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THE EFFECT OF PHYSICAL EXERCISE ON QUALITY OF LIFE DURING PREGNANCY

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Abstract

Pregnancy is a physiological condition during which a series of morphological and anatomical changes occur. Adaptation to new changes in the body depends on the psychological and physical condition of the patient. One of the many factors that affect the quality of life is physical exercise. Proper exercise prevents certain chronic diseases, reduces pregnancy discomfort, gives a feeling of satisfaction and influences a positive outcome of the pregnancy. The aim of this study was to examine the validity of the preliminary version of the questionnaire, and therefore examine the impact of exercise on the quality of life during pregnancy. The questionnaire involved pregnant women (N=33). All of whom were in their third trimester of pregnancy. The participants voluntarily filled out an anonymous questionnaire. The questionnaire included information about: social and marital status, education, frequency of maternity problems, the type of exercise, as well as the level of training load during pregnancy. High reliability and validity of the survey (0,873) was determined by Cronbach alpha coefficient. Pregnant women (48%) commonly practiced low intensity yoga, up to three times a week. Most of the women (45%) believe that the exercise has a positive impact on their health. A difference of statistical significance was observed between the type of exercise and heart burn ($r=0.349$; $p=0.046$), as well as between the type of exercise and body weight ($r=0.357$; $p=0.041$). The results of this pilot study show a lower incidence of common maternity symptoms in pregnant women who exercised during pregnancy.

Keywords: Pregnancy, physical exercise, quality of life.

Introduction

In 1948, the World Health Organization (1) was one of the first to define "Quality of life" as "A state of complete physical, mental, and social well-being" (World Health Organization 1948).

Results of previous studies show that moderate physical exercise does not have a negative effect on the course of pregnancy. Also, the results of the study show that pregnant women who exercised, on the recommendation of the American Institute of Obstetrics and Gynecology (ACOG, 2002), suffered less from the usual maternity health issues than sedentary pregnant women. This data shows the importance of exercise, as one of the factors that have a positive impact on the quality of life of pregnant women (2, 3, 4, 5).

By typing keywords: *pregnancy* and *quality of life* in PubMed search, you will find 354 scientific research papers. If you add *physical exercise* to these keywords, you will find the number of papers fall to a mere 15. This data can indicate the research done on this subject among pregnant women is significantly low (1).

As an optimal questionnaire was not found that answers the question what kind of impact does exercise during pregnancy have on the quality of life of pregnant women, a newly designed questionnaire was applied on a voluntary respondent group.

The aim was to find an optimal instrument that would provide significant information about exercise during pregnancy and the impact it has on the quality of life for pregnant women.

Methods

The study included a sample of respondents which included 33 pregnant women whose age ranged from 19 to 39 years. All had singleton and healthy pregnancies. The research was done within the month of September 2014, during which all the pregnant women were in their third trimester.

An optimal survey, that would provide the answer to the problem in research, could not be found in the available scientific sources so a new survey was formed. Based on 30 selected questions, a questionnaire was drawn up in order to supply relevant information on the impact of physical exercise on quality of life during pregnancy.

In one of the health centers in Novi Sad an anonymous survey was carried out voluntarily. The respondents had completed the questionnaire before their psycho-physical preparations class, which are held twice a week in the period before the birth. The survey was returned for further processing immediately after filling.

Attached to this paper are 7 questions relating to the importance of physical exercise during pregnancy. The remaining questions are related to general type information and issues related to the health status of the pregnant women (23 questions). Table 1 shows a form of 14 questions relating to the frequency of the usual maternity ailments (6)

Table 1

Survey Question No. 9 with a note to assess each symptom (pregnancy ailments) from 1 to 5 depending on the frequency of occurrence

br.	SIMPTOMS	never	rarely	often	perhaps	alweys
1.	headache	1	2	3	4	5
2.	nausea, vomiting	1	2	3	4	5
3.	vaginal discharge	1	2	3	4	5
4.	frequent urimtion	1	2	3	4	5
5.	swelling	1	2	3	4	5
6.	sleep disturbances	1	2	3	4	5
7.	leg cramps	1	2	3	4	5
8.	fatigue	1	2	3	4	5
9.	shortness of breath	1	2	3	4	5
10.	heartburn	1	2	3	4	5
11.	constipation	1	2	3	4	5
12.	hemorrhoids	1	2	3	4	5
13.	clumsiness	1	2	3	4	5
14.	light headedness	1	2	3	4	5

Data analysis was performed in SPSS and Excel. Based on the analysis, the validity of the questionnaire was determined by specifying Cronbach alpha coefficient. The questionnaire was corrected in order to increase the validity, a certain percentage and statistical significance was determined between the individual variables.

