Bulletin of the *Transilvania* University of Braşov
Series IX: Sciences of Human Kinetics • Vol. 12(61) No. 1 – 2019
https://doi.org/10.31926/but.shk.2019.12.61.12

ROLE AND IMPORTANCE OF PROPHYLACTIC PHYSIOTHERAPY DURING THE POSTNATAL PERIOD

Mihaela-Alina CRISTUŢĂ[1]

Abstract: *This paper aimed to emphasize the role played by prophylactic physiotherapy during the postnatal period, in order to re-educate the troubled functions and to heal the injuries suffered during pregnancy and at birth. The prophylactic physiotherapy intervention during the postpartum period can influence/improve the troubled functions and accelerate the healing of the injuries suffered during pregnancy and after birth.*

Key words: *prophylactic physiotherapy, postnatal period, physical activity.*

1. Introduction

The postpartum period, also called the postnatal period, is the stage when the woman returns to her morpho-physiological state before the pregnancy.

During this recovery period, the body goes from one adaptive state to another, the one before the pregnancy. This change is gradual up to the anatomical-functional recovery of the body, being helped by the beneficial influence of movement.

Right after birth, the mother's body begins to recover slowly, following the demands of pregnancy and birth. However, the normality to which the body returns is different than the one before the pregnancy. In order to protect the new life, the body is adapting through gradual modifications of shape and, most important, of function that can be felt especially after birth.

Postpartum physical therapy aims to aesthetically rebuild the body, especially the muscles that maintain a correct posture, rebuilding the perineum if it was injured, and the postnatal muscular-articular injuries (back muscles, abdomen muscles, etc.) [7].

The prophylactic physiotherapy of the new mother generally tries to re-educate the disturbed functions and hurry the healing of the injuries suffered during the pregnancy and birth [2].

Re-establishing the body alignment is necessary for the rehabilitation of vertebral disorders, of the hyperlordosis caused by pregnancy, of the dorsal

[1] "Vasile Alecsandri" University of Bacău, 157, Calea Mărăşeşti, 600115, Bacău, Romania

kyphosis compensating the lordosis or caused by an increase in breast size, by milking position, as well as by a flattening of the arch of the foot. Gradually, the body gets back to normal breathing, after the fundus has decompressed the diaphragm, the circulatory disorder go away and the hyperlaxity is reduced [4].

Getting into a prophylactic physiotherapy program during the postnatal period is essential in order to fight the negative effects on the mother, which can manifest as pain, discomfort and mechanical stress that could affect the baby.

2. Objectives

This research tried to emphasize the role and importance of prophylactic physiotherapy during the postnatal period.

In order to verify the hypothesis stating that through a prophylactic physiotherapy intervention during the postpartum period, one can influence/improve the body functions injured during the pregnancy and birth, a series of objectives and tasks were established: the study of the professional literature and accumulation of new information in order to establish how much this theme was researched; the selection of the group of subjects; the organization of the therapeutic process in a logical succession, based on specific principles; the development of the prophylactic physiotherapy sessions envisaging the improvement of the chosen intervention; recording the various parameters in order to observe the progress of the subjects; the popularization of the results in order to highlight the effects of prophylactic physiotherapy.

3. Materials and Methods

The research activity was conducted between December 2017 and May 2018, and the actual research was conducted over 4 months (January – April 2018), at the ”Autentic Fit” club, Bacău.

The research comprised 6 subjects, aged between 25 and 34, 3 subjects constituting the experimental group and 3, the control group.

The *research methods* were: the study of the professional literature, the inquiry method, the observation method, the measurement and assessment method, the statistical-mathematical method, and the graphical representation method [1].

The measurement makes possible the characterization of values in quantifiable terms, allowing the assessment, summarization, and analysis of the recorded data sets, to interpret and compare them. They were used to get relevant data regarding the state of the subjects, aiming to establish the degree of injury, or the progress over the course and at the end of the intervention program.

