

Evaluation of the Effectiveness of the Developed Version of Physical Rehabilitation of Women 30-40 Years After Childbirth

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Abstract

The course of ontogeny is often accompanied by the development of various dysfunctions and pathological processes capable of significantly and persistently violating the activities of individual organs, their systems and the organism as a whole. Previous studies have shown the possibility of rapid onset of severe pathology with a functionally unfavorable course of physiological processes. Given this, modern medicine pays great attention not only to treatment, but also to rehabilitation after various overloads and diseases. Its efforts are aimed at developing effective options for recovery and improving existing ones with the goal of creating a system of strengthening and preserving the health of the bulk of the population. Inclusion of gymnastic exercises that strengthen peripheral blood circulation and gas exchange in the regime of the day of the puerperum, on the background of massage significantly improves the general condition of the woman, accelerates the processes of the induction of the genital apparatus, intensifies metabolic processes, raises appetite and improves sleep. The use of physical exercises in the postpartum period helps very effectively to solve a number of important tasks for restoring the functional state of the puerperium and ensuring its adaptation to the forthcoming physical exertion after discharge from the maternity home.

The approved rehabilitation complex: 2 courses of general classical massage for 10 procedures with a break of 14 days with the performance between rhythmic gymnastics and massage sessions proved to be very effective. The conducted research has proved that its use in puerperas of 30-40 years contributes to a faster and full recovery of their functional parameters, contributing to the early normalization of their psychological status and functional characteristics of their body.

Introduction

The course of ontogeny is often accompanied by the development of various dysfunctions [1,2,3] and pathological processes [4,5,6] that can significantly and persistently disrupt the activity of individual organs [7,8], their systems [9,10] and the body as a whole [11,12,13]. Previous studies have shown the possibility of rapid onset of severe pathology [14,15] with a functionally unfavourable course of physiological processes [16,17,18]. Given this, modern medicine pays great attention not only to treatment [19,20], but also to rehabilitation [21,22] after various overloads and diseases [23,24,25]. Its efforts are aimed at developing effective options for recovery [26,27] and improving existing [28,29,30] in order to create a system of strengthening [31,32] and maintaining the health of the bulk of the population [33,34]. However, in such studies, great attention is paid to women's health [35-40], especially in the context of pregnancy and childbirth. This is due to the fact that pregnancy and subsequent births do not always have a positive effect on the health of women [41]. For effective recovery of the maternity in the postpartum period, it is necessary to actively apply the principles of medical rehabilitation, taking into account the characteristics of the body of women in the postpartum period, depending on their ability to adapt to physical stresses [42].

Highly efficient recovery tools for many of the violations are physical-fitness training, opportunities which allow us to solve the issues of strengthening the cardiovascular and respiratory systems, activating metabolic processes in tissues, training of the abdominal muscles to achieve balance in the Central nervous system, normalization of the bowel and pelvic organs [43,44,45].

The results of the analysis of available literature and the practice of the implementation of health procedures show that at present there is a lack of perfection in methods of in-line rehabilitation of women. In the practice of working with puerperas there is a dissonance between the recognition of the great health-improving possibilities of physical culture and health effects in the postpartum period and their inadequate adaptation for the practice of postnatal rehabilitation of women 30-40 years of age. In this connection, the goal is to develop a physical rehabilitation option for puerperas aged 30 to 40 years and evaluate its effectiveness.

Materials and Methods

The study was approved by the local ethics committee of the Russian State Social University on September 15, 2016 (protocol No. 9) and was conducted on the basis of this university.

The study involved 46 women aged 30-40 years who gave birth to a live child 6-8 weeks ago. All women under observation were comparable in terms of anthropometric indicators, physical condition, ultrasound findings of pelvic organs, hematological parameters and the results of the psychological test of Lusher. The women taken in the study were randomly divided into 2 groups (experimental and control) of 23 people each.

All taken under supervision of the puerperas received a physical rehabilitation of comparable duration - 34 days. In the control group, physical rehabilitation was represented by daily physical therapy sessions for 60 minutes 3 times a week. At the beginning of the study, the duration of the sessions was 30 minutes, gradually increasing to 60 minutes. The experimental group received 2 courses of general classical massage for 10 procedures with a break of 14 days. Between sessions of massage rhythmic gymnastics was conducted. At the end of the course, it was 30 minutes, gradually increasing to 60 minutes.

To assess the baseline condition of the women surveyed and to determine the effectiveness of the post-natal rehabilitation activities, a number of methods were applied in the control and experimental groups.

Assessment of the psychological state was conducted with the help of the full version of the color test of Lusher - the projective methodology of personality research [46].

Ultrasonic examination of the pelvic organs of women in the postpartum period was carried out. Laboratory examinations of women included the evaluation of the number of erythrocytes, hemoglobin, leukocytes, platelets and erythrocyte sedimentation rate in their blood [47].

Statistical processing of the obtained data was carried out with the help of the t-test of Student.

Research Results and Discussion

Evaluation of the overall psychological state of women in the outcome revealed that the most frequent group in the experimental group was the ambivalent and anxious state. Emotionally-detached state was registered somewhat less often. In the control group, the anxiety condition was also recorded most often in the outcome. By frequency, he was somewhat inferior to the ambivalent state. Emotionally-detached state was registered somewhat less often (Table 1).

