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Impact of locally made food multimix on maternal weight gain and outcome of pregnancy in Gauteng Province, South Africa

P. Amuna, F. B. Zotor and T. Adewuya

School of Science, University of Greenwich. . Medway Campus, Chatham Maritime, Kent, UK

Pregnancy weight gain (PWG) and its trajectory impact on birth outcomes[1,2] and birth weights. Providing adequate nutritional support at low cost in poor communities however remains a challenge. In this study we tested the effect of a locally produced ready to use food multimix on PWG and birth size in a low-income community in South Africa.

Following ethical approval, 120 healthy pregnant women were recruited from four antenatal clinics in a randomised controlled feeding intervention and assigned to intervention ($n = 60$) or control ($n = 60$) groups. Baseline health screening, repeated 24 hr recall dietary assessment and food frequency questionnaires were administered. The intervention group received Daily Diet plus 100 g of formulated food multimix (DD + FMM) of known energy and nutrient content. The control group, Daily Diet plus placebo (DD + P) in the form of a local powdered soup of known nutrient composition with regular supplies at 2-weekly follow-up. Maternal weight was monitored and birth weights of newborns recorded. Differences in means were tested for significance using independent t-test.

Mean daily energy and selected nutrient intake comparisons were: DD + P: energy, 6.67 (±2.94) MJ/d; protein, 69.29 (±32.13) g; Ca, 286.50 (±200.83) mg; Fe, 10.54 (±10.84) mg; Zn, 8.37 (±5.46) mg; Cu, 1.1 (±1.14) mg; folate, 222.33 (±174.86) mcg compared to DD + FMM which were 7.96MJ/d; 76.35 mg; 331.67 mg; 19.78 (±4.45) mg; 11.32(4.98) mg; 1.69(±1.22) mg and 333.2 (143.92) mcg respectively. Mean total PWG and birth weights were 11.50 (±1.35) and 10.40 (±1.59) kg in intervention and controls ($p<0.001$); and 3.02(0.38) and 2.71(0.28) kg ($p<0.001$) respectively.

We conclude that locally produced complementary foods can contribute significantly to pregnancy outcomes.

1. Dietz PM, Callaghan WM, Cogswell ME, Morrow B, Ferre C & Shieve, LA (2006) Combined effects of pre-pregnancy BMI and weight gain during pregnancy on the risk of preterm delivery. *Epidemiology*, **17**, 170–177.
2. Strauss RS & Dietz WH (1999) Low maternal weight gain in the second trimester increases risk of intrauterine growth retardation. *J. Nutr* **129**, 988–993.