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Physical Activity in Pregnancy and Its Role in Blood Pressure Control and the Prevention of Hypertensive Disorders of Pregnancy: A Narrative Review

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Abstract

Background. Hypertensive disorders of pregnancy (HDP), including gestational hypertension and preeclampsia, are among the most common and serious obstetric complications worldwide. They result from impaired cardiovascular adaptation to pregnancy and significantly increase maternal and perinatal morbidity and mortality. Physical activity is considered a safe, non-pharmacological intervention with potential preventive benefits.

Aim. To summarize current evidence on the impact of physical activity during pregnancy on blood pressure regulation and the risk of HDP.

Material and Methods. This narrative review included publications indexed in PubMed and Google Scholar from 2020–2026. Observational and interventional studies, systematic reviews, meta-analyses, and international guidelines assessing associations between physical activity,

blood pressure, and HDP were analyzed. Articles published before 2020 (except key recommendations) and those not in English or Polish were excluded.

Results. Pregnancy involves increased cardiac output, blood volume, and heart rate, with decreased systemic vascular resistance and blood pressure. Disruption of these adaptations predisposes women to HDP. Regular moderate-intensity physical activity improves endothelial function, reduces oxidative stress and inflammation, enhances autonomic balance and supports weight control. Evidence shows lower systolic and diastolic blood pressure and a reduced risk of gestational hypertension among physically active pregnant women. However, findings on preeclampsia prevention remain inconclusive, likely due to its multifactorial etiology.

Conclusions. Moderate physical activity during pregnancy is a safe strategy that promotes cardiovascular adaptation, improves blood pressure control, and lowers the risk of HDP, particularly gestational hypertension. Although its role in preventing preeclampsia remains unclear, current evidence supports including physical activity in routine prenatal care.

Keywords: Physical activity; Pregnancy; Gestational hypertension; Blood pressure; Maternal health

1. Introduction

Pregnancy is a period of intense physiological adaptation affecting most systems and organs in the female body. Cardiovascular changes play a particularly important role in maintaining the well-being of the fetus and mother. These alterations include an increase in circulating blood volume, cardiac output, and stroke volume, as well as an acceleration of heart rate accompanied by a decrease in peripheral vascular resistance.[1,2] These adaptive mechanisms begin early in pregnancy and are the result of both the enlarging uterus and the increasing metabolic demand during this period. Their presence is essential for the proper fetus development and a safe delivery.[1–3] Around the 20th week of pregnancy, the hemodynamic parameters of the mother's circulatory system reach relative stability, ensuring efficient placental transport of oxygen and nutrients from the mother to the fetus, and return to their pre-pregnancy values within 6 months

after the end of pregnancy.[1,2] A physiological consequence of these processes is a characteristic change in blood pressure, which decreases by the end of the second trimester and gradually increases in the third trimester.[4] Disruption of these cardiovascular adaptive mechanisms during pregnancy can result in the development of hypertensive disorders, which are one of the most serious obstetric complications.[2]

Hypertensive disorders of pregnancy (HDP) include chronic hypertension, gestational hypertension (GH), and preeclampsia (PE), along with its complications: eclampsia and HELLP syndrome.[5,6] Chronic hypertension is defined as elevated blood pressure ≥140/90 mmHg presents before pregnancy or before the 20th week of gestation. The new onset of hypertension in a pregnant woman after the 20th week of pregnancy, without organ complications, allows for the diagnosis of GH, which resolves within 3 months postpartum.[3,5,7] PE manifests as newly diagnosed hypertension after the 20th week of pregnancy accompanied by proteinuria ≥30 mg/dL or signs of organ damage.[3,5,7–9] Eclampsia, manifested by seizures, and HELLP syndrome, characterized by hemolysis, elevated liver enzymes, and thrombocytopenia, represent severe, life-threatening complications of preeclampsia affecting both the mother and the fetus.[3,5]

HDP remain one of the most common obstetric complications and are also the leading cause of maternal and fetal mortality worldwide.[9,10] It is estimated that hypertension may affect approximately 4-25% of all pregnant women worldwide, while the incidence of PE is reported at 3-8% of pregnancies.[5,8] On a global scale, HDP causes up to 70,000 maternal deaths and 500,000 neonatal deaths annually, accounting for 16% of all maternal deaths according to the World Health Organization data.[5,6,9,11] Moreover, in recent years there has been a steady increase in the incidence of HDP, which highlights the need for intensified research into their pathophysiology and to search for effective preventive and therapeutic strategies.[12,13]

