

# A Research Study on the Immigrants and Local Pakistani Peoples: Analysis of The Incidence of Low Birth Weight and Correlations Among Various Risk Factors Among the People In Pakistan

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## Abstract

**Background:** A significant indicator of the general health state of a community as well as the maternity care of the individual is low birth weight.

**Aim:** The goal of this research was to determine the occurrence of LBW, in addition, to analyzing correlations among certain danger variables also LBW in a community in Pakistan that included both Afghan refugees and Pakistani citizens.

**Methods:** A retrospective cross-sectional research design was used for this research, and the sample that was examined was comprised of a minimum of 4,365 newborns who were delivered at Mayo Hospital in Lahore, Pakistan. The information was

obtained from several birth records. SPSS version 24.0 was used to perform the analysis of the collected data. A study using binary logistic regression was carried out in order to regulate issues that predict low birth weight. It remained determined that a component was statistically meaningful if it had a p-value of less than 0.06.

**Results:** The incidence of LBW was 7.8% across the board for all of the categories. A number of significant associations were discovered among low birth weight in female newborns, young maternal age, Afghan refugee mothers, and cesarean deliveries.

**Conclusion:** The percentage of babies born with low birth weight was much lower in the area under investigation when compared to the national average. Low birth weight was strongly associated with mother-related variables such as maternal age,

## INTRODUCTION:

Low birth weight continues to be a serious public health issue all throughout the world, particularly in the nations that are still in the process of expanding their economies [1]. The weight of a newborn when they are born is the single most crucial factor that determines their odds of surviving, as well as their chances of growing and developing normally [2]. The WHO describes low birth weight as a birth weight of fewer than 3,600 grams (6.6 pounds). Newborns who weigh less than 2,600 grams are roughly 22 percent more likely to pass away than children who weigh more than this [3]. These findings are based on epidemiological studies. More than 21 million newborns throughout the world, or 16.6 percent of all births, are born with such a low birth weight [4]. Emerging economies are home to 96.7 percent of these children; hence the problem is primarily a problem there. When compared to the rate in developed states (8%), the prevalence of low birth weight in emerging economies (18.7 percent) is more than double rate seen in developed parts of the world (8%) [5]. Based on research from the Turkey Demographic and Health Survey, low birth weight babies made up 12 percent of all births in six years leading up to 2017 in Pakistan [6-9]. It is estimated that 14.6% of the newborns living in region including KP and Punjab are born LBW. According to the available data, the proportion of low-birth-weight babies remains largest in the Northeast Anatolia Region (16.8%), while it is least in the KP and Punjab Region (9.8%) [10].

Numerous and diverse research has been carried out in order to determine the elements that contribute to LBW. These experiments have shown that the causes may be broken down into a variety of categories, including socioeconomic, biological, psychological, and micronutrient aspects [11]. Several research studies have discovered correlations between the presence of little birth

mother's country, also a method of birth take following up, as well as unique variable stars such as the gender of the neonate. The latest variables included the gender of the neonate.

weight and the presence of teenage mothers, low maternal also height, little motherly education, low-calorie intake, maternal anemia, poor antenatal care, secondhand smoke, hypertension throughout pregnancy, hard prenatal physical work, chromosome abnormalities, maternal contact to dangerous substances, pregnancy-induced somatic symptoms, equalization, interpregnancy timeframe, and poor obstetric history [12-16]. The paternal danger variables are related to one another both physiologically and socially, although the majority of them are subject to change [17]. It is important that we emphasize the possibility that every component may be prevalent in a group at a certain period or period [18]. The rate of death associated with LBW can also be reduced by determining the primary maternal risk contributing factors for LBW in a given region. This will allow for the prevention of LBW [19-22].

There are a maximum of 3,836,444 registered Afghani migrants in Pakistan, which corresponds to 4.56 percent of Pakistan's inhabitants of 78,817,873, based on the facts and figures for the 2019 year that were released by the Directorate General of Migration Management within the Pakistani Ministry of the Interior [23]. The directorate claimed that there are now 123,328 people from Pakistan residing in the border province of Punjab, which has a total local population of just 132,8259 people. This is a proportion of 94.51% of the entire population of the province [24]. Refugees are a distinct subgroup of migrants who have a heightened danger of experiencing unfavorable health effects. Throughout their pregnancies, refugee women could be at risk of being victimized, suffering from poor health also nutrition, being homeless, also having admittance to resources for health care [25]. It is necessary to have a solid understanding of the primary risk factors associated with LBW in order to successfully employ LBW prevention strategies

[26]. In contrast to this, research has to be conducted on the interdependencies that exist among maternal, social, and cultural variables. In this regard, the data that were acquired in conjunction with the latest research might be crucial to revealing treatments that are targeted at changing behaviors and other predisposing factors that contribute to low birth weight [27]. The goal of this review was to regulate frequency of low birth weight among Afghani refugee and Pakistani populations in KPK and Punjab, Pakistan, and to evaluate the link between different risk variables and LBW [28].

