



RESEARCH ARTICLE

INFLUENCE OF MATERNAL STRESS AND BIRTH WEIGHT.

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Key words:-

Maternal stress, low birth weight.

Abstract

Maternal adaptation to pregnancy is a physiological state. It gears up the potential mother to cope up with the physiological stress of pregnancy and deliver a healthy baby. The antenatal self perceived maternal stress, if present, may subtly alter the maternal milieu interior, bring about biochemical changes at the molecular level, affect the uterine circulation, impair metabolism and modify the placental functions to the disadvantage of the fetus and may result in a low birth weight newborns.

With this in mind, the study was undertaken to educate pregnant women to reduce the levels of stress both at home, at work and to reduce the incidence of low birth weight babies.

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Introduction:-

Stress is often assumed to be a personal problem that should be dealt with by the individual. American President, **Harry Truman** put it as 'If you can't stand the heat, get out of the kitchen'.

Stress in the eighteenth century meant hardship, strains, adversity or affliction and the same in 19th century were denoted by force, pressure, strain or strong effort.

Hans Seyle considered as the '**Father of Stress**' in 1920 explained the stress responses with General Adaptation Syndrome. He also referred **Eustress** as a necessary, positive physical reaction which aids individuals in successfully meeting daily demands in their lives. It is the **distress**, a cause for concern as it most severely taxes our reserves.

Onset of labour before 37 weeks is defined as preterm labour and is the single most factor responsible for neonatal morbidity.

The term stress is **defined** as any change in the environment that changes or threatens to change an existing optimal steady state. They activate at the molecular, cellular or systemic level that tend to restore homeostatic reactions. It is also **defined** as a psychophysiological response caused by environmental factors called stressors which may be pleasant or unpleasant. The stress develops due to demand-capability imbalance in the organism's homeostatic mechanisms.

The Hypothalamus protects the body from stressful conditions and it minimises the effect of stress by activating sympathetic-adrenal system. Both catecholamines and glucocorticoids increase during stressful situations. These increase blood glucose and FFA levels and also increase blood flow to the tissues.

Aim:- To estimate maternal stress as a cause for Low Birth weight

Materials and Methods:-

This study was carried out in the Government Primary Health Centre, Madurai District after obtaining permission from the Deputy Director of Health Services, Madurai District and Block Medical Officer, Checkanoorani with structured questionnaire.

185 women who had normal vaginal deliveries between April 2016 and March 2017 whether booked or unbooked and referred from outside were taken up for the study.

Those with prepregnant medical disorders, multiple pregnancies, congenital malformations were excluded from the study.

