



RESEARCH ARTICLE

INTELLIGENCE DIFFERENCE BETWEEN CAESAREAN AND NON-CAESAREAN SCHOOL BOYS

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ABSTRACT

Background: Children Intelligence depends on various factors such as- heredity, Family educational background, occupation of the parents, family income, environment etc. Birth is a natural process but it also has to processes viz. Caesarean and Non-caesarean. But how can delivery mode of the children affect their Intelligence!

Aim: To find out the difference in Intelligent level between caesarean and non-caesarean school boys.

Materials & Methods: Total 240 subjects (120 Caesarean and 120 Non-Caesarean) of class IX- X-level school boys were selected from five different schools located at Birbhum and Kolkata, West Bengal, India. 'G.C. Ahuja Intelligence questionnaire' were used to measure Intelligence. This questionnaire composed of total 135 questions and eight different types of test (classification, analogies, reasoning, vocabulary, comprehension, series and best answer). The data for Intelligence were calculated by using descriptive statistics and "t" test and level of significance was set on 0.05 level.

Results: There is a significant difference exists on Intelligence level between caesarean and non-caesarean boys. The calculated "t" value (2.372) are higher than tabulated "t" 0.05(238) value (1.97). The Mean and Standard deviation of Caesarean and Non-caesarean boys Intelligence level has been found 96.96 ± 17.00 and 90.40 ± 25.06 .

Conclusion: Caesarean boys possess higher Intelligence level than Non-Caesarean boys.

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INTRODUCTION

Birth is a natural phenomenon. The mode of delivery differs as per the requirement of the situation or availability of the facilities. In progressive countries, Caesarean Section (CS) rate increasing rapidly with the progress of science. One of the most important reasons was painless, safe delivery, and emergency period. A Caesarean section is often performed when a vaginal delivery would put the baby or mother at risk (Pregnancy Labor and Birth, 2010). This situation are obstructed labour, twin pregnancy, high blood pressure in the mother, breech birth, problems with the placenta, umbilical cord or shape of the pelvis, and previous C-section. (Pregnancy Labor and Birth, 2010 and Safe Prevention, 2014) Worldwide, CS rates increased from 6.7% in 1990 to 19.1% in 2014, which represents a 12.4% absolute increase and an AARI (average annual rate of increase) (of 4.4%. Less developed countries showed the greatest absolute increase, 14.6 points (from 6.3%

to 20.9%; AARI = 5.1%). More developed countries followed with 12.7 points of absolute increase in the CS rate (from 14.5% to 27.2%; AARI = 2.6%). The rate of CS in least developed countries only rose by 4.2 points (from 1.9% to 6.1%; AARI = 5%) shows global and regional trends by UN geographical grouping from 1990 to 2014. Latin America and the Caribbean which started with the highest rate in 1990 (22.8%) is also the region with the largest rate in 2014 and the largest absolute increase in CS rate (19.4 points). The region with the second largest absolute increase was Asia going from a CS rate of 4.4% in 1990 to 19.5% in the latest estimates. North America and Oceania had parallel increases in their CS rates over the last 24 years. Among the more developed regions, Europe had the lowest CS rate till now. In Africa, large differences are seen between Northern Africa and the other sub regions (Betran et al., 2016). In India the rate of caesarean section delivery has increased from 3 % to 10 % between 1992-93 and 2005-06 (IIPS, 2007) Intelligence refers to intellectual functioning. Intelligence is defined as general cognitive, problem-solving skills. A mental ability involved in reasoning, perceiving relationships and analogies, calculating,

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learning quickly. Children Intelligence depends on various factors such as- heredity, family education background, occupation of the parents, family income, environment etc. But how can delivery mode of the children affect their Intelligence. Some studies in our country showed that many mothers believe that vaginal deliveries may had negative influences on intellectual performance of their neonates. In the study of Seyed Noori *et al.*, 35.2% of mothers believed that children born by caesarean delivery were more intelligent. Many studies suggest that caesarean delivery can impact children's neuropsychology and influences on the intelligence level and its structure. Some new research, suggest that Babies born naturally may have higher Intelligence than those delivered by caesarean section. According to scientists, when women give birth naturally there are higher levels of a special protein in babies' brains that helps boost intelligence levels as they develop.

MATERIALS AND METHDOS

In order to find out the difference in Intelligence level between caesarean and non-caesarean school boys, the researcher select total 240 subjects (120 Caesarean and 120 Non- Caesarean) of class IX- X-level school boys were selected from five different schools located at Birbhum and Kolkata, West Bengal, India. G.C. Ahuja Intelligence questionnaire' were used to measure Intelligence. This questionnaire composed of total 135 questions and eight different types of test (classification, analogies, reasoning, vocabulary, comprehension, series and best answer). For each sub-test, one page is devoted to instructions and practice examples. It serves the purpose of building morale with the subjects. It enables them to develop confidence and hence, they get adjusted with the nature of work. The data for Intelligence were calculated by using descriptive statistics and "t" test and level of significance was set on 0.05 level.

