COMMENTARY

Causes of Preterm and Low Birth Weight Babies in Pakistan: A Comprehensive Analysis

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Abstract

Preterm birth and low birth weight are critical public health concerns globally, contributing to significant neonatal morbidity and mortality. As a developing country, Pakistan faces substantial challenges in addressing these issues. This paper aims to provide a comprehensive analysis of the causes of preterm birth and low birth weight babies in Pakistan. Through an exploration of socioeconomic, healthcare, maternal, and environmental factors, the paper seeks to shed light on the complex interplay of factors contributing to this problem. Understanding these causes is essential for designing effective interventions and policies to reduce the incidence of preterm birth and low birth weight, ultimately improving maternal and neonatal health outcomes in Pakistan.

Keywords: *Preterm, low birth weight, neonatal mortality, maternal health, health outcomes.*

INTRODUCTION

Preterm birth and low birth weight are critical public health concerns globally, contributing to significant neonatal morbidity and mortality. As a developing country, Pakistan faces substantial challenges in addressing these issues. Preterm birth, defined as birth before 37 completed weeks of gestation, and low birth weight (LBW, generally classified as birth weight below 2,500 grams, are significant contributors to infant mortality, neonatal morbidity, and long-term health consequences [1]. Pakistan, with its high birth rate and limited healthcare resources, faces a considerable challenge in addressing the burden of preterm birth and LBW babies. In an analysis of UNICEF data, the prevalence of low birth weight (LBW) is 32%, with a rate of newborn mortality (NMR) of 42/1000 live births. In Pakistan, the NMR is 49/1000 births that survive, and we account for 7% of worldwide newborn fatalities. Two-thirds of all newborn deaths take place in ten countries, the majority of which are in Asia. Pakistan ranks third among nations with 298000 newborn deaths per year. Prematurity, asphyxia at birth, and infection are the leading contributing factors to neonatal death in developing countries with low incomes such as Pakistan [2].

Along with the length of gestation, certain geo-demographic components (maternal age, consanguinity, and nationality, the health of the mother (anemia), and previous pregnancies (abortion/miscarriage) had a significant relationship with the number of cases of LBW seen at the four healthcare facilities investigated in Peshawar. These findings suggest that the prevalence of preterm babies in this region of Pakistan can be negatively impacted by cultural variables [3]. Primary factors causing infant fatalities were infectious illnesses, such as sepsis (18.2%) and respiratory distress syndrome (24.2%) [4]. Preterm infants remain at significant risk of developing different diseases like Respiratory distress syndrome, infection, and metabolic disorders notwithstanding the introduction of contemporary procedures and cutting-edge services. Premature birth and its associated problems are not just linked to high rates of death and morbidity, but they also cause such premature babies to spend more time in the neonatal intensive care unit, placing a significant strain on the public health system [5].

SOCIOECONOMIC FACTORS

Socioeconomic status plays a crucial role in determining maternal health and birth outcomes. Poverty, limited access to education, and inadequate healthcare facilities lead to delayed or inadequate prenatal care. Poor maternal nutrition, limited access to clean water, and sanitation issues further contribute to adverse birth outcomes. Prematurity and its sequel are not merely linked to increased rates of illness and death, but they can also result in premature babies spending longer than necessary in newborn critical care facilities, placing a significant financial strain on medical facilities. Prematurity causes negative neurological consequences as well as acute morbidities, which is the area of greatest concern for individuals, households, and communities [6].

MATERNAL HEALTH AND BEHAVIORS

Maternal health is a key determinant of birth outcomes. Lack of proper antenatal care, inadequate nutrition, and underlying health conditions such as hypertension and diabetes can increase the risk of preterm birth and LBW.

Behavioral Health Factors

Maternal behaviors such as tobacco and substance use during pregnancy can negatively impact fetal development.

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Maternal Nutritional Status

Anemic women had a 4 and 1.9 times higher chance of, respectively, premature delivery and low weight at birth than non-anemic women. Moreover, anemic women had a 3.7 higher chance of preterm fetal mortality than non-anemic women and babies with anemia had a 1.8 times higher risk of having low Apgar scores at one minute of age [7].

Access to Antenatal Care

Most of the people living in rural areas in Pakistan don't have access to antenatal checkups and screening.

HEALTHCARE SYSTEM CHALLENGES

Pakistan's healthcare system faces multiple challenges, including inadequate infrastructure, a shortage of skilled healthcare providers, and disparities in healthcare access between urban and rural areas. The limited availability of specialized neonatal care units and antenatal services in remote regions contributes to poor pregnancy outcomes. The main factors leading to neonatal hospitalizations were premature birth, low weight at birth, newborn asphyxia, and newborn jaundice. Adequate prenatal care, prompt intervention, and prompt referral to higher-level medical care for the delivery of all pregnancies with a high risk could all help mitigate this. Prematurity was the main factor in the death of babies [8].

