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Comparing Mother of Low Birth Weight Infant to Mother of Normal Birth Weight Infant in Maternity Season, Abortion Record and Pregnancy Preparation

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ABSTRACT

Low birth weight has many reasons. By recognizing them, physical and mental health of infant will develop and reach to admirable level.
Aim: recognizing reasons of low birth weight.
Method**:** This research is conducted in casual – comparative method. At first, all newborn babies, born forwarding up the end of esfand in 2011 at three maternities and hospitals were selected for investigating on prevalence of birth low weight than 501 newborns with low and 501 ones with normal weight were selected by random and their mothers answered the questionnaire of biological. Cognitive, psychological and social characteristics by %85 in validity. Studied variable of this research are maternity season, abortion record and pregnancy preparation. Khidocongruent method was used for analyzing data.
Findings demonstrated that there is a meaningful relation between low birth weight and maternity season, abortion record and pregnancy preparation, (p=0/001)
Conclusion: by recognizing the reasons of low birth weight we can make a plan and program to prevent it.
KEY WORDS: low birth weight, maternity season, abortion record, pregnancy preparation

INTRODUCTION

Based on definitions of WHO, infant by 2500g and less are defined low birth weight. Weight is one of vital factors in healthy because, in comparison infants of low birth weight to other infants, they are more susceptible to death and incompetence (1). Low birth weight infants are more in danger and possible to die for and in comparison to normal birth weight infants, there are more possibilities for growth inabilities and illnesses in them (2).

Low birth weight Infants may have, cardiac and respiratory problems(3), cognition difficulty, mental retardation, learning disability (4)and ADHD (child with less attention and more action)(5). Annually, %15.5 in the other words, 20million infants born with low weight. In a research, they concluded that there was a clear seasonal plan in birth weight. In average, the infants born in spring and summer have the least weight. Perhaps because of exposing to winter coldness in middle period of pregnancy (6).In another research on seasonal change and low birth weight, they concluded that if pregnant women are exposed to environmental coldness, the possibility of birth with low weight will increase (7). Based on a research at 2006 in Israel, it was shown a meaningful seasonal plan (p</001) in birth weight. The most birth weight was in January (Day) and the least in July (Tir). Low birth weight at summer is in the middle area of geographical width, perhaps its reason is exposing to coldness at beginning and middle period of pregnancy. Based on data in Israel, maximum birth weight is in summer, happens because of getting more sunbeam in final weeks of pregnancy(8). In some research, they concluded that more possibility, mothers, who experienced abortion and more than two pregnancies, may have infants with low weight in compare to mothers without record abortion and first pregnancy(9-10)

A research in Iran – Tehran on 905 infants demonstrated that there was relation between record abortion and the prevalence of low birth weight (11). A research conducted for approving or rejecting the hypothesis that unwanted pregnancy may cause to low birth weight and premature birth the reason was on live and single birth. The conclusion demonstrated that in young white women , unwanted infants have less weight and are premature However in blacks , this is in all ages .(12) Researchers got that in unwanted pregnancies , there is more possibility

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to have low birth weight than in programmable ones (13). This group of pregnancy are exposed to the most dangers. (14) As, there are many reasons for low birth weight and low weight results to irredeemable complications for infants, the parents, family and the society Therefore, this research is conducted for comparing two groups of mothers with low birth weight and normal birth weight in maternity season, abortion record and pregnancy preparation to prevent the birth of infant with low weight.

RESEARCH METHOD

Population, sample and sampling method:
This research is cause- comparative one that was conducted practically. Statistical group includes all the normal and low weight newborns, born from the 1st of Farvardin up to the end of Esfand in 1390(2011_2012 March) with their mothers in RazaviKhorasan. For investigating prevalence of low birth weight ,all newborns of three hospitals and maternites in province were studied Then 501 low-weight newborns and 501 normal ones were selected randomly(simple random) and their mothers answered questionnaire to be compared on maternity season , abortion record and pregnancy preparation. 18 cases were eliminated for incomplete answers. Finally, we analyzed 501mothers with low weight newborn and 501 ones with normal weight newborns. With regard to W.H.O data on prevalence of birth low-weight in Iran 7% and already recorded research 10% in RazaviKhorasan, confidentially it got 95%(d=0/02) and 900 individuals from intervals of real ratio It states adequacy of representative (15).

$$n_o \quad \frac{Z^2_{1-\frac{\alpha}{2}} pq}{d^2}$$

$$n_o \quad \frac{4 \quad 0.1 \quad 0.9}{0.0004} \quad 900$$

Then a questionnaire was provided about biological ,cognitive psychological and social characteristics of parents based on the research result and studied discoveries about birth low-weight in different countries. Its liability was confirmed by respective specialist and guidance professor and consultant and its validity was stated 85 %(16).The studied variables of this research include : season of maternity , abortion record and mother ’s preparation for pregnancy in two groups for analyzing data , Khido was used.

