Assessment of Socio Demographic Factors and Maternal Characteristics Associated with Low Birth Weight among New Born in Central Hospital, Arar, Saudiarabia

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Abstract
A nonexperimental descriptive correlational study was undertaken on purposely selected low birth weight newborn in central hospital Arar with an objective to assess the sociodemographic and maternal characteristics associated with low birth weight among newborn by assessing the percentage of low birth weight newborn in relation to their sociodemographic and maternal characteristics.

Introduction
Children’s health is tomorrow’s wealth and one of World Health Organization (WHO)’s slogans of recent years. At birth, fetal weight is accepted as the single parameter that is directly related to the health and nutrition of the mother and on the other hand is an important determinant of the newborn to survive and experience healthy growth and development. This is because low birth weight (LBW) has been shown to be directly related to immediate, long-term and very long-term development and well-being. This study was planned to find out the socio demographic factors and maternal characteristics associated with low birth weight.

Statement of the Problem
A study to assess the socio demographic factors and maternal characteristics associated with low birth weight among new born in central hospital, Arar, Saudiarabia.

Objectives
• To find out the association between socio demographic factors, maternal characteristics and low birth weight newborn.

Research Design and Approach
Research approach selected for this study was non experimental approach Descriptive correlational design.
Setting of the study
The study was conducted in labour ward of Central Hospital, Arar, Saudi Arabia.

Population
The populations of this study were all mothers admitted in labour ward of Central Hospital, Arar, Saudi Arabia.

Sampling Technique
Purposive sampling technique was used for this study.

Sample size
60 mothers of low birth weight newborn

Results and Discussion
Part 3: Table 1: Association between socio demographic factors and low birth weight:

| Socio demographic factors | LBW (%) | VLBW (%) | ELBW (%) | Total LBW (%) |
|---------------------------|---------|----------|----------|---------------|
| Maternal age              |         |          |          |               |
| 15-20 yrs                 | 10%     | 3.3%     | 3.3%     | 16.7%         |
| 20-25 yrs                 | 25%     | 3.3%     | 0%       | 28.4%         |
| 25-30 yrs                 | 28.3%   | 3.3%     | 0%       | 31.7%         |
| >30 yrs                   | 16.6%   | 3.3%     | 3.3%     | 23.2%         |
| Education                 |         |          |          |               |
| Non formal                | 15%     | 3.3%     | 2%       | 21.6%         |
| Primary school            | 11.7%   | 1.6%     | 0%       | 13.3%         |
| Middle school             | 16.7%   | 3.3%     | 0%       | 23.3%         |
| High school               | 16.7%   | 0%       | 0%       | 16.8%         |
| Occupation                |         |          |          |               |
| Working women             | 20%     | 1.7%     | 1.7%     | 23.4%         |
| House wife                | 60%     | 11.7%    | 5%       | 76.6%         |
| Residence                 |         |          |          |               |
| Urban                     | 61.6%   | 10%      | 3.3%     | 75%           |
| Rural                     | 18.3%   | 2%       | 2%       | 25%           |
| Type of family            |         |          |          |               |
| Nuclear                   | 36.6%   | 6.6%     | 1.6%     | 45.2%         |
| Joint                     | 43.3%   | 6.6%     | 5%       | 54.8%         |
| Family income             |         |          |          |               |
| More than 5000            | 6.6%    | 1.6%     | 1.6%     | 9.9%          |
| 1000 – 5000               | 43.3%   | 6.6%     | 3.3%     | 53.4%         |
| Less than 1000            | 30%     | 5%       | 1.6%     | 36.7%         |

Chi square test shows that the maternal age calculated value 9.02 is less than the p value 12.5 at the degree of freedom 6, education calculated value 7.32 is less than the p value 15.5 at the degree of freedom 8, occupation calculated value 0.05 is less than the p value 5.99 at the degree of freedom 2, residence calculated value 1.43 is less than the p value 5.99 at the degree of freedom 2, type of family calculated value 0.72 is less than the p value 5.99 at the degree of freedom 2, family income calculated value 1.23 is less than the p value 9.48 at the degree of freedom 8. All of the above values show that there is no association between sociodemographic factors and low birth weight, it was tested under 0.05 level of significance.
### Part 3: Table 2: Association between maternal characteristics and low birth weight:

