

## **EFFECTS OF SOCIOECONOMIC FACTORS, PSYCHOLOGICAL STRESS, SMOKING, ALCOHOL AND CAFFEINE ON PRETERM DELIVERY**

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### **ABSTRACT**

The relation between preterm, birth and socioeconomic and psychological factors, smoking, alcohol and caffeine consumption are studied. Gestational age was determined from ultrasound and maternal dates. Adverse social circumstances are associated with preterm, birth which in turn affects fetal growth.

### **INTRODUCTION**

Preterm delivery is one of the main causes of perinatal death, neonatal morbidity and subsequent impairments (Bakketeig & Hoffman, 1981). Many studies have investigated low birth rate and fetal growth but fewer have looked at preterm deliveries (Berendes H., 1992). Studies of early delivery have shown varying results, social class is clearly related to several measures of early child morbidity and mortality (Roller & Quire, 1990), and many studies have reported an association between manual class and preterm birth (Berkowitz GS 1981, Abernathy et al., 1966 and Newton et al., 1979). Several studies have reported an effect of smoking on length of gestation (Fedrick & Anderson 1976; McDonald et al., 1992 and McIntosh ID 1984) although some have found no relation (Abernathy et al., 1966; Berkowitz and Kasl 1983 and Stein A. et al., 1987). Alcohol has also been implicated (Berkowitz G.S., 1981; McDonald and Armstrong B.C., 1992), but results for caffeine are equivocal (McDonald et al., 1992 and Fortier et al., 1993).

### **MATERIALS AND METHODS**

A consecutive series of 21111 women were booked for antenatal care at Abbasi Shaheed Hospital, KMC, Karachi for research purpose. In this study the investigating factors affecting fetal growth were, social class, education, income, marital status, help from others and contact with neighbours. In view of already well documented effects of ethnic origin on fetal growth, the study was restricted to Karachi women. The women were interviewed at four points in pregnancy. Relations were examined between factors measured at the first three interviews and gestational age. Social, behavioural and psychological data was obtained from the questionnaires, and a

detailed obstetric history was taken from the hospital record. The outcome measure for this analysis was gestational age at delivery. This was calculated from the date of delivery and gestational age at booking, based on maternal dates and early ultrasound examination, which was routine at the time of the study.

## **RESULT AND DISCUSSION**

The Table-1 exhibits the social variable and spontaneous pattern birth. Social class factors has a distribution of 62.5% female from or class, 30% from middle class and 7.5% from higher class. The education factor shows that 85% females were non-matric whereas 15% females had matric or higher qualification. The cohabitation is 50% each. House tenure factor shows 25% were owners of the house 50% were living on real and 25% were living with combined family system. Monthly income of 70% preterm females was less than Rs.5000 per month and 30% had income more than Rs.5000 per month. Planned pregnancy was found to be 75% and unplanned pregnancy of 25% in 200 cases was observed.

The Table 2 shows the psychological factors social support and spontaneous preterm birth. Anxiety was present 50% in 200 preterm females. About 75% of the total women were under depression and the rest 25% were free from depression. 60% of the female were troubled with nerves and depression where as 40% were not. Some preterm females took help from others, their percentage was 75% and 25% Meyer obtained help. Contact with neighbour was observed to be 100%.

Table 3 explained that smoking, alcohol and caffeine consumption at booking and spontaneous preterm birth. Smoking habit and alcohol consumption in Pakistani women is very low, due to eastern culture and social customs of this region. The data narrates the same clearly regarding smoking and alcoholism. Only 5% were involved in smoking and 95% had no smoking habit. On the other hand 2.5% used alcohol and 97.5% never used at all. Caffeine intake in this region is very high the 95% preterm female took caffeine and a small share of 5% did not.

The study has provided sonic evidences for an association between preterm birth and several socioeconomic factors. This analysis showed that lower social class- less education, low income, trouble with nerves and depression, help from others and contact with neighbours are all significantly associated with an increased risk of preterm birth. There are no apparent effects of smoking, alcohol and caffeine on the length of gestation overall and there was no evidence for any association with psychological factors.

Table 1  
Social variables and spontaneous preterm birth

Factors	(no) Preterm	Percentage (%)
<b>Social Class</b>		
Poor	125/200	62.5
Middle	60/200	30
High	15/20	7.5
<b>Education</b>		
Less than Matric	170/200	85
More than Matric	30/200	15
<b>Cohabitation</b>		
Yes	100/200	50
No	100/200	50
<b>House tenure</b>		
Owner	50/200	25
Rent	100/200	50
Living with parents	50/200	25
<b>Monthly Income</b>		
Less than 5000/- p.m.	140/200	70
More than 5000/- p.m.	60/200	30
<b>Planned Pregnancy</b>		
Yes	150/200	75
No	50/200	25

Table 2  
Psychological Factors, Social and Spontaneous Preterm Birth

Factors	(No) Preterm	Percentage (%)
<b>Anxiety</b>		
Yes	100/200	50
No	100/200	50
<b>Depression</b>		
Yes	150/200	75
No	50/200	25
<b>Trouble with nerves &amp; Depression</b>		
Yes	120/200	60
No	80/200	40
<b>Help from others</b>		
Yes	150/200	75
No	50/200	25
<b>Contact with neighbours</b>		
Yes	200/200	100
No	00/200	Nil

Table 3  
Smoking and Alcohol and Caffeine Consumption at Booking  
and Spontaneous Preterm birth

Factor	(No) Preterm	Percentage (%)
<b>Smoking Habit</b>		
Yes	10/200	5
No	190/200	95
<b>Alcohol Consumption</b>		
Yes	05/200	2.5
No	195/200	97.5
<b>Caffeine Intake</b>		
Yes	190/200	95
No	10/200	5

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