

WELLNESS INFLUENCES ON THE FOETUS EMOTIONAL AND PHYSICAL DEVELOPMENT DURING PREGNANCY

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INTRODUCTION

Leading scientists have found that information coming from the external world undoubtedly influences the formation of the future human being. Through the biochemical reactions of the mother's body, reacting in a specific way to the external world, the fetus "learns" to experience certain feelings and undergo different states. Research shows that everything that worries the mother also concerns the child, almost simultaneously. When the mother's heart rate increases due to fear, just fractions of a second later, the fetus's heart begins to beat twice as fast as usual. Physical activity at all levels, as well as tourism are a major part of social activities in the field of the health care (Dimitrova, 2016). Sport is a social and economic phenomenon, one of the largest and most important social activities that unites people and promotes their development (Polimenov, 20114; Markov, 2019; Dimitrova, 2020). It accompanies man in his quest for physical and spiritual beauty and health. It is a means of expressing personal and national identity (Polimenov, 2019; Tomova et al., 2019). In today's fast-paced and tense daily life, stress and accumulated mental fatigue create preconditions for more and more working women (Ilinova et al., 2019; Dimitrova et al., 2021). including pregnant women, to feel the need for recreational activities (Dimitrova, 2023; Markov et al., 2019). The harmonious development of normal pregnancy is a dreamed event for all categories of women (Nesheva, 2019; Dimitrova, 2020). This is the wish of each family and important part of our everyday life style (Ignatova, 2021). The healthy children 'development isn't come without exercises for developing their motor qualities (Dimitrova, 2017). It is possible to see real results after minimum 1 year of applying specific influences and methods (Ignatova, 2018a; Dimitrova, 2019c; Dimitrova, 2019d). In all case is useful to build Wellness culture in school (Dimitrova, 2020a; Dimitrova, 2019b). The results of original scientific research suggest that there are potential benefits in terms of control of maternal weight through fitness exercises, leading to significant long-term benefits for its overall health and that of the foetus (Brown, 2012). Wellness and SPA culture is focused entirely on health prevention (Dimitrova, 2016, Chipeva, 2019) through a rational, conscious, purposeful, progressive and lasting change in people's daily lives and behavior (including pregnant women). "One of the important factors in maintaining good health for prevention... is physical activity", and "... the well-known effects of aerobics are its potential to reduce excess weight, which allows the pregnant woman to stay within normal limits (Dimitrova, 2019). According Chipeva, 2018a "...Having fun and entertainment through aerobic program... accompanied by music have a significant emotional

impact...". As well we can cite "...the effect of aerobic dance or running on improving functional status..." (Dimitrova et al., 2021). Some elements of exercise and fitness aerobics from the gymnastics disciplines are also suitable for pregnant women, which comply with the dosage and the physiological state of pregnancy. Many authors recommend them for pregnant women (Bala, 2012; Battle et al., 2010; Brown, 2012; Krivonogova et al., 2010; Yeo, 2019). In order to encourage the promotion of useful programs for pregnant women and increase their efficiency for flexible individual and group adequate implementation are necessary in-depth knowledge and awareness of interdisciplinary team.

METHODS

The preliminary data for establishment of the information system are processed by the questionnaire method in a pilot study on 100 pregnant women. Standardized questionnaire with alternative answers was created with the instruments of the Google Drive. The psychometric study was applied to identify attitudes and practical participation of women respondents in Wellness motor exercises and sports during pregnancy and their activity in leisure time.

During the experimental study also done in terms of motor activity, but for pregnant women included in the Wellness Program for normal pregnancy (<https://www.facebook.com/GymFitMama/>). The results of 100 pregnant women are processed as prevailing number registered pregnant women are in the second semester (from February to June 2022). Each of the participants fills in personal informational paperboard with all necessary approvals. The pregnant women apply recommendations, signed by their private obstetrician - gynecologist with the seal of the Medical center and a written statement - informed consent applicable to tests and they accept the terms. Research is part of the mandatory functional control and control over their physical status during the training session. Adapted Wellness motor activities for normal pregnancy is conducted 2 times a week on a research under the Centre of excellence Heritage BG.

