



CODEN [USA]: IAJPBB

ISSN: 2349-7750

**INDO AMERICAN JOURNAL OF  
PHARMACEUTICAL SCIENCES**<http://doi.org/10.5281/zenodo.3376288>Available online at: <http://www.iajps.com>

Research Article

**PHYSICAL HEALTH CONDITION OF NEONATES IN  
PUNJAB, PAKISTAN****Muhammad Mustafa Qamar, Asma Baig, Mishal Azhar, Tehmina Irfan, Khazima Asif,  
Shehnla Shokat, Marium khan, Ayesha Basharat, Akhtar Rasul, Muhammad Shahid  
javed, Waqas Ahmad.**

Sargodha Medical College, University of Sargodha. Pakistan

**Article Received:** Feb 2019**Accepted:** June 2019**Published:** August 2019**Abstract:**

*The aim of this study was to evaluate the health status of a newborn in Punjab, Pakistan. Furthermore, to enlighten the correlation between maternal age and the physical health status of the newborn. A cross-sectional survey was conducted across Punjab to assess the physical health status of the neonates. Data of 1000 neonates as Sample population collected from the different hospital of Punjab. It includes Lady Atchison hospital Lahore, National hospital Lahore, Lady Wallington hospital Lahore, Services Hospital Lahore, District headquarter Toba Tek Singh and Allied Hospital Faisalabad. A Standardised Apgar scale was used as a data collection tool. Sample of 1000 newborns depicted that 60.15% of infants scored Normal to Good score, 33.85% scored low, and 6% of infants scored critically low. APGAR (Appearance, Pulse, Grimace, Activity, and Respiration) score of newborns of mothers having age more than 45 are critically low while mothers with age 21-25 years gave birth to babies with a better Apgar score. In Punjab above-average fraction of the Infants born were with excellent health status. Moreover, it is demonstrated that the Increasing maternal age has a negative association with the physical health status of neonates*

**Key Words:** APGAR score, newborns, Infants, health condition, maternal age.**Corresponding author:****Dr. Muhammad Mustafa Qamar,**  
Sargodha Medical College, University of Sargodha. Pakistan,  
Email: [mmustafaqamar@gmail.com](mailto:mmustafaqamar@gmail.com).

QR code



Please cite this article in press Muhammad Mustafa Qamar et al., *Physical Health Condition Of Neonates In Punjab, Pakistan., Indo Am. J. P. Sci, 2019; 06[08].*

**INTRODUCTION:**

Health is one of the key contributing factors of a country and the fundamental requirement of people. To interpret the present physical functioning level of neonates' health is notable. Neonatal health status varies with care services provided. After birth at hospitals, maternal and neonate health is related to social and economic factors. Apgar score is a method to examine the health of newborn children quickly [1, 2]. The Apgar scale was invented in 1952 by Dr Apgar to assess the neonate on five simple criteria scale from zero to two, then adding up the five results. The Apgar score is one of the suggested tools to report the status of the newborn infant. It has been used worldwide for the rapid and standardised assessment of neonates after delivery to determine the need for prompt resuscitative intervention and also the status of the newborn infant and the response to resuscitation [3, 4]. Apgar score ranked from zero to 10. A rating of 0 is an indication that no sign of life is present, and a total of 10 score means that the baby is in the best possible condition [5-10]. The health condition of the neonate can be examined on the basis APGAR, i.e. Appearance (Body Color), Pulse, Grimace, Activity, and Respiration [10, 11]. In APGAR Score, 7 and above are generally healthy, Score 4 to 6 are relatively low, Score less than four are critically low [10]. A low Apgar score at 1 minute can often be the result of a transient depression in the component parameters and is not associated with clinical outcomes. A low or moderately abnormal 5-minute Apgar score is, however, of higher predictive value. A low score at one-minute indicates that the neonate requires medical attention [12], but does not primarily suggest a long-term problem, mainly if the score improves at the five-minute test. A resulting score that remains below three suggests longer-term neurological damage, including a significant increase in the risk of cerebral palsy. The only purpose of the Apgar test's is to determine whether a newborn needs immediate medical care or not. It is not designed to predict long term health issues[1].

One- and five-minute Apgar scores are directly related to gestational age. Respiratory efforts, muscle tone, and reflex are the significant determinants for a decreasing Apgar score with declining gestational age [10]. Apgar score is affected by different factors including maternal age, the health status of mother, disease condition of mother, resuscitation, and any adverse event during the gestational period [12]. A

study demonstrated that in the majority of the deliveries, six per cent of infants were severely depressed, twenty-four per cent were moderately depressed, and seventy per cent were vigorous. Neonatal death occurred in fifteen per cent of infants scoring 2 or less, in contrast only a few numbers of infants scoring 8–10. Low Apgar scores tended to occur in infants exposed to heavy maternal medication, general anesthesia, or both [11].

