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Physical activity for pregnant and postpartum women: Physical Activity Guidelines for the Brazilian Population

Atividade física para gestantes e mulheres no pós-parto: Guia de Atividade Física para a População Brasileira

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ABSTRACT

This manuscript aims to present the recommendations of physical activity for pregnant and postpartum women developed for the Physical Activity Guidelines for the Brazilian Population. A mixed-method approach that included four steps was used: 1) review of the most recent international guidelines for physical activity during pregnancy; 2) narrative literature review on the effects of physical activity during pregnancy on the health of the woman and the baby; 3) consultation with pregnant women, postpartum women, professionals and researchers; 4) public consultation. The summarized evidence supports that physical activity during pregnancy and in the postpartum is safe, has benefits to the health of the mother and baby, and reduces the risks of some complications related to pregnancy. Pregnant women should be encouraged to do at least 150 minutes a week of moderate intensity physical activity. Pregnant women with contraindications should seek help from qualified professionals. In some cases, physical activity during pregnancy is not recommended. This document will be used as a tool to guide health professionals who work with pregnant women and women in the postpartum period. Also, it will inform and guide women during pregnancy and postpartum about the benefits of physical activity.

Keywords: Physical activity; Pregnancy; Exercise; Population.

RESUMO

Este artigo tem por objetivo apresentar as recomendações de atividade física para gestantes e mulheres no pós-parto desenvolvidas para o Guia de Atividade Física para a População Brasileira. Para isso, utilizou-se uma abordagem de métodos mistos que incluiu quatro etapas: 1) levantamento das diretrizes internacionais mais recentes; 2) revisão narrativa de literatura sobre efeitos da prática de atividade física durante a gestação para a saúde da mulher e do bebê; 3) escuta com gestantes, mulheres no pós-parto, profissionais e pesquisadores; 4) consulta pública. As evidências sumarizadas suportam que a prática de atividade física durante a gestação e no período pós-parto é segura, traz benefícios à saúde da mãe e do bebê, e reduz os riscos de algumas complicações relacionadas à gestação. Gestantes devem ser incentivadas a realizar pelo menos 150 minutos por semana de atividade física de intensidade moderada. Gestantes com contraindicações devem procurar auxílio de profissionais qualificados. Em alguns casos, a prática de atividade física durante a gestação não é recomendada. Este documento servirá como ferramenta para nortear profissionais de saúde que atuam com gestantes e mulheres no pós-parto e irá orientar a população-alvo quanto a prática de atividade física.

Palavras-chave: *Atividade física; Gestação; População; Exercício físico.*

Introduction

Physical activity plays an important role in mother-child health. Several studies have demonstrated that participation in leisure-time physical activities during pregnancy is associated with improved health outcomes for the mother and baby[1,2]. In addition, physical activity should be considered first-line therapy to reduce the risk of complications during pregnancy and improve maternal physical and mental health[3].

The first prenatal exercise guidelines were instituted by the American College of Obstetricians and Gynecologists in 1985[4], and since then, a growing body of evidence has demonstrated the safety and benefits of physical activity for pregnant women[1-3,5,6]. However, although these recommendations are well documented[7], there is still concern that physical activity during pregnancy may compromise the health of pregnant women and babies. Thus, government agencies should devise evidence-based dissemination strategies for health professionals in order to provide the population with better treatment.

The Physical Activity Guidelines for the Brazilian Population, with specific recommendations for pregnant and postpartum women, aims to address a gap between scientific knowledge and the practical use of more reliable evidence in Brazil. As such, the primary aim of this article is to present to health professionals who interact daily with this population the physical activity recommendations for pregnant and postpartum women developed for the Physical Activity Guidelines for the Brazilian Population. The secondary objective is to summarize the methodology used to construct the guidelines for these women.

Methods

The planning and execution of activities to develop physical activity recommendations for pregnant and postpartum women in the Physical Activity Guidelines for the Brazilian Population was conducted by a working group of seven researchers and two representatives from the Ministry of Health. The recommendations were developed using a mixed method approach. Initially, a review of the most recent international physical activity guidelines[7] was conducted, including those of Canada[5], the United States[1,8] and the American College of Gynecologists and Obstetricians[3,9]. In order to update the evidence presented by the guidelines, a systematic review of randomized clinical trials, cohort studies, systematic reviews and meta-analyses published between January 2018 and June 2020 was conducted.