Results and Analysis:-

AIM : Total No.of vaginal deliveries conducted From 4/16 to 3/17 -185

Table1:-

AGE DISTRIBUTION

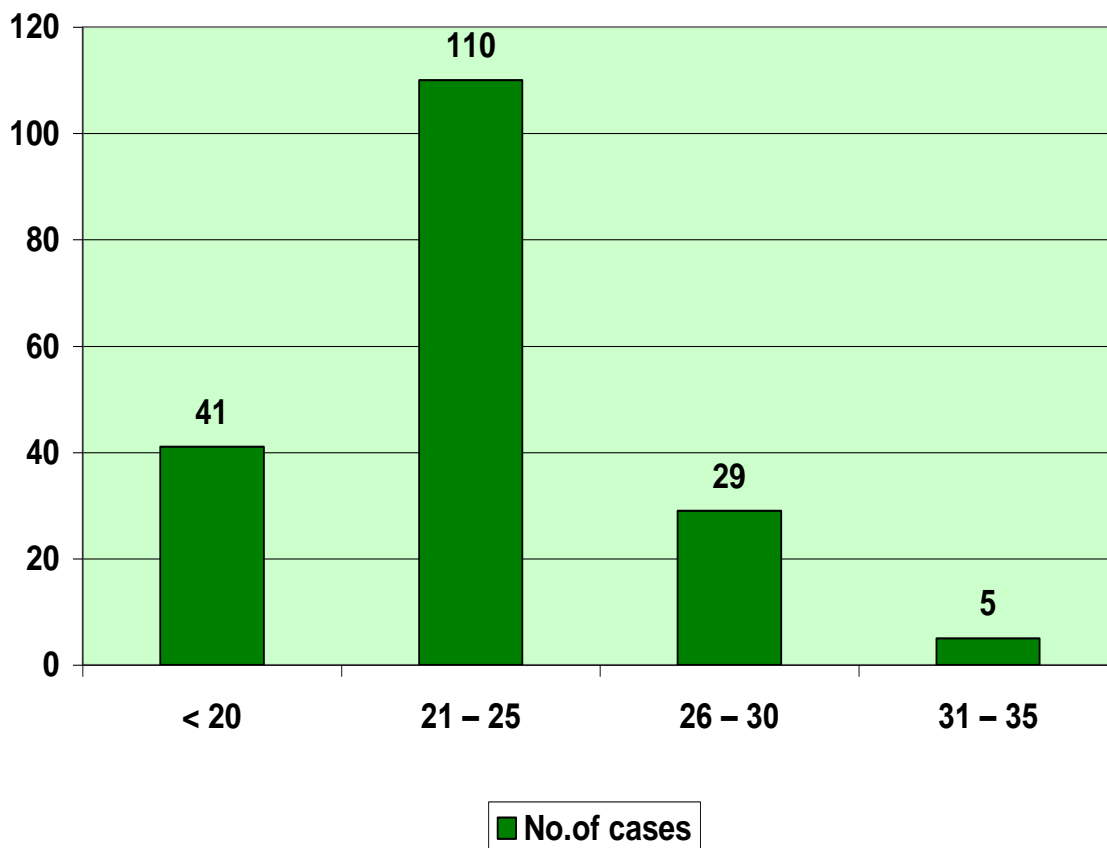


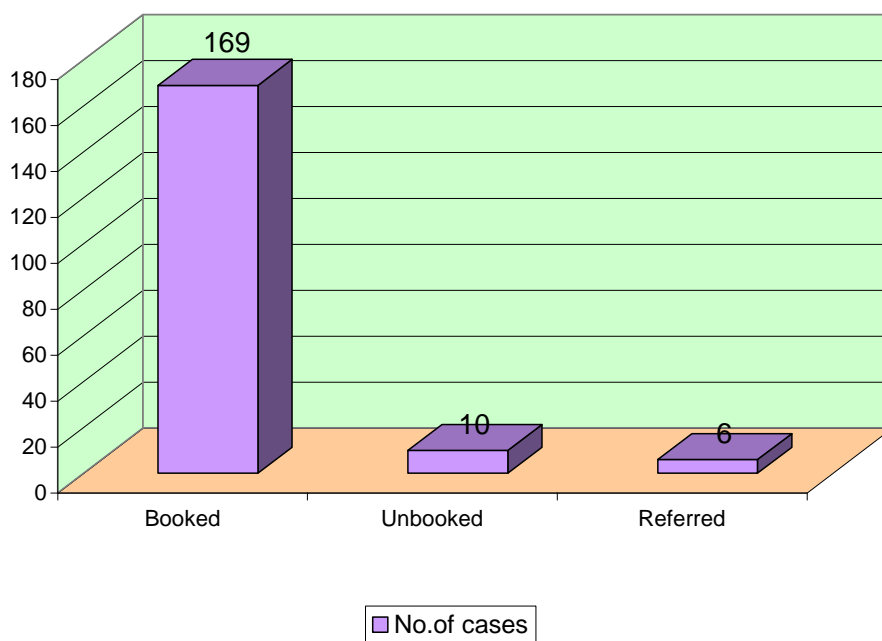
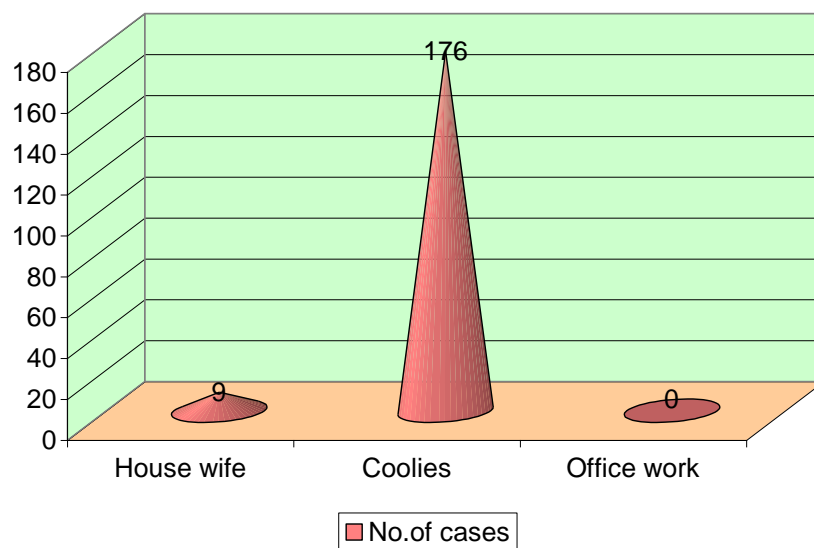
Table 2:-**CASES DISTRIBUTION****Table 3:-****TYPE OF WORK**

