ORIGINAL RESEARCH PAPER

Neonatology

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A STUDY OF VARIOUS SOCIOECONOMIC FACTORS RELATED TO PREMATURITY IN NEWBORN.

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ABSTRACT

Preterm birth is a syndrome with multiple causes and socioeconomic factors are one of the main causes of prematurity and neonatal morbidity and mortality. **Objectives:** To study various maternal socio-economic factors responsible for prematurity in newborn. **Materials and method:** In this hospital based observational prospective study,300 preterm newborn babies were enrolled and compared in terms of various socioeconomic factors. **Results:** Prematurity was most common 202 (67.33%) in upper lower socioeconomic class, a maximum number 118 (39.33%) of premature births occurred in illiterate mothers and majority 170 (56.67%) of mothers of preterm babies were housewives. **Conclusion:** Socioeconomic factors were great determinants of prematurity.

INTRODUCTION

In the era of modern Obstetrics, where there has been a rapid advancement in all specialties preterm labour still remains an enigma for the obstetrician and pediatrician today and is the leading cause of neonatal morbidity and mortality.[1] Preterm birth is defined by WHO as all births before 37 completed weeks of gestation or less than 259 days since the first day of a woman's last menstrual period.[2] These babies are known as preemies or premmies.

Factors Affecting Prematurity

1. Maternal
2. Placental
3. Fetal

Maternal Factors

a. Socioeconomic factors

- Age
- Antenatal Care
- Education
- Income
- Occupation

b. Anatomic Abnormalities

- Uterine Malformations
- Short cervix

c. Medical Conditions

- UTI
- PIH
- STI
- GDM
- Multiple gestation

d. Miscellaneous

- PROM
- Smoking
- Alcohol
- Illegal drugs[3-5]

Socioeconomic status, as indicated by level of income, education, wealth, occupation and access to resources, is well established as associated with an individual's health and well-being.[3-4] Keeping the magnitude of the problem and its co-relation with socio-economic profile in view, the study was undertaken to evaluate the socio-economical factors.

Aims And Objectives

The study was carried out with the following aims and objectives:

- To study various maternal socio-economic factors responsible for prematurity in newborn.

MATERIAL AND METHODS

Study Design

This was an observational, prospective study and was conducted on 300 preterm newborn babies delivered in the labour room of Obstetrics and Gynaecological Department of Rajindra Hospital Patiala and admitted to neonatology section of Department of Pediatrics, Rajindra Hospital, Patiala.

Inclusion Criteria

- Live-birth singleton infants born between 24 and 36 weeks of gestation
- Baby born by vaginal delivery

Exclusion Criteria

1. Congenital abnormal babies
2. Pregnant woman who had medical complications like diabetes mellitus, heart disease, chronic lung disease, jaundice.
3. Pre-eclamptic and eclamptic subjects
4. Multiple pregnancies
5. Caesarian section cases
6. Patient's refusal to participate in the study.

Data Collection Procedure

After obtaining informed consent, the eligible subjects were interviewed in person by using a proforma. The proforma was completed from an interview with the women during their stay in the maternity unit after the delivery and data was collected about age, social status, education level, occupation, marital status and obstetric history, intake of iron and vitamins, knowledge on antenatal advice and danger signs of pregnancy.

Three indicators were used to define the Family's socio-economic status i.e. Family income, Education of the Head of family and Occupation of the Head of family and were scored using the modified kuppuswamy scale.

Seven groups were defined in education.

Education	Score
Professional or Honours	7
Graduate or Post graduate	6
Intermediate or post-high-school diploma	5
High school Certificate	4
Middle school certificate	3
Primary school or Literate	2
Illiterate	1

Occupation was scored in seven groups.

Occupation	Score
Profession	10
Semi- profession	6
Clerical	5
Skilled worker	4
Semi- skilled worker	3
Unskilled worker	2
Unemployed	1

In the same way family income was scored. Seven groups were defined.