A summary of the evidence identified key findings related to the health of pregnant women, the health and development of the baby, delivery, and postpartum health outcomes. For each of the outcomes identified, the effect of physical activity was classified as i) positive; ii) negative; or iii) neutral. The quality of the evidence regarding the effects of physical activity on each of the outcomes was assessed by the Grading of Recommendations Assessment, Development and Evaluation (GRADE)[10]. This system classifies evidence quality into four levels: high, moderate, low or very low. The level and quality of evidence on the effects of physical activity for each of the outcomes identified was assessed independently by two members of the working group. Members of the working group resolved inter-rater inconsistencies by consensus.

Simultaneously to the identification and assessment of the evidence on the effects of physical activity during pregnancy, interviews with pregnant and postpartum women were conducted regarding physical activity in pregnancy and the postpartum. The aim of this stage was to identify the difficulties, facilitators, strategies, myths and opinions of health professionals and women regarding important content to be incorporated into the Physical Activity Guidelines for the Brazilian Population.

This consultation process was conducted through an electronic form and group discussions with pregnant and postpartum women. The form, which included open and closed-ended questions, was used to collect information on the knowledge and opinions about the recommendations and physical activity of the target population (pregnant and postpartum women, Brazilian researchers and health professionals, including those belonging to the Health Academy Program). Invitations to fill out the form were sent by email, social media (Instagram and Facebook) and the WhatsApp messaging app. Group discussions with the pregnant and postpartum women were conducted online in different regions of Brazil. The women were indicated as possible candidates to participate in discussions involving the working group that created the Physical Activity Guidelines for the Brazilian Population.

All the participants agreed to take part in the interview by signing a declaration of confidentiality and conflict of interest, and provided their full name, CPF (Brazilian Taxpayer Registration number), email, city

and state. Methodological details of the review process, assessment of evidence and interviews with the population are available on the Ministry of Health's website (www.saude.gov.br).

Finally, a public consultation of the final version of the document was conducted in August 2020. The text and an online form where the public could make suggestions for the guidelines were available on the aforementioned website. A total of 25 valid suggestions were received. These were analyzed by the working group and 13 were considered technically and/or socially relevant and added to the text.

Results

Evidence suggests that physical activity is safe during pregnancy and in the postpartum period, beneficial to the mother and baby's health, and reduces the risks of certain pregnancy-related complications. A summary of the main recommendations on physical activity during pregnancy and in the postpartum period is presented in Chart 1. Methodological details and the list of studies identified during the review are available online in the report made by the working group.

Chart 1 – Physical activity recommendations during pregnancy and the postpartum period for the Physical Activity Guide for the Brazilian Population

General recommendations
• Pregnant women with no contraindications should do between 150 and 300 minutes of moderate-intensity physical activity a week. Pregnant women who were physically active before pregnancy with no contraindications can engage in 75 to 150 minutes of vigorous physical activity per week.
• Women who were physically active before pregnancy can maintain their physical activity routine. Women who were not physically active before pregnancy can start physical activity gradually at any time during gestation
• Light to moderate-intensity activities are recommended for women who were not physically active before pregnancy. Women who were active before pregnancy can maintain their routine and engage in moderate to vigorous-intensity activities during gestation.
• Multidisciplinary effort is essential for pregnancy success. All health professionals who provide care during pregnancy should be familiar with the contraindications, signs and symptoms that suggest the physical activity routine should be modified or interrupted.
• The support of family and friends is essential for pregnant and postpartum women to engage in physical activity.

Women's health and physical activity during pregnancy

Healthy pregnant women, with no contraindications, can and should engage in regular physical activity to achieve physical and mental benefits, and prevent or minimize health complications[1,3,5].

The effects of physical activity during pregnancy and the quality of available evidence for outcomes related to women's health are exhibited in Chart 2. Overall, there is high-quality evidence showing that physical activity during pregnancy decreases the risk of excessive weight gain and gestational hypertension[11]. Moderate evidence indicates that physical activity during pregnancy helps maintain cardiorespiratory fitness[12], reduces the risk of gestational diabetes and preeclampsia[9]. Pregnant women who exercise their pelvic floor muscles during and after pregnancy with the help of health professionals have less risk of developing urinary incontinence[13,14]. However, there is no conclusive evidence that training routines without pelvic floor exercises affect the prevention or treatment of urinary incontinence[13]. Regular physical activity during pregnancy does not reduce the risk of lower back and pelvic pain, but can help minimize symptoms[15,16]. On the other hand, the quality of this evidence is very poor, derived from low-quality studies or observational studies susceptible to bias[16].

