, valid residence permit, other members of the family living in Portugal, and fluency in Portuguese. The informed consent and surveys were available in Portuguese and English and were completed by the mothers autonomously with the support of the attending physician if needed. The study was approved by the Ethics Committee of the Academic Medical Centre, Lisbon, Portugal (approval no. 71/21).

Statistical analysis was completed with IBM® SPSS® Statistics 28. We performed a descriptive

and inferential analysis (T-student, Chi-square or Fisher exact test, as appropriate for each variable) and statistical significance was set at p-value < 0.05.

Results

We obtained 347 answers, from a total of 785 postpartum women admitted to the maternity ward (44%). Some of the surveys were not fully completed, leading to the existence of missing data for some of the questions raised.

The mean maternal age was 31.8 ± 5.8 and mean paternal age was 33.7 ± 6.5 years. Global sociodemographic data can be found in **Tab. 1**.

Table 1. General sociodemographic data.

		Mothers (n = 347)	Fathers (n = 347)
Age (years), mean (SD)		31.8 (5.8)	33.7 (6.5)
Education level, n (%)	Primary education	26 (7.8)	23 (7.2)
	Basic education	43 (12.5)	46 (14.5)
	Secondary education	97 (29.0)	116 (36.5)
	Bachelor degree	108 (32.2)	83 (26.1)
	Master degree	56 (16.7)	44 (13.8)
	Doctoral degree	4 (1.2)	3 (0.9)
Occupation, n (%)	Unemployed/ student	64 (19.5)	24 (7.7)
	Intellectual and scientific activities	105 (32.0)	73 (23.4)
	Technicians and inter-mediate level professions	29 (8.8)	71 (22.8)
	Administrative staff	24 (7.3)	4 (1.3)
	Personal service workers, security, and salespeople	22 (6.7)	18 (5.8)
	Unqualified workers	62 (18.9)	59 (18.9)
	Other categories	22 (6.7)	63 (20.1)
Use of government support, n (%)		45 (13.2)	22 (6.9)
Health insurance, n (%)		185 (54.6)	167 (50.6)
Number of people in the household, median (min;max)		4 (2;8)	
Number of fixed income, n (%)	0	17 (5.0)	
	1	88 (25.9)	
	2	221 (65.0)	
	≥ 3	14 (4.1)	
Parents cohabitation, n (%)		310 (90.1)	
Migrant, n (%)		94 (27.6)	89 (26.2)

Some of the surveys were not fully completed, leading to the existence of missing data for some of the questions raised.

Most parents (79.1% of mothers and 77.3% of fathers) had at least secondary education. The three most frequent professional categories among mothers were intellectual and scientific activities (32.0%), students or unemployed (19.5%), and unqualified workers (18.9%), while the three most frequent professional categories among fathers were intellectual and scientific activities (23.4%), technicians and intermediate level professions (22.8%) and the residual "other" categories (20.1%). Most parents (54.6% of mothers and 50.6% of fathers) had health insurance or a health subsystem and 13.2% of mothers and 6.9% of fathers were beneficiaries of governmental support (unemployment benefit or social inclusion income). Almost 10% of parents did not cohabitate.

The migrant population constituted 27.6% (n = 94) of our global sample of postpartum women. Regarding the countries of origin, it was possible to observe a preponderance in the group of Portuguese-speaking African Countries with 42.5% of migrant mothers and 51.7% of migrant fathers originating from Cape Verde, São Tomé and Príncipe, Guinea-Bissau and Angola, followed by Brazil (26.6% of migrant mothers and 23.6% of migrant fathers), other European countries (14.9% of migrant mothers and 10.1% of migrant fathers) and Nepal, India, Pakistan or Bangladesh (6.4% of migrant mothers and 7.9% of migrant fathers). The great majority of parents (more than 80%) had a valid permanent residence permit and 85.1% of mothers and 88.8% of fathers were fluent in Portuguese. The remaining data can be found in **Tab. 2**.

Table 2. Migrant population sociodemographic data.

		Mothers (n = 94)	Fathers (n = 89)
Country of origin, n (%)	Brazill	25 (26.6)	21 (23.6)
	Cape Verde	15 (15.9)	15 (16.9)
	São Tomé and Príncipe	9 (9.6)	12 (13.5)
	Guinea-Bissau	11 (11.7)	9 (10.1)
	Angola	5 (5.3)	10 (11.2)
	Nepal, India, Pakistan or Bangladesh	6 (6.4)	7 (7.9)
	Other European countries	14 (14.9)	9 (10.1)
	Other countries	9 (9.6)	6 (6.7)
Permanent residence in Portugal, n (%)		92 (97.9)	84 (94.4)
Family present in Portugal, n (%)	Nuclear family	46 (50.0)	
	Extended family	43 (46.7)	
Permanent residence permit, n (%)		74 (80.4)	71 (84.5)
Fluency in Portuguese, n (%)		80 (85.1)	79 (88.8)

Some of the surveys were not fully completed, leading to the existence of missing data for some of the questions raised.

