Is ACOG Guideline Helpful for Encouraging Pregnant Women to Do Exercise During Pregnancy?

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Abstract- To evaluate physical activity of pregnant women before and after ACOG guideline study. Four hundred and eighty-five pregnant women enrolled in this before-after study. They were asked to study ACOG guideline. A structured questionnaire filled by women at first visit and the last visit in the prenatal clinic.Type, frequency, duration and anxiety about doing exercises during pregnancy period. Before education, 411 did exercises before pregnancy onset, among them, 346 were walking out and 65 did light exercises such as aerobics. After studying the protocol, 434 (89.4%) did walking during pregnancy period in comparison to 71% who did walking before pregnancy (P<0.001). Forty two (56.7%) out of 74 who had not done sport before, went for walking after the protocol reading, and nine continued not doing exercise. Among 74 participants who had not done exercise before the protocol reading, 16 (21%) were doing exercise three times a week and 11 (14%) changed their habit to daily exercise practice (P<0.001). Forty percent (195 women) were anxious about doing exercise during pregnancy before guideline study, while 116 reported that after the protocol reading, they had no anxiety about doing exercises during pregnancy (P<0.001). Guidelines providing information about physical activity during pregnancy will help pregnant women to do exercise during pregnancy with convenience and less anxiety.

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Introduction

There is no debt about benefits of physical activity among the general populations. Recommendations are available about benefits of physical activity during pregnancy. Similar to other periods, physical activity will be valuable for reducing cardiovascular problems, limiting weight gain, decreasing musculoskeletal discomfort, reducing lower limb edema and pregnancy specific benefits such as reducing risk of developing gestational hypertension and diabetes (1,2). Most women are concerned about effects of physical activity on their own health and fetus health.

Based on socio-cultural reasons, pregnant women are encouraged to reduce physical activity during pregnancy because of worries about potential harms such as early pregnancy loss or reduced placental circulation (3).

In 1985, the American College of Obstetricians and Gynecologists (ACOG) published a guideline for the safe physical activities during pregnancy. According to ACOG recommendation, pregnant women are encouraged to do low-impact, moderate-intensity and regular exercises during this period (4). They also were told to avoid intense activities (such as jogging or cycling) for more than 15 minutes per session, and limit their heart rate to (140 beats/min) (5).

ACOG recommended doing low-intensity exercises every day more than or equal to thirty minutes. They also suggested high intensity exercises to be done three times a week with twenty minutes or more duration.

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The goal of this study was to evaluate physical activity of pregnant women before and after ACOG guideline study.

Materials and Methods

In this before-after study which conducted Tehran University of medical sciences. 600 pregnant women who were in the first trimester of pregnancy period and referred to prenatal clinics were randomly selected by means of simple random selection. Exclusion criteria were: history of hypertension, diabetes, and preterm labor, premature rupture of membranes and placenta previa and vaginal bleeding during pregnancy period. They asked for answer to the questionnaire including questions about age, education, occupation, parity, type, frequency and duration of the sport before pregnancy, and anxiety, about doing exercise during pregnancy.

All of them asked to study ACOG guideline during 10 days and act to its contents. An alert researcher followed them every two weeks to evaluate if they act to contents of the guideline. Women, who did not read the protocol or found the protocol hard to act, excluded from the study.

Women also asked for fill the questionnaire about type, frequency, duration and anxiety about doing exercises during pregnancy period in their last visit at prenatal clinic.

Statistical analysis was performed by SPSS software version 18.0 (Statistical Product and Service Solutions, SSPS Inc., Chicago). Data are presented as mean ± SDs. McNemar test was applied for categorical variables evaluation.

P-value < 0.05 was considered statistically significant.

Results

Four hundred and eighty-five pregnant women completed the study. Fifty four excluded due to abortion and sixty one withdrew from the study. Mean age of participants was 28 ± 5.2 while 370 (76.3%) were housewives and 115 (27.3%) were employees. Educational level was less than 12 years in 74(15.3%), equal to 12 years in 205 (42.3%) and more than 12 years in 209 participants. Three hundred and twenty six were gravid one and remaining had a previous delivery. Before education, 411 did exercises before pregnancy onset, among them, 346 were walking out and 65 did light exercises such as aerobics. After studying the protocol, 434 (89.4%) did walking during pregnancy period in comparison to 71% who did walking before pregnancy (P<0.001).

One hundred and thirty-nine participants did exercise three times a week, 132 once a week and 86 did exercise daily before pregnancy. Among 132 participants who did exercise once a week, after the protocol reading, 38 changed frequency of exercise to daily practice (28.8%) and 30 (22.7%) changed their activity to 3 times a week. Among 74 participants who had not done exercise before the protocol reading, 16 (21%) were doing exercise three times a week and 11 (14.8%) changed their habit to daily exercise practice (P<0.001).

