



Editor : Ns. Mutia Farlina, M.Kep. Sp.Kep. An

# CONQUERING LOW BIRTH WEIGHT EFFECTIVE STRATEGIES

Ns. Arif Rohman Mansur, S.Kep., M.Kep  
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# CONQUERING LOW BIRTH WEIGHT EFFECTIVE STRATEGIES



"Conquering Low Birth Weight Effective Strategies" authored by Ns. Arif Rohman Mansur and Ns. Ira Mulya Sari, offers an exhaustive investigation into low birth weight (LBW), a pressing public health challenge. This book methodically unpacks the complex web of causes leading to LBW, ranging from maternal health and nutrition to broader socioeconomic and environmental influences. It emphasizes not only the immediate health concerns that LBW poses for newborns but also explores the profound long-term developmental impacts and the extensive socioeconomic repercussions on families and healthcare systems. By providing a comprehensive review of evidence-based prevention and management strategies—including preconception care, nutritional support during pregnancy, and the management of high-risk pregnancies—the authors lay down a strategic blueprint. This guide is designed to address and ameliorate the factors contributing to LBW while simultaneously improving the health and well-being of mothers and their children. Central to the discourse, the book acts as a clarion call, urging healthcare professionals, policymakers, and the community at large to come together in tackling LBW, a crucial determinant of neonatal and maternal health. By presenting a thorough analysis coupled with actionable recommendations, it aims to inspire a unified, global response to combat the challenges posed by LBW. "Low Birth Weight: Challenges, Implications, and Strategies" is more than an academic treatise; it is an essential resource for all stakeholders committed to improving public health outcomes. It seeks to pave the way towards a future where LBW does not hinder the optimal health and development of any child, thereby making it an indispensable tool for enhancing public health and achieving better neonatal and maternal health outcomes globally.



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## PREFACE

In a world where the health of the youngest members of society is a mirror reflecting the broader health of the community, the issue of low birth weight (LBW) stands as a critical concern demanding our collective attention and action. This book, dedicated to unraveling the complexities of LBW, is borne out of a commitment to improve neonatal outcomes and maternal health across diverse landscapes.

Our journey through the pages of this book takes us deep into the exploration of LBW, starting with its definition, significance, and the urgent need for a concerted effort to address its root causes and effects. We delve into the factors contributing to LBW, from maternal health and nutrition to environmental influences and healthcare accessibility, revealing a multifaceted challenge that intersects with social, economic, and medical dimensions of society.

Our exploration does not stop at identifying the problem; it extends to presenting a comprehensive overview of the impact of LBW on immediate health concerns, long-term physical and cognitive development, and the overarching financial burden it places on families and healthcare systems. Through rigorous research and insightful analysis, this book aims to shed light on the immediate and far-reaching consequences of LBW, challenging us to see beyond the numbers to the real-life implications for children, families, and communities.

The heart of our discussion lies in the interventions and prevention strategies outlined in the latter part of the book. From preconception care and nutritional support to the management of pregnancy complications and specialized care for high-risk pregnancies, we offer a blueprint for action that healthcare providers, policymakers, and individuals can use as a guide to mitigate the incidence of LBW. These strategies, grounded in the latest research and best practices, underscore the importance of a proactive and comprehensive approach to maternal and neonatal health.

As we conclude our exploration, it becomes clear that addressing LBW is not merely a medical challenge; it is a moral imperative that calls for a global response. By understanding the causes, effects, and interventions related to LBW, we take a crucial step toward ensuring a healthier future for the next generation.

This book is a call to action – an invitation to join the collective effort to combat LBW and improve the quality of life for countless individuals worldwide. It is a resource for healthcare professionals, researchers, policymakers, and anyone committed to making a difference in the lives of mothers and their children. Together, we can turn the tide on low birth weight and pave the way for a brighter, healthier future.