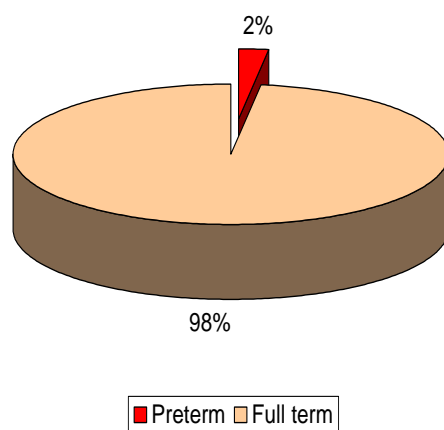
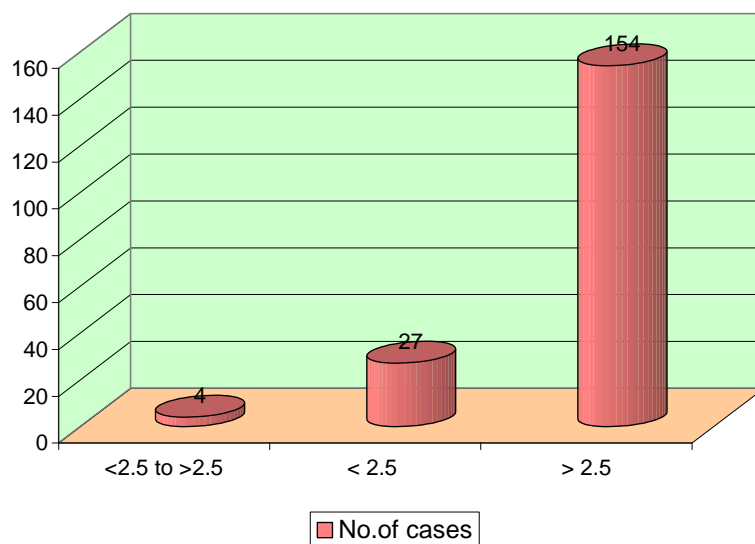
Table 4:-**TERM DISTRIBUTION****Table 5:-****BIRTH WEIGHT DISTRIBUTION**

