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Research Article

EVALUATION OF FACTORS AFFECTING BABY BIRTH WEIGHT BY REGRESSION ANALYSIS

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ABSTRACT. The health of the mother, who is an important member of our women and the family, is as important as herself, and the factors affecting the birth weight of the baby should be investigated when it is considered directly as the health of the child, that is, the society. We can list these factors as demographic, socioeconomic, medical and nutritional status. In this study, the variables affecting the birth weight of the baby were discussed in detail with regression analysis.

Keywords: *birth weight, pregnant, gynecology, obstetrics, regression*

INTRODUCTION

One of the most important factors affecting perinatal morbidity and mortality is the baby's birth weight. The birth of the baby at the ideal birth weight will reduce the perinatal risk. The researchers gathered the variables affecting birth weight under the headings of socioeconomic, physical, medical, ethnic and anthropometric factors [1]. Birth weight; obtained after birth of the fetus or newborn It is defined as the first weight determined. Birth weights of the baby born in a healthy state vary between 2500gr and 4500gr. Birth weight below 2500 grams is defined as live birth weight. As can be seen from Figure 1, low birth weight falls into 3 categories; The concepts of low birth weight are used for babies between 1500-2499 grams, very low birth weight for babies between 1499 and 1000 grams, and extremely low birth weight for babies weighing less than 1000 grams [2, 3]. Birth weights of female babies are reported to be 118-121 grams less than boys [4].

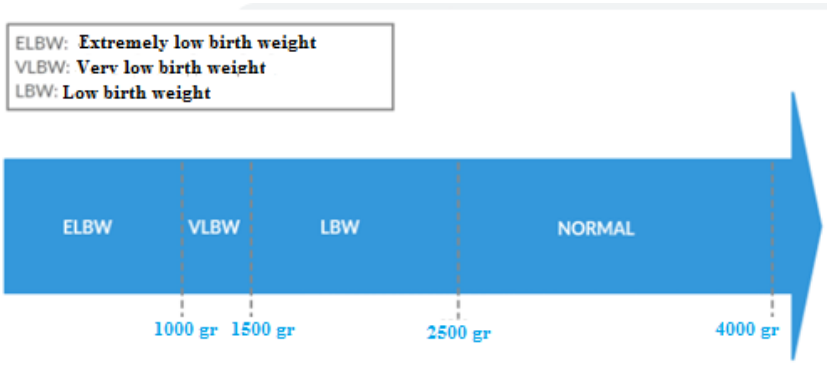

Fig. 1. *Low birth weight and normal babies*

The positive relationship between parity and birth weight has also been determined in some studies [5,6]. It is known that whether the mother smokes or not affects the birth weight of the baby [7]. It recommends the need for nutritional support for weight gain of less than 1.5 kg / month in the last six months of pregnancy [8]. The form of weight gain is also important, low birth weight babies (SGA) if early weight gain is insufficient, and preterm birth incidence increases if late weight gain is insufficient. In addition, weight gain is of special importance for adolescents whose bodies are also growing. While the ideal weight gain is normally 9-14 kg in pregnant women, it should be accepted as 18 kg for pregnant women in adolescence [9]. Looking at the statistics in Fig. 2, it is seen that babies are born with an increasingly low birth weight. Although the reason for this is not known exactly, the reasons for low birth weight are the order in the mother's diet, maternal activities, socioeconomic effects, environmental effects and even other unquestioned effects [10].

