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LOW BIRTH WEIGHT AMONG THE NEWBORN AT EL-OBIED MATERNITY AND GYNECOLOGICAL TEACHING HOSPITAL (2013-2015)

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ABSTRACT

Introduction: *Birth weight is a reliable index of intra uterine growth retardation (IUGR) and a major factor determining child survival, future physical growth and mental development.* ***Methods:*** *The design which used was Analytic- cross –sectional hospital- based study, was conducted (in the labor room) during one month from 5oct. to 5Nove.2015.Cover all new born (546) in Elobeid Maternity and Gynecological Teaching Hospital. The objectives were to determine LBW rate, to identify the health factors that contribute to low birth Weight, to find out distribution of low birth weight per gender and asses the Knowledge of the mothers regarding to LBW. Data was collected by using Structural questionnaire contains demographic, socio economic and environmental factors associated with low birth weight and weighing the new born using standardized weighing scale in the hospital measured between 0.5kg . Data was collected by researcher, sisters and midwives, and was analyzed by using computer program of (SPSS) statistical package for social science*

Results*: The incidence of low birth weight in ELobied Maternity &Gynecological Teaching Hospital was (11.5%). Male (57.1%) is more affect with low birth weight than female statistically insignificant (X^2= 7.106, P =0.578), that mean there was no relation ship between low birth weight and gender. Educational level of mothers (47.6%) statistically significant(X^2=23.754, P =0.000) that mean there was relation ship between educational level of mothers and low birth weight. The study was shown that there was no relation ship between low birth and age of the mothers (less than 20years) (11.1%) statistically insignificant(X^2=2.57, p = 0.787) . The nutritional status of the mothers during pregnancy was inadequate, (92.1%) had ordinary daily intake statistically significant(X^2= 7.9, p =0.001). The majority of mothers delivering low birth weight from centre of the city (87.3%). Diseases among mothers during pregnancy (42.8%), and smoking (36.5%) , statistically significant(X^2=34.019,p =0.001). their knowledge about low birth weight was poor (90.5%).* ***Conclusion:*** *The study recommends by control of the diseases during pregnancy, raising the level of education, and strengthening of maternal health care centre.*

KEY WORDS: *Low Birth, Weight, Newborn, EL-Obied*

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INTRODUCTION

Care of the child is most important all over the world especially in developing countries. The child must have many aspects of care, which is needed, physically, mentally, socially and psychologically from conception, intra uterine, during labor, newborn stage, infancy stage, early child hood, middle child hood, and late child hood.

The birth weight of an infant is the most important determinant having healthy growth and development. The weight of the child at birth in all developed countries is considered as most important because influence the child health (CDC. 2001).

The weight of the new born at birth [birth weight], have relation ship with gestational age. The new born child in normal range is defined [Appropriate for gestational age], all new borns whose weight is above or under this range usually have complications.(Mayes 2005).

The new born child whose weight at birth is under the normal range [low birth weight], has been defined by the World Health Organization [WHO] as weight at birth less than 2,500gm.[5.5pound](WHO 2014).

The new born child whose weight above the normal range [large for gestational age] is defined as a weight above 4000gm.or 4500gm.[9 p150oz] regardless of gestational age.

Low birth weight incidence is world wide is 25 million. Of the 142 million infants born in 1990 as low birth weight, 19 million were born in developing countries.(Baird. et al 2002)

Globally this mean about one in every 6 infants has low birth weight. The incidence of low birth weight varies widely between regions of the world with level of 32% in southern Asia, 9% in Easter Asia, 11 to 16% in Africa and 10 to 12% in Latin America and Caribbean's (Park 2005).

Low birth weight in Omdurman maternity hospital is about 14.5% (Seham 2004).

In Kassala maternity hospital in the yeast of Sudan incidence of low birth weight is 14% in 2006(Osman 2006,)

In Khartoum state Capita of Sudan low birth weight incidence about 13% (Omar. et al 2012).

Prevalence of low birth weight in EL Fashir hospital in westrn of Sudan is about 14.9% (Abdearhuim et al 2008)

Many maternal risk factors have lead to LBW infants. These factors include low socioeconomic status, little or no maternal care and cultural behavior that related to taboos, diet, smoking and poor education.