Environmental Factors

Environmental factors, such as air pollution and exposure to indoor smoke from cooking fuels, have been associated with adverse birth outcomes. These factors can lead to intrauterine growth restriction (IUGR) and preterm birth [9].

Cultural and Societal Norms

Cultural practices and societal norms can influence maternal health-seeking behaviors. Early marriages, limited decision-making power for women regarding healthcare, and preference for male children can contribute to inadequate prenatal care and increased stress on pregnant women.

Although it has only been investigated in a small number of trials in low-income populations, neonatal oil massage, a common community practice, may help temperature regulation and barrier integrity of skin and reduce the risk of major diseases, disability, and mortality in vulnerable premature babies [10].

Interventions and Policy Implications

Addressing the issue of preterm birth and LBW in Pakistan requires a multi-faceted approach. Improving maternal nutrition, promoting awareness about the importance of antenatal care, enhancing healthcare infrastructure, and providing training for skilled birth attendants are crucial steps. Moreover, targeted interventions that address specific socioeconomic and cultural barriers are essential for reducing the burden of preterm birth and LBW.

Research Gaps and Future Directions

While some studies have explored the causes of preterm birth and LBW in Pakistan, there is a need for more comprehensive and longitudinal research to understand the intricate interplay of factors contributing to these issues. Additionally, the impact of emerging challenges, such as the COVID-19 pandemic, on maternal and neonatal health requires further investigation.

CONCLUSION

Preterm birth and low birth weight are complex issues with multiple interrelated causes in Pakistan. Efforts to address these challenges must encompass improvements in healthcare infrastructure, enhanced maternal education, and targeted interventions to address specific socioeconomic and cultural barriers. By addressing the multifaceted causes, Pakistan can make significant strides in improving maternal and neonatal health outcomes and reducing the burden of preterm birth and LBW.

CONFLICT OF INTEREST

The author declares no conflict of interest.

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REFERENCES

1. Abbas F, Kumar R, Mahmood T, Somrongthong R. Impact of children born with low birth weight on stunting and wasting in Sindh province of Pakistan: a propensity score matching approach. Sci Rep 2021; 11(1): 19932.
DOI: https://doi.org/10.1038/s41598-021-98924-7
2. Hussain S, Tarar SH. Neonatal mortality of low birth weight neonates born in a tertiary care teaching hospital in Pakistan. Malay J Paediatr Child Health 2015; 3(21): 1-11.
3. Badshah S, Mason L, McKelvie K, Payne R, Lisboa PJ. Risk factors for low birthweight in the public-hospitals at Peshawar, NWFP-Pakistan. BMC Public Health 2008; 8: 197.
DOI: https://doi.org/10.1186/1471-2458-8-197
4. Mustufa MA, Korejo R, Shahid A, Nasim S. Infection remains a leading cause of neonatal mortality among infants delivered at a tertiary hospital in Karachi, Pakistan. J Infect Dev Ctries 2014; 8(11): 1470-5.
DOI: https://doi.org/10.3855/jidc.3569

5. Khan MR, Maheshwari PK, Shamim H, Ahmed S, Ali SR. Morbidity pattern of sick hospitalized preterm infants in Karachi, Pakistan. J Pak Med Assoc 2012; 62(4): 386-8.
6. Khan MR, Maheshwari PK, Shamim H, Saleem AF, Ahmed S, Ali SR, *et al*. Neurodevelopmental outcomes of premature infants at a tertiary care center in Pakistan. Pediatr Neurol 2012;47(2):109-13. DOI: https://doi.org/10.1016/j.pediatrneurol.2012.05.010
7. Lone F, Qureshi R, Emmanuel F. Maternal anaemia and its impact on perinatal outcome in a tertiary care hospital in Pakistan. East Mediterr Health J 2004; 10(6): 801-7.
8. Ali SR, Ahmed S, Lohana H. Disease patterns and outcomes of neonatal admissions at a secondary care hospital in Pakistan. Sultan Qaboos Univ Med J 2013; 13(3): 424-8.
9. Rosário Filho NA, Urrutia-Pereira M, D'Amato G, Cecchi L, Ansotegui IJ, Galán C, *et al*. Air pollution and indoor settings. World Allergy Organ J 2021; 14(1): 100499. DOI: https://doi.org/10.1016/j.waojou.2020.100499
10. Salam RA, Darmstadt GL, Bhutta ZA. Effect of emollient therapy on clinical outcomes in preterm neonates in Pakistan: a randomised controlled trial. Arch Dis Child Fetal Neonatal Ed 2015; 100(3): F210-5. DOI: https://doi.org/10.1136/archdischild-2014-307157