RESULTS

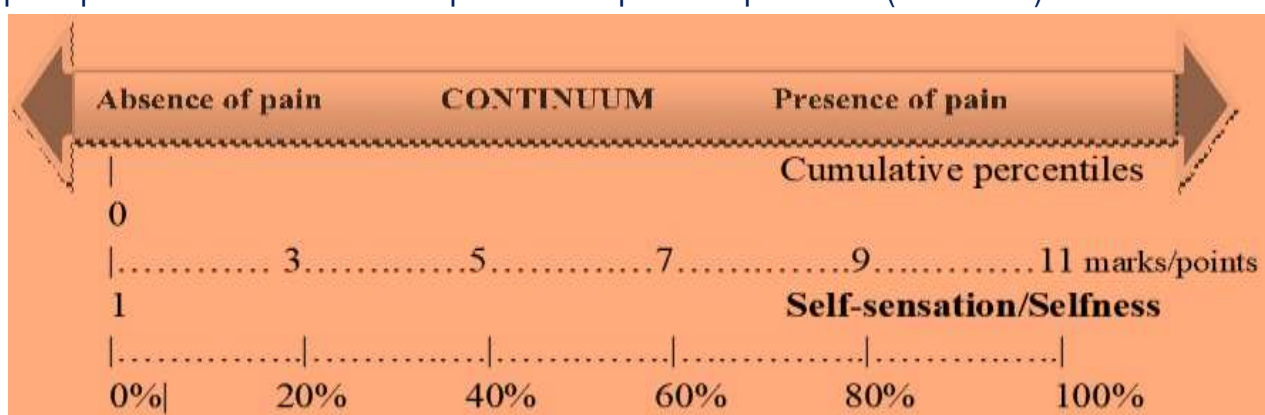
During pregnancy, a woman is the emotional and spiritual teacher of her child. Pregnancy is the most crucial period for shaping the future being, the time for its formation as a personality, even character. During pregnancy, a woman is the spiritual teacher of her child, and her womb is its first world, the gateway to earthly life, where it begins its adaptation to the specific vibrations of the Earth. The mother not only shapes the qualities of the future physical body but also further refines the information provided by the father's seed. She can enhance or diminish certain characteristics. Everything depends on the thoughts and feelings that pass through her because everything leaves its energetic imprint on her body and on the fetus in her womb. Modern research on the prenatal influence of the mother on the fetus. The period of intrauterine development is part of the unconscious, which, although not remembered and not integrated into self-awareness, has its significance in the ontogenesis of personality. This is the period during which millions of cells of the human body, with all its organs and systems,

and the complexity of higher nervous activity, are formed from a single cell - the egg cell plus the chromosomal information provided by the father's sperm. Each embryo repeats phylogenesis - the history of life from the appearance of the first single-celled organism to the complex human organism. And this process of construction takes place inside the mother's body without the need for conscious participation on her part. Regardless of whether she is aware of this process or not, through her interaction with the world, the fetus inside the womb builds itself, incorporating information received from the outside. Thus, the process of the so-called prenatal education occurs. Today, it is known that the development of the organism depends not only on genetic (internal) information but also on external information from the environment, passing through the mother's body and her subjective reframing of objective reality. Genes provide the blueprint by which the organism is formed, but whether something will be included or excluded from the program also depends on the signals received from the outside. The information that penetrates the womb provides important guidelines, and according to it, the fetus builds itself from within. Whether some genetically transmitted diseases will develop depends on the prenatal environment as well. It is known that when the body is subjected to stress, for example, it can activate changes in DNA and create new genes in its effort to respond to external challenges. Today, science has evidence that inadequate behavior of the mother during pregnancy, experienced stress, and increased anxiety are common causes of various pathological conditions in the child - both psychological and somatic.

During the prenatal period, the child shares a common life with the mother. Thus, stress hormones such as catecholamines, for example, penetrate the placental barrier and enter the fetus. The same applies to endorphins released during positive emotions. The mother and the child form a common neurohormonal organism that equally suffers from the adverse effects of the external environment, which is recorded in long-term memory, influencing the child's later life. Positive maternal emotions contribute to enhanced fetal growth and the development of sensory perception in the fetus.