The clinical significance of HDP extends beyond the perinatal period. Both GH and PE contribute to numerous maternal, fetal, and neonatal complications that pose a significant threat to health and life, including preterm birth and increased perinatal mortality, fetal growth restriction, placental abruption, and maternal multiple organ failure or disseminated intravascular coagulation.[3,14] Importantly, studies indicate that women with a medical history of HDP have a significantly elevated risk of cardiovascular and cerebrovascular disease later in life, with an estimated reduction in life expectancy of up to 10 years compared to women without HDP.[5,10,12,15] A similar relationship has also been observed in offspring from pregnancies complicated by PE, who have been found to demonstrate a higher predisposition to cardiovascular and metabolic diseases in adulthood.[5,14]

The exact pathomechanism of the development of hypertensive disorders is still not fully understood and leaves many questions unanswered. Nevertheless, it is believed that vascular endothelial dysfunction, abnormal remodeling of uteroplacental vessels, acid-base imbalance, inflammatory processes, and oxidative stress may play an important role in the pathogenesis of HDP.[8,14] Given the limited efficacy of current pharmacological methods and the lack of causal treatment for HDP, increasing emphasis is being paid to better understanding these mechanisms and identifying effective forms of prevention.[6,14]

Physical activity during pregnancy, which is currently considered a safe intervention with numerous benefits for both the mother and the fetus, may play a promising role in the prevention of HDP. Moderate physical activity during pregnancy promotes weight loss, improves insulin sensitivity, reduces inflammation and oxidative stress, and improves vascular endothelial function, which can significantly influence the prevention of hypertension in pregnancy.[2,3,5] In addition, regular physical activity has a beneficial effect on the autonomic nervous system, reducing excessive activation of the sympathetic nervous system and reducing symptoms of stress, anxiety, and depressive disorders in pregnant women, which themselves constitute risk factors for GH and PE.[14] Evidence from both observational and interventional studies indicates that physical activity initiated before and during pregnancy may have a protective effect against the development of GH and PE. However, further research is required to clarify the underlying mechanisms of this effect and its dependence on the type and duration of exercise.[16]

In light of the increasing incidence of HDP in recent years and its long-term health consequences, the analysis of the impact of physical activity during pregnancy on blood pressure regulation and the risk of HDP seems to be particularly significant. The aim of this narrative review is to provide a comprehensive overview of the current state of knowledge on the role of physical activity in the prevention of HDP, with consideration of pregnancy-related cardiovascular adaptations and the mechanisms underlying these relationships.

2. Materials and Methods

The aim of this narrative review was to synthesize the current state of knowledge regarding the impact of physical activity during pregnancy on blood pressure regulation and the development of HDP. The literature review was based on the following electronic databases: PubMed and Google Scholar. Publications from 2020-2026, published in English, were included in the review. An exception was made for the World Health Organization (WHO) guidelines from 2018, as no more recent recommendations are available. The search strategy used combinations

of Medical Subject Headings (MeSH) terms and keywords such as: “pregnancy”, “physical activity”, “exercise”, “blood pressure", “gestational hypertension”, “hypertension disorders”, “preeclampsia”, which were combined using the logical operators AND/OR.

Studies that were included in the analysis evaluated the relationship between physical activity during pregnancy and blood pressure regulation or the occurrence of hypertensive disorders of pregnancy. Articles published in languages other than Polish or English, as well as those published before 2020, were excluded from the analysis. The research comprised observational and interventional studies, as well as relevant systematic reviews, meta-analyses and International recommendations. The selection process involved analysis of titles and abstracts, followed by full-text publications. Given the narrative nature of the study, no quantitative analysis was deemed necessary.

The AI-based tools were used as an aid in the editing, stylistic consistency improvement, and translation of the text. Their use was limited to supporting clarity and linguistic correctness. The authors assume full responsibility for the content, interpretation of data, and conclusions presented in this study.