For a more concrete assessment, the following evaluation and measurement methods were used: The Body Mass Index is a statistical indicator of a person's mass in relation to her height. It presents the ratio between the weight in kilograms (W) and height in centimeters (H) to the square. This index establishes the correlation between the subcutaneous adipose tissue and the total body fat, body weight, height, abdominal perimeter, heart rate, respiratory rate, blood pressure [2, 3].

The prophylactic physiotherapy programs were conducted starting with the postpartum period, 2 sessions per week, of 45-50 minutes each.

The selection of the physical therapy means and methods took into account the individual particularities of each subject, the stage of the postpartum period, and the contraindications.

The **prophylactic physiotherapy objectives** were to:

- ✓ recover after the modifications of the body happened during pregnancy and birth;
- ✓ stimulate the involution of the modifications caused by pregnancy and birth;
- ✓ prevent certain internal disorders (congestions or abdominal stasis) and prophylaxis of thrombosis;
- ✓ remove the stasis fluids and toxins in the new mother's body;
- ✓ stimulate the lactate secretion by increasing the blood flow in the mammary glands;
- ✓ activate the circulation in the upper area of the thorax and mammary glands;
- ✓ improve the postural tone;
- ✓ prevent and/or fight the kyphotic and scoliotic postures;
- ✓ train the abdominal breathing by amplifying the diaphragm and abdominal muscle motions;
- ✓ strengthen the pelvic-perineal muscles;
- ✓ rebuild the abdominal muscle strength;
- ✓ prevent the urinary bladder ptosis;
- ✓ ensure the physical support necessary for the satisfaction of all maternal obligations.

The prophylactic physiotherapy intervention consisted in massaging of the legs and abdomen; free active exercises for the head, core, arms and legs; voluntary exercises for the perineal and bladder control of the micturition; isometric contraction of the calf muscles; exercises to train the thoracic and abdominal breathing; exercises to strengthen the arm and leg muscles; exercises to strengthen the abdominal, buttocks and pelvic floor muscles.

The methodical indications regarding the development of prophylactic physiotherapy intervention envisaged that the program would follow the aimed objectives and be changed after 3-4 days if the new mother feels good and can perform the previous exercises without problems; increase gradually the effort intensity, the number of repetitions, the duration; repetition of exercises from previous sessions, to which new ones are added; physical effort should not cause discomfort or pain; each session should end with the massage of the legs and with a mental and muscular relaxation; the first contact of the therapist with the patient should inspire a feeling of trust in the therapy, the therapist explaining the role played by physical exercise on the fast recovery of the body, as well as the importance of an active participation to increase effectiveness.

In regards to the **early postnatal gymnastics**, the exercises will begin the second day, performing at the clinic the retroversion of the pelvis, exercises for the perineum, for the legs, for diaphragm breathing, circulatory massage of the legs.

After they leave the clinic, they perform retroversions and abdominal contractions; thoracic and abdominal breathing exercises; perineum training exercises (Kegel exercises); circulatory exercises for the legs; breathing exercises [4, 5, 6].

As a **recommendation**, the exercises are repeated 3 times a day, slowly, gradually, performed with the physical therapist's hand on the patient's abdomen.

4. Results and Discussions

Based on the initial and final assessments, the results were as follows:

In regard to the **body weight**, the average difference between its values before and 8 weeks after birth (late postpartum) is of 4.5 kg (R.A. 59kg./63.5 kg, with a difference of 4.5 kg.; M.M. 57kg./59.5 kg, with a difference of 2.5 kg.; B.R. 52kg./58.5 kg, with a difference of 6.5 kg.). Before the pregnancy, their average body weight was 56kg, right after birth it was 66.66 kg, and 8 weeks after birth, 60.5kg.

