Relationship between length and weight of birth at infants with Characteristics of mothers in after and before pregnancy

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ABSTRACT: Background: One of the most important health factors, birth weight and height, which shows how the intrauterine growth and maternal care during pregnancy. So many factors affect recognition in the course of care and reduce maternal and fetal complications, are very important. This study aimed to determine the relationship between weight and height at Infants with characteristics of Mothers in after and before pregnancy. In this descriptive-analytical (cross sectional) study 345 mothers in maternity hospitals in Sari. Collect data recording sheet was associated with meter and scale. Maternal height and weight before pregnancy and after delivery in the cards obtained was determined by the investigator. After birth, the baby's weight and height were measured and recorded. Data collection and analyzed with spss software. The Mean±SD weight and height of infants were 3187 gr and 51/65 cm. The average height and weight with a BMI of mothers before and after delivery, mode of delivery, infant gender, ethnicity, occupation and mother's parity was statistically significant ($p<0.05$). Environmental factors can effectively and ethnic differences in height and weight make it possible to identify weaknesses and to provide an environment of intrauterine fetal growth and prevention of preterm delivery, the probability of the fetus the normality of the size birth increased.

Keywords: Body mass index, Infants, length birth, mother, weight birth.

INTRODUCTION

One of the main causes of mortality in the neonatal period, in the low of birth weight and abnormalities to result of congenital and it is developmental delay intrauterine and they can the baby weight as a very important factor he will be considered child survival and health in the future. The most rapid period of growth and development in is human fetal life, therefore the main and most important events in the development occurs in this period.(1) Many of the events that can in pregnancy, and even before that happens, The physical, and on frame size fetus and the newborn negative. (2) Any genetic or environmental factors can ultimately cause low birth weight or even the various anomalies. (3) However, the result of a complex interaction between several factors such as genetic problems, maternal illness, drug use and social factors, economic, ethnic and Climate is effective in child development. So according to the health of children from the intrauterine life is very important. (4) The easiest and most effective indicators of infant and child health, is measurement of height and weight.(5) Babies who are born with normal weight in comparison with the low birth weight infants weight survival also how to deal with aggressive is high environmental factors and pathogenic. Generally babies that intrauterine growth have appropriate for gestational age is lower the

probability of death in the neonatal period and infancy.(6) Fetus or neonate with weight above or below the normal weight range, is the risk of death or if he stay alive they are exposed to physical and neurological. Reduce mortality and morbidity associated, to the prevention of abnormal birth weight prenatal diagnosis and treatment depends on Factors affecting the weight. (4) Mortality in the neonatal period is largely dependent low birth weight and the lower the birth weight is higher infant mortality rates. The lowest of risk to death and morbidity in neonates that they had the normal range of weight and they are between 3 to 4 kg.(5)On the other hand, Greatly increased Abnormalities and mortality rates for infants with birth weight of 4 kg or higher. Also, studies have shown High birth weight is not only not effective, But even in the prevalence of mental and neurological disorders are more affected and it is with an increase in mortality in this period(6)and it was not normal Short stature at birth and can be caused by congenital (Including chromosomal abnormalities Such as Turner syndrome or down dermatogens such as dilating or alcohol consumption by the mother or severe prematurity) or a family circumstance(7)The most important of the factors that likely affect of The development of the fetus inside the womb can include Gestational age, gender, inheritance, Maternal age, Multiple, Mother's height and weight, Rank of pregnancy, Nutrition of the mother during pregnancy, The previous far, abortion, embryonic , Mother of chronic diseases, Placental abnormalities, the amount of weight the mother, Teratogens consumption, Smoking and or repeated exposure to ionizing radiation and mutagenic in the mother. And intrauterine growth embryo delay or cause them to be in various abnormalities. (8) Measurement of height and weight, if compared with the benchmark indices used, in addition to defining the physical condition of the child Can be It is also the basis for the continuing growth of the child.(9) On the other hand, one of the factors affecting on the outcome of the pregnancy and the baby's body, body mass index and the weight of the mother is during of pregnancy. (10). The observations, body mass index it was lower in mothers as a risk of factor for preterm delivery and the low birth of babies weight and be can Low intrauterine growth and increased mortality be childbirth.(11) beside High body mass index with increased blood pressure, urinary tract infections, gestational diabetes, bleeding after parturition, macrosomia and increased cesarean section cases also is along.(12) As mentioned many factors be can to be effective in the development of the fetus and newborn. These factors in different areas affects the average height and weight in newborns.(13) whereas with regard to ethnic differences, economic conditions, social and current climate between different regions of too the world The characteristics of mothers and body mass index to cause significant differences between babies is the two main measures of height and body weight.(14) For this purpose, the present study with the aim of determine the relationship between height and weight at birth with the characteristics of mothers before and after pregnancy of the Sari city.