3. Results

3.1. Cardiovascular Adaptations and Blood Pressure Regulation in Pregnancy

Pregnancy is associated with a multitude of alterations in a female body, aimed at ensuring the well-being of the fetus and maintaining gestation. These alterations affect all systems, particularly the cardiovascular system, and appear early in pregnancy, stabilizing around the second trimester.[1,2] Due to hormonal changes in the circulatory system of a pregnant woman, the circulating blood volume, cardiac output, and heart rate increase, accompanied by a reduction in systemic vascular resistance and a decrease in arterial blood pressure during the first and second trimesters.[1,2,4] The fundamental objective of these adaptations is to ensure optimal blood perfusion through the uteroplacental unit, thereby facilitating appropriate fetal growth and development by supplying adequate amounts of oxygen and nutrients and efficient removal of metabolic waste products.[2] The increase of circulating blood volume, in conjunction with the elevated cardiac output, facilitates adequate blood perfusion of maternal organs and provides a physiological reserve during labor and delivery.[1,17] Dysregulation of these adaptive mechanisms predisposes pregnant individuals to the development of HDP.[3]

Blood pressure regulation during pregnancy is a complex process. A decrease in blood pressure is primarily responsible for a reduction in total vascular resistance, which is a

consequence of both hormonal changes and the development of a low-resistance placenta.[4,15,17] Pregnancy-related hormones, including relaxin, progesterone and estrogens, exert potent vasodilatory effects.[15,17] Concurrently with hormonal changes, the renin-angiotensin-aldosterone system (RAAS) is activated in the female body. This activation leads to an increase in circulating blood volume by intensifying water and sodium retention in the renal tubules.[1,17] The effect of the increased cardiac preload is an intensified release of atrial natriuretic peptide (ANP), which, similar to relaxin, induces vasodilation and modulates the activity of the the renin-angiotensin-aldosterone system.[1] The final effect of these changes is a decrease in blood pressure and systemic vascular resistance alongside an increase in plasma volume.[17]

As a consequence of decreasing blood pressure and peripheral resistance, the sympathetic nervous system is physiologically activated to prevent excessive hypotension. However, it has been observed that this mechanism may contribute to the development of hypertension during pregnancy.[1]

3.2. Pathomechanism of Hypertensive Disorders of Pregnancy

The aetiology of HDP, particularly GH and PE, remains to be fully elucidated.[6,14] According to the prevailing scientific evidence, damage to vascular endothelial cells, increased inflammation, and reduced placental perfusion resulting from increased contraction of small blood vessels, may play a significant role in the development of GH.[6,14] It has been observed that women with GH exhibit reduced activity of vascular endothelial growth factor (VEGF), the presence of which, in physiological pregnancies, stimulates endothelial proliferation, allowing for its regeneration. Accordingly, a disruption of the angiogenesis process occurs, resulting in impaired placental perfusion, trophoblast ischemia, and ultimately placental dysfunction.[14] Another factor that may influence the development of GH is an increase in vascular resistance, induced by inflammation and a dysregulated mechanism of activity of natriuretic peptides during pregnancy.[15]

The underlying mechanisms and etiological factors contributing to the development of preeclampsia remain unclear.[18,19] However, current evidence suggests that vascular endothelial dysfunction and impaired placental development play a significant role in the pathogenesis of PE.[8,18] Defective invasion of syncytiotrophoblasts into the uterine wall during the early stages of pregnancy has been demonstrated to cause impaired remodeling of the spiral arteries, which ultimately results in reduced blood flow through the placenta.[15,18] This condition induces an imbalance in the angiogenesis process through increased release of antiangiogenic factors, such as soluble fms-like tyrosine kinase-1 (sFlt-1) and soluble endoglin (sEng), by the dysfunctional

placenta.[18,19] Moreover, women who develop PE exhibit a notable decrease in proangiogenic placental growth factor (PlGF), which is responsible for the development of a healthy pregnancy.[18,20] The final effect of these abnormalities is increased vasoconstriction, resulting in elevated blood pressure and impaired maternal organ function, which leads to the symptoms of PE.[18]

Evidence suggests that the risk of HDP is strongly associated with certain maternal risk factors that may be present even prior to conception. The presence of obesity, insulin resistance, autoimmune diseases, or diabetes significantly increases the risk of developing GH and PE.[14,21] As shown by recent studies, the risk of PE is twice as high in overweight women and even three times higher in women with grade 1 obesity.[11] In light of the limited efficacy of conventional pharmacological interventions, there has been a noticeable trend towards a focus on modifiable risk factors, in particular physical activity, which has been demonstrated to have a positive influence on the risk of developing GH and PE.[14] Regular physical activity has been evidenced to promote a number of health benefits, including improved endothelial function and modulation of autonomic balance and inflammatory processes. Additionally, physical activity enables weight loss, which indicates its potential role in the prevention and treatment of these disorders.[11] Despite growing evidence, lifestyle modification interventions remain undervalued in clinical practice.[21]