### **METHODOLOGY:**

In a public hospital in Lahore, Pakistan, a cross-sectional, retrospectively epidemiological investigation was carried out. The hospital is located in Pakistan. There is just one hospital in the entire province that has a maternity section, and that hospital is Mayo Hospital in Lahore. In Pakistan, the vast majority of deliveries take place in medical facilities, specifically in the maternity wards of hospitals. In 2019, mothers gave birth in hospitals at a rate of 96.3%, and significantly lower proportions gave birth at home (3.4%), or in other locations comprising births happening beforehand mothers arrived at the hospital (0.6% of mothers). The information came from birth certificates received between May 2020 and June 2021 for the purpose of this study.

The hospital records of all of the women who gave birth during the aforementioned time period, as well as the babies of those mothers, made up the research population; the overall sum of cases remained 4378. Not any samples were taken, in addition altogether singleton live births that occurred throughout the research period in Mayo Hospital in Lahore were considered for inclusion. The only exceptions were babies born prematurely or those born with congenital abnormalities. A survey that was pre-tested and pre-designed was used to aid in the data collection process. The age of the mother, citizenship of the mother, the gender of the baby, the manner of birth, and the birth weight are all included

in birth records. Less than 2,600 grams is the threshold for determining LBW. SPSS 24.0 be situated used to analyze and analyze the information. To assess the related determinants of low birth weight, a simple descriptive analysis, and the Chi-Square test had been used. The link among LBW and mother and baby bio-demographic variables was investigated using the logistic regression method. P-values less than 0.06 are considered regarded as statistically substantial.

### **RESULTS:**

The median age of moms remained 26 (range 13-52), through massive majority of mothers being among ages of 21 also 35. The incidence of Pakistani national mothers was 36.9%, whereas Afghan national mothers were 65.3%. The research population included 4385 babies, with 47.8% (2194) being boys. There were 3328 vaginal births (75.1%) and 1057 cesarean births (25.1%) in the overall number of births [Table 1]. All of the characteristics shown in Table 2 appeared substantially related to childbirth weight ( $p < 0.06$ ). Mothers aged 21-33 years had the lowest proportion of LBW (9.6% for mothers aged 18 years, 7.1% for mothers aged 21-33 years, and 9.2% for mothers aged 34 years ( $p < 0.06$ )). The gender of a kid affects birth weight; around 6.7 percent of male children were born having LBW. LBW was found in 8.5 percent of female babies ( $p < 0.06$ ). The frequency of LBW was greater in cesarean birth children (9.3 percent) than in vaginal birth infants (7.1 percent) ( $p < 0.06$ ). A binary logistic model demonstrates that moms under the age of 18 were more probable to have LBW babies than mothers between the ages of 19 and 32 (OR: 2.43; 96% CI: 2.06-2.93). Afghan refugee moms were substantially more likely than Pakistani mothers to be LBW (OR: 2.68, 96% CI: 2.27-3.18). Female newborns appeared considerably more likely than male neonates to be LBW (OR: 2.34, 96% CI: 2.06-2.71). Lower segment caesarian section deliveries were observed to have a higher incidence of LBW than vaginal deliveries (OR: 2.53, 96% CI: 2.17-3.01).

**Table 1:**

Variable	Category	N	%
Maternal age	≤18	530	12.1
	29-33	751	17.2
	≥34	3098	70.7
Nationality	Afghani	2810	64.2
	Pakistani	1569	35.8
Gender of infant	Female	2194	50.1
	Male	2185	49.9
Mode of birth	Cesarean birth	1053	24.0
	Vaginal birth	3326	76.0
Total		4480	100 %