Stress leads to low birth weight, an increased mortality rate, respiratory infections, asthma, and weak cognitive development in the fetus. Emotional stress correlates with premature birth, childhood psychopathology, cases of schizophrenia, school problems, susceptibility to drug addiction, legal offenses, and suicidal actions. Fetal trauma may manifest in the affective sphere of the adult. The emotional stress on the mother can cause biochemical imbalance in the fetus, hyperactivation of the adrenal-cortical system with subsequent increase in adrenocorticotrophic hormone, cortisol, catecholamines, and glucagon. This, in turn, is perceived by the fetus's DNA receptors. In this way, the hormonal imbalance in the mother can induce emotional dysfunction in the fetus. Scientifically validated conclusions have been drawn that the dominant emotional state of the woman during pregnancy determines the child's predisposition to the corresponding emotional response. In the first stage of the study, 40 mothers are observed and evaluated using an anxiety scale. In the second stage, the born children are tracked at three stages – after birth, at three, and six months. Scales assessing psychomotor development, muscle tone, indicators of emotional state, and dominant emotions of the children are used and compared with those of the mothers during pregnancy. It turns

out that both the content and character of the mother's emotional state, such as fear and aggression, are transmitted to the child. It is established that the fourth, fifth, and sixth months of pregnancy have the greatest impact on the formation of the child's emotional sphere when the brain structures that play a crucial role in emotion formation are most actively developing and differentiating. In the main group of anxious mothers, children exhibit emotional instability leading to disruptions in the cognitive sphere. This includes frequent mood swings, frequent crying, prevalence of negative emotional states, difficulty falling asleep, and easy arousal. And if significant differences were not observed in the first month, in the third month, 27.5 percent of emotionally unstable children were identified in the first group, and by the sixth month, it increased to 33 percent. In the other group, there were no such children at all. The self-report rating scale in score and percentages looks graphically as follows superimposed on the continuum of presence of pain and pain relief (Scheme 1):



Scheme 1. Continuum for the presence of pain and pain relief

We have shown that after practicing the Wellness Methodology of a gymnastics program in a indoor gym (GG), 31% of the women reported back a pain relief, 40% self-perceived pain of - 5 points; 25% reported 3 points pain; and 4% only tension in the back and lumbar zone or reached insignificant pain. We found that the Wellness Methodology of aquatic exercise program is also a desirable and sought after health prevention practice for pregnant women.

The effectiveness and benefits of practicing it are associated with rapid relief and elimination of pain sensation in the sacroiliac region. We found that after practicing the Wellness Methodology of Water Gymnastics (WG) program, 14% of women scored - 5 points, 46% self-reported around to 1 point soo reached a low pain threshold or feel only tension, 30% reported 3-points pain relief and 10% had no back and lumbar back pain.

Psychometric measurement found significant social improvements in the pregnant women's quality of life after implementing the proprietary Wellness Program methodologies in a gym and aquatic environment. According Wadsworth (2017) prenatal care offers a unique opportunity to promote the adoption of healthy behaviors. Although recommendations are currently accepted for pregnant women to engage in moderate exercise, many women may not receive this information from their health care providers. All pregnant women organised combine work with motivated

commitment and participation in the exercises for pregnant women in the National Sports Academy, where 16 of them have secondary education, 2 have secondary vocational education and 82 have higher education. Made Recreational motor activities helped to form conditionally 12 groups' pregnant women during the period 2021 to 2022. the respondents received information about the program from the site - www.nsa-nesheva.com (44%), others learned about it from friends (41%). The rest of the participants - from advertisements and a pregnant participated in the program twice - the first and second pregnancy. The anamnesis data show that out of 100 women, three are with three pregnancies, 22 have two and the remaining 75 have one child. The percentage among physically active (78%, 2% of this percentage are highly skilled athletes), and inactive (22%) before pregnancy, motivated and involved in gymnastics program for pregnant shows predominance of the former. The physical active women before pregnancy have practiced some form or elements of different sports (swimming, tennis, athletics, gymnastics, tae - bo, fitness, etc.) and exercise. 87 of Participants exert different professions (prosecutors, lawyers, architects, accountants, economists, engineers, designers, a doctor, nurse and other professions) and 13 pregnant women are undergraduates.

Physio metric characteristics

Table 1 presents the mean and standard deviation (Mean \pm SD) of indicators of the physio-metric characteristics of the studied pregnant women (age – A; height – H; body mass immediately after establishment of the pregnancy – W_I; BMI immediately after establishment of the pregnancy; body mass in the program inclusion – W_M).

