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Abstract

**Background:** Low birth weight (LBW) can lead to infant death, especially during the first year of life.

**Aims:** To assess risk factors related to LBW babies in Sana’a, Yemen.

**Methods:** We conducted an unmatched case–control study of 252 women who came for delivery at Al Thawra Hospital, Sana’a, Yemen, between August and October 2016.

**Results:** Significant risk factors for LBW were: birth interval

**Conclusion:** Shorter birth interval is an important risk factor for LBW; therefore, improving maternal awareness of this should be emphasized during postnatal follow-up.

Keywords: low birth weight, prematurity, pre-eclampsia, khat chewing, smoking.

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Introduction

Low birthweight (LBW) is defined as birthweight

There is a high prevalence of LBW infants in Yemen, where 32% of all newborn infants have LBW (6). This study was conducted to assess the maternal sociodemographic, reproductive and lifestyle risk factors related to LBW in Sana’a City, Yemen.

Methods

Study design and sampling

This was an unmatched case–control study conducted at Al Thawra Modern General Hospital, located in Sana’a City, Yemen during August–October 2016. This hospital is one of the biggest referral hospitals in Yemen. The cases and controls were selected according to the inclusion criteria, that is, women who gave birth to a single live infant and who were resident in Sana’a City for at least 1 year. Women who had given birth to newborns weighing

Data collection

Data were collected from selected women through self-administered questionnaires and medical records. Questionnaires were administered via face-to-face interview and questions were closed-ended in nature (Yes/No answers). The questionnaires and medical records consisted of women’s age, educational level, occupational status, birth parity, birth interval, history of previous abortion, history of pre-eclampsia during the current pregnancy, gestational age of the newborn, number of antenatal care visits, as well as khat chewing and smoking during the current pregnancy. Interviews were conducted by 2 well-trained female data collectors within the first 24 hours after delivery, and medical record data were extracted after the interview. The researchers trained the data collectors and supervised them during data collection and checked all the questionnaires to ensure accuracy.

Ethical considerations
The study was approved by the Medical Research and Ethics Committee of the University of Science and Technology, Sana’a, Yemen. Before starting the interview, the participants were informed about the purpose of the study and its benefits. Verbal and signed consent were obtained from the participants before data collection. The respondents were assured that all the information would be confidential and only used for this study.

**Statistical analysis**

All the data were analysed by SPSS version 24.0. Qualitative variables were described by calculation of frequency, and quantitative variables were represented by mean and standard deviation. Odds ratios (ORs) and 95% confidence intervals (CIs) were calculated to measure the risk. \( \chi^2 \) and Fisher’s exact tests were used to show significant associations between cases and controls, as well as association of various risk factors and LBW. We used multiple logistic regression to calculate the adjusted ORs (aORs) after controlling for all possible confounders, with the corresponding 95% CIs, for LBW concerning exposure of interest.

**Results**

A total of 126 cases and 126 controls were included in the study (Table 1). The mean age in the cases and controls was 25.9 (standard deviation; 7.06) and 25.2 (5.48) years, respectively. Most cases and controls were aged 20–29 years. In the case group, 67 (53.2%) women did not complete their primary education and 59 (46.8%) who did. In the control group, 58 (46%) women did not complete their primary education and 68 (54%) did. In terms of occupation, 116 (92.1%) women in the case group were housewives and 10 (7.9%) worked outside the home. In the control group, 113 (89.7%) women were housewives and 13 (10.3%) worked outside the home. There was no significant association between cases and controls concerning sociodemographic and socioeconomic characteristics.

Birth interval Tables 2 and 3). However, in multivariate analysis, the only significant risk factor for LBW was birth interval

**Discussion**

LBW is a significant cause of morbidity and mortality among neonates and children (8). Infants’ gestational age has a vital role in determining BW. There is an increased risk of LBW for premature infants.

Recommendations can be made to reduce the prevalence of LBW. Screening should be conducted by healthcare professionals of pregnant women with high risks of delivering LBW infants, especially if the mothers have a birth interval

**Conclusion**
Risk factors for LBW identified in this study can be reduced and prevented by improving maternal health education, especially on pregnancy spacing.

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**Competing interests:** None declared.

**References**


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