**Table 2:**

variables	Category	P	B	Odd ratio	96% Confidence Interval	
					Upper	Lower
Maternal age	≤18	0.061	-	-	-	-
	19-33	0.352	0.022	1.063	1.605	0.704
	≥34	-	0.772	1.423	1.923	1.052
Nationality	Pakistani	0.514	0.001	1.671	1.268	3.198
	Afghani	-	-	-	-	-
Gender of infant	Female	0.291	0.017	1.338	1.052	2.701
	Male	-	-	-	-	-
Mode of birth	Caesarean birth	0.424	0.003	2.528	2.166	3.001
	Vaginal birth+	-	-	-	-	-
Constant		2.783	1.001	6.946		

**DISCUSSION:**

In our research, the proportion of LBW babies was found to be 7.8% across all categories, which appeared to be on equal footing with developed regions (8.1%) [29]. This study challenges the national statistic, which stands at 12.1%. This disparity may be related to differences in the random sample, research setting, birth location, and kinds of healthcare facilities, since this research included those neonates produced in one center in Punjab Province, whereas the nationwide sample comprised neonates delivered in multicenter and numerous regions. Some other factors for the reduced frequency of low birth weight in our research area might remain reported home births [30-33].

The prevalence of LBW among infants delivered to young moms was greater in this research than in mothers who gave birth at a medium or mature age. This conclusion could well be understood by the fact that younger age of 18 years tended to remain unmarried, still in high school, and had an unexpected pregnancy, and they, too, had biological immaturity issues associated with poor mother self-care and inadequate nutrition. Several research has shown that newborn infants to moms under the age of 19 were at a greater chance of being LBW [34]. However, in research conducted in Pakistan, there wasn't a strong relationship between maternal age and LBW [35].

The prevalence of LBW in Afghan refugees was much greater in our study than in Pakistan. Likewise,

in research done in Pakistan, percentage of LBW in Afghan refugees was 3.6 times greater than in indigenous populations. Similarly, in Malaysian research, the percentage of LBW among Afghan immigrants remained twice as high as in Pakistani [36-39]. This is due to refugee women's exposure to homelessness, hunger, and restricted access to healthcare throughout pregnancy. Female newborns are more inclined than male newborns to suffer LBW, according to research done in Pakistan. Conversely, female newborns were shown to have decreased birth weights than infant boys in an Afghan investigation. Female newborns had a greater percentage of LBW than infant boys, which was similar to the results of another research. Male newborns have larger birth weights than female neonates [40]. This variation becomes apparent after 32 weeks of gestation. And though specific mechanism influencing the birth change in weight is uncertain, this can be attributable to androgen activity or the Y chromosome, which contains genetic material for prenatal development [41]. As the consequence, male newborns may have more intrauterine development and birth weight than female infants. In this research, the percentage of LBW in cesarean section newborns was substantially greater than in vaginal delivery newborns. Delivering delivery through lower segment cesarean section has been related to a greater incidence of LBW in newborns in research done in Bangladesh, compared to vaginal deliveries [42].

However, this finding contradicts research conducted in Pakistan, which discovered a negative connection between cesarean delivery and LBW. Another investigation, done in the Maldives and Nepal, found no link between cesarean delivery and LBW. This relationship, nevertheless, must be regarded with care in some circumstances. Owing to a feared pregnant ailment while still in preterm gestation, including such previous versions, eclampsia, and bleeding placenta previa, the patient required emergent LSCS. This research has certain drawbacks [43].

For starters, leading to a shortage of data, additional sociodemographic factors just like maternal weight,

maternal education level, parental smoking status, drug intake, as well as employment that might have an influence on LBW newborn infants cannot be considered in current research [44]. Second, because births beyond the hospital were not part of research, the findings could not be generalized to a specific population as in the inhabitant's research. Finally, a clear association was discovered among young maternal age, Afghan refugee mothers, female infants, cesarean delivery, and LBW [45].

Increasing the mother's knowledge and practice for a healthy pregnancy should remain prioritized in order to reverse those LBW tendencies. Our findings underscore the critical need for treatments to decrease unfavorable maternal health in adolescent pregnancies [46]. Health professionals should urge young women to seek specialized prenatal care, as suggested by Pakistan's Ministry of Health. To boost completion rates and handle high-risk pregnancies, a specialist maternal office center that is favorable to adolescent/teenage moms is recommended. A more in-depth investigation of Afghan refugee results is important to fully understand the key reasons for LBW in comparison to Pakistani mothers [47].

## **CONCLUSION:**

Understanding the anticipated health difficulties in our current set of women that will allow health care administrations to meet refugees' specific health requirements while also ensuring maternal and fetal well-being. Detection of elevated moms, as well as early diagnosis and management of lifestyle factors, could reduce the occurrence of less birth weight and their associated short- also the long-term implications.

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