1-2 Problem Statement:

Low birth weight is one of the major determinants of neonatal survival and postnatal morbidity (Mansour.et al 2005).

Infants of low birth weight are 5 times more likely to die in their first year. Their deaths account for 20% of all post- natal deaths there is relatively risk of congenital, especially those who are small for their gestational age , respiratory tract problems , particularly infections are more common (Boemera et al 1996).

Low birth weight continues to be significant public health problem globally and is associated with a range of both short – and long- term consequences .Over all, it is estimated that 15% to 20% of all births Worldwide are LBW, representing more than 20 million births a year. the goal to achieve a 30% reduction of the number of infants born with weight less than 2500 g by the year 2025. This would translate in to 3.9% relative reduction per year between 2012-2025 and a reduction from approximately 20 million to about 14 million infants with low birth weight at birth.

Preterm birth is the most common direct cause of neonatal mortality. Every year, 1.1 million babies die from complications of preterm birth (WHO 2014).

Low birth weight is not only a major predictor of prenatal mortality and morbidity, but recent studies have found that low birth weight also increases the risk for non communicable diseases such as diabetes and cardiovascular disease later in life.

There is considerable variation in the prevalence of low birth weight across regions and within countries however, the great majority of low birth weight births occur in low- and middle-income countries and especially in the most vulnerable population. Regional estimates of LBW include 28% in south Asia, 13% in sub-Saharan Africa and 9% in Latin America .It is worth noting that these rates are high, in spite of the fact that the data on LBW remain limited or unreliable, as many deliveries occur in homes or small health clinics and are not reported in official figures, which may result in an underestimation of the prevalence of LBW (WHO 2014).

An epidemiological survey on low birth weight infants in China and analysis out come of full term LBW infant out comes , the study showed that the incidence of LBW 6.1%(Cheiny. et al 2013).

In Japan, the study cared out in 2005 revealed that the incidence of LBW is about 10.9% the causes are increased rate of smoking and multiple births (Colin. et al 2005).

Prevalence and causes of low birth weight in India about 20% the study showed that males have less frequent of low birth weight than females (Baharati .et al 2011).

In Sudan, low birth weight is a major cause of infant mortality. Study carried out in EL obeid town, in the western part of the Sudan about the infant

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mortality about 20% of deaths were due to low birth weight (Ali, 2000).

Two studies were conducted during 1989-1990 in central Sudan to determine the incidence of low birth weight and to ascertain the major risk factors, which influence birth weight. The incidence of low birth weight was 18.1% in the community and 8.2% in the hospital (Taha 2002).

Objectives: General objective: TO study low birth weight (LBW) among the new born at Elobeid Maternity and Gynological Teaching Hospital, 2015. Specific objectives: to determine low birth weight rate among delivered new –born at Elobeid Maternity and Gynological Teaching Hospital. To identify the health factors that contribute to low birth weight. To find out distribution of low birth weight per gender. To assess the knowledge of the mothers regarding to low birth weight.

METHODS & MATERIALS

Study design

This study is analytic- cross –sectional hospital-based study.

Study Area

North Kordofan State which is one of the 18 states of Sudan. (Wileyat). It is an area of 7474 km^2 which represent 8.3% of the total area of the country. Estimated population is 2,117,645.

Elobeid town is the capital of the state, lying in the west of Sudan and is about 623 kilometers from the Khartoum.

North Kordofan state lies in the middle of the Sudan surrounded by Khartoum State in the North, Blue Nile state in the East, South Kordofan state in the South and West Kordofan State and North Darfur in the West.

The total population of Elobeid town is 750,000 capita. Most of them are Muslims and Arabic is the main language there.

-Communication:

Highway roads connect Khartoum with south Kordofan and other states.

-Economic:

Traditional agriculture, animal rearing, Arabic gum and trade are the main economic activities. People with different groups, but homogenous in culture. Most of them are farmers, traders and government employee.

In Elobeid 40,000 household and 65000 families average 6 person per household.

Elobeid maternity and gynecological teaching hospital

Is located in the middle of the town, east of Elobeid main market and near faculty of medicine- Kordofan university.

The hospital serves about 750000 people. Children under 5 years in Sheikan locality are 90804.

