

Low Birth Weight in Post-Conflict Baghdad, Iraq

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Abstract: *Background:* In Iraq, high prevalence of low birth weight was reported in the last decade (50.0%), and lower figure was reported recently (21.3%). Iraqi women have been exposed to wars, civil war, terrorism and widespread violence in the last two decades. Publication on the effect of exposure to violence on birth weight is scarce. This work was carried out to comment on low birth weight during conflict in Iraq. *Methods:* A total of 385 singleton newborns delivered at Al-Yarmouk Teaching Hospital was included in the study for the period 1st Nov. 2014 to 1st April 2015. Information regarded mothers were collected by interview. Requested data were demographic, reproductive health, medical and obstetrical history. Birth was taken from birth records. *Results:* The rate of low birth weight was 19.7%. Maternal education, parity, hypertension, iron deficiency anemia, visits to antenatal clinic were significantly associated with low birth weight ($p = 0.002, 0.003, 0.001, 0.002, 0.001$ and 0.001 , respectively). *Conclusion:* High prevalence of low birth weight was detected.

Keywords: LBW, Malnutrition, Iraq, Violence, Civil war, Terrorism

1.Introduction

The prevalence of low birth weight (LBW) in Eastern Mediterranean countries varies greatly with economic status. Low rates are found in Bahrain, Cyprus, Kuwait, Qatar and United Emirates and high rates reported in Afghanistan and Somalia 1 .

In Iraq, LBW was 9% in 1980s 2,3 increased to 13.3% 4 , 15.1% 5 in early 1990s. High figures were reported (50% 6 and 51.8% 7) in 2006. The high figures of LBW and the increasing trend in prevalence were attributed to exposure to wars and sanctions 2,3,6-9 . Recently, slightly lower figures than in 2006 were reported (31% 10 and 21.3% 11) which might reflect an improvement in the health and economic situations.

Iraqis were exposed to violence wars, sanctions, civil war, widespread violence and terrorism 12-14 . Several articles showed that maternal exposure to violence is a risk factor for LBW 15-17 . This work was carried to out to comment on LBW (prevalence and determinant factors) in Iraq during the long lasting conflict.

2.Materials and Methods

A total of 385 singleton newborns delivered at Al-Yarmouk Teaching Hospital in Baghdad city during the period 1st Nov. 2014 to 1st April 2015 was included in the study. Information regarding mothers was collected by direct interview of the mother. The data requested including demographic data, reproductive health, medical and obstetrical history during the current pregnancy (hypertension, iron deficiency anemia, antepartum hemorrhage "APH" and antenatal care visits "ANC"). Birth weight was taken from birth records.

Multiple logistic regression was done to find out which variables are significantly associated with LBW (birth weight < 2500 gm). P value < 0.05 was considered statistically significant.

3.Results

Out of the total, 76 newborns were born with LBW. The prevalence of LBW was significantly associated with maternal education, parity, APH, hypertension, iron deficiency anemia, and ANC services ($p = 0.002, 0.003, 0.001, 0.002, 0.001$ and 0.001 , respectively). Maternal age was not significantly associated with LBW ($p = 0.8$).

4.Discussion

This study revealed LBW rate of 19.7%. It is almost similar to that reported recently in Baghdad, Iraq (21.3%) 11 . The observed rate (19.7%) is higher than that reported in 1990s (15.1% and 13.3%) 4,5 and much higher than that reported in 1980s (9%) 2 . It is much lower than that reported in Iraq during 2006 (50% and 51.8%) 6,7 . High figures of LBW in 2006 were explained by maternal malnutrition which is in turn due to wars and sanction 4,5 . UNICEF reported that malnutrition among mothers had led to increase rate of LBW babies from 4.5% in 1990 to 23.8% in 1998 8 . Several articles showed different rates of LBW and malnutrition in different regions of Iraq at that period 10,18 . Iraqi population was largely depend on government rations that provide 1000 Kcal (4.2 MJ) per person per day for the period 1990-1997 8,19 . Economic and social conditions remain at level that dose little for nation health. Recently, it was reported that malnutrition among mothers is an important factor for LBW in Djibouti, Somalia, Sudan and Yemen 20 . The noticed decline in prevalence of LBW in this study might be attributed to slight improvement in economic situation after the end of sanction.

The rate of LBW in this study (19.7%) is much higher than that reported in the previous partner of 1980s war, Iran (8.8%) 21 . This difference might be explained by the further exposure of Iraqis to wars (1991 and 2003), more than a decade of sanctions which in turn affect badly economic and social situation in Iraq. Widespread violence and civil war aggravated badly economic and social situation too, and contributed for the difference.

Recent publications showed that maternal exposure to violence (domestic, neighborhood, war, and widespread violence) 16,17, 21 is a risk factor for LBW and prematurity. Exposure of Iraqi women to violence (wars, civil war, terrorism and widespread violence) 12-14 might be contributed to high figures of LBW.

In the line of other studies in Iraq 22,23 , maternal age was not associated with LBW. It is in contrast with other previous studies carried out in Iraq 6,7 . The effect of age on LBW might be masked by escalated violence in the last years. Several articles documented the escalated violence in the last years 12-14

Low Maternal education level was a risk factor for LBW. It is a well- established finding in studies 7,22,23 .

Similar to other studies 6,7,22,23 , parity, APH, hypertension and iron deficiency anemia were associated with LBW.

Consistent with other studies 6,22,23 , ANC was significantly associated with LBW. This finding might be explained by improvement of health system after the deterioration by wars and widespread violence. Abdul Lafif et al 7 reported no association between ANC and LBW and explained that by the deterioration of health services.

In conclusion, high prevalence of LBW was detected. Maternal socioeconomic characteristics affect LBW. Maternal exposure to violence masks the effect of maternal age.

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Table 1: Studied variables associated with LBW previous

Variable	LBW		
	β	SE	P value
Age	0.6	0.7	0.8
Maternal education	- 0.2	0.8	0.002
Parity	0.6	0.7	0.003
APH	0.3	0.05	0.001
Hypertension	0.2	0.5	0.002
Iron deficiency	0.6	0.7	0.001
ANC	0.3	0.6	0.001