MBNA Publishing House Constanta 2022

Proceedings of the International Scientific Conference SEA-CONF

SEA-CONF PAPER • OPEN ACCESS

Implementing exercise as an integral part of the daily routine in the prepartum period. Case Study

To cite this article: H. Croitoru and V. Ene-Voiculescu, Proceedings of the International Scientific Conference SEA-CONF 2022, pg. 97-101.

Available online at www.anmb.ro

ISSN: 2457-144X; ISSN-L: 2457-144X

doi: 10.21279/2457-144X-22-012

Implementing exercise as an integral part of the daily routine in the prepartum period. Case Study.

H. Croitoru[1] and V. Ene-Voiculescu[2]

[1] Faculty of Navigation and Naval Management, „Mircea cel Batran" Naval Academy, Constanta, Romania
[2] Faculty of Marine Engineering, „Mircea cel Batran" Naval Academy, Constanta, Romania
Virgil Ene-Voiculescu: virgil.ene@anmb.ro

Abstract. According to research conducted between 2010 and 2015, healthy pregnant women should exercise for at least 150 minutes a week (20-30 minutes a day) with moderate to intense intensity to combat or reduce the effects of high blood pressure, gestational diabetes, preeclampsia, urinary incontinence or obesity. We can say that in general, the effects of exercise during the prepartum period can be compared with the long-term medical and psychological benefits of exercising by any person who is not pregnant. However, the American College of Obstetrics and Gynecology has issued a number of recommendations limiting intense exercise during this period. gestation for women who had a sedentary lifestyle prior to pregnancy or those with high-risk pregnancies. The purpose of this article is to highlight the benefits of practicing exercise during the prepartum period while establishing guidelines to facilitate all specialists in physical education and sports a model of regularization of exercise in women during pregnancy. This periodization model follows the entire gestational course and has been developed in accordance with the latest studies, respecting all the recommendations developed by the most important forums worldwide in the field of obstetrics and gynecology as well as in the field of physical education and sports.

1. Introduction

Throughout history, there have been several methods of improving, first of all, the effects felt during birth and less of the changes that occurred from conception to birth. The physiological interval represented by the gestational period is 38 weeks and is divided into 3 trimesters starting from the moment of fertilization. The first trimester of pregnancy is between week 1 and week 14 of pregnancy, is represented by the process of pregnancy and presents the highest risks in terms of embryonic mortality.

The second trimester is between weeks 14 and 27 and represents the stage in which the fetus makes its presence felt through the onset of fetal movements. In terms of symptoms, this trimester is considered the easiest for the expectant mother.

The third trimester is between week 28 and the time of birth, which may vary depending on the course of the pregnancy. This trimester is characterized by additional discomfort during sleep, high blood pressure, significant weight gains and increased contractions of Braxton Hicks.

2. Exercise as an integral part of your daily routine

Physical exercise, expressed through a type of motor activity (sports activities, competition, leisure activities, body expression activities and recovery activities) carried out in an organized or independent way, aims at optimizing the bio motor potential of the individual, as well as cognitive, affective components. and social-relational, increasing the quality of life.

The gestational period represents a favorable moment to implement the practice of daily physical activities in order to improve the physical and hormonal transformations that take place during this period.

The data obtained so far show that moderate exercise during pregnancy is safe and can improve the progress of pregnancy by reducing the risk of overweight, diabetes and gestational hypertension, preeclampsia, macrosomia and postpartum weight retention.

A scientific report published in 2018 shows that physically active pregnant women (who managed to comply with the ACOG 2008 recommendations for exercising during pregnancy) had a lower weight gain than women in the same category who did not practice exercise during pregnancy and had a 23% lower probability of exceeding the recommendations of the Institute of Medicine on weight limits accepted as physiological.

3. Case Study

Below we present the case of a woman in the prepartum period at the first pregnancy who expressed her desire to take part in a prepartum physical training program.