In Pakistan, there is a lack of research and essential data on the physical condition of the newborn, which relates the difference between the condition of a newborn at one and five minutes. There must be well awareness among parents about the effect of age and health of the mother, which in turn determine the physical health of the newborn. Lack of awareness of doctors or paramedical staff to get timely and appropriate Apgar Score is compromising the documentation regarding the healthiness of newborns; health authorities of Pakistan should strictly address this negligence. The proper research regarding all these conditions for educational and interventional purposes is critically required.

Our study primarily focuses on determining the current physical health status of neonates and also to relate their physical condition with their mother age. To evaluate the ratio of physically healthy and unhealthy neonates and also to compare the difference (improvement or decline) in Apgar score from 1 minute to 5 minutes of examination. One of important direction of our work is to highlight the importance of Apgar score in regular clinical practice and to assure proper documentation of the score so that a significant data would be available to assess the Quality of health of neonates in Pakistan. It will also direct the Policymakers and health care departments for the provision of further precautionary measures and effective intervention.

**MATERIAL AND METHODS:**

The study was a cross-sectional survey. One thousand newborns babies were incorporated in the study by Convenience Sampling technique.-The data procured from different hospitals situated in different cities of Punjab. It includes Lady Atchison hospital Lahore, National hospital Lahore, Lady Wallington hospital Lahore, Services Hospital Lahore, District headquarter Toba Tek Singh and Allied Hospital Faisalabad.-Standardised Apgar scale was used as a data collection tool.

**STATISTICAL ANALYSIS:**

Analysis of data was made using SPSS Software for Windows Version 20. Pie chart, bar charts were used for descriptive statistics. Pearson correlation was used to find out the association between maternal age and APGAR score. A p values of less than 0.05 was set as statistic significant.

**RESULTS:**

**Participants age:** According to the data, 41.6 % of neonates were born from mothers with the middle age (26 to 30 years), and only 1.2% was born from mothers with age greater than 45 years (Fig 1). 53.60% of infants born were female, and 46.40% were male.

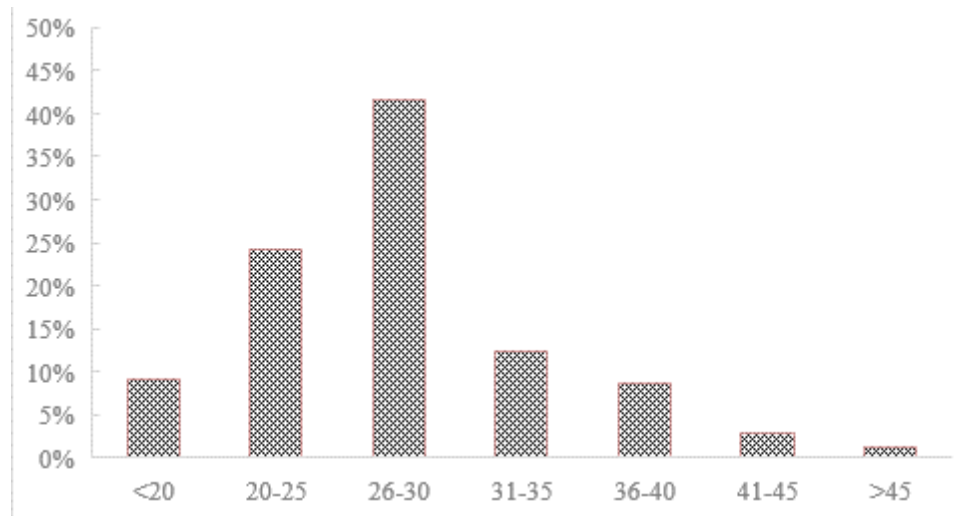


Fig 1: Age of the mothers

**APGAR Score in the newborn:** Majority of the newborn babies ranked average; relatively, a small fraction had low APGAR (Appearance, Pulse, Grimace, Activity, and Respiration) score (Fig 2). According to the data, only 8.2% of children scored 10 (i.e. best total score) in APGAR Scale. The maximum percentage of newborns, i.e. 27.8% scored 6. 22.3% of total newborns scored. 18% of newborns scored 5. Least percentage of newborn babies scored one as 4.7%.