RESEARCH FINDINGS

This research is based on following questions:

It is remarkable that group membership in questions means to be the group of mothers with low birth weigh and the ones with normal birth weight infants.

Question 1:

Is there any meaningful relation between maternity season and group membership?

For analyzing data, firstly an adoptive two –way table is formed with two groupmembership variables, two levels of under and over 2500 g and maternity season in four levels of spring, summer, autumn and winter.Then, the Khido model was used for analyzing data, the obtained results were shown in following tables and charts.

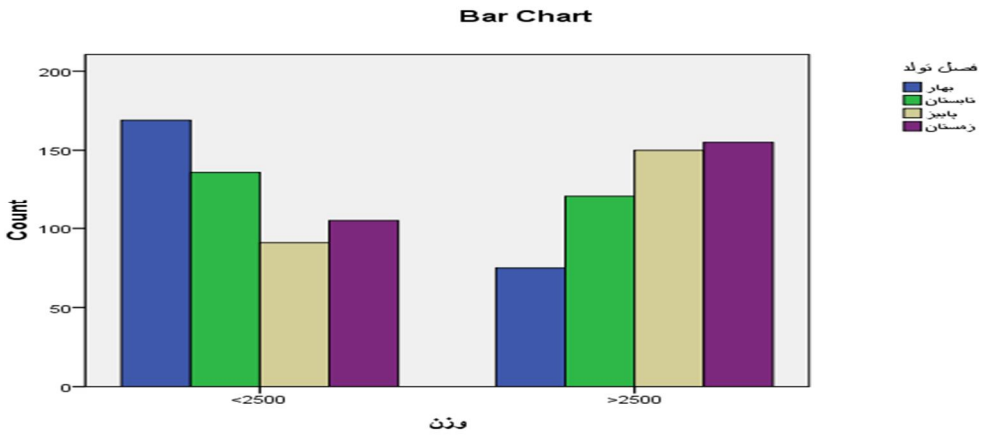

Chart 1: infant ‘birth season regarding the above chart, maternity of mothers with normal weight is mostly in autumn and winter.

Table 1 : Frequencies adoption and observed percentages in two group membership variables and maternity season.

maternity season				group membership
winter	**autumn**	**summer**	**spring**	
105(21%)	91(18/2%)	136(27/1%)	169(33/7%)	<2500g
155(30/9%)	150(29/9%)	121(24/2%)	75(15%)	>2500g

The results of above table illustrate that maternity of% 60/8 mothers with low birth weight infants are in spring and summer while in mother with normal weight infant, it is %39/2.
% 60/8 mothers with normal birth weight infants have maternity in autumn and winter but it is %39/2 in mothers with low birth weight infants. It was shown in table 2 the result of X2 adoption exam in two group's frequency difference with phi factor.

Table 2: result of X 2 adoption exam and phi factor for observed frequencies.

P	phi	P	df	X^2
./000	./247	./000	3	62/310

The result of above table shows that there is a meaningful relation between mother of low birth weight infant and mother of normal birth weight infant in maternity season (X2=62/310 , p=0/001) So, with regard to the results of above table that rate of maternity of mothers with low birth weight infants in spring and summer is %21/6 times more than mothers with normal birth weight infants and also according that this difference is meaningful , it concludes that there is a meaningful relation between mother's maternity season and low birth weight of infant (phi=./247,p=./001). So season of maternity may be determinant factor in low birth weight of infant.

Question 2:

Is there any meaningful relation between abortion record of mother and group membership?

For analyzing data, firstly an adoptive two –way table is formed with two group membership variables, two levels of under and over 2500 g and experience abortion in two levels of yes and no. Then, the Khido model was used for analyzing data, the obtained results were shown in following tables and charts.