Table 6:-

PARITY VS BIRTH WEIGHT

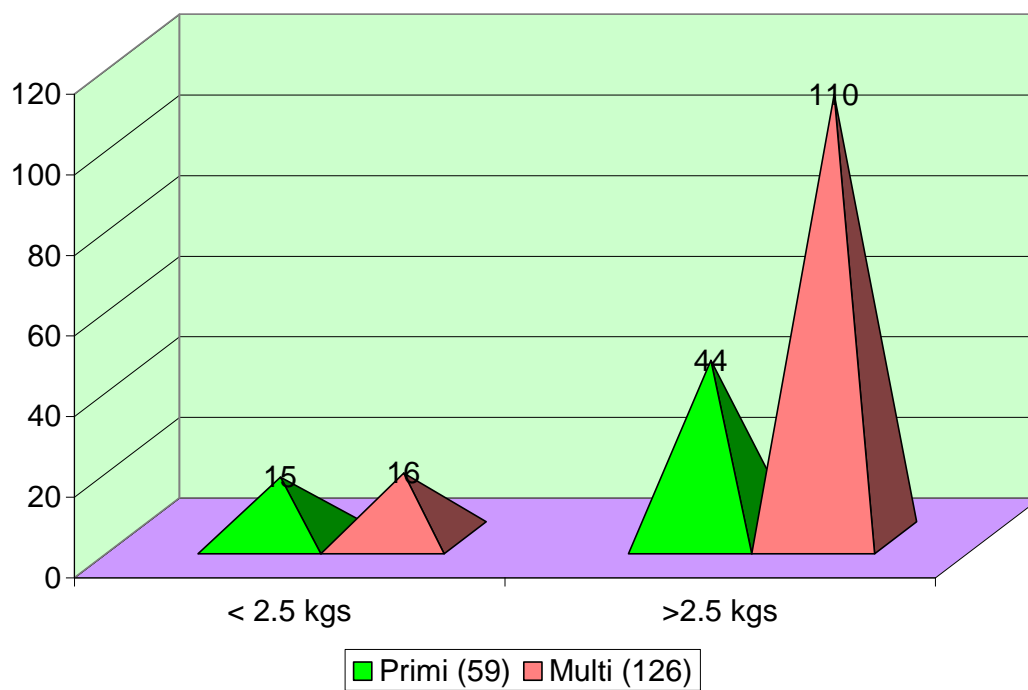


Table 7:-

SOCIO ECONOMIC STATUS VS BIRTH WEIGHT

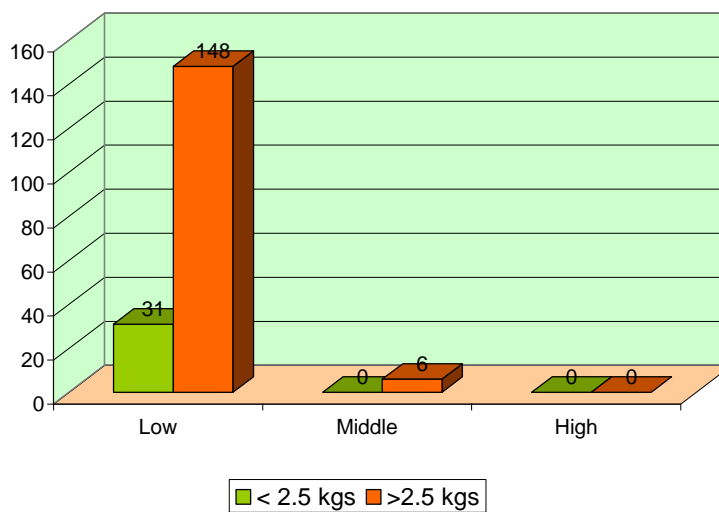
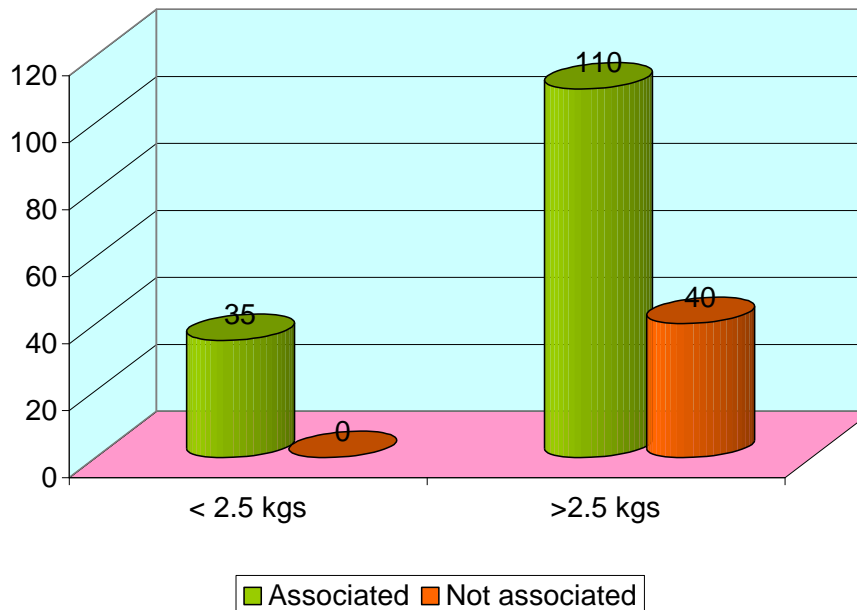


