

# Association of objective major life events with the delivery of preterm babies

T C Weerasuriya<sup>1</sup>, J Wijeratne<sup>1</sup>, D Wijegunawardena<sup>1</sup>, S Weerasooriya<sup>1</sup>

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## Abstract

**Introduction** In many instances of pre-term deliveries a definite cause cannot be identified. Major objective life events may be associated with some of these cases.

**Objectives** To assess the significance of major objective life events in preterm deliveries.

**Design** Cross-sectional case-control study.

**Method** A pre-tested questionnaire was filled by the mothers under supervision. 100 cases of preterm deliveries and 100 cases of term deliveries were analysed.

**Results** A sudden reduction of income, hospitalisation of the mother for non-obstetric causes, hospitalisation of an immediate family member and assault by the husband were significantly associated with preterm deliveries. Death of an immediate family member, instances of husband working in the war-torn areas of north and east and a long term illness of a close relative were events which were not significantly associated with pre-term deliveries. 57/100 pre-term deliveries as compared to 21/100 controls had experienced one or more stressful life events ( $P < 0.05$ ).

**Conclusions** One or more stressful life events were associated with pre-term delivery.

## Introduction

Pre-term deliveries are an important cause of neonatal morbidity. However in many instances there are no apparent obstetric or medical causes associated with the delivery of pre-term babies. Our hypothesis is that major objective life events (physical, psychological or social) experienced during pregnancy may be associated with pre-term deliveries.

## Objective

To investigate for an association between objective major life events experienced during pregnancy and pre-term deliveries.

## Design

A cross sectional case-control design was used. The study population consisted of mothers aged between 20-35 years with a gestational period of <37 weeks (calculated according to the mother's dates) with no postnatal complications. Only mothers in their first or second pregnancy were included. Those with known obstetric and gynaecological complications indicated in Table 1 were excluded from the study group.

The control group comprised infants born by vaginal delivery at or beyond 37 weeks (calculated according to the mother's dates) to an uncomplicated mother aged between 20-35 years in her first or second pregnancy who had none of the above exclusion criteria.

The objective major life events are given in Table 2. The study was conducted in December 1997 at De Zoysa Maternity Hospital, Castle Street Hospital for Women, Lady Ridgeway Hospital, Sri Jayawardenapura Hospital and Kalubowila Teaching Hospital.

## Table 1 Obstetric and gynaecological complications

Past history of abortion  
Pregnancy induced hypertension  
Gestational diabetes  
Renal disease  
Malaria  
Measles  
Rubella  
Fever lasting more than seven days  
Any known gynaecological problem  
Pre-existing diabetes  
Pre-existing hypertension

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<sup>1</sup>Student, Faculty of Medicine, Colombo

**Table 2**  
**Objective major life events**

Husband subjected to terrorist attack  
 Death of husband due to terrorist attack  
 Wounding of husband due to terrorist attack  
 Husband missing after a terrorist attack  
 Husband is an alcoholic  
 Husband assaults physically  
 Husband assaults verbally  
 Husband abroad during pregnancy  
 Husband separated during pregnancy  
 Husband divorced during pregnancy  
 Hospitalisation of self during pregnancy for conditions other than obstetric causes  
 Close family member hospitalised during pregnancy  
 Chronic illness of husband or child  
 Attempted suicide by husband or child  
 Arguments with husband or child  
 Arguments with neighbors  
 Husband arrested by police  
 Court conviction of self  
 Sudden decrease of income by more than two thousand rupees  
 Inability to pay a debt.

**Methodology**

A pre-tested questionnaire was given to the mothers to be filled by themselves. Members of the study group were available for clarifications. A serial count was maintained and when a total of 100 cases and 100 controls were reached the process was stopped.

**Results (Table 3)**

A sudden reduction in income by more than Rs. 2000 was experienced by 17 cases and 05 controls. The P value was <0.05.

Hospitalisation of the mother for a non-obstetric cause was experienced by 24 cases and by 08 controls with a P value of <0.05.

