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Effect of dietary counseling on preventing excessive weight gain during pregnancy



S.B. Abdel-Aziz ^{a,*}, I.S. Hegazy ^a, D.A. Mohamed ^a,
M.M.A. Abu EL Kasem ^b, S.S. Hagag ^a

^a Public Health and Community Medicine Department, Al Kasr EL Aini, Cairo University, Egypt

^b Obstetrics and Gynecology Department, Al Kasr EL Aini, Cairo University, Egypt

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ABSTRACT

Objectives: Excessive gestational weight gain (EGWG) is associated with short- and long-term health problems among mothers and their offspring. The aim of this study was to assess the effect of dietary counseling on EGWG.

Study design: Randomized controlled intervention trial.

Methods: The study was conducted at the antenatal care (ANC) clinic, Center for Social and Preventive Medicine, Pediatrics Hospital, Cairo University, during the period from July 2015 to April 2016. A total of 200 primigravidae aged between 20 and 30 years were included and randomized into intervention and control groups. Based on data analysis from phase 1, nutritional practices of the studied participants were identified and tailored nutrition counseling sessions designed. Follow-up of the studied participants throughout ANC visits was done to enforce the healthy dietary intake and encourage weight gain according to the recommendations to avoid EGWG.

Results: The intervention resulted in a significantly higher proportion of women in the intervention group who gained gestational weight within the Institute of Medicine recommendations compared to women in the control group (42.7% vs 13.9%, respectively) (P -value <0.001); this was detected between the 25th and 35th weeks of gestation. Dietary counseling had significantly improved the frequency of consumption of different food items and knowledge, attitude, and practice mean scores of the intervention group in comparison with the control group (P -value <0.001).

Conclusions: The results of the present study demonstrated that dietary counseling given to pregnant women reduced the proportion of EGWG and improved dietary practices. There is a strong need for effective intervention strategies targeting EGWG to prevent adverse pregnancy outcomes.

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* Corresponding author. Tel.: +20 (0)122 6742424, Fax: +20 2 23644383.

E-mail address: Shaimaabaher@yahoo.com (S.B. Abdel-Aziz).

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Introduction

Pregnancy is a critical period during which good maternal nutrition is a key factor influencing the health of both the child and mother.¹ Obesity is a growing problem, and excessive gestational weight gain (EGWG) is associated with long-term obesity in both mothers and their babies.²

The prevalence of obesity has increased among women of childbearing age,³ and approximately 60% of obese pregnant women gain more weight than recommended during pregnancy.⁴

In 2014, the Egyptian Demographic Health Survey⁵ estimated that the prevalence of obesity among ever-married women aged between 15 and 19 years was 17.5%, between 20 and 29 years was 31.8%, between 30 and 39 years was 50.9%, and between 40 and 49 years was 65.3%.

Excessive weight gain during pregnancy increases the risk for several complications during pregnancy, delivery, and neonatal complications. It is highly linked with several adverse maternal and fetal outcomes, including gestational hypertension, diabetes, pre-eclampsia, and cesarean delivery in the mother, and macrosomia and long-term obesity in the offspring.⁶

In 1990, the National Academy of Science Institute of Medicine (IOM)⁷ formulated body mass index (BMI; in kg/m²) in specific recommended ranges for healthy weight gains during pregnancy, and in 2009, these ranges were made more restrictive for obese pregnant women. Obese women are more likely to gain weight above the recommendations and should be advised during antenatal care (ANC).

ANC period provides a window of opportunities to deliver weight management intervention as most of the pregnant women are willing to make changes in their dietary intake.⁸ Behavioral intervention such as weight awareness and dietary pattern improvement may mitigate the risks of pregnancy complications.^{9,10}

The aim of this study was to assess the effect of dietary counseling and behavioral life style intervention delivered during pregnancy to decrease the proportion of women who exceeded recommendations for gestational weight gain (GWG) compared with a control group who received standard care during routine ANC visits and to investigate the pregnancy outcome.

Methods

Study design and setting

This is a randomized controlled trial (RCT) having both intervention and control groups conducted at the ANC clinic, Center for Social and Preventive Medicine (CSPM), Pediatrics Hospital, Cairo University, during the period from July 2015 to April 2016.

Study population

A random sample of 200 primigravidae aged between 20 and 30 years in the first trimester (<12 weeks of gestation) of

pregnancy, attending the selected ANC clinic, free from history of any chronic medical problems were recruited to participate. As shown in Fig. 1, 22 primigravidae were excluded; 10 refused to participate, 5 were unable to be contacted, and 7 did not meeting the inclusion criteria. Women were not eligible for participation if they were younger than 18 years (to avoid natural linear growth), having the history of previous abortion or stillbirth, presence of any chronic disease, and taking any type of medications that might interfere with the body weight (steroids, diuretics, and thyroid hormones). Randomization was performed using a computer-generated randomization allocation table by the researcher without involvement in the study design. During follow-up, 10 women were lost to follow-up, six were unable to be contacted during pregnancy, and 15 cases were excluded (six miscarried, four abortion, and five stillbirth cases). Finally, data were analyzed from 147 pregnant women—75 from the intervention group and 72 from the control group.

Sample size calculation

Sample size calculation was done using a sample size program, version 3.0.34, alpha = 0.05, and power = 80% calculations, assuming that the difference in weight gain between the intervention group and control group was equal to 6.9, standard deviation for weight gain is equal to 14, and intervention to control ratio is 1:1.¹¹

The calculated sample size was found to be 70 for each group, and 200 primigravidae have been approached at the beginning to compensate for dropouts.

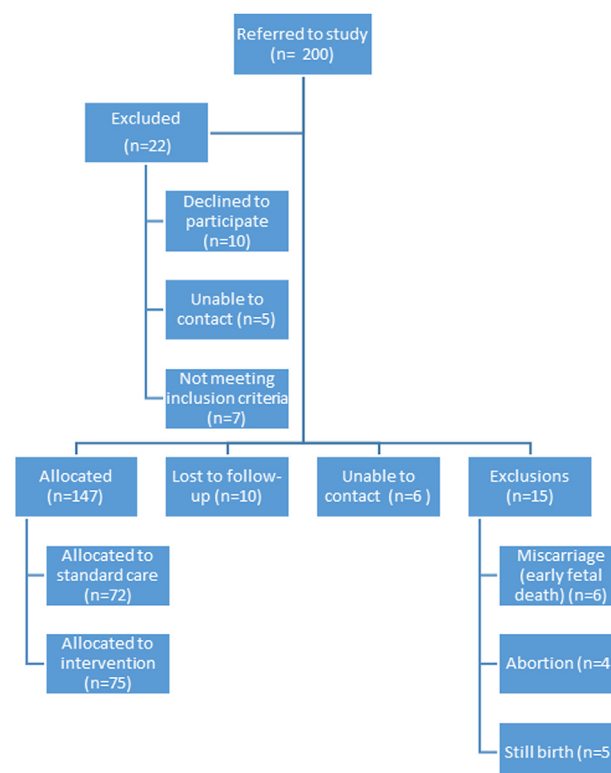


Fig. 1 – Flow diagram.

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