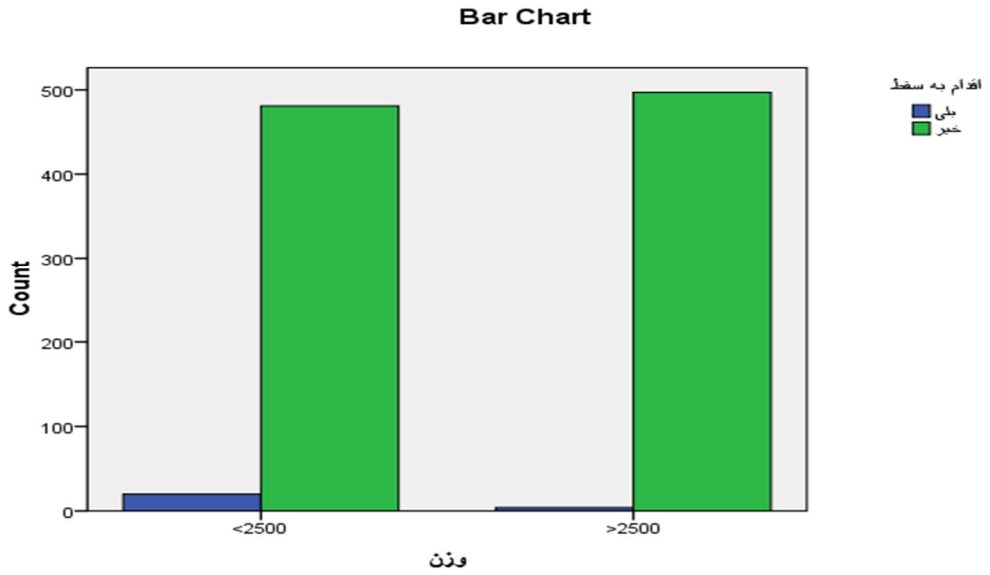

Chart 2: experience abortion

With notice to chart, mother with normal birth weight had less experience abortion.

Table 3 :Frequencies adoption and observed percentages in two group membership variables and experience abortion.

experience abortion			group membership
	No w	Yes	
	%)96(481	%)4(20	<2500g
	%)99.2(497	4 (8%)	>2500g

The results of above table illustrate that%4mothers with low birth weight have experienced abortion but it is %./8 in mothers with normal birth weight .Also it was recorded that % 99/2 mothers of infants with normal birth weight have not experienced abortion but the rate of abortion in mothers of low birth weight infant is %96.

It was shown in table 4 the result of X2 adoption exam in two groups frequency difference with phi factor.

Table 4 : result of X 2 adoption exam and phi factor for observed frequencies

P	phi	P	Df	X^2
./001	./104	./001	1	11/906

There is a meaningful difference between the mothers with low birth weight infant and the ones with normal weight infant in the rate of abortion record(2=11/906,p=./001). Therefore, with regard to the results of above table which illustrate that the rate of abortion is %3/2 less in mothers with normal weight infants than the ones with low birth weight ones and according that this difference is meaningful. it concludes that there is a meaningful relation between mother 'abortion records and low birth weight in infants (phi=./104, p=./001). So, abortion record of mothers is a determinant factor in infants' low birth weight.

Question3:

Is there any meaningful relation between mother preparation pregnancy and group membership?

For analyzing data, firstly an adoptive two –way table is formed with two group membership variables, two levels of under and over 2500 g and mother preparation pregnancy in two levels of yes and no. Then, the Khido model was used for analyzing data, the obtained results were shown in following tables and charts.