3.3. Global Recommendations on Physical Activity During Pregnancy

Current international guidelines unequivocally recommend regular physical activity during pregnancy for women without medical contraindications, emphasizing its safety and positive impact on the health of the mother and child.[11,22] It has been proven that physical activity can play an important role in the prevention of HDP, including GH, and also has a beneficial effect on the general women's health.[3,6,14] Furthermore, a sedentary lifestyle has been identified as a separate risk factor for the development of obesity and gestational diabetes.[22] As both the World Health Organization (WHO) and the American College of Obstetricians and Gynecologists (ACOG) recommend, in the absence of significant medical contraindications, pregnant women should perform 150 minutes of moderate aerobic exercise per week.[3,16,22] The Royal College of Obstetricians and Gynecologists (RCOG) and the National Institute for Health and Care Excellence (NICE) have issued similar recommendations regarding exercise time.[5] The Australian Department of Health, meanwhile, recommends 150 to 300 minutes of moderate-intensity activity for pregnant women.[16] It is important to individualise the exercise programme

with the help of an obstetrician-gynecologist, taking into consideration any health contraindications and the lifestyle before pregnancy. Training sessions should be equally spaced and last 30 minutes on average. However, it is not recommended to participate in intense exercise exceeding 45 minutes.[11,22]

A current ACOG guideline deviates from the previous classification of contraindications to physical activity into relative and absolute, emphasizing the importance of individual adjustment of both the form and intensity of training by a physician to the clinical condition of the pregnant woman.[22,23] Obstetricians should pay particular attention to comorbid conditions such as cardiovascular disease, hypertension, diabetes, or severe obesity. At the same time, complete avoidance of physical activity as a preventive measure for preeclampsia or preterm birth is no longer advised, due to a lack of evidence supporting its effectiveness.[22,23]

Despite the presence of well-defined guidelines, observational data indicate that less than half of pregnant women follow the recommended physical activity standards, and participation declines significantly as pregnancy progresses.[16] A considerable number of women refrain from regular exercise due to concerns about their own or their fetus's safety, as well as due to entrenched social beliefs and common pregnancy-related complaints, including fatigue, nausea, or feeling unwell. Therefore, it appears imperative to undertake educational initiatives and disseminate reliable information about the health benefits of exercise during pregnancy in order to actively encourage women to engage in safe physical activity.[16]

3.4. The Role and Effects of Physical Activity in Cardiovascular Regulation During Pregnancy

It has been proven that regular physical activity during pregnancy brings numerous health benefits and is an important element in the prevention of obstetric complications.[3,16,22] A number of observational and randomised studies have confirmed the beneficial effects of physical activity on reducing metabolic disorders in pregnant women. These include excessive weight gain, insulin resistance and gestational diabetes.[3,5,16,22] Women who are physically active demonstrate a lower incidence of cesarean sections, faster recovery after delivery, reduced pain during pregnancy, and a lower incidence of depression and mood disorders.[14,22] Importantly, regular physical activity during pregnancy has also been associated with favorable effects on cardiovascular function and is therefore considered a significant factor in the prevention of HDP, with some evidence suggesting greater effectiveness than certain pharmacological interventions.[4,22]

A key role of physical activity during pregnancy lies in its influence on the cardiovascular system and arterial blood pressure regulation, which is particularly relevant in the context of HDP.[3] Moderate physical activity, particularly aerobic exercise, has been demonstrated to improve hemodynamic parameters, leading to an increase in cardiac output and minute volume as well as a decrease in heart rate.[3,4,14] These adaptations support optimal maternal and placental perfusion and may contribute to a reduced risk of developing hypertension.[3,14] Furthermore, regular physical activity may help maintain normal blood pressure during pregnancy by promoting weight loss, reducing oxidative stress, and improving endothelial function.[3,6,24]

Physical activity during pregnancy exerts multidirectional effects on the pathophysiological mechanisms associated with the development of HDP.[6] One of the primary protective functions is the antioxidant effect caused by increased activity of enzymes, such as superoxide dismutase (SOD) and glutathione peroxidase (GPx), which effectively neutralize reactive oxygen species (ROS).[6,14] This effect is further enhanced by an increase in the number of mitochondria in skeletal muscles under the influence of exercise.[14] Concurrent reduction in markers of oxidative damage, including lipid peroxidation, confirms the ability of physical activity to reduce oxidative stress. This plays a key role in the pathogenesis of PE.[25]

