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## **i. Abstract**

A descriptive cross sectional study was carried out to assess maternal weight gain and to determine selected factors associated with maternal weight gain in mothers attending maternal clinics at Medical Officer of Health areas of Ruwanwella and Yatiyantota. Socio demographic factors, pregnancy related factors, environmental factors, nutritional status and knowledge, attitude in relation to the maternal weight gain, were looked into.

A two-staged sampling process selected 388 uncomplicated singleton pregnant mothers. In the first stage, 11 clinics were selected randomly from 22 maternal clinics in both MOH areas. Thereafter, in the second stage study was carried out until 388 mothers who met required criteria, were obtained from the selected clinics. Of the mothers selected 262 were from Yatiyantota and 126 were from Ruwanwella.

Difference between the weight of the mother before 14<sup>th</sup> week of gestation and weight after 37<sup>th</sup> week was considered as maternal weight gain. Weight gain before 14<sup>th</sup> week and after 37<sup>th</sup> week was regarded as negligible.

Average maternal weight gain in the study was 8.12kg with the standard deviation of 3.1 kg. Weight gain ranged from 2.5kg to 17.3kg. Of the study sample, 36.3 percent gained less than 7kg while 31.7 percent gained more than 9kg.

In the univariate analysis, factors like ethnicity (P=0.002), place of residence (P=0.000), domestic workload (P=0.002), parity (P=0.0001),

exposure to cooking smoke ( $P=0.002$ ), knowledge ( $P=0.005$ ), Body Mass Index ( $P=0.005$ ), family income ( $P=0.0001$ ) and nutritional status ( $P=0.009$ ) showed a highly significant ( $P<0.01$ ) association with maternal weight gain.

In the multiple regression analysis, using above mentioned 9 factors, 4 were identified as highly significant correlates with maternal weight gain. They were Body Mass Index ( $R^2 = 0.061$ ), place of residence ( $R^2 = 0.047$ ), domestic workload ( $R^2 = 0.027$ ) and parity ( $R^2 = 0.013$ ). Therefore, 14.8 percent of variation in maternal weight gain could be explained by these 4 variables. Body Mass Index and domestic work explained only 6.1 percent and 2.7 percent of the variation respectively.

Parity, Body Mass Index, domestic workload and exposure to cooking smoke showed inverse relationships with maternal weight gain. These relationships were statistically significant ( $P<0.01$ ). Nutritional status, knowledge and family income showed positive relationships with maternal weight gain. These relationships were statistically significant ( $P<0.01$ ). A higher proportion of mothers with favorable attitude towards weight gain during pregnancy, gained weight of 7kg or more. This difference in the proportions of favorable attitude group was statistically significant ( $P<0.05$ ). Level of education and birth interval up to the interval of 36 to less than 60 months, had a positive linear relationship with maternal weight gain. These relationships were statistically significant ( $P<0.05$ ).

When ethnicity was considered, highest proportion of mothers gaining 7kg or more, were Muslims while lowest was observed in Tamil mothers. Mean weight gain of estate mothers was 6.18kg while it was 8.33kg in non- estate mothers.

As regards age, after 20 years of age, maternal weight gain showed a negative relationship with age. Before 20 years, although a higher percentage of mothers gained 7kg and above, the difference in the proportions was not significant statistically ( $P>0.05$ ). But after 35 years, lower proportion gained 7kg and above, this difference in the proportions was statistically significant ( $P<0.01$ ).

Factors like consanguinity, exposure to passive smoking, family support, occupational workload and social class did not show a significant statistical association with maternal weight gain ( $P>0.05$ ).

Finally, recommendations were made to educate pregnant mothers regarding proper nutrition, adequate resting during pregnancy, avoidance of cooking smoke and importance of the awareness of maternal weight gain during pregnancy. Improvement of family planning and developing a system to recommend maternal weight gain based on Body Mass Index, were proposed as measures to reduce the incidence of low birth weight babies and to uplift health of the mother after the delivery.