-Hospital Units:

I.C.U department, Nursery Unit, labour room (2 delivery tables) and 6wards (consist of 119beds).

-Manpower in the hospital:

13 specialists, 19 Doctors, 7 chemists, nurses technician 43, ordinary nurses 19 , Matron , 29 Midwives , 12 statistic technician , 12 lap technician and 8 laboratory medical assistants.

Also 6 pharmacy medical assistant, 10 officers, 3 supervisors and 2 vaccinators.

Study population

The population of the study consists of mothers and their newborn attending Elobeid maternity & gynecological teaching hospital for delivery in the period of the study.

Sample Size

Total coverage, number of all newborn (546) in the period of the study 5 October - 5 November.

Data collection

Tool

Data was collected by using the following methods:

a. Structured Questionnaire and data for new born listed in a questionnaire and directed to mothers of the newborn.

The questionnaire consists of 3 parts:

- Part one for general information and identification of mother, file number, Tribe and date.
- Part two for information about demographic and socio-economic status of the family and mother age, education, family size, occupation, antenatal care, health problems and mothers knowledge and behavior.

Part three: for information about the new born, his weight, gender, order and outcome.

b. Weighing the new born immediately after birth using standardized weighting scale in the hospital measured between 0-5 kg .

c. Records.

Technique

Data was collected by researcher, sisters and midwives after training for 48hours 2 hours per day.

Data analysis

The collected data analyses by using computer program of (SPSS) statistical package.

Ethical considerations

- Approval from the appropriate management authorities obtained.
- Mothers of newborn provided informed consents.

RESULTS

Data was obtained from 546 delivered mothers at ELobeid maternity and gynecological teaching hospital in the period from 5 October to 5 of November2015.

The incidence of low birth was (11.5%), (63birth), and the normal birth weight (88.5%), (483birth) as shown in table (1).

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Residence of mothers who delivered new born with low birth was; (25.4%) in suburban while (46%) in the centre of the city and (28.6%) were from out side North Kordofan State as shown in table (2).

Table (3) shows age of mothers who delivered at Elobied maternity &gynecological teaching hospital with low birth weight (11.1%) were less than 20years , (39.7%)were between 20- 25years , (17.5%) were between 26-29years , (20.6%)were between 30-35years and (11.1%) more than 35years old.

The education level of mothers delivered were presented in table (4) (47.6%) of mothers with low birth weight were illiterate, (27%) had basic school education, (8%) khalwa, (11.1%) had secondary school education and (6.3%) had a university education.

Occupation of mothers how delivered low birth weight shown in table (5) (88.9%) were house wife, while (3.2%) were student and (7.9%) were employee.

Family size (3-4persons) among mothers with low birth weight babies (31.7%) while (5- 10person) were (63.5) and with more than (10 persons) (4.8%) as showed in table (6).

Table (7) show that (87.3%) of parents have relation ships among mothers delivered low birth weight, while (12.7%) of parents haven't relation ship.

Table (8) show the period between pregnancies among mothers with low birth weight (30.2%) with interval less than one year, (36.5 %) with interval one to two years , (27 %) with interval of 2-3 years and (6.3%) more than 3years.

In table (9) the percentages of diseases among mothers delivered at ElObeid maternity and gynaecological hospital with low birth weight (9.5%) have diabetes, while (6.3%) have hypertension,(1.6%) have heart diseases, (25.4 %) have anaemia and normal without diseases (55.6%).

Diseases during pregnancy shown in table (10), (9.5%) have diabetes, while (6.3%) have hypertension, (28.6%) have anaemia, (1.6%) have toosage and normal without diseases (54%).

Table (11) shows families income among mothers delivered at Elobeid maternity &gynaecological hospital with low birth weight, (15.9%) less than 300pounds, while (50.8%)300 <600pounds,(20,6%) from 600- 900pounds and (12.9%) more than 900pounds.

Nutrition during pregnancy in table (12) mothers who take normal diet (92.1%) and (7.9%) have special diet.

Presence of abortions among mothers delivered at Elobeid maternity & gynaecological hospital is shown in table (13) were (23.8 %)of mothers with low birth weight have abortion while (76.2%) have no abortion.