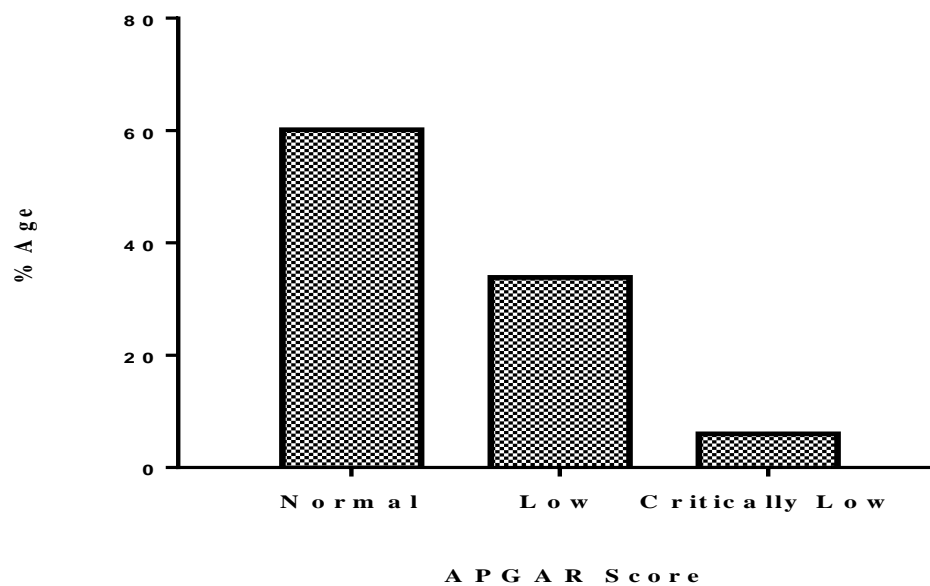


Fig 2. APGAR score in newborn babies

**Mother age and Apgar score at 1 and 5 Minutes:**

A negative association was observed between APGAR score and mother age ( $r = -0.39$ ;  $p < 0.05$ ). APGAR score of newborns of mothers having age more than 45 was critically low while mothers with age 21-25 years gave birth to babies with a better Apgar score.

**DISCUSSION:**

The prime objective of this study was to evaluate the healthiness of neonates using the APGAR scoring system in Punjab. Also, to enlighten the correlation between maternal age and APGAR score of newborns. Our results showed that Sample of 1000 newborns depicted that 60.15% of infants scored Normal-Good, 33.85% scored low, and 6% of infants scored critically low. The healthiness of newborns is better from low scores (i.e. at 1 Minute assessment) to average scores (i.e. at 5 minutes of assessment). Physical health of 32.7% of the newborns at 5 minutes of the evaluation was normal-good, i.e. having score 10 and 24% of the newborns at 5 minutes of evaluation scored eight, i.e. also normal-good. This difference is due to the emergency medical treatment given after 1 minute of evaluation [12].

Apgar score of infants with mother's age >45 years was critically low and mothers with age 21 to 25 years. Our finding was similar to the study conducted in Brazil from 2004 to 2009, to observe the risks of a low 5-min Apgar score with maternal age. They showed that low Apgar score was associated with maternal age [13]. According to our results in Punjab 44.7% of newborn scored Normal-Good (score range, 7-10) at 1 minute of assessment and 75.6% at 5 minutes of assessment, 6.6% newborns scored Critically low (score range below 4) at 1 minute of examination and 5.4% at 5 minutes of assessment similarly 48.7% of newborns scored low (i.e. 4-6) at 1 minute of assessment and 19% at 5 minutes of assessment. A similar kind of population-based study was carried out in Sweden during 1988-1997 to find out the rate of 5 minutes APGAR score below seven which showed that out of 1028,705 term infants, 7787(0.76%) had 5 min APGAR score below 7 [14].

The physical health condition of babies is dependent upon many factors like gestational age, birth weight, mother health. So further exploration of conditions and events involved in the aetiology of low APGAR score is essential for the development of prevention strategies. A number of researches are available which enlightened the importance of APGAR score for example Casey in February 15,2001 summarized

that for infants born at term (37 weeks of gestation or later), the mortality rate was more for infants with five-minute Apgar scores of 0 to 3, as compared to infants with five-minute Apgar scores of 7 to 10 [15].

These studies can be used to find out how prenatal factors are related to scores and scores to outcomes. In our study, we highlighted the correlation between Apgar score and maternal age. There are frequent researches which relate the Apgar score with other factors [16, 17]. Stoen and her fellows studied the association between APGAR scores and neonatal development. They found a linear relationship between APGAR score and neurodevelopment of neonates. They found that good APGAR score is directly related with good neuro development. [18].