From the overall sample, most women received adequate prenatal care (92.1%) according to the Portuguese national health care program (≥ 6 appointments). Among the non-migrant mothers, 92.8% had adequate prenatal care, while among the migrant mothers, this value was 88.4%. There was no statistically significant difference (p = 0.264) between the migrant and non-migrant population regarding the completion of the prenatal care program, however, there was an association (p < 0.01) between a lower maternal age or a lower level of education and this compliance. The remaining comparative analysis between the group of migrant and non-migrant mothers showed differences between groups regarding the time of the beginning (p = 0.010) and place (p = 0.011) of pregnancy surveillance, as well as tobacco consumption (p = 0.002) during pregnancy. Other obstetrical outcomes can be found in **Tab. 3**.

Table 3. Obstetrical outcomes.

		Non-migrant mothers (n = 253)	Migrant mothers (n = 94)	p
Pregnancy surveillance (≥ 6 appointments), n (%)		231 (92.8)	84 (88.4)	0.264
≥ 3 ultrasound scans, n (%)		242 (97.2)	90 (94.7)	0.709
Beginning of surveillance, n (%)	**1st trimester**	234 (94.0)	81 (85.3)	**0.010**
	2nd trimester	7 (2.8)	10 (10.5)	
	3rd trimester	3 (1.2)	2 (2.1)	
Place of surveillance, n (%)	**Primary healthcare**	82 (32.9)	48 (50.5)	**0.011**
	Hospital	54 (21.7)	20 (21.1)	
	Private healthcare	59 (23.7)	10 (10.5)	
Serologies in 3rd trimester, n (%)	**HIV+**	2 (0.8)	3 (3.2)	0.131
	HBsAg+	0 (0.0)	2 (2.1)	0.063
Consumptions during pregnancy, n (%)	**Alcohol**	3 (1.2)	4 (4.2)	0.095
	Tobacco	31 (12.4)	2 (2.1)	**0.002**
	Other drugs	0 (0.0)	1 (1.1)	0.276
Type of delivery, n (%)	**Spontaneous vaginal delivery**	132 (53.0)	46 (48.4)	0.139
	Instrumental delivery	51 (20.5)	14 (14.7)	
	Cesarean	64 (25.7)	34 (35.8)	
Gestational age (weeks), median (min;max)		39 (36;41)	39 (35;42)	0.952
Birth weight (g), mean (SD)		3,222 (469)	3,257 (446)	0.542

Some of the surveys were not fully completed, leading to the existence of missing data for some of the questions raised.

Discussion

According to the World Health Organization, the implementation of health policies should be based on the definition of a vision for the future and should help to establish goals and references for the short and medium term [7]. The Portuguese National Health Service, through the promotion of universal access to health care, aims to promote equity, efficiency and quality of care in all its services [8].

In Portugal, the provision of maternal and child health care by the state took place from the 1970s when the government implemented measures aimed at guaranteeing universal access to health care and invested in the creation of a national primary health care center network [9]. In 1979, with the creation of the National Health Service and, in 1989, with the implementation of the first National Program of Maternal and Child Health, the focus on improving indicators in maternal and child health became even more evident. Also, in 1989, it was created the National Commission of Maternal and Neonatal Health, responsible for the first major restructuring of maternity hospitals in the country with the creation of a differentiated perinatal support network, maternal and neonatal referral networks, introduction of mandatory pregnancy surveillance records and the concentration of births in units with better facilities and resources, leading to the closure of about 150 of the 200 existing maternity hospitals in the country at that date [10]. In 2006, the same committee issued a set of recommendations for improving the safety and quality of care provided, as well as the reduction in the rate of cesarean sections [11] and the closure of maternity hospitals with less than 1,500 deliveries per year to ensure medical teams with sufficient experience to deal with complex and challenging clinical situations [12].

Policies implemented over the past 35 years have significantly increased the proportion of women with adequate pregnancy care and the number of deliveries in hospitals assisted by health professionals [5]. The introduction of the national pregnancy surveillance program, creation of the maternal-child referral network, articulations of the care provided between primary health care and hospital care, as well as the implementation and generalization of access to public health measures (vaccination, improved food care and food security, education for health and pregnancy and parental

protection measures) have contributed decisively to the improvement of maternal and child health indexes. The success achieved in the provision of maternal and child health care translated into the steep reduction in infant mortality rate observed worldwide [4], from 64.7/1,000 in 1990 to 28.9/1,000 in 2018 [13]. Portugal has been one of the most successful countries globally, improving from 84.7/1,000 in 1960 to 2.8/1,000 in 2019, even below the European Union average (3.5/1,000 in 2018) [14].