Evidence from moderate quality studies, albeit in smaller quantities, demonstrates that physical activity attenuates the severity of depressive symptoms during pregnancy, reducing the risk of depression by up to 67%[8,17]. Conversely, evidence suggests that physical activity during pregnancy does not change the risk of developing anxiety or anxiety symptoms[17].

To achieve the health benefits of physical activity, pregnant women should be encouraged to engage in moderate-intensity exercises, such as brisk walking, water aerobics, cycling on a stationary bicycle, or strength training for at least 150 minutes a week. There seems to exist a dose-response relationship between physical activity during pregnancy and some health outcomes, suggesting that physical activity levels above the recommended minimum may provide further decreases in the risk of developing gestational diabetes, gestational hypertension and preeclampsia[11].

Effect of physical activity during pregnancy on childbirth, fetal development and newborn health

The evidence shows that physical activity during pregnancy is safe and poses no risk to fetal development and newborn health (Chart 3). Low-quality evidence indicates that physical activity during pregnancy does not increase the risk of miscarriages, congenital anoma-

Chart 2 – Summary of evidence on the effect of physical activity on women's health.

Outcome	Effect of physical activity	Level of evidence	Observations
Cardiorespiratory fitness: regular physical activity during pregnancy helps maintain or increase cardiorespiratory fitness	+	Moderate	Breastfeeding women who engage in aerobic exercise improve their cardiorespiratory fitness without affecting milk production and composition
Excessive weight gain: regular physical activity during pregnancy helps maintain weight or reduce excessive weight gain	+	High	Moderate-intensity physical activity for 150 to 300 minutes a week reduces the risk of excessive weight gain during pregnancy
Gestational diabetes: physical activity during pregnancy reduces the risk of gestational diabetes	+	Moderate	To achieve some reduction in the risk of developing gestational diabetes, women should engage in physical activity at least 3 times a week, for a minimum of 25 minutes per session, but higher weekly volumes may result in greater benefits. Activities can be varied, such as brisk walking, water aerobics, stationary cycling or strength training.
Gestational hypertension: physical activity during pregnancy reduces the risk of gestational hypertension	+	High	To reduce the risk of developing gestational hypertension, women should engage in physical activity at least 3 times a week, for a minimum of 25 minutes per session. Longer sessions may result in greater benefits. Activities can be varied, such as brisk walking, water aerobics, stationary cycling or strength training
Preeclampsia: regular physical activity during pregnancy reduces the risk of preeclampsia	+	Moderate	To reduce the risk of developing preeclampsia, women should engage in physical activity at least 3 times a week, for a minimum of 25 minutes per session. Longer sessions may result in greater benefits. Activities can be varied, such as brisk walking, water aerobics, stationary cycling or strength training
Lower back pain: regular physical activity during pregnancy does not lower the risk of lower back and pelvic pain, but it can help reduce symptoms.	+	Very low	Specific exercises to stabilize and strengthen the hip gluteus, extensor, and abductor muscles, as well as to educate pregnant women about the importance of stretching and safe exercise to alleviate the severity of lower back and pelvic pain symptoms. The risk of pain may be greater in obese pregnant women.
Urinary incontinence: regular practice of pelvic floor exercises reduces the risk and symptoms of urinary incontinence during pregnancy or postpartum	+	Moderate	Pregnant women should be advised to exercise their pelvic floor muscles with the help of health professionals, during and after pregnancy.
Depression and Anxiety: regular physical activity during pregnancy reduces the risk and symptoms of depression	N	Moderate	Physical activity during pregnancy does not seem to change the risk of developing anxiety or anxiety symptoms.

Legend: + = positive effect; - = negative effect; N = no effect.

lies, premature mortality[18], rupture of the amniotic sac before the onset of labor, cesarean section, induction of labor, time of delivery, perineal laceration, fatigue, injury, musculoskeletal trauma and maternal damage, even when performed in the first trimester[19]. Poor-quality evidence suggests that not engaging in physical activity from the first trimester increases the risk of pregnancy-related complications. Moderate-quality evidence shows that physical exercise during pregnancy does not affect fetal growth and is associated with reduced risk of preterm births and overweight babies at birth[2]. It also demonstrates that physical activity during this period reduces the risk of macrosomia and other adverse outcomes, including preterm delivery and low birth weight[20]. Although some studies suggest that physical activity during pregnancy is linked to lower birth weight in newborns, the differences are minimal. Very low-quality evidence indicates that engaging in physical activity during pregnancy does not impact the average APGAR score[20,21].