| Maternal characteristics      | LBW | LBW (%) | VLBW | VLBW (%) | ELBW | ELBW (%) | Total LBW (%) |
|-------------------------------|-----|---------|------|----------|------|----------|---------------|
| Weight                        |     |         |      |          |      |          |               |
| < 45kg                        | 7   | 11.6%   | 4    | 6.6%     | 0    | 0%       | 18.4%         |
| 45 – 55 kg                    | 21  | 35%     | 3    | 5%       | 1    | 1.6%     | 41.7%         |
| > 55 kg                       | 20  | 33.3%   | 1    | 1.6%     | 3    | 5%       | 39.9%         |
| Height                        |     |         |      |          |      |          |               |
| < 145 cm                      | 10  | 16.6%   | 0    | 0%       | 0    | 0%       | 16.6%         |
| 145 cm – 155 cm               | 28  | 46.6%   | 6    | 10%      | 3    | 5%       | 61.7%         |
| 155 cm – 165 cm               | 10  | 16.6%   | 2    | 3.3%     | 1    | 1.6%     | 21.6%         |
| Parity                        |     |         |      |          |      |          |               |
| Primipara                     | 8   | 13.3%   | 3    | 5%       | 2    | 3.3%     | 21.8%         |
| Multi para                    | 31  | 51.6%   | 5    | 8.3%     | 0    | 0%       | 59.9%         |
| Grand multi para              | 8   | 13.3%   | 0    | 0%       | 2    | 3.3%     | 16.7%         |
| Grand grand multi para        | 1   | 1.6%    | 0    | 0%       | 0    | 0%       | 1.6%          |
| Sex                           |     |         |      |          |      |          |               |
| Male                          | 16  | 26.6%   | 4    | 6.6%     | 2    | 3.3%     | 36.7%         |
| Female                        | 32  | 53.3%   | 4    | 6.6%     | 2    | 3.3%     | 63.3%         |
| Blood pressure                |     |         |      |          |      |          |               |
| <10g/dl                       | 23  | 38.3%   | 2    | 3.3%     | 3    | 5%       | 46.6%         |
| ≥10g/dl                       | 25  | 41.6%   | 6    | 10%      | 1    | 1.6%     | 53.4%         |
| Hemoglobin                    |     |         |      |          |      |          |               |
| <120/80 mmHg                  | 21  | 35%     | 6    | 10%      | 0    | 0%       | 45%           |
| ≥120/80 mmHg -140/90 mmHg     | 27  | 45%     | 2    | 3.4%     | 4    | 6.6%     | 55%           |
| Day time rest                 |     |         |      |          |      |          |               |
| < 30 mts – 60 mts             | 10  | 16.6%   | 0    | 0%       | 2    | 3.3%     | 19.9%         |
| 30 mts – 60 mts               | 21  | 35%     | 4    | 6.6%     | 1    | 1.6%     | 43.4%         |
| 60 mts – 90 mts               | 15  | 25%     | 3    | 5%       | 1    | 1.6%     | 31.8%         |
| > 120 mts                     | 2   | 3.3%    | 1    | 1.6%     | 0    | 0%       | 4.9%          |
| Gestational age               |     |         |      |          |      |          |               |
| Greater than or equals to 37 weeks | 18 | 30%    | 5    | 8.4%     | 4    | 6.6%     | 45%           |
| Less than 37 weeks            | 30  | 50%     | 3    | 5%       | 0    | 0%       | 55%           |
| Birth interval                |     |         |      |          |      |          |               |
| Less than 2yrs                | 20  | 33.3%   | 5    | 8.3%     | 0    | 0%       | 41.6%         |
| More than 2yrs                | 17  | 28.3%   | 2    | 3.3%     | 0    | 0%       | 31.6%         |
| Primi                         | 11  | 18.3%   | 1    | 1.6%     | 4    | 6.6%     | 26.6%         |
| Consanguinity                 |     |         |      |          |      |          |               |
| Yes                           | 14  | 23.3%   | 3    | 5%       | 0    | 0%       | 28.4%         |
| No                            | 34  | 56.6%   | 5    | 8.3%     | 4    | 6.6%     | 71.6%         |
| Previous Lbw                  |     |         |      |          |      |          |               |
| Yes                           | 14  | 23.3%   | 3    | 5%       | 0    | 0%       | 28.4%         |
| No                            | 34  | 56.6%   | 5    | 8.3%     | 4    | 6.6%     | 71.6%         |
| Previous preterm              |     |         |      |          |      |          |               |
| Yes                           | 6   | 10%     | 5    | 8.3%     | 0    | 0%       | 18.4%         |
| No                            | 42  | 70%     | 3    | 5%       | 4    | 6.6%     | 81.6%         |

Chi square test shows that the maternal weight calculated value 9.8 is greater than the p value 9.4 at the degree of freedom 4, maternal height calculated value 3.15 is less than the p value 9.48 at the degree of freedom 4, parity calculated value 12.9 is greater than the p value 12.5 at the degree of freedom 2, sex of the baby calculated value 1.25 is less than the p value 5.94 at the degree of freedom 2, hemoglobin calculated value 2.63 is less than the p value 5.99 at the degree of freedom 2, blood pressure calculated value 6.2 is greater than the p value 5.99 at the degree of freedom 2, day time rest calculated value 5.12 is less than the p value 12.5 at the degree of freedom 6, consanguinity calculated value 1.93 is less than the p value 5.99 at the degree of freedom 2.
gestational age calculated value 7.5 is less than the p value 5.99 at the degree of freedom 2, birth interval calculated value 14.06 is less than the p value 9.48 at the degree of freedom 4, previous low birth weight calculated value 1.9 is less than the p value 5.99 at the degree of freedom 2, previous preterm calculated value 12.04 is less than the p value 5.99 at the degree of freedom 2. All of the above values shows that there is no association between height, sex of baby, hemoglobin, day time rest, consanguinity, previous low birth weight and low birth weight. There is association between maternal weight, parity, blood pressure, gestational age, birth interval, previous preterm and low birth weight, this all was tested under 0.05 level of significance.

Conclusion
The findings of the study shows that there is no association between the socio demographic factors and low birth weight and association between maternal characteristics such as maternal weight, parity, blood pressure, gestational age, birth interval, previous preterm and low birth weight.

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