MATERIALS AND METHODS

The present study, a descriptive-analytical (cross sectional) after the receiving license of Medical Ethics Committee University of Medical Sciences of Mazandaran and get written consent from the mother, over 345 people of mothers in the 3 hospital like Emam, BouAli and Shafa in the Sari city were done Pregnant women live life, were done in 2014. Research on the sampling procedure, it was available non probability sampling, In this case, that referred to the corresponding in the hospital at two hours every day and mothers, who, in the above hours (Seen 2 hours) were supposed to parturition, were considered in the sample component. According to statistical information from parturition diurnal (Caesarean section and Natural childbirth) as of approximately was getting of each of the hospitals. the sampling were done to form that the sample size in the form of times was divided according to the number of parturitions per hospital, that 60 percent of the sample size (207 of people) from Emam hospital, 30% of BouAli hospital, and finally selected 10% of the sample size (32 of people) of Shafa hospital. Data collection in this study was tool consists of two parts. The first course, Includes information questionnaire of pregnant mothers demographic and The second part , was the relevant measure of body mass index , that In the motherhood for the record height and weight to before pregnancy, Their health card that on the first visit to the health center was recorded during pregnancy and for measuring this indicator again, hours after birth, was measured by researcher and in confinement, and used by wall meters with carefully 0/5 and Hamilton digital scale with Carefully to hectogram . Validity scales Also, The comparison was diurnal by five kilograms of weight control. The precision of meter were compared with standard meter. Also the baby's weight and height immediately after the birth by Seca balance with an accuracy of 5 g and meter without of elastic were measured by midwife that was present in the operating room. Inclusion criteria for this study, was live-bearing and Single-job opportunities and exclusion of criteria; Catching problems in pregnancy was diagnosed Such as Decolman, Placenta previa, Preeclampsia, Eclampsia, Polyhydramnios, Oligohidramanios and there are abnormalities like Fibrom, Uterine tumors, Ovarian Tumors and abdominal tumors. To determine used the status of BMI the proposed standard values of WHO. (13) BMI less than 18/5 as low birth weight, is normal between 24/9-18/5, overweight 29/9-25, and more than 30 was considered as overweight. All procedures before the start were explained for all the research units. For data analysis was used by

Spss-16 software and descriptive statistics average, index, middle and standard deviation and to perform the test of the hypothesis used by T-tests, Analysis of variance and correlation (If compliance data of the normal distribution) and used by nonparametric manvitny test, and Krosal wallis(In case of failure to comply with data of normal distribution).

RESULTS AND DISCUSSION

Results

The results showed that %50/7 (175 people) was girl and they were %49/3 (170 people) was boy. In terms of ethnicity %26/4 (91 people) fars, %30/1(104 people) Gilac, %23/5 (81 people) Turkmen, %20 (69 people) Turk. Study on the parturition was method %73 (252 items) Natural childbirth, %26/7 (92 items) Caesarean section and %3 (1 items) Type of vacuum. The birth rank (Number of previous successful parturition) moms. Case study was in %41/7 (144 people) Single-child, %23/5 (81people) 2 children, %15/9 (55 people) 3 children, %12/2 (42 people) 4 children, %7/7 (23 people) 5 children. Of education %35/7 (123people) primary school, %27/2 (94 people) education tips, %30/7 (106 people) secondary education and %6/4 (22 people) academic degree. The maximum and minimum number of stages of pregnancy was in the %26/8 (127 people) at the first time and the %0/6 (2 people) was the Ninth. %90/4 (312 people) of mothers is housewife and %4/9 (17 people) and % 4/4 of mother was employee and worker. On average %65 of mothers before pregnancy and %57 of them after childbirth were located within the scope of normal body mass index. (Table 3) The mean and standard deviation of height and weight respectively were measured 3187±486gr and 51/65±2/27gr. On the other hand between the previous weight (p=0/008) and after the mother (p=0/004) with the weight of baby, Between maternal age and weight (p=0/003) and the baby's height (p=0/002) between the body mass index before (p=0/026) and then the mother(p=0/02) with the weight of the baby, between the number of pregnancy the mother with the baby's height (p=0/01) between birth weight and mother's occupation (p=0/04) between BMI and sex of the baby(p=0/006) was observed statistically significant relationship.