At the beginning of the postpartum training program, a questionnaire was applied to the subject with the aim of accumulating the following information:

- an identification data;
- level of education;
- employment;
- medical history;
- pre-pregnancy fitness level;
- knowledge of the phenomenon of physical exercise in the pre- and postpartum period;
- the need to exercise the physical effort manifested by the subjects;
- expectations in terms of the effects of physical exercise on the health and psycho-emotional state of the subjects;
- support from family and loved ones for pre- and postpartum exercise.

Following the application of this initial questionnaire, we obtained the following data:

Subject at the age of 28, living in an urban area, graduating from high school with a material level declared very good. The subject does not suffer from diseases that affect his gestational evolution or chronic diseases.

She is not a drinker of alcohol or tobacco, has a balanced diet and a normal stress level. She did not exercise before the pregnancy, but she expressed her desire to start a prepartum physical training program, being guided by a specialist and encouraged by her family.

At the recommendation of the coordinator of the prepartum physical training program and in accordance with the availability of the subject, an exercise program adapted to each quarter of the evolution of the gestational period was established.

The main goals of the prepartum fitness program were to maintain muscle tone during pregnancy, to relieve the unpleasant symptoms caused by the bodily changes that a pregnant woman suffers during this period and a good control of body weight.

Thus, a model of periodization of prepartum physical exercise was developed in stages for all 3 trimesters of pregnancy, totaling 36 weeks.

Table 1. Periodization of prepartum physical exercise

Macrocycle						
The Mesocycle I- Anatomical adaptation		**The Mesocycle II**				**The Meso**
Microcycle Week 0-6	Microcycle Week 7-12 2 meeting/week	Microcycle Week 13-16 3 meeting/week	Microcycle Week 17-20 3 meeting/week	Microcycle Week 21-24 3 meeting/week	Microcycle Week 25-28 2 meeting/week	Microc Week 2 2 meeting/
Rest	-1 swimming -1 mobility	- upper train hypertrophy - resistance + mobility - lower train hypertrophy	- upper train hypertrophy - resistance + mobility - lower train hypertrophy	- upper train hypertrophy - resistance + mobility - lower train hypertrophy	- global training hypertrophy - mobility + resistance	- glob traini hypertr - mobil resista

Simultaneously with the elaboration of the physical training macrocycle that took place throughout a classification of physical exercises according to obstetric morpho-physiological criteria that can be perfo period and a classification of recommended and non-recommended work positions in gestational period.

Table 2. Classification of physical exercises allowed in the prepartum period according to obstetric mor

Criteria	Type of exercises	Examples
Anatomical	Depending of of each muscle group or body segment	Toning thr muscles of the arms, the back,
By intensity	Ex. low intensity physical	Selective influence of the muscul
	Ex. medium intensity physical	Ex. physical for toning differen
By the nature of the muscle contractions	Ex. isometric physics	Ex. physical for toning the parav
	Ex. isotonic physics	Ex. physical dynamic for loweri
	Ex. mixed physical	Ex. physical for pelvic
After the age of pregnancy	Trim.l I - learning	Nr. of repetitions for the
	Trim. II - consolidation	Nr. of repetitions for the
	Trim. III - treining	Nr. of repetitions for the
By goal	Ex. for general physical training	Ex. physical for improvning the body's ci
	Ex. physical for technical	Ex. physical for control and relaxation of
	Ex. physical for tactis	Ex. physical for respiratory
By type of exercises	Ex. with body weith	Knees, squats, and s
	Ex. with added weiths	Ex. with dumbbells or ap
By type of accessories	Ex. with additional elastic strength	Ex. with elastic ban

	Ex. with appliances	Press for pectoral me
	Ex. with support on various accessories	Fixed ladder, fitball, an

Table 3. Classification of recommended and non-recommended job positions during the ges