Table (14) show presence of dead new born among mothers delivered at Elobeid maternity &gynaecological hospital with low birth weight, (22.2%) have dead new born while (77.8 %) have no dead new born.

(36.5%) of mothers with low birth weight were smoking , (3.2%) were using tea and coffee, (25.3%) using tea only, (1.6%) using coffee only while (3.2%) were using alcohol , and(30.2%)not using any thing as in table (15).

Table (16) shows the health status of new born among mothers delivered at Elobeid maternity &gynaecological hospital with low birth weight (79.4%)with normal health status and (20.6%) have up normality.

In table (17) shows an order of new born with low birth weight, first (44,4%), while (31.7%) second ,(12.7) third and others (11.2%).

Sex of new born with low birth weight were (57.1 %) males while (42.9%) females as shown in table (18) .

In table (19) shows status of delivery of new born (8.2%) was single and (17.5%) were twins.

Table (20) shows type of delivery among studied mothers with low birth weight, (9.5%) by using scissors, (52.4%) by sections and (38.1%) have normal delivery

In table (21) the percentages of knowledge among mothers delivered at Elobeid maternity &gynaecological hospital with low birth weight (9.5%) have , while (6.3%) have hypertension,(1.6%) have

Table (1) : Low birth weight rate of new born in ELobeid maternity &gynecological teaching hospital , 2015.(n- 546)

Birth weight	No	Percentage
Normal birth weight	483	88.5%
Low birth weight	63	11.5%
Total	546	100%

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Table (2) : Residence of Mothers who delivered at El-Obeid maternity & gynecological teaching hospital , 2015 (n- 546)

Districts	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	NO	%
City sub urban	16	25.4	198	41.0	214	48.1
Centre of the city	29	46.0	95	19.7	124	39.4
Outside of the state	18	28.6	190	39.3	208	12.5
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

X^2 = 22.210 P= .001 statistically significant

Table (3) Age of mothers who delivered at ELobeid maternity &gynecological teaching hospital, 2015.
(n- 546)

Age	Low Birth Wight		Normal Birth Weight		Total	%
	NO	%	NO	%		
Less than 20 years	7	11.1	70	14.5	77	14.1
20-25 years	25	39.7	164	34.0	189	34.6
26-29 years	11	17.5	101	21.0	112	20.5
30-35 Years	13	20.6	113	23.4	126	23.1
More than 35 years	7	11.1	35	7.2	42	7.7
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

X^2 = 2.57 P= .787 1nsignificant

Table (4) : Type of education level among mothers who delivered at ELobeid maternity &gynecological teaching hospital , 2015.(n- 546)

Education level	Low Birth Weight		Normal Birth Weight		TOTAL	
	No	%	No	%	No	%
Illiterate	30	47.6	111	23.0	141	25.8
Khalwa	5	8.0	15	3.1	20	3.7
Primary (Basic)	17	27.0	223	49.2	240	44.0
Secondary	7	11.1	96	19.9	103	18.9
University	4	6.3	38	7.9	42	7.7
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

X^2 = 23.754 P= .000 statistically significant

Table (5) :Occupation of mothers who delivered at ELobeid maternity &gynecological teaching hospital, 2015 .(n- 546)

Occupation of mothers	Low Birth Weight		Normal Birth Weight		TOTAL	
	No	%	No	%	No	%
House wife	56	88.9	433	89.6	489	89.6
Student	2	3.2	21	4.3	23	4.2
Employee	5	7.9	29	6.0	34	6.2
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

X^2 = .520 P= .824 Insignificant

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Table (6) : Family size of mothers delivered at ELobeid maternity &gynecological teaching hospital, 2015. (n- 546)

Family size	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
3-4 persons	20	31.7	301	62.3	321	58.8
5-10 persons	40	63.5	165	34.2	205	37.5
More than 10 persons	3	4.8	17	3.5	20	3.7
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

$X^2 = 21.865$ P= .000 statistically significant

Table (7) : Husband relation ship among mothers who delivered at ELobeid maternity &gynecological teaching hospital , 2015.(n:546)

Husband relationship	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
Yes	55	87.3	200	41.4	255	46.7
No	8	12.7	283	58.6	291	53.3
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100%**