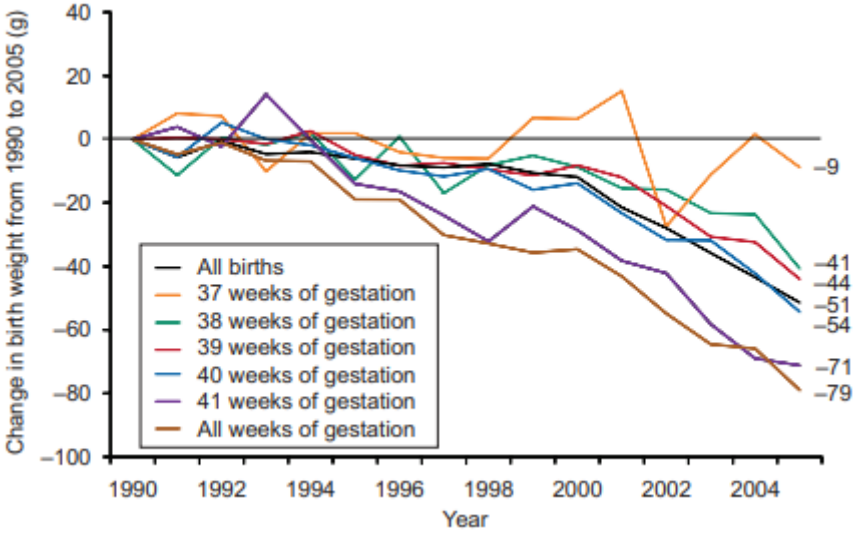

Fig. 2. *Trends in birth weight from 1990 to 2005*

Anemia is the most common comorbidity affecting almost half of all pregnancies [11]. Hemoglobin concentration less than 11.0 g/dl or hematocrit less than 33% is considered anemia in pregnancy according to the World Health Organization (WHO) and Centers for Disease Control and Prevention (CDC) definitions [12, 13]. In this study, the variables affecting the birth weight of the baby were discussed in detail with regression analysis.

MATERIALS AND METHODS

Evaluations were made with 1328 data in total. Data is collected from patient files examined at a university hospital in Turkey. Age, Working Condition, Living Place, Job, Hemoglobin (Hb), Follow, Nutrition Support, and smoking are features that play an important role in determining the baby's birth weight. The data was analyzed by using Statistical Package for the Social Sciences (SPSS)-26.0 program. Regression Analysis were used. $p < 0.05$ was considered statistically significant.

RESULTS AND DISCUSSION

According to the demographic characteristics in Table 1, in our data set, it is seen that mostly 230 people are between the ages of 45 and above, 708 people do not work, 561 people live in countryside and 621 people live in countryside areas, 481 people are employees.

Table 1. *List of demographic attributes in the data set*

Variables		Frequency
Age	<=20	279
	21-35	445
	36-44	375
	45 and above	230
Working Condition	Not working	708
	Working	621
Living Place	City	768
	Countryside	561
Job	Housewife	711
	employee	481
	Officer	120
	Others	17

When Table 2 is examined, it is seen that the variables included in the model explain the model approximately 55.3%.

Table 2. *Model Summary*

R	R Square	Adjusted R Square
0,744[a]	0,553	0,550

When we look at Table 3, it is seen that the model is meaningful (p <0.05).

Table 3. *ANOVA*

	df	F	Sig.
Regression	11	148,297	,000[b]
Residual	1317		
Total	1328		

When Table 4 was examined, it was seen that among the variables included in the model, the variables that significantly explained the birth weight of the baby were the variables of nutritional support and the week of birth (p <005). The variables of age, work status, parity, Hb, Anemia, place where the mother lives, occupation, whether there is a risk situation and smoking do not statistically explain the birth weight of the baby in this model (p> 0.05).

Table 4. *Coefficients of attributes in the data set*

Model	Unstandardized Coefficients B	Sig.
(Constant)	1537,371	0,000
Age	-3,552	0,671
Working Condition	-4,382	0,879
Number of Births	9,560	0,386
Hb	-17,952	0,165
Anemia History	-3,311	0,838
Nutrition Support	82,273	0,000
Week of birth	493,760	0,000
Living Place	17,762	0,196
Job	-2,882	0,888
Risky Situation	16,715	0,274
Smoking	2,776	0,880

CONCLUSION

As a result of this study, the effect of a total of 11 variables, namely age, job status, number of births, Hb, Anemia History, Nutrition support, week of birth, place of residence, occupation, risky situation, smoking on the birth weight of the baby was examined and the variables of Nutrition support and the week of birth were statistically found meaningful. As a result, a high positive correlation was found between the mother's receiving nutritional support and the baby staying in the womb as much as it should be, and the baby's birth weight.

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