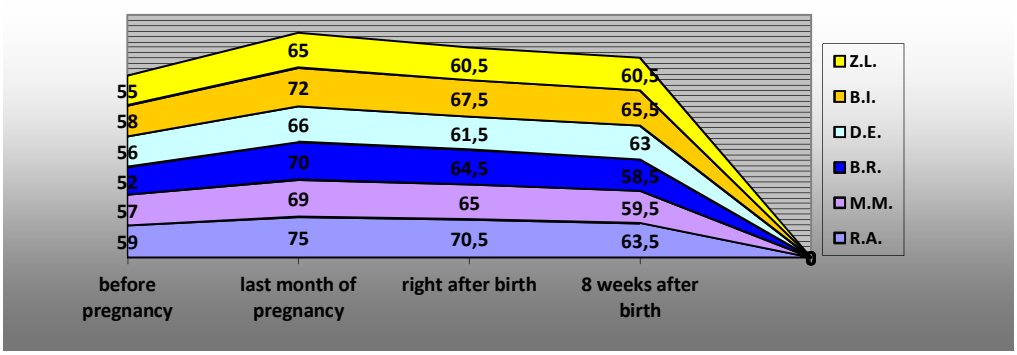

Fig. 1. *Graphical representation of body weight curve*

Figure 1 highlights the progress curve of the recorded body weight.

The **Body Mass Index** values have increased in all three subjects with the natural gain in weight. Right after birth (early postpartum), the subjects R.A. and B.R. have recorded values within the normal limits of the BMI (24.39 and 23.71, respectively), the subject M.M. recording a value of 26.10 (overweightness).

Eight weeks after birth (late postpartum), but also as a result of the weekly prophylactic physiotherapy programs, the BMI values have improved, in the sense that they decreased within normal limits (normal weight), as follows: the average value right before pregnancy - 20.80; right after pregnancy - 24.73, and 8 weeks after birth - 22.45, with a difference of 1.65.

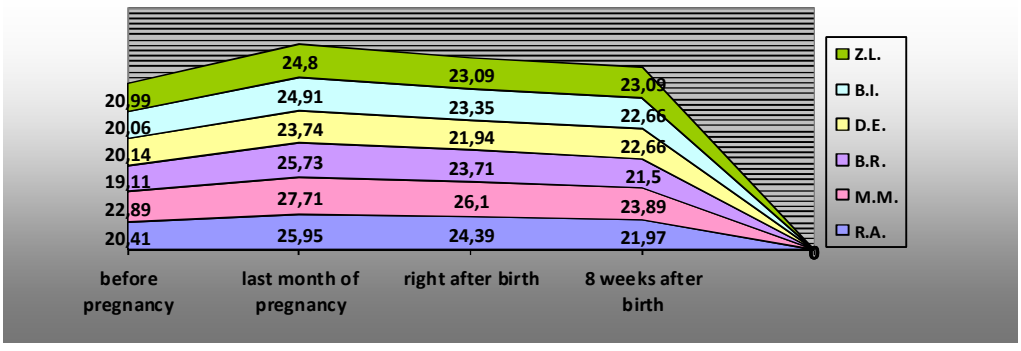

Fig. 2. *Graphical representation of the Body Mass Index curve*

Figure 2 highlights the progress curve of the recorded Body Mass Index.

In the case of **height** and **abdominal perimeter**, the average difference between the values before pregnancy and 8 weeks after birth was of 2.33 cm (height) and 7 cm (abdominal perimeter), positive values being recorded.

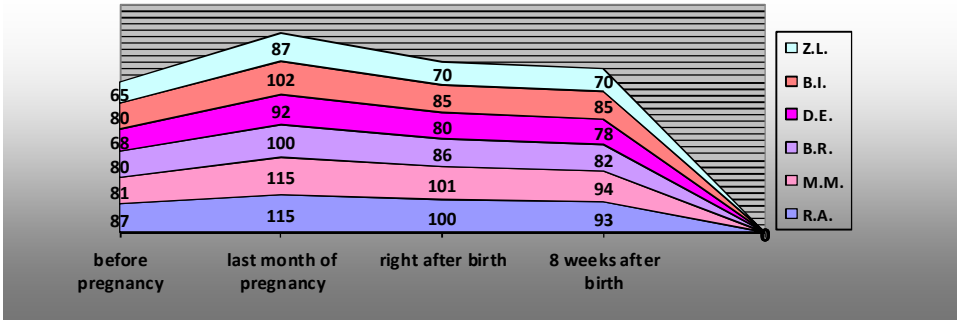

Fig. 3. *Graphical representation of the abdominal perimeter curve*

Figure 3 highlights the progress curve of the recorded abdominal perimeter curve.