Exercise has also a positive impact on the development and function of the placenta.[16] Regular physical activity promotes placental growth, improves vascularization, and increases the number of villi and villous vessels. All of these factors result in a larger exchange surface for gases and nutrients between the mother and the fetus.[6,14] Subsequently, the risk of hypoxia and metabolic deficiencies in the fetus is reduced. An essential element of the beneficial effects of physical activity is also the enhancement of vascular endothelial function. It has been demonstrated that an increase in shear forces affecting the vessel wall during exercise, as well as an elevated concentration of nitric oxide (NO), lead to vascular remodeling and promote vasodilation.[6,14] Physical activity also promotes angiogenesis by increasing placental growth factor (PlGF) and reducing soluble fms-like tyrosine kinase-1 (sFlt-1), which may play a crucial role in the prevention of PE.[8]

Regular physical activity reduces the inflammatory response by lowering the concentration of pro-inflammatory cytokines, such as TNF-α, and increasing the level of anti-inflammatory mediators, including IL-10. This, in turn, contributes to the proper functioning of the immune system during pregnancy.[12,14] In addition, exercises modulate cardiovascular autonomic regulation by reducing sympathetic nervous system activity and stabilizing

parasympathetic tone. Improved autonomic balance facilitates more effective blood pressure control during pregnancy and may reduce the risk of gestational hypertension.[14]

In summary, physical activity during pregnancy exerts a complex effect on blood pressure regulation and cardiovascular function through hemodynamic, vascular, neurohormonal, and molecular mechanisms. Despite the fact that the underlying mechanisms remain to be fully elucidated in some cases, a thorough examination of the extant data reveals a clear indication that moderate-intensity exercise represents a safe and effective strategy for promoting optimal blood pressure regulation.[14]

3.5. Influence of Physical Activity on Hypertensive Disorders of Pregnancy

A review of the available scientific evidence indicates that physical activity during pregnancy is associated with a significant reduction in the risk of HDP, with this effect appearing to be most noticeable in relation to GH.[3,13,21,26] Numerous systematic reviews and meta-analyses, including those by Barakat et al. and Zhang et al., have demonstrated that physically active pregnant women exhibit a statistically significant lower risk of developing GH compared with inactive women.[3,14] Consistent findings were reported in the systematic review by Danielli et al. and the umbrella review by Martinez et al. Moreover, a statistically significant reduction in systolic and diastolic blood pressure was observed among women who exercised, suggesting a potential pivotal role in the primary prevention of preeclampsia.[5,24] In a randomized, blinded, prospective study reported by Murphy et al., regular physical activity undertaken from the 16th week of pregnancy has been shown to result in a significant reduction in blood pressure values in pregnant women, with the most substantial reduction in systolic blood pressure observed in the resistance and aerobic training group in comparison to the control group.[27]

In contrast to GH, the impact of physical exercise on the risk of developing PE remains unclear, and most of the available systematic reviews do not confirm a reduction in the incidence of PE in the general population of pregnant women.[8,13,24,28,29] The lack of a clear protective effect of physical activity on the occurrence of PE may be due to the complex and multifactorial pathogenesis of this disorder. Immunological factors, genetic predisposition, and trophoblast implantation disorders play an important role in this regard, and physical activity interventions can only affect them indirectly.[3] Additionally, the efficacy of physical activity in preventing PE may be related to the timing of its initiation and the intensity of training. However, these factors were often not taken into account in the analyzed studies.[3,8]

A comparison of different forms of physical activity reveals that aerobic exercise and combined training (aerobic and resistance) offer the most significant benefits in reducing the

risk of HDP and lowering blood pressure, particularly when performed regularly and under supervision.[3,4,15] According to recent scientific findings, a combination of training and yoga-type exercises has been demonstrated to be more effective in reducing the risk of developing HDP than aerobic training alone. This phenomenon may be attributed to the simultaneous impact on muscle mass growth, as well as autonomic regulation and cortisol reduction.[5] On the other hand, scientific data on isolated resistance training remain limited and do not allow for an accurate assessment of its impact on the risk of HDP.[2] Another important factor influencing the effectiveness of physical activity is the time of its performance. It has been established that both the continuation of activities initiated prior to pregnancy and the initiation of exercise in the early trimesters of pregnancy have a positive effect on reducing the risk of HDP.[13,21] Nevertheless, the precise point at which the introduction of physical activity brings the greatest health benefits remains unclear.[30]