Table 1. The average height and weight of newborns based on mother age

P-Value	Mother age			Index
	35 and upper	20-35 years	Less than 20 years	
	55	104	186	N
P=0/03	3522±232	3812±312	246±2954	Weight(gr)
P=0/02	50/9±1/1	53/2±3/1	49/3±3/2	High(cm)

Table 2. The average height and weight of newborns according to gender and ethnicity

High(cm)	Weight(gr)	N (%)	Sex	Ethnicity
49/76	3208	49(14/2)	girl	Fars
52/28	3303	42(12/2)	boy	
51/34	3364	42(12/2)	girl	Turkman
50/92	3239	39(11/3)	boy	
50/90	3077	54(15/6)	girl	Gilac
51/37	3152	50(14/5)	boy	
48/79	3082	30(8/7)	girl	Turk
54/52	3161	39(11/3)	boy	

Table 3. Mother's BMI in before and After Pregnancy

After Pregnancy N (%)	Before Pregnancy N (%)	BMI
7(2)	48(14)	Low Weight
196(57)	225(65)	Normal
94(27)	51(15)	High Weight
48(14)	21(6)	Obesity

Table 4. Mean & SD of BMI

Newborn BMI	BMI (after)	BMI (before)	Weight (after)	weight (before)	Mother high	Mother age	
2/54	25/18	22/34	52/48	58/22	1/59	26/4	Mean
0/74	3/97	3/91	10/70	10/01	0/55	6/33	SD

Discussion

One of the most important factors in the health of birth was the height and weight that showed the growth inside the womb and how to take care of the mother in pregnancy during. Therefore many factors have been implicated in this affair and are effective somehow on the value of it. In this study, the mean and standard deviation of height and weight of babies was respectively 3187±486gr and 51/65±2/27 cm that this finding Matches with the results of Tootoonchi (14), Behrman (15), and Valizadeh (16) researches. This is while that weight of newborns in contrast to reports derived from the studies from GoleAlipour (3244gr)(17), Britlon(3500gr),(18) lesser and the indicators reported by Singly(2870gr)(19), Afroughi(3050gr)(20) It was more. So the height and weight average of boys and girls In this study, it was similar to findings from studies of Tootoonchi (14), Valizadeh (16), and Ayatollahi (21). Also in this study was ascendency the height and weight average of boys to girls, which this finding is also results of the studies, was consistent from Tootoonchi (14), Hindmarsh (16) and Ayatollahi (21). Also in this study, they had relevance weight after pregnancy with the baby's weight at birth, that this finding with the resulting findings of studies was consistent from Tootoonchi (14), Goldenberg (22), and Babson (23). This study showed that height and weight average of infants in mothers under 20 years it's less than mothers aged 20-35 years. That this finding is also with studies is matches from Behrman (15), valizadeh (16) and GoleAlipour (17). Therefore is necessary from according to pregnancy age and prevent the next problem due to the low age of mothers at the time of pregnancy because the low birth weight babies in the future they have the possibility of less growth and the possibility of physical and mental diseases is higher at them. It was that above findings disagreement with the results of the study from Tootoonchi (14) that can be the cause outlined of it arising from the choice of samples in this study. That was the first pregnancy of mothers in their entry to the study cycle. Between the numbers of pregnancies there was a relationship with the baby's weight and height that this finding with the studies was consistent from Tootoonchi (14), from Behrman (15) and GoleAlipour (17). Possible causes of the relationship between the number of pregnancies or mother's parturition with the baby's height and weight. It can be being more outlined risk Preeclampsia in the first pregnancy that increases the risk of premature parturition (14). But in subsequent pregnancies, with the weight of the mother, increases baby frame size at birth. Although the increase in infertility treatment and the percentage of multiple of pregnancies and thus the risk of premature birth in mothers who have a history of infertility, Increases the risk of the birth of babies with small frame size (18). The results showed that was a relationship between income with the weight before and after mother's. That this can be caused by a full and correct nutritional status on the ex parte and the lack of incoming stress it was from The economic and social on the other side that this finding also with the results of the studies Was consistent from Tootoonchi(14) and Dobbling (24). Also in this study, weight average in natural childbirth it was more than ratio of caesarean section that this finding is also with the results of the study was consistent from Tootoonchi (14) and GoleAlipour (17). That it would be emphasis on natural childbirth the necessity of natural childbirth and complications of cesarean section. On the other hand, there was a relationship between birth weight and mother's occupation. This is the case with research was consistent from GoleAlipour (17), Tootoonchi (14) and Dobbling (24) and khan. And so can be confirms that housewife's mothers and those jobs were lighter Such as administrative high were having the levels of rest and due to pregnancy. That can be baby in intrauterine development to be effective to better shape.

CONCLUSION

In this study, Research showed that most of important factors from despite the low weight of the newborn has been lower the age of the mother, Low weight mothers before pregnancy, Heavy jobs and method of parturition. And on the other hand, According to the highest build abnormalities in the third week to 8 embryonic periods, the emphasis will be the necessity of feeding interventions before pregnancy in this period and the use of appropriate food pyramid. Also recommended in the health centers of the rural and urban and healthy home Be provided adequate training about pregnancy's age-appropriate, The number of pregnancies, The benefits of natural childbirth and other factors of demographic that can be helpful on the index from anthropometric at birth the babies.

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