Duration of exercise of two hundred and sixty-two women was less than or equal to thirty minutes and sixty minutes for 134. The other 15 applicants did exercise less than 30 minutes before the protocol reading.

Amongst 262, 182 (67.9%) continued their sport habit thirty minutes every time and 63 (23.7%) increased time of their exercise to one hour (P<0.001). Forty two (56%) out of 74 who had not done sport before, went for walking after the protocol reading, and nine continued not doing exercise. Three out of 23 who went to swimming pool before pregnancy, continued swimming and 16 changed the type of sport to walking.

Forty out of 74 (54%) who had not done exercise before study, did exercise during pregnancy 30 minutes every session and 10 did exercise at least 60 minutes every session (P<0.001).

Sixty five women reported that they did aerobic and light exercises at first survey while fifty-six changed their sport type to walking and three of them kept on their own type of sport.

Forty percent (195 women) were anxious about doing exercise during pregnancy before guideline study, while 116 reported that after the protocol reading, they had no anxiety about doing exercises during pregnancy (P<0.001).

Discussion

Findings of this study showed that ACOG guideline helped pregnant women to do exercises during pregnancy and reduce their anxiety about exercises in this period. More than half of women, who had not done exercise before pregnancy, did exercises during pregnancy, and one third of them did exercise three times a week while a fifth of them stated daily practice. It can show that proper education about exercises will help pregnant women to maintain active and vigorous.

In a previous study conducted by Ribeiro and Milanez, knowledge, attitude and practice of 161

pregnant women towards physical activity during pregnancy evaluated. They found that attitude of 93% of participants toward exercise during pregnancy was adequate while only 29% reported that they had physical activity in their pregnancy period. Walking was the most common type of, but only 25% had adequate exercise practice (20 minutes three times a day) throughout their pregnancy (6).

Due to physical responses, pregnant women profit from exercises such as nonpregnant women (7). Exercise will lead to increased heart rate, cardiac output, plasma volume, core temperature and placental perfusion. By increasing parenchymal component of the placenta, the total vascular volume, surface area and capillary volume, exercise will improve placental perfusion (8). Exercise during pregnancy will help control maternal glucose level and may be beneficial for gestational diabetes prevention by increasing insulin sensitivity (9).

As fetal para-sympathetic and sympathetic nervous systems become mature during second and third trimesters, maternal exercise has been considered to be effective to increase fetal heart rate variability and decrease fetal heart rate (10).

On the other hand, chronic exposure to norepinephrine and other catecholamines that are essential for fetal growth that resulted from maternal exercises will improve fetal cardiac autonomic control (11).

Previous studies, suggest that the level of erythropoietin in the cord blood and amniotic fluid which are indicatives of fetal stress are not high in the time delivery in women, who did exercise during pregnancy in comparison with non athlete women (12) which can show that fetal oxygenation was sufficient.

Anatomical changes that occur during pregnancy such as shift in the center of gravidity, exaggerated lordosis of the spine, protruding abdomen, rectus diastasis and laxity of ligaments because of increased progesterone level, have a role in experiencing discomfort and pain during pregnancy. Studies showed that women who did exercises routinely during pregnancy reported a lower level of physical discomfort (13,14).

When recommending exercise to a pregnant woman, we should remember that it is contraindicated in women with a history of ruptured membranes, preterm labor, incompetent cervix, growth restricted fetus, placenta previa, persistent bleeding, high-order multiple gestations and uncontrolled medical problems such as type I diabetes, thyroid disorders, cardiovascular or respiratory disorders (15).

Duncombe *et al.,* reported that women perceived physical activity as a beneficial habit which could help them control blood glucose levels and weight gain, balance the mood, improves energy efficiency and make makes childbirth easier (16).

Some researchers believe that lack of motivation is among important causes of do not do exercise during pregnancy although they are aware of advantages of physical activities for their health and the health of their baby (6).

It should be considered that physical activities will affect health status of the fetus as well as health condition of the mother.

Along with maternal benefits of physical exercises, physical activity during pregnancy will affect fetal health, too. Studies showed that the maternal exercise will protect against birth weight extremities and pre preterm birth (6).

On the other hand, physical activity will be helpful for reducing risk of delivering LGA (Large for gestational age) infants for obese women (17-22).

Guidelines providing information about physical activity during pregnancy will help pregnant women to do exercise during pregnancy with convenience and less anxiety.

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