Physical activity and postpartum

The postpartum period is an opportune time to adopt an active and healthy lifestyle[3]. However, resuming or starting activities may be a challenge[3]. In the absence of medical or surgical complications related to childbirth, women can gradually resume physical activity after pregnancy, some as soon as a few days after giving birth.

Physical activity has positive effects on women's health in the postpartum period and does not negatively affect breastfeeding (Chart 4). During this period, moderate-intensity activity is recommended for

at least 150 minutes a week. Women who engage in vigorous activity or were physically active before pregnancy can continue these activities during the prenatal and postpartum period[3,8]. It is important to highlight that regular exercise in lactating women improves maternal cardiovascular fitness without affecting breast milk production and composition[22].

Evidence suggests that physically active women are less likely to develop postpartum depression[8]. In addition, high-quality evidence shows that physical activity helps women regain their pre-pregnancy weight. Interventions during pregnancy may help reduce weight retention up to 12 months postpartum. However, considering previously published data, the results must be interpreted with caution[1,8]. The studies underscore that there is insufficient evidence to determine the ideal amount of physical activity for postpartum weight loss and whether there is a dose-response relation between physical activity and weight loss during this period[8]. Furthermore, daily pelvic floor muscle training[23] may reduce the risk of postpartum urinary incontinence.

Physical activity intensity

Evidence indicates that healthy pregnant women may initiate or maintain regular moderate (when previously inactive) or vigorous-intensity physical activity (when previously active)[3,5,23]. Vigorous-intensity physical activity up to the third trimester appears to be safe for

Chart 3 – Summary of evidence on the effect of physical activity on the baby's health.

Outcome	Effect	Level of evidence	Observations
Preterm birth: physical activity during pregnancy reduces the risk of preterm birth	+	Moderate	Physical activity during pregnancy reduces the incidence of preterm birth, even in obese women, when performed 3 to 7 times a week, in 30-to-60-minute sessions.
Fetal growth: physical activity affects fetal growth	N	Moderate	Regular physical activity during pregnancy does not seem to affect fetal growth.
Birth weight: physical activity during pregnancy reduces the risk of macrosomia	+	Moderate	Physical activity during pregnancy reduces the risk of macrosomia (excess birth weight).
Miscarriage: physical activity during pregnancy reduces the risk of miscarriage	N	Low	Evidence suggests that physical activity during pregnancy does not heighten the risk of miscarriage. Even when performed in the first trimester, it does not increase the probability of miscarriage or congenital anomalies.
Perinatal mortality: physical activity during pregnancy does not increase the risk of perinatal mortality	N	Low	Physical activity during pregnancy does not increase the incidence of perinatal mortality.
APGAR: physical activity during pregnancy may increase the APGAR score	N	Low	There is no evidence that physical activity during pregnancy changes the average 5 or 7-minute APGAR score.

Legend: + = positive effect; - = negative effect; N = no effect.

Chart 4 – Summary of evidence on the effect of physical activity on postpartum women.

Outcome	Effect	Level of evidence	Observations
Weight retention: regular physical activity helps women return to their pre-pregnancy weight. When needed, it can provide additional weight loss.	+	High	Moderate or vigorous-intensity physical activity, performed for at least 150 or 75 minutes a week, respectively, helps reduce weight after pregnancy.
Breastfeeding: regular physical activity does not interfere with lactation	N	Low	Postpartum women may engage in physical activity regularly, as it does not seem to influence breastfeeding.
Urinary incontinence: pelvic floor exercises reduce the risk and symptoms of urinary incontinence in the postpartum period	+	Moderate	Pelvic floor muscle exercises are recommended for postpartum women. These exercises may be performed on their own or combined with other exercises.
Depression and Anxiety: regular physical activity during the postpartum period does not reduce the risk of depression or anxiety symptoms	N	Moderate	Depression and Anxiety: Regular physical activity during the postpartum period does not reduce the risk of depression or anxiety symptoms.

Legend: + = positive effect; - = negative effect; N = no effect.

most healthy pregnancies. However, more research is needed, particularly studies involving exercise with an intensity greater than 90% of maximum heart rate in the first and second trimesters. It may be safer to suggest only moderate-intensity exercises in the third trimester[23].

The intensity of physical activity during pregnancy and postpartum can be monitored by the perceived exertion and talk test. Thus, on a scale from 0 to 10, perceived fatigue for moderate-intensity physical activities will be between 5 and 6, hindering conversation, and between 7 and 8 for vigorous activities, when the woman is unable to speak while moving.