Table 1: Considered indicators of puerperas in the course of rehabilitation

Indicators	Traditional rehabilitation, n=23, M±m		Author's rehabilitation, n=23, M±m	
	initially	at the end of observation	initially	at the end of observation
General psychological state				
Adequate, %	0	35.5±0.24	0	39.1±0.42
Disturbing, %	47.8±0.26	30.1±0.19	34.8±0.21	21.7±0.38 p<0.01
Ambivalent, %	34.8±0.33	30.1±0.29	39.1±0.30	30.5±0.24
Emotionally-detached, %	17.4±0.17	4.3±0.07	26.1±0.27	8.7±0.05 p<0.01
Laboratory test results				
Number of red blood cells, x 10 ¹² /l	3.2±0.19	3.7±0.28	3.4±0.16	4.3±0.20 p<0.01
Concentration of hemoglobin, g/l	105.0±0.38	115.0±0.43	98.0±0.42	128.0±0.16 p<0.05
Number of leukocytes, x 10 ⁹ /l	13.5±0.07	8.7±0.34	12.9±0.09	7.2±0.12 p<0.05
Number of platelets, x 10 ⁹ /l	164.0±0.24	250.0±0.18	152.0±0.33	280.0±0.20 p<0.05
Erythrocyte sedimentation rate, mm/hr	17.0±0.28	12.0±0.17	18.0±0.32	9.0±0.19 p<0.05
Results of ultrasound examination				
Length of uterus, cm	18.7±0.25	17.6±0.18	19.8±0.23	17.1±0.14 p<0.05
Diameter of the uterus, cm	13.2±0.20	12.6±0.34	13.8±0.16	11.7±0.22 p<0.05
Cavity of the uterus, mm	13.6±0.42	12.5±0.29	12.3±0.33	11.0±0.35 p<0.05
Myometrium, mm	38.0±0.45	36.0±0.40	41.0±0.56	33.5±0.32 p<0.05
Endometrium, mm	13.0±0.23	15.1±0.28	15.0±0.14	17.8±0.25 p<0.05
Cervix of the uterus, mm	8.6±0.16	8.2±0.20	8.4±0.21	7.0±0.18 p<0.05

p - reliability of differences in the results of rehabilitation in both observation groups.

In the experimental and control groups, anemia was observed in the experimental and control groups (the number of erythrocytes was $3.4 \pm 0.16 \times 10^{12}/l$ in the experimental group and $3.2 \pm 0.19 \times 10^{12}/l$ in the control group). Against the background of the blood loss in labor, they also initially had a decrease in the number of platelets. In addition, an increase in the number of leukocytes to $12.9 \pm 0.09 \times 10^9/l$ in the experimental group and up to $13.5 \pm 0.07 \times 10^9/l$ in the control group was observed in the examined women with acceleration of the erythrocyte sedimentation rate in both observation groups.

The detected increase in the number of leukocytes and the acceleration of the rate of erythrocyte sedimentation should be regarded as the reaction of the organism to the blood loss that occurred [48,49,50]. In addition, the increase in the number of white blood cells in women is caused by the activation of the protective mechanisms of their body, aimed at curbing the infection from the uterine cavity and inhibiting inflammation in its walls [51-54].

According to the results of ultrasound examination, when taking in the study in the experimental and control groups, a similar condition of the uterus is observed, related to the recent delivery and the physiological course of the postpartum period.

After completion of rehabilitation in both groups of puerperas, similar indicators were evaluated. In the group of women who received authorial physical rehabilitation, the most often recorded adequate psychological state. The occurrence of the ambivalent state was lower. Anxious and emotionally-detached states in this group were rare. The obtained results demonstrated the advantage of using author's rehabilitation in comparison with the use of the traditional rehabilitation scheme (Table 1).

When comparing the dynamics of hematological indicators against the background of rehabilitation, the advantages of the author's scheme are noted (Table 1). Thus, in women against the background of this scheme of rehabilitation, there was a more pronounced suppression of manifestations of anemia. At the end of the observation, the number of erythrocytes in the blood of this group of puerperas was higher than in the group receiving traditional physical rehabilitation and reached $4.3 \pm 0.20 \times 10^{12}/l$ ($p < 0.01$). The concentration of hemoglobin in women of this group also reached a higher level and amounted to 128.0 ± 0.16 g/l by the end of the observation. This was accompanied in this group of observations by a more pronounced increase in the number of platelets and a deeper decrease in the number of leukocytes to $7.2 \pm 0.12 \times 10^9/l$ ($p < 0.05$). With a somewhat greater slowdown in the rate of erythrocyte sedimentation, it reached the level of normal.

When comparing the results of rehabilitation in the observation groups, differences in the achieved level of ultrasound parameters of the uterus were found. More physiological were her indicators in the group who received rehabilitation by the author's scheme. Thus, in this group of puerperas, the length of the uterus decreased by 15.8%, the diameter of the uterus decreased by 17.9%, the uterine cavity decreased by 11.8%, the thickness of the myometrium decreased by 22.4%, the thickness of the endometrium increased by 18.7% reduction of the cervix by 20.0%.

Conclusion

Inclusion of gymnastic exercises that strengthen peripheral blood circulation and gas exchange in the regime of the day of the mothers' mother, significantly improves the general condition of the woman [55], accelerates the processes of involution of the genital apparatus, intensifies metabolic processes, increases appetite and improves sleep [56]. The use of physical exercises in the postpartum period helps very effectively to solve a number of important tasks for restoring the functional state of the puerperium and ensuring its adaptation to the forthcoming physical exertion after discharge from the maternity home. The approved rehabilitation complex: 2 courses of general classical massage for 10 procedures with a break of 14 days with the performance between rhythmic gymnastics and massage sessions proved to be very effective. The conducted research has proved that its use in puerperas of 30-40 years contributes to a faster and full recovery of their functional parameters, contributing to the early normalization of their psychological status and functional characteristics of their body.

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