Portugal has, however, witnessed the emergence of new challenges, as a result of the modification of the social tissue and reproductive options, such as the postponement of motherhood and the increase in the number of foreign citizens with linguistic, cultural and social barriers that may jeopardize proper monitoring of pregnancy and child health [6].

The results of our study showed a quite expressive (7.9%) rate of not adequately surveilled pregnancies (< 6 appointments) and discrepant with what is believed to be the national reality, with more than 95% of the pregnancies meeting the criteria for adequate prenatal care [15]. The region of Lisbon and Tagus Valley, where our hospital is located, is the region of Portugal with the lowest density of family doctors per 100,000 inhabitants, thus being one of the regions of the country with the lowest coverage of primary health care [16]. Bearing in mind that, in the organization of the Portuguese health system, prenatal care is mostly performed in primary health care, this low coverage may explain this relatively low compliance with the prenatal care program. In addition to the geographical issue, it is also important to highlight the impact of maternal age and level of education on adequate pregnancy care. These variables are widely described as being fundamental to the outcomes and quality of indicators in child health. In our study, the results showed that both the lower maternal age and the lower education level were associated with inadequate surveillance of pregnancy and this data is in accordance with the international literature [17]. This fact is worthy of reflection regarding the implementation of health policies. It is essential to mobilize resources to increase health surveillance coverage in these sectors of the population. The discrepancy in maternal education level, the high number of mothers being students or unemployed and unqualified workers, and the high rates of use of governmental support highlight the need to adapt resources to the different backgrounds of the health services users and to implement policies to reduce health inequalities originated by the populational social determinants of health [18, 19].

The results of our study also showed a very significant proportion of the migrant population. Unsurprisingly, the vast majority of migrants came from Portuguese-speaking countries, but the proportion originating from other European countries or Asian countries is not to be neglected. This figure is clearly higher than data from the same maternity hospital published in 2004, which reported 9.6% of newborns born to migrant mothers over a period of 6 months. Also, in these data, most of the migrants were from Portuguese-speaking countries [20]. It is important to highlight the high number of mothers and fathers not fluent in the Portuguese language, which clearly hinders the provision of the best prenatal and postnatal health care and requires an adaptation of health resources for the optimization of the care provided. Despite the fact that there is no significant difference between compliance with the prenatal surveillance program in relation to the migrant and non-migrant populations, the high rate (11.6%) of pregnancies not adequately surveilled in the migrant population is a matter of concern with respect to the universality and accessibility to health care. In addition, the existence of a significant difference between the group of migrant and non-migrant mothers with respect to the timing of initiation of pregnancy surveillance, with a higher proportion of migrant mothers starting this follow-up after the 1st trimester of pregnancy, can also be interpreted as a relevant access to health care indicator. In fact, the experience of pregnancy and childbirth is not only made from accessibility. The international literature points out communication, language barriers and personal and cultural maternal expectations as key factors in the experience of access to health care [21]. In addition, the literature also identifies a consistent trend for traumatic events in the migratory process, as well as worse outcomes in pregnancy and childbirth in the migrant population, with an increased risk of maternal and neonatal morbidity and mortality compared to the native population, a fact that should not be overlooked in the definition, adequacy and implementation of health policies [22, 23].

The main limitation of this study is the fact that it is a cross-sectional observational study conducted in a single hospital in the region of

Lisbon and Tagus Valley. Although the sample size is considerable, the response rate is relatively low when considering the total number of hospitalizations in the period studied. The fact that some of the questionnaires were not fully completed, as well as the fact that some were completed by the puerperal woman herself and others with the help of the medical team, are also factors that can result in information biases in data collection. Finally, the lack of follow-up of newborns after hospital discharge makes it impossible to correlate the data obtained with possible outcomes in the neonatal period.

In conclusion, lack of adequate prenatal care was expressive in our sample and it was associated with lower maternal age and lower level of education. These facts should be kept in mind and be the object of further reflection. The proportion of the migrant population is currently very expressive, with a non-negligible number of parents not fluent in the Portuguese language, which requires an adaptation of health resources to optimize the care provided.

Similar studies in other national realities could be an asset for the rigorous sociodemographic characterization of the national and local realities. Only in this way will it be possible to adopt inclusive measures and strategies for the continuous improvement of health care at such crucial stages of the life cycle as pregnancy and childbirth.

Declaration of Ethics

The study has been approved by the Ethics Committee of the Academic Medical Centre, Lisbon, Portugal (approval no. 71/21).

Informed consent

Informed consent was obtained from all individuals included in this study.

Declaration of interest

The Authors declare that there is no conflict of interest. The Authors declare that no financial or non-financial benefits have been received or will be received from any party related directly or indirectly to the subject of this article.

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