Risks and contraindications

Evidence consistently shows that women with a healthy pregnancy and no contraindications can engage in simple physical activities, such as moderate-intensity walking. However, some precautions must be taken, especially with activities that involve a risk of falling or intense physical contact with people and objects (for example: football, basketball, wrestling). Activities involving excessive heat should be avoided, particularly with high humidity (for example: saunas), in order to prevent hyperthermia, mainly in the first trimester[5,9].

Physical activity during pregnancy is contraindicated in certain circumstances[24]. Thus, if any of the factors listed in Chart 5 are present, it is suggested that such activities be indicated by a prenatal care specialist and assisted by a physical education professional and physiotherapist with experience in guiding pregnant women, in order to ensure the safety of both mother and baby.

Chart 5 – Physical activity contraindications during pregnancy*.

Physical activity should be performed in the presence of a professional	Physical activity is contraindicated
• Mild respiratory diseases • Mild, congenital or acquired heart disease • Type 1 diabetes (controlled) • Mild preeclampsia • Premature rupture of preterm membranes (before 37 weeks of gestation) • Placenta previa after 28 weeks of gestation • Untreated thyroid disease • Eating disorders • Nutritional deficiencies and malnutrition • Excessive smoking (more than 20 cigarettes a day) in the presence of comorbidities (hypertension, diabetes)	• Severe respiratory diseases (chronic obstructive pulmonary disease, restrictive lung disease and cystic fibrosis) • Severe heart disease (congenital or acquired) • Severe or uncontrolled arrhythmia • Placental detachment • Vasa previa • Intrauterine growth restriction • Active premature labor • Severe preeclampsia • Cervical insufficiency

* Adapted based on international recommendations[3,5] and literature review conducted by Meah et al[24].

Physical activity and physiological adaptations during pregnancy

Several anatomical and physiological changes occur during pregnancy. These adaptations vary in relation to gestational age and affect pregnancy weight gain and the baby's growth rate[25]. All these adaptations must be considered when prescribing physical activity[3].

The most distinct changes in pregnancy are the gain in body weight and change in the center of gravity, which results in progressive lordosis. These changes increase spinal loading, which can cause pain, especially in the lumbar area[3,26]. Physical activities to strengthen the abdominal and back muscles may reduce the risk of lower back pain[26].

Some body positions may be uncomfortable for pregnant women due to anatomical changes. Physical activities in the supine position after the 20th week may lead to decreased venous return due to compression of the aorta and vena cava, caused by the pregnant uterus, thereby creating hypotension and hemodynamic changes that should be considered in body movement exercises[3]. Although studies show bradycardia and alterations in the fetal heart rate pattern during activities in the supine position, no adverse results were found, indicating a lack of evidence on this topic[27]. Separation of the abdominal muscles may occur in some pregnant women. In these cases, they are advised to seek professional help and avoid abdominal strengthening exercises[5].

Major pregnancy-related cardiovascular changes include increased blood volume, heart rate, stroke volume, cardiac output and reduced systemic vascular resistance[3,28]. Fetuses need oxygen, fetal substrates, thermal stabilization, and the removal of by-products. During pregnancy, physical exertion creates a natural effect and the delivery of fetal substrates is maintained. It is safe, because during and after the activity, circulatory reserves necessary for the pregnant woman and the baby are established[12,25].

Regular physical activity may contribute to the regulation of blood pressure, reducing the risk of developing hypertension and preeclampsia[11,28]. Furthermore, it enhances placental growth and vascularization, promoting efficient nutrient transport, and may improve placental tissue density[29].

Resting cardiopulmonary function in physically active pregnant women, with a gestational age of 35 to 38 weeks, may be similar to non-pregnant women who exercise. Ventilatory responses may also be similar; however, at rest, pregnant women present with greater minute ventilation than their non-pregnant counterparts[25].

Significant adaptations in pulmonary ventilation are observed during pregnancy. Minute ventilation increases by up to 50%, primarily as a result of increased tidal volume. Lung volume declines, which impairs the ability to perform aerobic and anaerobic activities. Aerobic activities during pregnancy may lead to beneficial respiratory adaptations and should therefore be encouraged when there is no contraindication[3].