$X^2 = 47.158$ P= .000 statistically significant

Table(8) : Period of interval between pregnancies among mothers who delivered at ELobeid maternity &gynecological teaching hospital , 2015. (n:546)

Interval	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
Less than one year	19	30.2	49	10.1	68	12.5
1- < 2years	23	36.5	277	57.3	300	54.9
2-3years	17	27.0	129	26.7	146	26.7
More than 3years	4	6.3	28	5.8	32	5.9
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

X^2 = 22.361 P=0 .070 statistically Insignificant

Table(9) : type of diseases among mothers who delivered at ELobeid maternity &gynecological teaching hospital , 2015. (n:546)

Diseases	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
Normal (No diseases).	35	55.6	395	81.8	430	78.8
Diabetes	6	9.5	29	6.0	35	6.4
Hypertension	4	6.3	37	7.7	41	7.6
Heart diseases	1	1.6	6	1.2	6	1.3
Anaemia	16	25.4	16	3.3	32	5.9
Others	1	1.6	0	0	0	0
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

$X^2 = 60.167$ P=0 .000 statistically significant

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Table(10) : A antenatal care visits during pregnancies among mothers who delivered at ELobeid maternity &gynecological teaching hospital , 2015.
(n:546)

ANC	LBW		NBW		Total	
	No	%	No	%	No	%
No vists	3	4.8	29	6.0	32	5.9
Less than 3vists	17	27.5	138	28.6	155	28.4
3----10vists	38	60.3	285	59.6	323	59.2
More than 10 vists	5	7.9	31	6.4	36	6.6
Total	63	11.5	483	88.5	546	100

X^2=0. 407 P= 0.544 not significant.

Table(11) : Families income / months among mothers who delivered at ELobeid maternity &gynecological teaching hospital , 2015.
(n:546)

Birth weight Families income/month	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
Less than 300 pounds	10	15.9	111	23.0	121	22.2
300<600 pounds	32	50.8	203	42.0	235	43.0
600- 900 pounds	13	20.6	91	18.8	104	19.0
More than 900 pounds	8	12.7	78	16.1	86	15.8
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

X^2 = 2.781 P=0 .743 statistically In significant

Table(12) : Nutrition during pregnancy of mothers delivered at ELobeid maternity &gynecological teaching hospital , 2015.
(n:546)

Nutrition during pregnancy	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
Ordinary diet	58	92.1	323	66.9	381	69.8
Special diet(proteins minerals)	5	7.9	160	33.1	165	30.2
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

X^2 = 16.770 P=0 .000 statistically significant

Table(13) : History of abortions among mothers delivered at ELobeid maternity & gynecological teaching hospital , 2015.
(n:546)

Abortion	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
Yes	15	23.8	93	19.3	108	19.8
No	48	76.2	390	80.7	438	80.2
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

X^2= .729 P=0 .394 statistically Insignificant

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Table(14) : History of deaths of new born among mothers delivered at ELobeid maternity &gynecological teaching hospital , 2015. (n:546)

Birth weight / Dead new born	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
Yes	14	22.2	86	17.8	100	18.3
No	49	77.8	397	82.2	446	81.7
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

X^2 = .727 P=0 .394 statistically Insignificant

Table(15) : type of habits during pregnancies among mothers who delivered at ELobeid maternity &gynecological teaching hospital , 2015. (n:546)

Birth weight / Habits	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
No used	19	30.2	188	38.9	207	37.9
Tea	16	25.3	208	43.1	224	41.0
Smoking	23	36.5	69	14.3	92	16.8
Alcohol	2	3.2	5	10	7	1.3
Coffee	1	1.6	4	8	5	.9
Coffee and tea	2	3.2	1	.2	3	.5
Others	0	0	8	1.7	8	1.6
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100%**

X^2 = 34.019 P=0 .001 statistically significant

Table(16) : Health status of new born delivered at ELobeid maternity &gynecological teaching hospital , 2015. (n:546)

Health status	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
Normal	50	79.4	455	94.2	505	92.5
Abnormal	13	20.6	28	5.8	41	7.5
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

X^2 = 17.666 P=0 .000 statistically significant

Table(17) : Order of new born delivered at ELobeid maternity &gynecological teaching hospital 2015.(n:546)

