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ORIGINAL ARTICLE

THE PREGNANT WOMAN'S SOCIOECONOMIC FACTORS ASSOCIATED TO THE NEWBORN INFANT'S WEIGHT

FATORES SOCIOECONÔMICOS DA GESTANTE ASSOCIADOS AO PESO DO RECÉM-NASCIDO FACTORES SOCIOECONÓMICOS DE LA MUJER EMBARAZADA ASOCIADOS AL PESO DEL RECIÉN NACIDO

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ABSTRACT

Objective: to analyze the association of the pregnant woman's socioeconomic factors to the newborn infant's weight. **Method:** this is a descriptive study, with a quantitative approach, carried out with 120 puerperal women and their newborn infants. Data collection took place through a questionnaire and its analysis was based on Pearson's chi-square test, using the software *Statistical Package for Social Sciences* (SPSS), version 17.0. The study was approved by the Research Ethics Committee of Universidade Federal do Ceara (UFC), under the CAAE 0092.0.045.000-11. **Results:** one found out the prevalence of a young population, with 91 individuals (75.8%), stable union (60 individuals, 50%), low income (97 individuals, 80.8%), low education (35 individuals, 29.2%), and 56 farmer individuals (46.7%). Regarding the newborn infants, 41 (34.1%) were born weighing < 3,000 g. **Conclusion:** income and marital status influenced birth conditions, emphasizing the importance and need to provide puerperal women with an improved quality of life. **Descriptors:** Birth Weight; Socioeconomic Factors; Pregnancy.

RESUMO

Objetivo: analisar a associação dos fatores socioeconômicos da gestante ao peso do recém-nascido. **Método:** trata-se de estudo descritivo, com abordagem quantitativa, realizado com 120 puérperas e seus recém-nascidos. A coleta de dados ocorreu por meio de questionário e sua análise foi baseada no teste qui-quadrado de Pearson, com utilização do programa *Statistical Package for Social Sciences* (SPSS), versão 17.0. O estudo foi aprovado pelo Comitê de Ética em Pesquisa da Universidade Federal do Ceará (UFC), sob o CAAE n. 0092.0.045.000-11. **Resultados:** constatou-se a prevalência de população jovem, com 91 indivíduos (75,8%), união estável (60 indivíduos, 50%), baixo poder aquisitivo (97 indivíduos, 80,8%), baixa escolaridade (35 indivíduos, 29,2%) e 56 indivíduos lavradores (46,7%). Quanto aos recém-nascidos, 41 (34,1%) nasceram com peso < 3.000 g. **Conclusão:** a renda e o estado civil influenciaram as condições de nascimento, ressaltando a importância e a necessidade de proporcionar melhor qualidade de vida às puérperas. **Descritores:** Peso ao Nascer; Fatores Socioeconômicos; Gravidez.

RESUMEN

Objetivo: analizar la asociación de los factores socioeconómicos de la mujer embarazada al peso del recién nacido. **Método:** esto es un estudio descriptivo, con abordaje cuantitativo, realizado con 120 puérperas y sus recién nacidos. La recogida de datos ocurrió por medio de un cuestionario y su análisis se basó en la prueba de chi-cuadrado de Pearson, con utilización del programa *Statistical Package for Social Sciences* (SPSS), versión 17.0. El estudio fue aprobado por el Comité de Ética en Investigación de la Universidade Federal do Ceara (UFC), bajo el CAAE 0092.0.045.000-11. **Resultados:** se constató la prevalencia de población joven, con 91 individuos (75,8%), unión estable (60 individuos, 50%), bajo ingreso (97 individuos, 80,8%), bajo nivel educativo (35 individuos, 29,2%) y 56 individuos agricultores (46,7%). En cuanto a los recién nacidos, 41 (34,1%) nacieron con peso < 3.000 g. **Conclusión:** los ingresos y el estado civil influyeron en las condiciones de nacimiento, ressaltando la importancia y la necesidad de proporcionar una mejor calidad de vida a las puérperas. **Descriptor:** Peso al Nacer; Factores Socioeconómicos; Embarazo.