Results

A satisfactory Cronbach alpha coefficient of 0.873 was obtained by eliminating certain questions in determining the reliability of the survey. The third version of the survey contained 15 selected questions, but the statistical analysis in this study included the first version of the newly formed 30 survey questions.

The results of this study show that of the total number of subjects (N = 33) 48% of them exercised. The respondents mostly practiced yoga. The answers to questions concerning the

training load within a week, show a small extent (up to three times) and low intensity exercise. When questioned whether physical exercise has had a positive impact on their psycho-physical condition, 45% of the pregnant women gave an affirmative answer. When adding up the points, (Question 9) a conclusion was made that physically active pregnant women suffered far less from the feeling of nausea, vomiting, swollen legs and cramps, clumsiness, difficulty breathing and heartburn (Table 2).

Table 2

The frequency of the usual maternity ailments in sedentary and physically active pregnant women

		sedentary (n =17) * points	**active** (n = 16) * points
number	**SYMPTOMS**		
1.	headache	34	34
2.	nausea, vomiting	45	37
3.	vaginal discharge	58	53
4.	frequent urimtion	62	60
5.	swelling	31	24
6.	sleep disturbances	45	41
7.	leg cramps	35	24
8.	fatigue	52	50
9.	shortness of breath	45	36
10.	heartburn	57	41
11.	constipation	34	36
12.	hemorrhoids	25	25
13.	clumsiness	3	35
14.	light headedness	26	24

*** The answer is expressed in points based on the questions set out in Table 1**

Statistical analysis of common maternity ailments (14 symptoms) and exercise (type of exercise and training load) resulted in a statistically significant correlation between the type of exercise, and heartburn ($r = 0.349$; $p = 0.046$), as well as between the type of exercise and body weight ($r = 0.357$; $p = 0.041$).

Disscusion

Pregnancy is a physiological condition that carries with it a series of morphological and anatomical changes in the body (1). As pregnancy is a very sensitive period in the life of every woman, it is very important that lifestyle adjustments are made. Pregnancy significantly affects and changes lives of pregnant women. Changes in the quality of life during pregnancy takes

place under the influence of numerous factors (1). Physical exercise can have a positive impact on the course and outcome of pregnancy (7, 8, 9, 10), and therefore it can affect the quality of life for pregnant women (2, 3, 4, 5).

Exercise is scientifically proven to reduce the appearance of certain chronic diseases, such as gestational diabetes, hypertension, obesity, and pre-eclampsia (7). Also, exercise has an impact on reducing the incidence of the usual maternity symptoms, such as fatigue, headaches, hemorrhoids, constipation, dizziness and other symptoms (6).

Exercise has an important role in psycho-physical preparation of pregnant women before delivery. However, group exercises under the supervision of specialized healthcare employees working with pregnant women only starts at the beginning of the third trimester, respectively, in the 27th week of pregnancy. By that time, their bodies undergo a period of adjustment to the changes. The increase in body weight leads to changes in the musculoskeletal system, causing looser ligaments and increases the risk of injury (7). Also, there is a change in the cardiovascular and respiratory system, causing variations in pulse and blood pressure, which may have an impact on the shortness of breath during physical activity (7). Metabolic changes affect the change in body temperature, and can cause dehydration during exercise at high temperatures (7).

As metabolic changes require greater energy consumption, the body must first be prepared. American Institute of Obstetrics and Gynecology advises (ACOG, 2002) that pregnant women who have no diagnosed medical or obstetric complications can exercise under the supervision of a doctor. They also advise and that pregnant women who have not previously exercised and been physically active not to initiate new physical activities (7, 8, 9, 10). So that exercise would not lead to adverse effects it is advisable to exercise caution. If pregnant women exercise following the recommendations and guidelines at ACOG, the exercise can have a positive impact on the health of mothers and fetuses (7, 8, 9, 10).