New born order	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
First	28	44.4	150	31.1	178	32.5
Second	20	31.7	131	27.1	151	27.7
Third	8	12.7	76	15.7	84	15.4
More than three	7	11.2	126	26.1	133	24.4
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

X^2 = 8.960 P=0 .003 statistically significant

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Table(18) : Gender among new born delivered at ELobeid maternity &gynecological teaching hospital , 2015.
(n:546)

Gender of new born	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
Male	36	57.1	191	39.5	227	41.6
Female	27	42.9	292	60.5	319	58.4
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

X^2 = 7.106 P=0 .578 statistically In significant

Table(20) : Type of delivery among mothers who delivered at ELobeid maternity &gynecological teaching hospital , 2015.
(n:546)

Types 0f delivery	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
Normal	24	38.1	162	33.5	186	34.1
By scissors	6	9.5	55	11.4	61	11.2
By section	33	52.4	266	55.1	299	54.7
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

X^2 = .586 P=0 .578 statistically Insignificant

Table (21): Knowledge of mothers about LBW delivered at ELobeid maternity &gynecological teaching hospital, 2015.
(n:546)

Knowledge about LBW	Low Birth Weight		Normal Birth Weight		Total	
	No	%	No	%	No	%
Yes	6	9.5	87	18.0	93	17.0
No	57	90.5	396	82,0	453	83.0
Total	**63**	**11.5**	**483**	**88.5**	**546**	**100**

DISCUSSION

Low birth weight (LBW) is an important indicator of obstetric care and health status, it continue to remain major public health problem worldwide especially in developing countries.

Low birth weight is an important determinant of child – hood morbidity, associated with death during infancy. Low birth weight is a significant health problem contributing to infant mortality and long –term developmental problems. LBW is one of the major causes of the death of the infant during the first year of life . Study carried out in ELobied western part of Sudan about infant mortality by Ali 2000 was found that the infant mortality 20%, there were difference studies carried in Sudan in the different region about low birth weight, were showed different variations of prevalence of LBW, but in ELobied town there was no any research about LBW in the hospital or in the community.

This hospital based study carried out in ELobieb maternity and gynecological teaching hospital in western Sudan, the study aimed to determine low birth weight rate among delivered new born, to identify the health factors that associated with low birth weight, to find out disruption of low birth weight per gender and to asses the knowledge of the mothers regarding to low birth weight.

To determine low birth weight among delivered newborn in ELobied maternity and gynecological teaching hospital (Table 1):

The low birth weight in this study was found 11.5%, it was almost is the same as to what found in the previous studies done in Kassala (Sudan) (11.4%) , and in Khartoum (Sudan) (11%), Our finding of low birth weight rate it was higher than Nigeria (7.3%), China (6.1%),London(9.7), Taxas (8.2%) and Saudia Arabia – Riyadh (7.3%) and it was lower than studies were carried out in ELfashir (Sudan) (14.9%), India (20%), Bangladesh (36%), Ethiopia (22.5), Egypt (12.1%), Omdurman (Sudan) (14%) ,Sir Lanka (17.6%), Tanzania (29%) and south Asia (27%). These wide disturbances of percentage of low birth weight in the different countries and the regions in the same country.

To identify the risk factors associated with low birth weight tables 2,3,4.5,67,9,10:

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Regarding the residence of mothers, the results of this study revealed that the residence of mothers who delivered low birth weight from the urban area was 46.4%, while the mothers who delivered LBW in the sub urban was 25.4%, this agree with study carried out by Terma 2003 in Jimma Zone – Ethiopia, Our fding disagree with study carried out by Osman 2007 in Kassala (east Sudan), who reported that 17.9% of mothers who delivered LBW from the suburban while 9.5% from urban and also disagree by study carried out by WHO 2004 in Bangladesh revealed that the residence of mothers who delivered LBW in the suburban area about 37%, and 29% in the urban . In our study statistically significant (x=22.210,p=0.001).

There was correlation between residence of mothers and the low birth weight.

In table (4) the education level of mothers who delivered LBW were illiterate 47.6%, it was consistent with study carried out in Khartoum (Sudan) by Saeed et al 2013 reported that 42.3% of mothers who delivered LBW had lack of education, and also agree with study carried by Dehlui 2013 in Negiria and this is one of the risk factors which associated LBW Statistically significant (p= 0.000).