Hospitalisation of immediate family member during the pregnancy was encountered by 20 cases and 07 controls with a P value <0.05.

Five cases and 03 controls have encountered a death of an immediate family member during the period of pregnancy which had a P value >0.05. (not significant)

Nineteen cases and 01 control had been assaulted by the husband during pregnancy. The P value here was <0.05.

**Table 3**  
**Results**

<i>Stressful life events</i>	<i>Cases</i>	<i>Controls</i>	<i>Chi square values</i>	<i>Significance at P&lt;0.05</i>
Sudden reduction of income by more than 2000 rupees	17	05	7.35	positive
Hospitalisation of self for non obstetric cause	24	08	9.52	positive
Hospitalisation of immediate family member during the pregnancy	20	07	7.24	positive
Death of immediate family member during pregnancy	05	03	0.03	not significant
Physical assault by husband	19	01	10.06	positive
Husband in North and East	06	01	2.37	not significant
Chronic illness of husband or child	00	01	00	not significant
Total	57	21		significant

Six cases had their husbands working in the North and East while only 01 control had her husband working in the war zone. The P value was >0.05 (not significant).

A long term illness of a close relative was experienced by only 01 control with a P value of >0.05 (Yates corrective applied).

Stressful life events with zero respondents are not mentioned. 57 of the mothers among them had experienced one or more stressful life events during the period of pregnancy while 21 of the mothers in the control group had encountered a stressful event during the period of pregnancy. This was significant statistically at P value <0.05 (Table 4).

Three of the cases had experienced a stressful life event at a POA of 01 month while 09 controls had the same experience. One mother out of the controls experienced a stressful life event at a POA of 02 months. Four mothers of the control group had encountered a stressful life event at 03 months of gestation. Out of the cases 28, 23, 02 had experienced a stressful life event at a POA of respectively 04, 05, 06 months, while 01 case and 07 controls had undergone similar experience throughout the period of pregnancy (Table 5).

**Table 4**  
**Stressful life events during pregnancy**

No of stressful life events	Number of cases	Number of controls
None	43	79
One or more	57	21
Total	100	100

**Table 5**  
**Stressful events during different months of pregnancy**

Months	No. of cases	No. of controls
1	03	09
2	00	01
3	00	04
4	28	00
5	23	00
6	02	00
7	00	00
8	00	00
9	00	00
10	00	00
Right throughout pregnancy	01	07
Total	57	21

## Discussion

As our objective was to study the association of objective major life events and the delivery of preterm

babies we defined an objective major life event as an instance which has a psychological impact on a person's life, which is referred to as stress. These events, when experienced need a lot of readjustments in one's life. In identifying the life events, a scale originally standardised on a population of pregnant women, known as a modified life events inventory was used<sup>1</sup>. It is evident from the above results that reduction in income (P <0.05), hospitalisation of self (P <0.05), hospitalisation of an immediate family member (P<0.05), and physical assault by husband (P <0.05) are the major objective life events that has a statistically significant association with preterm delivery. Among the cases 53% had experienced one or more stressful life events during the second trimester, while 14% controls had encountered a similar event during the first trimester. 07% controls had experienced stressful life event during the entire duration of the pregnancy.

A similar study on the association of major objective life events with low birth weight had been done in the UK in 1991 and they had found a statistically significant association between the two<sup>2</sup>.

The major drawback of our study was recall bias. Mothers who have delivered a preterm baby are more likely to associate that event with some objective major life event than mothers who have delivered at term. This may have led to the high level of significance seen in our study.

## Conclusion

One or more objective major life events are statistically associated with pre-term delivery. Out of them reduction in family and income, hospitalisation of immediate family member and assault by husband were found to significantly influence a pre-term delivery.

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## References

- Hunt R W, Linda P. Modified life events inventory. *British Medical Journal* 1984; **288**:1191-4.
- Mutale T, Creed F, Maresh M, Hunt L. Life events and low birth weight - analysis by infants preterm and small for gestational age. *British Journal of Obstetrics and Gynaecology* 1991; **98**:166-72.