In relation to the recommendations of regular exercise during pregnancy, it can be concluded that the pregnant women in this study meet the recommended minimum exercise on a daily and weekly basis (7, 8, 9, 10). If the results of this study are compared to a study which examined a longer period of time with a greater number of respondents, the information obtained shows that an equal number of pregnant women in both studies were physically active during pregnancy (6). Also, in both of the studies there is lower incidence of common maternity ailments in pregnant women who exercised as compared to sedentary pregnant women (6). On the basis of the link between the maternity ailments and the type of exercise, a significant fact is that exercise during pregnancy has an impact on weight gain and the occurrence of heartburn. This information contributes to the importance of having a customized exercise regime in early pregnancy.

In our country, it is usual that pregnant women prepare to give birth under the supervision of trained midwives. These organized psycho-physical trainings start late, at the beginning of the

third trimester in the 27th week of pregnancy. Until then, you can develop many pregnancy symptoms, including chronic diseases.

The question is, how many pregnant women have the will and available energy for the extra physical load that exercise brings? A women entering pregnancy with already acquired habits of exercise would be easier submitted to physical activity (7, 8, 9, 10). Presentation of the results of the studies and research of this specific population of patients, and further research of the quality of life of physically active pregnant women, could contribute to improve and perfect the model customized workout, as well as improve the quality of life during pregnancy.

The results of this pilot study show a lower incidence of common maternity problems in pregnant women who practiced during pregnancy. Correction of the questionnaire and the analysis of a larger number of subjects would produce significant data demonstrating the importance of exercise during pregnancy and the quality of life for pregnant women.

References

Dr Jelena R. Dotlić. Studija determinanti zdravstvenog statusa i kvaliteta života u trudnoći. Doktorska disertacija. Univerzitet u Beogradu, Medicinski fakultet, Beograd, 2012.

Cinthia Gondim Pereira Calou1, Ana Karina Bezerra Pinheiro, Régia Christina Moura Barbosa Castro, Mirna Fontenele de Oliveira, Priscila de Souza Aquino, Franz Janco Antezana. Health Related Quality of Life of Pregnant Women and Associated Factors: An Integrative Review. Health, 2014, 6, 2375-2387.

Montoya Arizabaleta, Orozco Buitrago, Aguilar de Plata, Mosquera Escudero, Ramirez Velez R. Aerobic exercise during pregnancy improves health-related quality of life: a randomised trial. J Physiother. 2010;56(4):253-8.

Rakhshani A, Maharana S, Raghuram N, Nagendra HR, Venkatram P. Effects of integrated yoga on quality of life and interpersonal relationship of pregnant women. Qual Life Res. 2010 Dec;19(10):1447-55.

Ana L Vallim, Maria J Osis, José G Cecatti, Érica P Baciuk, Carla Silveira and Sérgio R Cavalcante. Water exercises and quality of life during pregnancy. Vallim et al. Reproductive Health 2011, 8:14

Phyllis N. Horns, Lona P. Ratcliffe, Janice C. Leggett, Melvin S. Swanson. Pregnancy Outcomes Among Active and Sedentary Primipa ro us Women. J Obstet Gynecol Neonatal Nurs. 1996 Jan;25(1):49-54.

R. Artal, M. Tole, S. White. Guidelines of the American College of Obstetricians and Gynecologists for exercise during pregnancy and the postpartum period. Br J Sports Med. 2003 Feb; 37(1): 6–12.

No authors listed. SMA Statement The Benefits and Risks of Exercise During Pregnancy. J Sci Med Sport. 2002 Mar;5(1):11-9.

ACOG Committee Opinion. Weight Gain during pregnancy. Number 548. The American College of Obstetricians and Gynecologists. 2013; 121: 210-2.

ACOG Committee Opinion. Exercise during pregnancy and the Postpartum Period. Number 267. The American College of Obstetricians and Gynecologists. 2002;