Table (3): In this study age of mothers who delivered LBW less than 20 years was low about 11.1% , than mothers age 20-25years (39.7%) , this was consistence by study carried out by ALhassan 2010 in Madani (Sudan) and it was also consistence with study carried out by Azzeh 2013 in Makkha (Aribia Saudia) were reported that no difference of mothers age and LBW. Our finding disagree by study carried by Siddhi 1998 in Tanzania reported that the low birth weight was higher in mothers age less than 20 years, the age of mothers less than 20 yeas was factor which affecting LBW, but In this study statistically not significant(x= 2.57, p= 0.787).

In table (5) show that there was no relation between mothers occupation and low birth weight .Our founding in this study the majority of mothers who gave LBW were house wife (88.9%), this was consistent with previous study carried by Azzeh et al 2013 in Saudia Aribia, and it was also consistence with study carried out by Ministry of Health Centre and Nutrition 2008 in SriLanka reported that 58.3%of mothers who gave LBW were unemployed. And disagree with previous study carried out by Mansour et al 2002 he was reported that there was significant between maternal work and low birth weight , in our study statistically not significant (p=.824).

Small family size was found to be related to low birth weight in table (6) This consistent with written in Nelson text book 2005 which stated that if family size was small we got a normal newborn compared to large families , in our study was found that (5-10person) (63.5%) of mothers had low birth weight statistically significant (x=21.865, p= .000) .

Table (8) show that there was no significant between births intervals and low birth weight p=0.070, in our study was found that the periods of intervals from 1<2years was (36.5%) , this was not confirm which written by Siddhi 1998 in Tanzania he was reported that there was significant correlation between births interval and low birth weight.

-Mothers delivered low birth weight babies had health problems during pregnancy like infections ,Bleeding , diabetes, anaemia and hypertension .These health problems are considered as a major cause of low birth weight this agree with (Gorge, 2007) (19).It must be treated and controlled by regular visit to antenatal care centre statistically significant (X= 60.167, p= 0.000).

History of dead new born and abortions in this study had no affect low birth baby. Statistically not significant(x=0.727, p= 0.394).

-Low birth weight was found to be related to substance abuse habits smoking or alcohol during pregnancy. It is an important factor, where 36.5% were smokers and 3.2% used alcohol. This result agree with what it is noticed that more than 50% of smokers had low birth weight, and also this finding agree with (Fundamental Concepts Skill for Nursing, 2007) .(19) statistically significant(x=34.019.p= 0.000) .

- Nutrition during pregnancy is an important factor if the pregnant women not had taken important elements of nutrition can delivered low birth weight baby. In this study the mothers who have low birth weight had taken normal diet about (92.1%), special diet (7.9%). statistically significant (X^2=16.770p= 0.000).

Males with low birth weight were more than females (male 57.1%), (female 2.9%). This is agree with study in reference (Gorge, 2007) (19), which staled that males larger than females but the difference is slight at birth. Statistically significant(x=34.019.p= 0.000).

Relatives or relation ship between parents for new born with low birth weight was a factor that can lead to low birth weight (87.3% had relation ship), (12.7 no relation ship between them), statistically significant(x=47.158, p= 0.000).

Age of the mothers, educational level, and residence, nutrition during pregnancy, family size, habits of smoking and alcohol consumption during pregnancy, diseases with pregnancy, order of newborn, and parent's consanguinity are the most factors associated with low birth weight.

Knowledge of mothers who delivered low birth weight (90.5%) not no about low birth weight.

CONCLUSION

Incidence of low birth weight was found to be 11.5%, in the studied population. Mothers delivered LBW were more illiterate this may influence their knowledge and hence lead to increase in low birth

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weight among babies. The study revealed that most of mothers which delivered newborn with low birth weight were from the centre of the city. The study showed that substance abuse, (e.g. smoking and alcohol) during pregnancy was practised by some mothers. Those factors can affect newborn birth weight. The nutritional status of mothers was inadequate and poor (92.1%) during pregnancy. Males with low birth weight were more than females (57.1% males and 42.9% females). The study revealed that the majority of mothers (90.5%) had poor knowledge about low birth weight.

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