Table 1. Descriptive statistics (Mean \pm SD) of physio-metrics parameters of the pregnant women

Parameters	N	Mean \pm SD
(A)	100	28,98 \pm 3,94
(H) [cm]	100	167,14 \pm 6,56
(W_I) [kg]	100	57,05 \pm 8,57
(BMI) [kg/cm ²]	100	20,38 \pm 2,49
(W_M) [kg]	100	62,33 \pm 9,28

One of the most important questions reflected in Figure 2 is "What motivates women to use sports services during their pregnancy?" The results can be used in the preparation of advertising or educational campaigns aimed at promoting and attracting more pregnant women to activities with sports and the consumption of specialized sports services for pregnant women. And to this question the respondents had the opportunity to indicate up to 3 answers. Impressive are several very strong motives compared to the others, which we can define as motives of paramount importance: better preparation for childbirth (62.5% of cases), for prevention against disease / health (57, 5% of cases) to relieve stress (57.5% of cases), for inspiration and pleasure (37.5% of cases) and weight management (25%). What these main motives have in common, according to the respondents, is

that each of them is directly or indirectly related to a health or psychological factor. From this we can conclude that a pregnant woman is responsible for her health, mental and emotional balance and equilibrium. Considering the rest of the results obtained, which can be conditionally defined as secondary motives, we come to the following conclusions. In the first place in 15% of cases is the creation of new contacts. This is due to the fact that after the birth of a child, a woman is more or less forced to change her social circle. That is why it is important to make connections and contacts with other pregnant women. In 12.5% of the cases the motive is the satisfactory price of the offered services. The low percentage probably indicates that a large part of the respondents are willing to spend a significant amount of their budget if it would contribute to their health and well-being. Qualified staff and good attitude is a motive for using sports services for pregnant women in 10% of cases, the desire to learn something new and useful in 7.5%, and the idea of diversifying everyday life or "escape" for a little work / the family" in 5% of cases.

DISCUSSION

In the first place, recreational motor activities for pregnant women has a high social significance. Lack of physical activity has negative consequences not only on the health of the individual, but also on the development of society as a whole. Scientists provide evidence by tracking pregnancy, childbirth, and the first eight months of a hundred mothers and their children, revealing an apparent correlation between the emotional anxieties of pregnant women and the observed disruptions in the functions of the children – health issues and psychological disturbances. This is an important task for the expectant mother, whose main goal during this period is to take care of the wear and tear of a healthy and viable generation. The market of sports services for pregnant women and the significant interest in them (65% of respondents) reveal opportunities to impose such services. Secondly, all women (including all pregnant women considered as potential participants in this subsystem) are a large group of specific users of sports services, which requires the development of specialized, tailored and researched training programs, as well as the presence of closely specialized and qualified sports specialists. And thirdly, it is necessary to create, in recent years, more and more private sports formations offering different types of sports programs for women with normal pregnancies.

CONCLUSIONS

The mother serves as the mediator between the external, bodily world and the internal arrangement of perceiving reality. She not only conveys information about the external world but also her emotional and mental patterns. Through the neural connections formed in the unborn, through hormones and endorphins, the chemical carriers of emotions, the child learns to feel and develops a certain attitude toward life. It can be concluded that the need for Wellness motor activities must be applied with a comprehensive information strategy for inclusion of larger audience of women with normal pregnancy. Based on the analysis in this original paper, we grounded the following conclusions:

- Wellness motor activities with psychologic prophylaxis as meditation and respiration is originally elaborated;
- Any training/session of their content are structured of the following parts: 5 min preparatory, 5 min dance, 25 min basic, 5 min final - stretching and 10 min relaxation;
- The steps upgrading the motor effort during the class and stay in the cardio work within the intervals for one healthy motor activity for women with normal pregnancy;
- The physiological Wellness motor activity influence to the pregnant woman body is boost the blood circulation and the immune system by the biggest oxygen flow to the organs;
- The oxygen revitalise the fetus health status and is in support of the healthier baby born;
- The healthier babies are the healthy future workers of the society and this is the big social benefit of the mother's Wellness lifestyle during the pregnancy.

Note:

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