Although there is clear evidence confirming the beneficial effect of physical activity on the risk of GH, the interpretation of results concerning its impact on PE and comparisons between different exercise protocols remains uncertain. These limitations can be attributed to several factors. Firstly, there is considerable heterogeneity among the study populations. Secondly, the criteria for diagnosing PE vary. Thirdly, there is a lack of standardization in the assessment of physical activity. Finally, the reporting of training intensity and volume is inadequate.[11] Nevertheless, the available data clearly indicate that regular, moderate-intensity physical activity during pregnancy represents a safe and effective non-pharmacological strategy for the prevention of GH and overall HDP risk, with no evidence of adverse effects on pregnancy outcomes or fetal health.[2,14]

4. Discussion

The results of this narrative review suggest that physical activity during pregnancy plays a significant role in regulation of the cardiovascular system and in reducing the risk of hypertensive disorders of pregnancy, particularly gestational hypertension.[3,13,21,26] The physiological cardiovascular adaptations that occur during pregnancy, including changes in circulating blood volume, cardiac output, vascular resistance, and autonomic regulation, are crucial for maintaining optimal uterine-placental perfusion. Disruption of these adaptations, however, predisposes to the development of HDP.[1–3] A review of the literature indicates that regular, moderate physical activity has a beneficial effect on many pathogenic mechanisms of HDP, including endothelial dysfunction, oxidative stress, inflammatory processes, autonomic imbalance, and excessive weight gain during pregnancy.[3,6,14]

Research has demonstrated that physical activity improves endothelial function by increasing shear forces and nitric oxide concentrations. This, in turn, promotes vasodilation and vascular remodeling.[6,14] Moreover, the proangiogenic effect induced by physical exercise, characterised by an increase in PlGF concentration and a decrease in sFlt-1 levels, may support normal placental development and perfusion.[8] It has been demonstrated that the antioxidant effects of physical activity, mediated by increased activity of enzymes such as superoxide dismutase and glutathione peroxidase, along with a reduction in markers of oxidative damage, counteract mechanisms involved in the development of HDP, especially PE.[6,14,25]

The reviewed studies also indicate that physical activity exerts beneficial effects on autonomic regulation by reducing sympathetic nervous system activity and stabilizing parasympathetic tone, thereby facilitating more effective blood pressure control during pregnancy.[14] Additionally, the reduction in concentrations of pro-inflammatory cytokines, along with the improvement in metabolic parameters - including insulin sensitivity and weight control, contributes to a lower overall risk profile with respect to the development of GH and PE. [3,5,11,16]

Although the protective effect of physical activity on gestational hypertension has been confirmed in observational studies, randomized trials, and meta-analyses, the efficacy of this intervention in preventing preeclampsia remains less clear.[8,13,24,28] This uncertainty may result from the complex and multifactorial pathogenesis of preeclampsia, including immunological and genetic factors and placental implantation disorders, on which physical activity interventions can only have an indirect effect.[3,15,18] Additional limitations of the study include the heterogeneity of the study populations, variability in diagnostic criteria, lack of standardized assessment of physical activity, and insufficient reporting of exercise intensity and duration.[11]

Despite the existence of well-established international recommendations for regular physical activity during pregnancy, the level of compliance remains low, especially in the later trimesters.[16] Concerns about the safety of the mother and fetus, pregnancy-related discomfort, and entrenched social beliefs continue to limit women's participation in physical activity. The findings of this study underscore the significance of personalized counseling and the important role of healthcare professionals in promoting evidence-based physical activity as an integral part of prenatal care.[11,22]

5. Conclusions

Regular, moderate-intensity physical activity in pregnancy is a safe and effective non-pharmacological strategy that supports physiological changes in the cardiovascular system,

improves blood pressure control, and reduces the risk of hypertensive disorders of pregnancy, especially GH. The positive effects of physical activity have been demonstrated to be the result of hemodynamic, vascular, metabolic, inflammatory, and neurohormonal mechanisms, with no evidence of adverse effects on maternal and fetal health. Despite the lack of clarity regarding the effect of physical activity on the prevention of PE, a review of the available data reveals a general support for its promotion as an integral component of prenatal care. Nevertheless, the results of this investigation suggest the necessity for additional well-designed studies in order to define the optimal type, intensity, and timing of exercise and to better define its role in the prevention of PE.

Disclosure:

Author's contribution:
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