Available online at www.sciencedirect.com

Public Health

journal homepage: www.elsevier.com/puhe

Original Research

Pattern and determinants of birth weight in Oman

M.M. Islam [a,*], M.K. ElSayed [b]

[a] Department of Mathematics and Statistics, Sultan Qaboos University, Oman
[b] Health Information and Epidemiology, Ministry of Health, Oman

ARTICLE INFO

Article history:
Received 3 February 2015
Received in revised form
5 May 2015
Accepted 13 July 2015
Available online 3 September 2015

Keywords:
Birth weight
Low birth weight
Risk factor
Incidence
Consanguineous
Oman

ABSTRACT

Objectives: The aim of this study was to analyse the pattern of birth weight (BW) and identify the factors affecting BW and the risk factors of low birth weight (LBW) in Oman.
Study design: The data for the study came from the 2000 Oman National Health Survey conducted by the Ministry of Health. The survey covered a nationally representative sample of 2037 ever married Omani women of reproductive age.
Methods: Data on birth weight were gathered from health cards of the infants born within five years before the survey date. The study considered 977 singleton live births for whom data on birth weights were available. LBW was defined as BW less than 2500 g. Descriptive statistics, analysis of variance, multivariate linear regression and logistic regression models were used for data analysis.
Results: The mean BW was found to be 3.09 (SD 0.51) kg. BW was found to be significantly lower among the infants with the following characteristics: born in Ad-Dhakhliyah region, born in rural areas, and whose mothers had low economic status, low parity (0–2), and late initiation of antenatal care (ANC) visit. The incidence of LBW was found to be 9% in Oman in 2000. Mother's education, economic status, region of residence, late initiation of first ANC visit and experience of pregnancy complications appeared as the significant determinants of LBW in Oman. In contrast to most other studies, this study demonstrates that mothers with an advanced level of education (secondary and above) are more likely to have infants with LBW in Oman.
Conclusion: The study findings highlight the need of intervention for specific groups of women with higher risk of adverse BW outcomes.
© 2015 The Royal Society for Public Health. Published by Elsevier Ltd. All rights reserved.

Introduction

Birth weight (BW) is a key predictor of the health, survival and development of a new born baby. It is not only associated with the high mortality risk during childhood, but also highly associated with health, physical, emotional, psychological and scholastic development and well-being in childhood and adulthood.[1–9] Low birth weight (LBW) – defined by the World Health Organization (WHO) as weight at birth of less than

* *Corresponding author*. Department of Mathematics and Statistics, College of Science, Sultan Qaboos University, P.O. Box 36, PC 123, Muscat, Oman. Fax: +968 24141490.
E-mail addresses: mmazhar.islam@yahoo.com, mislam@squ.edu.om (M.M. Islam), medhatelsayed@gmail.com (M.K. ElSayed).
http://dx.doi.org/10.1016/j.puhe.2015.07.011
0033-3506/© 2015 The Royal Society for Public Health. Published by Elsevier Ltd. All rights reserved.

2500 g (i.e. 2.5 kg or 5.5 pounds)[10] – is associated with increased risk of numerous adverse health outcomes in childhood and adulthood.[11,12]

Previous studies have shown that LBW babies are 20 times more likely to die than normal weight (≥2500 g) babies.[1,2] As LBW is largely preventable, it provides a target for intervention to improve the child health and survival.[6] LBW has been selected as an important indicator for monitoring the achievement of major health goals during the 2002 World Summit for Children.[13] It is also one of the targets of the Millennium Development Goals (MDGs). The target to reduce at least one-third of the incidence of LBW by 2015 was established by the international community as a move to achieve the first goal of the MDGs for eradicating extreme poverty and hunger.[14] LBW is thus given high priority by the national governments and the international community.