The values for **blood pressure, heart rate** and **respiratory rate** highlight a good recovery during the postpartum period at approximately the same values recorded before the pregnancy.

The subjects in the control group have recorded relatively good values, as follows: the **Body Mass Index** values have increased in all three subjects, once they have gained weight. Right after birth (early postpartum) they recorded values within normal BMI limits - 21.94 the minimum value and 23.35 the maximum value, with an average of 22.79, higher than the average before pregnancy, of 20.39. Eight weeks after birth (late postpartum), the average value of 22.80 represents a slight increase, by 2.41 - the BMI values being again within normal limits (normal weight).

In regard to the **body weight**, the average difference between its values before and 8 weeks after birth (late postpartum) is of 6.66 kg (D.E. 56kg./63kg, with a difference of 7kg.; B.I. 58kg./65.5kg, with a difference of 7.5kg.; Z.L. 55kg./60.5kg, with a difference of 4.5kg.). Before the pregnancy, their average body weight was 56.33kg, right after birth it was 63.16 kg, and 8 weeks after birth, 63kg.

In the case of **height** and **abdominal perimeter**, the average difference between the values before pregnancy and 8 weeks after birth was of 6.66cm (height) and 6.66 cm (abdominal perimeter), positive values being recorded.

The values for **blood pressure, heart rate** and **respiratory rate** highlight a good recovery during the postpartum period at approximately the same values recorded before the pregnancy.

The average difference value for the **Body Mass Index**, recorded by the experimental group was of 1.65, while the control group's was of 2.41. The average difference value for the **body weight**, recorded by the experimental group was of 4.5 kg, while the control group's was of 7.33 kg, which shows a positive influence of the controlled and organized physical activity.

5. Conclusions

After analysing the results, it can be said that the research hypothesis was confirmed, thus the prophylactic physiotherapy intervention during the postpartum period can influence/improve the body functions injured during the pregnancy and birth.

The values recorded by the subjects of the experimental group and the ones from the control group before pregnancy and 8 weeks after birth (late postpartum) show that the experimental subjects have returned faster to their state before their pregnancy. The subjects have stated that as a result of the constant and organized prophylactic physiotherapy, they have felt comfortable mentally and physically, and they have adopted a more correct body posture.

Acknowledgements

The author thanks the management and staff of "Autentic Fit" and the participants for supporting this research.

References

1. Ababei, R.: *Metodologia cercetărilor activităților corporale* (*Methodology of Body Activity Research*). Bacău, Editura Alma Mater, 2009.
2. Balint, T.: *Kinetoterapia, o alternativă în combaterea obezității (Physical therapy, an alternative to combating obesity).* Bacău, Editura EduSoft, 2006.
3. Cordun, M.: *Kinantropometrie* București, Editura CD Press, 2009.
4. Ochiană, G.: *Kinetoprofilaxie – Kinetoterapie în obstretică – ginecologie (Kinetoprophylaxis – Physical therapy in obstetric gynecologys).* Iași, Editura Pim, 2006.
5. Mârza, D.: *Kinetoprofilaxie primară (Primary kinetoprophylaxis).* Iași, Editura Tehnopress, 2005.
6. Selby, A.: *Gimnastica Pilates pentru gravide (Pilates gymnastics for pregnant women).* București, Editura All, 2003.
7. http://www.saptamanamedicala.ro/articole/Kinetoterapia-postpartumpostnatala.html. Accessed on 20.01.2018