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INTRODUCTION

One of the causes for perinatal and infant morbimortality is low birth weight, and, thus, it has a great importance in public health.¹ This way, in the field of collective health, concern about the occurrence of low birth weight is supported both on what it represents to infant morbidity and mortality and on the frequency with which it occurs.² Around the world, maternal mortality, as well as the infant one, still is a matter of concern, especially in the poorest regions, with low socioeconomic development, and, consequently, the poor supply of health services.³

The main causative aspects of the death risk within the neonatal period are low birth weight and gestational age < 37 weeks.⁴ The determinants of neonatal mortality are the biological and socioeconomic factors related to health care.⁵

Despite the numerous difficulties related to health access, one may highlight the issues of low income, education, marital status, and others, that significantly interfere with the health of mother and newborn infant (NBI). In addition to the factors described, it’s also worth highlighting the fact that fetal growth is directly related to placental development and its functional capacity.⁶ The frequency of low birth weight is related to the maternal health factors and to the social conditions of the family concerned. The greater the number of NBIs with low birth weight in a community, the greater the participation of social determinants in its occurrence.⁷

Even with health programs aimed at the population’s quality of life, such as prenatal care, the Program for Integral Children’s Health Care (PAISC) and others, it’s still possible that not all people have access to health services, something which will remain being a public health problem among the less privileged social groups, resulting in a lack of appropriate care for the population and, as a consequence, higher risks for diseases and problems associated to poor living conditions.

OBJECTIVE

- To analyze the association of the pregnant woman’s socioeconomic factors to the NBIs’ birth weight.

METHOD

This is a descriptive study with a quantitative approach. The population consisted of 120 puerperal women and their

NBIs at a public hospital which is a health care reference of the macro-region of Picos, Piauí, Brazil. The study took place from June to August 2011. The inclusion criteria were the following parameters: age > 18 years and mother of a non-twin term NBI. The exclusion criteria were: some cognitive limitation which makes the interview impossible, at-risk pregnancy cases, and some puerperal complication.

As a technique for collecting data one used a structured form which addressed knowledge and understanding of the following aspects: age, marital status, occupation, education level, income, and birth weight. All participants were informed on the study objective, justification, and procedures used in the research, with the free and informed consent term, using accessible language. Subsequently, data were directly collected from the puerperal woman, as well as the analysis of the pregnant woman’s card for more technical information.

Data were processed on a microcomputer, using the software *Statistical Package for Social Sciences* (SPSS), version 17.0. For the statistical analysis, one employed, initially, simple frequency tables, in order to characterize the sample. In the second moment, one used Pearson’s chi-square test. The significance level set was 0.05 (5%) to reject the null hypothesis.

The research was approved by the Research Ethics Committee of Universidade Federal do Ceará (UFC), under the CAAE 0092.0.045.000-11. The study was conducted in accordance with the principles of Resolution 196/96, from the National Health Council (CNS), which establishes the ethical precepts of researches involving human beings.⁸

RESULTS

Birth weight, in grams, of the NBIs had an average of 3,224.46 g. The majority, 75 individuals (62.5%), showed an adequate weight (3,000 to 3,999 g), 5 individuals (4.1%) had low birth weight (< 2,500 g), and 36 individuals (30%) were underweight (2,500 to 2,999 g) (Table 1).

Table 1. Birth weight classification (underweight, insufficient weight, adequate weight, and overweight) of newborn infants under study in the town of Picos, Piauí, Brazil, 2011.

Birth weight (g)	n	%
< 2,500	5	4.1
2,500-2,999	36	30
3,000-3,999	75	62.5
≥ 4,000	4	3.4
Total	120	100

Out of the 120 puerperal women under study, 91(75.8%) were aged between 18 and 28 years, 27(22.5%) were aged between 29 and 39 years, and 2(1.7%) ≥ 40 years. Regarding marital status, most puerperal women, 96 (80%), had a partner, in a union, official or not, and 24(20%) were single. Regarding education level, 35(29.2%) had low education, ≤ 7 study years, 78(65%) had between 8 and 12 study years, and 7(5.8%) over 12 study years. Regarding the participation in the family income, 105(87.5%) perform a domestic, agricultural, or

autonomous work activity, resulting in a low purchasing power in which 97(80.8%) of the puerperal women obtained an average per capita household income around 0 to 1 minimum wage, only 23(19.2%) were living with 1 to 3 minimum wages, and none of the respondents had a household income > 3 minimum wages (Table 2). According to the data obtained, one can realize that the variables family income < 1 minimum wage and the fact of being a single woman significantly influenced the NBI’s weight (p = 0.05 and p = 0.003, respectively).

Table 2. Distribution of the group under study according to the maternal socioeconomic characteristics and the newborn infants’ birth weight at the town of Picos, Piauí, Brazil, 2011. n = 120.