United Nations Children's Funds (UNICEF) reported that there are more than 20 million infants worldwide, representing 15% of all births, are born with LBW in 2011.[15] According to a joint study of UNICEF and WHO in 2004 about 96% of LBW newborns are seen in developing countries and the level of LBW in developing countries (17%) is more than double the level in developed regions (7%).[12]

BW is a composite of foetal growth and length of gestation, each of which has different contributors.[16] Many factors effect BW that are related to the infant, the mother, the physical environment or the genetics.[12] The risk factors of LBW include, among others, maternal factors such as: maternal health and her risky health behaviours, insufficient antenatal care, psychosocial stress, low body mass index, poor nutrition, diseases, diet and lifestyle during pregnancy as well as socioeconomic and demographic characteristics. Some other risk factors of LBW are sex and birth order of the baby, genetic factors and environmental pollution.[17] Although several causal associations are well established, there are mediating and etiological factors whose effects on the different components of LBW are still under investigation. Although the pattern of risk factors for adverse BW may be similar among populations, the relative contribution of each factor may vary from one setting to another.[12,18,19] It is, therefore, important to identify population-specific factors affecting BW so that appropriate policy intervention can be formulated for further improvement of child health and survival.

The Sultanate of Oman is one of the Arabian Gulf Countries. The country was under poverty and isolation until 1970. However, by the late 1980s, Oman was transformed into a modern state, with all the modern facilities and infrastructures, under the dynamic leadership of the present ruler His Majesty Sultan Qaboos Bin Said who ascended to power in 1970. Economically, Oman is now classified as a high-income country with a per capita Gross Domestic Product (GDP) of more than US$20,000 in 2013.[20] The standard of living and health status have improved enormously since 1970. The country has a well-organized universal free health care system assuring universal access to health care services for all of its citizens which is widely recognized and acclaimed by various international organizations, including the World Health Organization.[21,22] As a result almost all the health indicators witnessed dramatic improvements over the past four decades and several diseases have been eliminated from the country. Oman has also made impressive gains in the achievement of key MDGs.[23] Despite all these improvements in health status, a recent concern is raised about some of the childhood health indicators, particularly the LBW and infant and under-five mortality for their unchanging or increasing trends as indicated by the recent health statistics of the Ministry of Health (MOH) in Oman.[24]

Data from MOH demonstrate that the infant and under-five mortality rates in Oman remain almost unchanged at a rate of around 10 and 12 per 1000 live births, respectively, since 2005, despite continued efforts for improving child health and survival. On the other hand, LBW shows increasing trends since 1980. LBW rate was about 4% in 1980, doubled (8.1%) in 2000, and had further increased to 10.2% in 2013.[25] It seems that improved medical technologies greatly improved the foetal survival chances since the middle of last century, but didn't directly help much to reduce the incidence of LBW.[24]

In Oman, LBW has appeared as the second leading cause of morbidity among newborns and a leading cause of early neonatal mortality (death before seven days of life) and the third leading cause of mortality among infants (death before one year of age).[25] Thus, LBW can be seen as a real challenge for improving child health and survival in Oman. As BW is one of the important biomarker of health, survival and future development of newborn babies, it is important to identify the risk factors for LBW, so that appropriate measures can be taken for the improvement of health and survival of infants. This study provides an overview of the pattern of BW and identify the factors affecting BW and the risk factors of LBW in Oman using data from a population based nationally representative health survey. The findings of the study may have important policy implications for the improvement of newborn health and survival.

Methods

The data

The data for this study came from the 2000 Oman National Health Survey (ONHS) which was conducted by the MOH with the collaboration of UN organizations such as UNFPA and UNICEF, WHO and the UN Statistics Division. The details of the 2000 ONHS may be seen in Al- Riyami et al.[26] Only married women under 50 years of age who were Omani nationals were included. The survey covered a nationally-representative sample of 2037 married women from 2013 randomly selected households. The sample of households was selected following a multistage stratified probability sampling design. Thus, the overall sample is a self-weighting sample, providing a national level of unbiased estimates.

The 2000 ONHS contains data on the general health of the household members and reproductive health characteristics of married women including their nuptiality pattern, pregnancy history, pregnancy outcome and health of offspring including BW for last birth that occurred within five years of the survey date. The survey gathered information on BW from the child's health card. Since Oman has a universal free health care system,[21] almost all (99%) deliveries occur in health facilities, mostly in public health facilities,[23] and the BW of

Download English Version:

https://daneshyari.com/en/article/10516203

Download Persian Version:

https://daneshyari.com/article/10516203

Daneshyari.com