Starting position	**Recommended position**			**Unrecommended p**	
Stand	On both feet - far forward, backward, sideways - crossed right forward, left cossward - with the knees bent os semi-bent		On top - far forward, backward	On both feet - squatting close, far, twisted - fused forward, backward, sideways	On top - with bent kn - squatting wit without suppo -fandat
On your knees	Near - with close heels - with the heels apart	Distant - with close heels - with the heels apart	Sitting on his heel - with close heels - with the heels apart		On one knee - on other leg - free leg strech
Placed	Near/distant - stretched out	Squat - depărtat - încrucișat	On one thigh - stretched out - bent		Square - close - distant
Lying down	Dorsal - close - distant		Cost - close - distant		Facial - close - distant
Pendent				By hands - vertically - horizontally	- o
Support	Lying on your back - on the forearms			Lyving face down - on one hand - on both hand - on the forearms	

Throughout the physical training program, the subject was constantly monitored by the attending physician with his approval to continue practicing physical activity until the 34th week of pregnancy due to a favorable evolution of the gestational period which took place without complications both from the point of view of the fetus as well as the bodily integrity and effort capacity of the expectant mother.

4. Results obtained at the end of the prepatum preparation period

Following the application of a questionnaire at the end of the postpartum training program, we were able to highlight the following results:

- the subject was able to practice physical activities with the consent of the specialist until a very advanced stage of the gestational period (week 34) due to a favorable evolution of the pregnancy;
- the subject has not undergone significant changes from a physical point of view that would reduce his ability to perform physical exercises specific to the period in which he is;
- due to the physical activity carried out in conjunction with a balanced lifestyle, the subject presented a weight gain of only 14 kg at the end of the gestation period, given that the physiological contribution of pregnancy to total body weight is about 10 to 12 kilograms;
- the subject did not complain of joint or muscle pain apart from a discomfort in the lumbar area caused by the amplification of the lumbar lordosis in the last trimester of pregnancy;
- throughout the program, the subject was satisfied with the body's capacity for effort as well as the body's ability to recover after the effort;

5. Conclusions

-According to the latest studies in the field of sports science and the recommendations of specialized medical forums, we can conclude that the implementation of physical activities in the daily routine of women in gestation is safe and even recommended due to its psycho-emotional benefits. especially at the morpho-functional level, thus contributing to the improvement of the quality of life of pregnant women.

- Following the results highlighted by the case study presented, we can say that the implementation of physical activities in the prepartum period can improve the exercise capacity of women in the gestational period and can improve the physical changes that this category of people may feel.
- By implementing physical exercise in the daily routine we were able to maintain within the physiological limits the body weight throughout the gestational period, which favors an easier postnatal recovery and a return to fitness before pregnancy much faster.
- Hus we can highlight the fact that by implementing a prepartum physical training program we can positively influence the evolution of the gestational period, we can alleviate the discomfort created by the changes that occur in this delicate period and we can significantly contribute to improving the quality of life of pregnant women.

6. References

1. Dipietro, L., Evenson, K. R., Bloodgood, B., Sprow, K., Troiano, R. P., Piercy, K. L., … PowelL, K. E. (2019). Benefits of Physical Activity during Pregnancy and Postpartum. Medicine & Science in Sports & Exercise*, 51(6), 1292–1302.* doi:10.1249/mss.0000000000001941

2. Croitoru H., Teodorescu S., Ene-Voiculescu C., Effects of physical exercise on a multiparous patient in the prepartum period. case study, 2020 Revista Discobolul, vol. 59, pag. 121-130, DOI: https://doi.org/10.35189/dpeskj.2020.59.2.3

3. Adams, E. D., & Bianchi, A. L. (2008). *A Practical Approach to Labor Support. Journal of Obstetric, Gynecologic & Neonatal Nursing, 37(1), 106–115.* doi:10.1111/j.1552-6909.2007.002.

4. American College of Obstetricians and Gynecologists. Nutrition during pregnancy, available at: https://www.acog.org/Patients/FAQs/Nutrition-During-Pregnancy