Facilitators and barriers to physical activity during and after pregnancy

Despite the known benefits of physical activity for the health of pregnant women and babies, most of women do not meet the established recommendations for physical activity during pregancy[30,31]. Women engage in less physical activity throughout pregnancy and in the postpartum period, especially in the first year postpartum. The numerous barriers faced by pregnant women may explain their low levels of physical activity[32]. An active lifestyle during pregnancy may be difficult to maintain due to limitations such as tiredness, fatigue, nausea, physical pain and bodily changes[33]. The fear of harming oneself or the baby is also recurrent[33]. Insecurity about physical activity during pregnancy is related to interpersonal barriers, such as lack of counseling, adequate information, social support and guidance on how to exercise[32,33]. Furthermore, due to family and personal commitments[32], lack of time is a barrier mentioned by most pregnant women, but more frequently among multiparous mothers with a low socioeconomic status. Likewise, environmental barriers, such as unfavorable climate, limited access to adequate and safe facilities, as well as the cost and lack of specific programs for pregnant women are prominent in this group[33]. Finally, in the postpartum period, some of the main barriers are tiredness, lack of time and insufficient newborn care support[34].

Unlike barriers, facilitators can increase the engagement in physical activity during pregnancy and the postpartum period. Women with a higher education level generally have better access to facilitators and are typically more active[32]. Factors such as good maternal and baby health, physical well-being, less pregnancy discomfort, reduced stress, high self-esteem and good fitness levels are strong facilitators [32]. In addition, access to information about physical activity and its benefits, social support and access to safe and adequate facilities promote a physically active pregnancy.

Similarly, the main facilitators for physical activity in the postpartum period are partner and social support, as well as the physical and mental well-being provided by exercise[34].

Discussion

In this article, we summarized the evidence on the effects of physical activity for pregnant and postpartum women and the process of developing physical activity recommendations for this group. The best available evidence shows that exercise during pregnancy and in the postpartum is safe, benefits the health of mother and baby, and reduces the risk of some pregnancy-related complications. Pregnant women should be encouraged to perform at least 150 minutes a week of moderate--intensity physical activity. This can be achieved progressively, with varied activities such as walking, running, cycling, dancing, and strength exercises spread over different days of the week, performed at home, outdoors or at a training facility. Pregnant women with contraindications should seek help from qualified professionals. In some cases, physical activity is not recommended during pregnancy.

The Physical Activity Guide for the Brazilian Population, applied to pregnant and postpartum women, was created through a rigorous and interactive process based on the most recent scientific evidence, as well as Brazilian cultural and social diversity. This study presents physical activity recommendations for pregnant and postpartum women that should be widely followed by health professionals and managers who work with this group.

In addition to helping pregnant and postpartum women, the recommendations may encourage health professionals and managers to include physical activity in primary and routine care, as well as in the community. In the present article, we briefly list recommendations, contraindications, barriers and facilitators for physical activity during this period. However, the Physical Activity Guide for the Brazilian Population contains different exercises and contraindications, in addition to explaining how to overcome barriers. It is underscored that physical activity should be included by health professionals, along with other social deter-

minants, as a measure of disease prevention, health maintenance and promotion.

Managers can contribute to the dissemination of material for pregnant and postpartum women, health professionals and other managers. Moreover, based on the guide, managers will be able to plan specific or long-term strategic actions with their teams. Health professionals can use the guide to help prescribe physical activities, based on theoretical and practical suggestions, in addition to disseminating the information to the community. For both managers and health professionals, the parameters indicated by the Guide can support the assessment and monitoring of the population's physical activity levels, which results in better health planning.

Even though evidence on the subject has improved in recent years, there is still a need to explore strategies to encourage pregnant women to become more physically active. These strategies need to be investigated mainly in groups with different socioeconomic conditions. More studies are needed to better understand the risks and benefits of vigorous physical activity for pregnant women and analyze the benefits of different types of physical exercise. Finally, stronger evidence is needed to determine the effect of physical activity on the outcomes of lower back and pelvic pain, urinary incontinence, anxiety and breastfeeding during pregnancy and postpartum, as well as fetal development and labor outcomes.

The present study presents recommendations on physical activity for pregnant and postpartum women, providing guidance about the type, intensity and adequate volume to obtain health benefits. Additionally, an extensive review of the scientific literature revealed which physical activities pregnant women can engage in and which are ill advised. Furthermore, we show how to adopt an active and healthy lifestyle, provide reasons to exercise and guide health professionals to possible adaptations, if necessary. Thus, the Physical Activity Guide for the Brazilian Population, with a specific chapter for pregnant and postpartum women, is a complete and updated document, considering the particularities of the Brazilian population.

Conflict of interest

The authors declare no conflict of interest.

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Authors' contributions

All the authors participated in the study concept and design, literature review, data collection, data analysis and interpretation. All authors reviewed and approved the manuscript.

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