Socioeconomic characteristics	Birth weight (g)								
	< 3,000		3,000-3,999		3,999		≥ 4,000		p
	n	%	n	%	n	%	n	%	
<u>Maternal age (years)</u>									
18-28	91	75.8	32	26.7	56	46.7	3	2.5	0.99
29-39	27	22.5	9	7.5	17	14.2	1	0.8	–
≥ 40	2	1.7	1	0.8	1	0.8	–	–	–
<u>Marital status</u>									
Single	24	20.0	5	4.1	17	14.2	2	1.7	0.003
Married	60	50.0	16	13.3	44	36.7	–	–	–
Free union	36	30.0	20	16.7	14	11.6	2	1.7	–
<u>Occupation</u>									
Autonomous	9	7.5	4	3.4	5	4.1	–	–	0.102
Housemaid	40	33.3	12	10	28	23.4	–	–	–
Agricultural worker	56	46.7	23	19.1	29	24.1	4	3.4	–
Others	15	12.5	2	1.7	13	10.8	–	–	–
<u>Education level</u>									
≤ 7 years	35	29.2	11	9.2	22	18.3	2	1.7	0.605
8-12 years	78	65	29	24.1	47	39.2	2	1.7	–
> 12 years	7	5.8	1	0.8	6	5	–	–	–
<u>Family income*</u>									
< 1 MW	97	80.8	37	30.8	56	46.6	4	3.4	0.05
1-3 MW	23	19.2	4	3.4	19	15.8	–	–	–
> 3 MW	–	–	–	–	–	–	–	–	–

*MW = minimum wage (R\$ 545.00)

DISCUSSION

Birth weight reflects the health level, so, populations with unfavorable socioeconomic conditions present a higher probability of having a major incidence of low weight NBIs.⁹ This is a strong predictor of neonatal mortality and morbidity.⁹ In a study¹⁰ analyzing infant mortality in two population-based cohorts one observed that birth weight remains the most important risk factor directly linked to infant mortality, since low weight children still to die 12 times more than those with an appropriate weight.

According to the Ministry of Health¹¹, state of Piauí has 3,093 low birth weight NBIs, and the town of Picos is in 6th place with regard to this category. However, in this study, there was a low proportion of low birth weight NBIs, 5(4.1%). The pregnant women’s profile is outlined as a young population, with an average age of 24.98 years; 91 individuals (75.8%) were in the age group from 18 to 28 years. By relating this variable to birth weight, there was no statistical association, corroborating the literature¹²⁻³, where maternal age had no significant influence on birth weight.

Regarding the socioeconomic conditions, marital status is an important aspect to be taken into account, since the absence of a paternal figure, generally, may bring lower financial stability for the family, and it can constitute a risk factor for low birth weight.¹⁴ This fact is confirmed in the literature¹⁵⁻⁶, where the mothers living without a partner are associated to an increased risk for low birth weight.

Poverty is among the factors generating the highest rates of low birth weight, hence, the less privileged social class gets the highest rates of neonatal and post-neonatal mortality.¹⁴

In a study¹⁷ on low birth weight, the proportion of low birth weight children was nearly 3 times higher among lower income families (≤ 1 minimum wage) when compared to those with higher economic status (income > 10 minimum wages). The differences between income groups remained the same even after 11 years (1982 to 1993), with the poorest children showing a 2.4 times higher risk of low birth weight than those from wealthier families.

By relating the income < 1 minimum wage and the single marital status to birth weight, one found out a statistical association ($p = 0.003$ and $p = 0.05$), corroborating the above findings, which point out these variables as risk for low birth weight.

Regarding occupation, 56(46.7%) pregnant women were agricultural workers and 40 (33.3%) identified themselves as housemaids. This composition is a reality still very present in our society, despite the strong inclusion of women in the labor market in the various sectors.¹⁸ By associating to birth weight there wasn't statistical significance, corroborating another study¹⁹, in which there was no significant association to low birth weight.

Regarding education level, although in this study the amount of study years didn't interfere with birth weight, 85(70.8%) pregnant women had more than 8 study years. This finding is interesting, because mothers who attended school for more than 8 years have in a higher education a protective factor with regard to the occurrence of a low birth weight NBI.²⁰

Therefore, one may say that low maternal education level constitutes an important factor which can predispose to the emergence of potentially risky situations for the mother and the NBI, as mothers with less than 8 study years have a 1.5 time higher chance of having low weight NBIs. This association may be related to mothers' unfavorable

socioeconomic conditions, something which, perhaps, will cause a lesser weight gain during pregnancy and late onset of prenatal care or a worse quality in this attention.²¹

CONCLUSION

Low income, < 1 minimum wage, and the single marital status favored the low birth weight, showing that these are some of the negative effects directly interfering with the NBIs' health.

Based on the results obtained, one found out the need for further intervention in the process of assisting the less privileged social groups and strategies for the social inclusion of pregnant women into health care policies which act by fighting low birth weight, since studying which factors are related to low birth weight is as important as promoting alternatives to improve these women's quality of life.

Therefore, further studies shall be conducted to deepen knowledge on the factors which can bring consequences to the NBI's health, such as low birth weight.

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