Table 1. Number of item and time limit for each sub-test

| No. | Sub-Test | Number of Item | Time Limit |
|-------|----------------------|----------------|------------|
| 1 | Following Direction | 9 | 4 Minutes |
| 2 | Classification | 20 | 4 Minutes |
| 3 | Analogies | 20 | 4 Minutes |
| 4 | Arithmetic Reasoning | 6 | 4Minutes |
| 5 | Vocabulary | 40 | 4Minutes |
| 6 | Comprehension | 8 | 4Minutes |
| 7 | Series | 12 | 4 Minutes |
| 8 | Best Answer | 20 | 4 Minutes |
| Total | | 135 | 32 minutes |

Scoring

Scoring of response sheets was done by the investigator himself according to the scoring keys given in the manuals of four tests. A brief description of the scoring procedure for each test is given below: The scoring of response sheet for Ahuja's group test of intelligence was done with the help of scoring stencil keys. The relevant stencil key was put on each page of the answer sheet. It was so adjusted that the page number was visible through the holes of the scoring stencil. Then the correctly marked answers visible through the holes were counted and written on the left margin of the answer sheet. The same procedure was followed for all the sub-tests except for the test-VII. In that case, the correct answers were alternative that correspond with the numbers given on the stencil key. The question numbers that were answered wrong or were left un-

attempted were marked with a red colored pencil. Both wrong as well as the un-attempted questions were deducted from the total number of items contained in the sub-test VII and the balance score was obtained. Then, the scores from the different pages of were written in the table given at the top of the front page of the answer sheet. The sum total of all the eight sub-tests were considered as the total score obtained by a subject, which was considered as his general mental ability score.

Analysis of data

To find out the difference in Intelligence level between caesarean and non-caesarean school boys, descriptive statistics and "t" test were applied at 0.05 level of significant and it is presented in the table.

Table 2. Comparison of Intelligence difference between caesarean and non-caesarean boys

| Parameters | Caesarean boys | | Non-caesarean boys | | t - Ratio |
|---|----------------|-------|--------------------|-------|-----------|
| | Mean | S.D | Mean | S.D | |
| intelligence df = 238 | 96.96 | 17.00 | 90.40 | 25.06 | 2.372* |
| Table value-1.97 *. Significant at 0.05 level | | | | | |

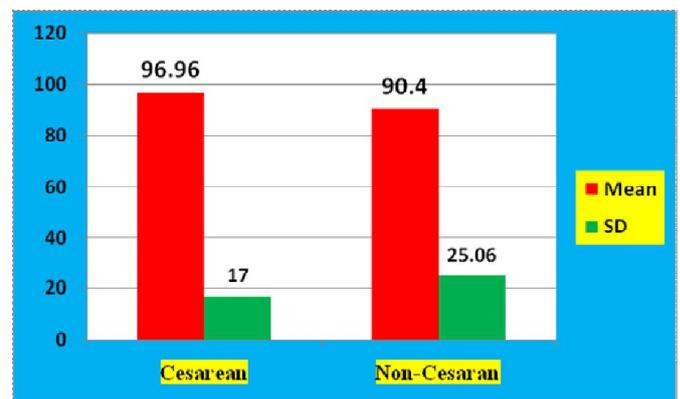


Figure 1. Intelligence difference between caesarean and non-caesarean boys

From Table-2 and Figure-1, it is clearly revealed that there was a significant difference exist on Intelligence level between caesarean and non-caesarean boys, as because calculate t – value 2.372 are higher than tabulated " t " 0.05(238) value-(1.97) and it was also showed that the mean and standard deviation of caesarean and non-caesarean boys were 96.96±17 and 90.4±25.06.

DISCUSSION OF FINDINGS

From the results it was observed that the significant difference was found in Intelligence level between caesarean and non-caesarean children at 0.05 level of significance. From this study it can be concluded that Intelligence level of caesarean boys were better than non-caesarean boys. This is may be due to the fact that most of the caesarean boys are six-seven generation learner, their parental socio-economic background were very high, on the other hand most of the non-caesarean children are 2nd or 3rd generation learner and their parental educational and income level were comparatively low than of the caesarean boy's parent. Out of 120 non-caesarean boys, 15 boys were from tribal community. The mean Intelligence level of these 15 tribal boys was below 50. This might be another reason of less Intelligence level of non-caesarean boys.

The result of the present study differ from the result of others study. Such as Nayereh Khadem and Talaat Khadivzadeh (2010) found that IQ score of caesarean delivery and natural delivery groups 101(3.67) vs. 100.7(4.28) but no significance difference were found between two groups. Eide MG (2005), Concluded that presentation at birth did not effect adult intellectual performance. BY Drishya Nair (2012) according to Tale University, babies born by naturally have higher IQ than those born via C-section. Posted by Betsy Shaw (9/8/2012) Dr. Tamas Horvath concluded that Vaginal birth benefits babies brain like C-section can't, due to the uncoupling 2 protein (ucp2), a natural protein which is found in increased levels in babies who are born vaginally. This protein is linked to memory development and storage.

Conclusion

Within the limitation of the present study the following conclusions were drawn on the basis of obtain difference exist on Intelligence level of Caesarean and Non-caesarean boy's and in comparison of mean and standard deviation of Intelligence level. The finding demonstrated that Intelligence level of a baby who born Caesarean section have more than a baby who had born by Normal delivery.

Recommendation

1. On the basis of the findings of the present study, the following recommendation are made : a) similar study may be conducted on larger subjects with same or other variables. b) similar study may be conducted on the basis of socio-economic condition, rural and urban areas student c) Again it can be recommended that the similar study can be taken up with the help of sophisticate software for IQ testing. d) The present study will helpful for farther research in the field of Physical Education, Human Psychology and Medical Science.

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