Padang, March 21, 2024

Arif Rohman Mansur

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# UNIT

# 1

## INTRODUCTION

### A. Definition of Low Birth Weight

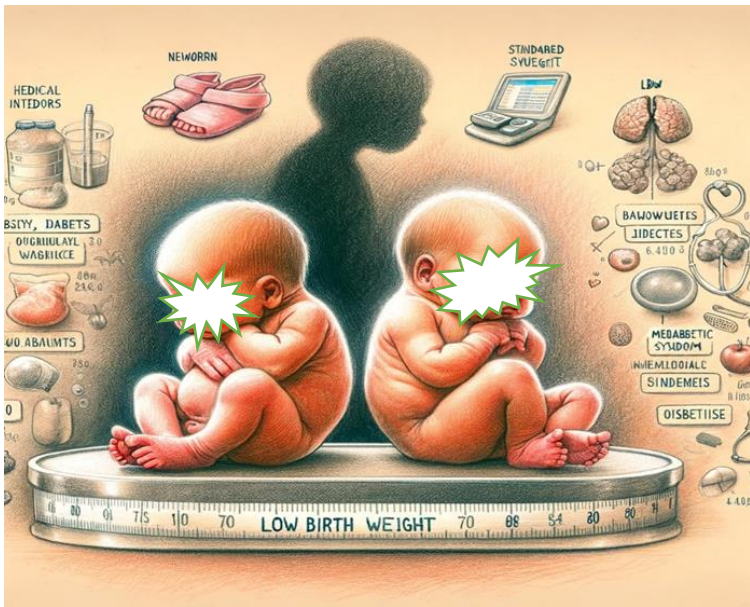


Figure 1 Low Birth Weight

Low birth weight (LBW), defined as newborns weighing less than 2500 grams or approximately 5.5 pounds, stands as a pivotal health indicator, marking a child's initial vulnerability and potential future health challenges. This condition is intricately linked with increased neonatal mortality, childhood morbidity, and an elevated risk of chronic conditions such as



# UNIT 3

## IMPACT OF LOW BIRTH WEIGHT

### A. Immediate Health Concerns

#### 1. Increased Vulnerability to Infections

Newborns with low birth weight have a weaker immune system, making them more susceptible to infections. Newborns with low birth weight (LBW), defined as weighing  $\leq 5.5$  lb, are at an increased risk of facing significant health challenges due to compromised immune system functionality. This susceptibility to infections is a critical concern, as it is linked to higher morbidity and mortality rates compared to newborns with normal birth weights. The developmental origins of health and disease hypothesis provide a foundational understanding of how LBW can lead to chronic diseases by affecting the immune system's development, thereby increasing the risk of infections (Alexander, Dasinger, & Intapad, 2014).

A systematic review of the literature underscores the multifaceted impact of LBW on newborn health, especially in terms of infection susceptibility. For instance, LBW is recognized as a key determinant of infectious disease mortality during infancy, highlighting the urgent need for robust evidence to confirm this relationship and the development of targeted interventions to mitigate the risk (Read & Clemens, 1995). In addition to the direct impact on immune system functionality, LBW is associated with structural abnormalities and cognitive function impairments,

# UNIT 4

## INTERVENTIONS AND PREVENTION STRATEGIES

### A. Before Pregnancy

#### 1. Preconception Care

Improve women's health and address any risk factors before becoming pregnant. This includes managing chronic conditions (like diabetes and hypertension), ensuring adequate nutrition, and avoiding harmful substances (smoking, alcohol, and illicit drugs).

Preventing low birth weight involves managing chronic conditions like diabetes and hypertension, ensuring adequate nutrition, and avoiding harmful substances such as smoking, alcohol, and illicit drugs. Chronic conditions like type 2 diabetes and hypertension are associated with poor cognitive development and chronic diseases in adulthood (Hailu & Kebede, 2018). Strategies to prevent low birth weight include strengthening antenatal follow-up, controlling body mass index, and improving the socioeconomic status of mothers (Mengesha et al., 2017). Adequate management of low birth weight babies and prevention of associated factors are crucial in averting infant deaths (Sharma et al., 2015).

Nutritional counseling, health education to improve lifestyle, and early recognition and treatment of complications are recommended interventions to prevent low birth weight (Mulatu et al., 2019). Maternal health care interventions like women empowerment, education,

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The author was born in Jepara on August 28, 1987, and is the youngest of five siblings. He earned his Bachelor's degree (S.Kep.) and completed his professional nursing education (Ns) from the Nursing Science Program (PSIK) at the Faculty of Medicine, Gadjah Mada University (UGM) in 2009 and 2010, respectively. Since April 1, 2019, he has been working as a lecturer in the Pediatrics and Maternity Department at the Faculty of Nursing, Andalas University, where he remains to the present. In addition to his lecturing duties, he actively writes books, contributes articles to mass media and journals, manages the Pengabmas journal (Andalas Service News), leads the GKM for the Undergraduate Nursing Program, and serves as a member of the Unand Book Task Force. One of the author's mottos is "Dare to Try and Keep Learning." He has written several books or learning modules and published various research findings in national and international journals. The author is married and blessed with three sons.

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Ira Mulya Sari born in Padang on April 13, 1984, is a permanent faculty member in the Maternity and Child Department at the Faculty of Nursing, Andalas University. Prior to this position, she taught at STIKes Indonesia Padang and Akper Nabila Padang Panjang. Known affectionately as Ai, she is married and blessed with four children: Zahid, Shadiq, Shanum, and Ali. She completed her specialized education in pediatric nursing at the University of Indonesia in 2016.