Apgar score could be further related to many factors to highlight its importance in determining the physical condition of newborn babies. Our study covered various factor which affects the healthiness of newborn, but there is uttermost need to explore it on a larger sample size. Furthermore, there is a dire need to find the association of other factors with APGAR score and to compare the results among various provinces of Pakistan and with other countries as well.

**CONCLUSION:**

In Punjab above-average fraction of the Infants born were with functional health status. Increasing maternal age has a negative association with the physical health status of neonates

**REFERENCES:**

1. Pediatrics AAo. The APGAR score. *Advances in Neonatal Care*. 2006;6(4):220-3.
2. Cnatingius S, Norman M, Granath F, Petersson G, Stephansson O, Frisell T. Apgar score components at 5 minutes: risks and prediction of neonatal mortality. *Paediatric and perinatal epidemiology*. 2017;31(4):328-37.
3. Razaz N, Boyce WT, Brownell M, Jutte D, Tremlett H, Marrie RA, et al. Five-minute Apgar score as a marker for developmental vulnerability at 5 years of age. *Archives of Disease in Childhood-Fetal and Neonatal Edition*. 2016;101(2):F114-F20.
4. APGAR S. Use and abuse of the Apgar score. *Pediatrics*. 1996;98(1):141-2.
5. Shah P, Anvekar A, McMichael J, Rao S. Outcomes of infants with Apgar score of zero at 10 min: the West Australian experience. *Archives of Disease in Childhood-Fetal and Neonatal Edition*. 2015;100(6):F492-F4.

6. Catlin EA, Carpenter MW, Brann BS, Mayfield SR, Shaul PW, Goldstein M, et al. The Apgar score revisited: influence of gestational age. *The Journal of pediatrics*. 1986;109(5):865-8.
7. Gonzales GF, Salirrosas A. Arterial oxygen saturation in healthy newborns delivered at term in Cerro de Pasco (4340 m) and Lima (150 m). *Reproductive biology and endocrinology*. 2005;3(1):46.
8. Moster D, Lie RT, Irgens LM, Bjerkedal T, Markestad T. The association of Apgar score with subsequent death and cerebral palsy: a population-based study in term infants. *The Journal of pediatrics*. 2001;138(6):798-803.
9. Onda-Onama C, Tumwine J. Immediate outcome of babies with low Apgar score in Mulago Hospital, Uganda. *East African medical journal*. 2003;80(1):22-9.
10. Vyas L, Meena RB, Rajoria L, Agarwal C, Ratnoo L, Lamba I. Correlation of Neonatal Outcome with Labor Admission Test in Low Risk Obstetric Population. *Imperial Journal of Interdisciplinary Research*. 2017;3(7).
11. Finster M, Wood M. The Apgar score has survived the test of time. *Anesthesiology: The Journal of the American Society of Anesthesiologists*. 2005;102(4):855-7.
12. Haddad B, Mercer BM, Livingston JC, Talati A, Sibai BM. Outcome after successful resuscitation of babies born with apgar scores of 0 at both 1 and 5 minutes. *American journal of obstetrics and gynecology*. 2000;182(5):1210-4.
13. Almeida N, Pedreira C, Almeida R. Impact of maternal education level on risk of low Apgar score. *Public health*. 2016;140:244-9.
14. Thorngren-Jerneck K, Herbst A. Low 5-minute Apgar score: a population-based register study of 1 million term births. *Obstetrics & Gynecology*. 2001;98(1):65-70.
15. Casey BM, McIntire DD, Leveno KJ. The continuing value of the Apgar score for the assessment of newborn infants. *New England Journal of Medicine*. 2001;344(7):467-71.
16. Khatun F, Lee TW, Rani E, Biswash G, Raha P, Kim S. The relationships among postpartum fatigue, depressive mood, self-care agency, and self-care action of first-time mothers in Bangladesh. *Korean Journal of Women Health Nursing*. 2018;24(1):49-57.
17. Altman M, Sandström A, Petersson G, Frisell T, Cnattingius S, Stephansson O. Prolonged second stage of labor is associated with low Apgar score. *European journal of epidemiology*. 2015;30(11):1209-15.
18. Vik T, Støen R, Lydersen S. There is a linear association between decreasing Apgar scores at 5 and 10 min and adverse neurodevelopmental outcomes. *BMJ evidence-based medicine*. 2018;23(5):193-4.