Family Income	Score
>36,997	12
18,498-36,996	10
13,874-18,497	6
9,249-13,873	4
5547-9248	3
1866-5546	2
<1865	1

From the above data socioeconomic status was calculated and classified in five classes.[16]

Social Class	Score
Lower	5
Upper Lower	4
Lower Middle	3
Upper Middle	2
Upper	1

Mother's education was divided in four groups.

Education
Illiterate
Primary
Secondary
Graduation
Mother's occupation was divided in two groups.

Occupation
Housewife
Employed
Maternal age was divided in four groups.

Age Group (yrs)
18-21
22-25
26-29
30-33

Data thus obtained was collected, compiled and analyzed statistically to know socio-economic causes of prematurity.

Observations

Table-1 Distribution According To Socioeconomic Status Of The Family With Prematurity (n=300)

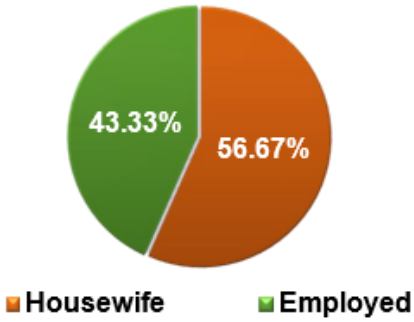
SES Class	Premature Births	Percentage	$_c2$	p value
Upper	0	0%	13.32	0.015 (S)
Upper Middle	34	11.34%		
Lower Middle	64	21.33%		
Upper Lower	202	67.33%		
Lower	0	0%		
Total	300	100%		

As clear from above table, prematurity was most common 202 (67.33%) in upper lower socioeconomic class followed by 64 (21.33%) in lower middle socioeconomic class with statistically significant difference.

Table- 2 Distribution According To Relation Of Maternal Education With Prematurity (n=300)

Maternal Education	Premature Births	Percentage	$_c2$	p value
Illiterate	118	39.33%	8.32	0.024 (S)
Primary	99	33.00%		
Secondary	68	22.67%		
Graduation	15	5%		
Total	300	100%		

As depicted from above table, large number 118 (39.33%) of premature births occurred in illiterate mothers and difference was statistically significant.



Distribution According To Relation Of Maternal Occupation With Prematurity (n=300)

DISCUSSION

Our study was comparable with the studies done by Al-Dabbagh et al[6] (2006);Donoghue et al[7] (2013); Shubhada et al[8] (2013); Kunle-Olowu et al[9] (2014), which also showed that prematurity was more common in upper lower socio-economic class with percentage of 82.5%, 66%, 74.2%, 50.3% respectively.

Our study was in accordance with the studies conducted by Al-Dabbagh et al[6] (2006), Morgen et al[7] (2008), Temu et al[13] (2016), which also showed that prematurity was more common in illiterate mothers with percentage of 64.2%, 51.7%, 45.5% respectively.

Our study was comparable with Bell et al[17](2008), Casas et al[12](2015), Khojasteh et al[15](2016)which also showed that prematurity was more common in unemployed mothers with data of 52.7%, 55.4%, 53.2% respectively.

SUMMARY AND CONCLUSIONS

The gestational age was correlated with various maternal socio-economic factors and the following conclusions were obtained.

1. Prematurity was most common 202 (67.33%) in upper lower socioeconomic class.The difference recorded was statistically significant in relation to distribution of premature births as per socioeconomic status.
2. A maximum number 118 (39.33%) of premature births occurred in illiterate mothers. the statistical analysis revealed highly significant correlation between prematurity and maternal education.
3. A majority 170 (56.67%) of mothers were housewives. This study suggests that, overall, employment during pregnancy is associated with a reduction in the risk of preterm birth.

It is anticipated that the results of this review were of interest and value to policy makers. Thus, the development of strategies for improving access to effective care inhj developing countries must remain a top research and operational priority. The key goal is prevention of preterm birth by addressing socioeconomic problems.

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