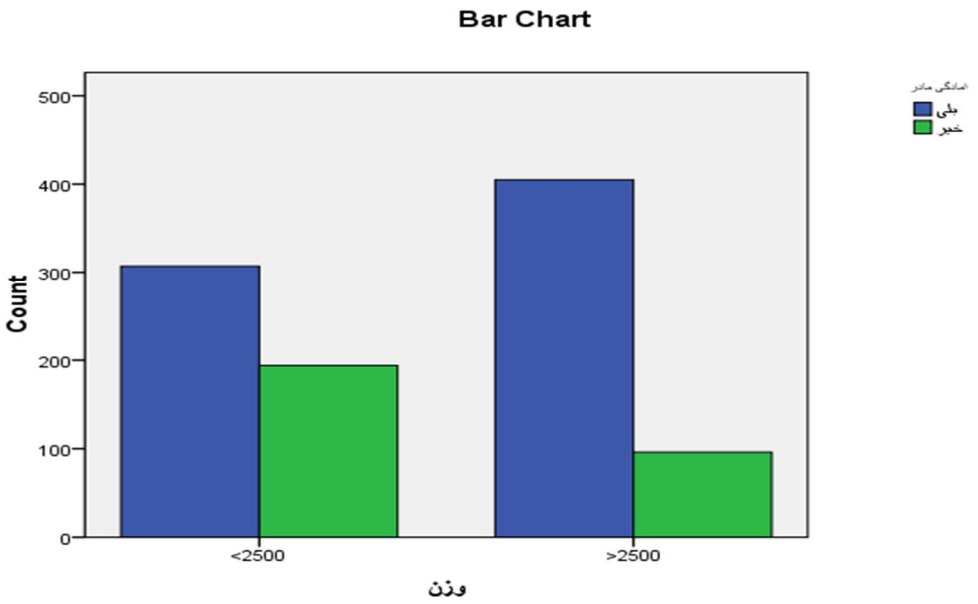

Chart3: mother preparation pregnancy

Based on chart, mothers with normal birth weight infants were more ready for pregnancy.

Table5: Frequencies adoption and observed percentages in two group membership variables and mother preparation pregnancy.

mother preparation pregnancy		group membership
NO	Yes	
194(38/7%)	307(61/3%)	<2500g
96(19/2%)	405(80/8%)	>2500g

The result of above table shows that only %61/3 mothers with low birth weight infant were prepared while this rate was %80/88 in the ones with normal birth weight infant. %19/2 mothers with normal birth weight infant were not prepared for pregnancy yet this rate in mother with low birth weight infant is %38/7. It was shown in table 6 the result of X2 adoption exam in two groups' frequency difference with phi factor.

Table 6: result of X 2 adoption exam and phi factor for observed frequencies

P	phi	P	Df	X^2
./000	-./216	./000	1	47/310

The results of above table demonstrates that there is a meaningful difference between mother with low birth weight infant and the ones with normal birth weight infant in the rate of preparation for pregnancy (X2=47/310, p=./001). So , according to the results of above table , the rate of pregnancy preparation is %19/5 times more in mothers with low birth weight infants than the ones with normal birth weight infant and with regard to this meaningful difference, it concludes that there is a meaningful relation between mothers ' pregnancy preparation and low birth weight in infants (phi= - ./216 , p=./001).So ,mothers' preparation for pregnancy is a vital factor in low birth weight infants.

DISCUSSION AND CONCLUSION

Above discovering about mother's maternity season indicates its meaningful relation to group membership (/001=P, 62/310=X^2).Thus, mother's maternity season is one of the affective factors in low birth weight. This conclusion confirms the discovering of Morre and colleagues (1997) Elter Kavak(2004) Chodick (2006) (6,7,8). Then, we can say that the mothers who have maternity in spring and summer ,spent remarkable period of pregnancy, namely second or third three_ month in winter .those phase are very crucial and vital in rapid growth of nervous system and the beginning of sensory motor reflexes of fetus. Usually in winter, day is short, light of sun is little , night is long and air pollution is more. The results of second question in this research indicates that there is a meaningful relation between abortion record and low birth weight (X2=11/906 , p=./001).This result is also similar Maeng and colleagues (1984) Egbalian and Tutunchi's research (2007).(9-10-11). Based on it, in the mothers, who have experienced abortion, the possibility of premature maternity will increase .The most mothers get pregnant immediately after losing their infants ,and this short instance between two pregnancies impacts on infant growth and leads to low weight. And finally, on the last question, discovering's indicate that there is a meaningful relation between mothers' pregnancy preparation and low birth weight. These discoverings are similar to Ketton and Hayward's, Eggleston and the colleagues (2001) Williams 'ones (2005) (12,13,14). When mother is not prepared for pregnancy, she does not usually cooperate in pregnancy cares. In addition, after first or second weeks of pregnancy (when menstruation stops) spinal cord of fetus will form and his/her heart beats. Unprepared mother does not attend and respect to preventing the danger like as, consumption folic acid for avoiding spinal cord problems, this matter is dangerous. With regard to findings of research it suggests that some researches are done on other factors related to low birth weight specially about fathers such as father's age, his outcome and wages for complete prevent of low birth weight.

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