Table – 8

PSYCHOSOCIAL STATUS VS BIRTH WEIGHT



During the period of study, out of 185 mothers admitted for normal vaginal delivery, 169 were booked, 10 unbooked and 6 cases were referred from outside. Among them 9 were housewives and 176 engaged in physical work pertaining to domestic chores, household works plus manual work depending on weekly wages. No office goers doing desk work got admitted for good fetal outcome.

Out of 59 Primigravida cases 15 had delivered babies weighing less than 2.5 kgs and 44 babies weighed more than 2.5 kgs and only 4 preterm babies were born for women in the age group of 18-21 years.

Peacock et al observed in his study that pregnant women having troubles with nerves and depression had a 2 fold increase of preterm deliveries. They belonged to low socio economic status and had both physical and mental stress as they feared labour.

Among 126 multigravida, 16 patients delivered babies with a birth weight of less than 2.5 kgs and 110 with more than 2.5 kgs weighed babies. So out of 181 fullterm deliveries, 27 had a low birth weight and 154 had a birth weight of more than 2.5 kgs.

Discussion:-

Low birth weight babies are a major contributor to the perinatal mortality and morbidity. Socioeconomic status, financial, physical exhaustion, mental agony, psychological, psychosocial factors contribute for the delivery of low birth weighed infants.

Optimal stress with a sense of well being, joy of motherhood is beneficial. The stress threshold varies with each individual. Hence beyond some point, this threshold becomes distress.

Mothers who had a mental satisfaction, financially sound to rear child, those with self confidence, self esteem accounted for lesser LBW babies.

Pompeii et al observed 40% reduction in the risk of preterm deliveries in women who were formally employed for 46 hours per week. **Hendrickson et al** found that physical activity involving long hours of standing or walking had a three times higher risk of Low birth weight babies.

Launer et al 1990 found a similar pattern with a lowest 19.08 % LBW babies in office goers with sedentary lifestyle. The reason for low birth weight newborns is attributed to prolonged physical activity and standing which reduced the venous return, cardiac output which consequently reduced uterine blood flow. This in a subtle way lead to hormonal changes resulting in irritability of the uterus also.

With the availability of sophisticated household machines and gadgets, tedious household work becomes less laborious and poses less physical and psychological maternal stress which could have attributed to better birth weight for babies.

Conclusion:-

Poverty and low socioeconomic status is a significant factor contributing to maternally perceived stress and to LBW infants **Salam's** study. **Wilcox et al** stressed social, emotional, interpersonal and family environment amounting to 325 of LBW babies born. **Rothberg et al.**, identified moderate to severe stress factors accounting for 48% of cumulative stress and birth weight of newborns.

The low birth weight babies currently believed to be due to idiopathic reasons may actually be attributed to underlying maternally perceived stress. Alleviating this may significantly reduce the incidence of LBW.

If appropriate nutritional elements are not present in a pregnant women's diet, a number of maternal deficiencies can occur which also accounts for low birth weight. Hence proper advice regarding diet, exercise, physical and mental relaxation helps in delivering a healthy baby by eliminating stress.

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