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It's time to increase physical activity promotion among pregnant women in France

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Abstract:

BACKGROUND: The lockdown linked to COVID-19 was shown to have negative effects on healthy behaviors in the general population, prompting the implementation of adapted public health measures. However, more vulnerable populations, such as pregnant women, were not specifically taken into account. At the time of writing this study, we know little about how the COVID-19 pandemic impacted the physical activity (PA) behavior of pregnant women in France. Given the many reports in the literature about women's low level of PA throughout pregnancy and the negative effects of the COVID-19 lockdown on behaviors in the general population; however, we might assume that their sedentary behaviors increased. The current study aimed to analyze the French recommendations and PA promotion among pregnant women.

MATERIALS AND METHODS: A literature search was done using PubMed for the key terms "physical activity/physical activity promotion," "pregnant women/pregnancy," and "French population/France." All the relevant studies were included to support the argument for this narrative review.

RESULTS: Efforts to promote PA for pregnant women often seem ineffective and even unrealistic, and many women become overweight or obese during pregnancy. Health professionals need evidence-based guidelines and continuous training and skills development in order to convincingly encourage women to be more active during pregnancy and the postpartum period.

CONCLUSION: Health policies should strengthen PA promotion among pregnant women with detailed evidence-based guidelines on PA during postpartum.

Keywords:

Health policy, physical activity promotion, pregnant women

Background

Globally, the COVID-19 crisis and the resulting restrictions exacerbated obesogenic environments, making the practice of physical activity (PA) more difficult.^[1] Indeed, the lockdown in France was imposed by the competent authorities to ensure adequate social distancing during the pandemic period, but this meant that a large proportion of the population had to restrict their movements. An increase in sedentary behavior has been reported in the literature as one of the lasting effects of the COVID-19 pandemic.^[2-6]

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The French people were restricted in their movements outside their homes (i.e. PA for <1 h/day and <1 km from home), and meeting the PA recommendations thus became difficult. Public health measures were taken in an attempt to address this problem.^[7] For example, the French Agency for Food, Environmental and Occupational Health and Safety (ANSES) issued recommendations for the general healthy population, which was now "confined," about how to maintain PA and limit physical inactivity, and it did so by adapting its benchmarks for children, adults, and people over the age of 65. However, it is important to note that no strategy regarding the PA

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behaviors of pregnant women was described in the ANSES publication.

Yet, it is essential that national guidelines target vulnerable populations to increase knowledge of PA recommendations, health benefits to increase PA behaviors. In France, PAs are positively associated with knowledge of nutritional recommendations, mainly acquired via nutritional information and educational actions.^[8] Established in 2001–2005 for first then extended, the French National Nutrition and Health Program (PNNS) is a nutrition policy whose objective is to improve the health status of the population by acting on one of its major determinants, nutrition. The current study aimed to analyze the French recommendations and PA promotion among pregnant women.

Materials and Methods

A literature search was done using PubMed for the key terms “physical activity/physical activity promotion,” “pregnant women/pregnancy,” and “French population/France.” All the relevant studies were included to support the argument for this narrative review.

Results

Very few scientific studies dealing with the subject were found in France, which could limit the argumentation and understanding. Studies reported in neighboring countries were introduced to argue the point.

We report here the lack of investment in France on PA policy for pregnant women.

The context for pregnant women

Given the current context, studies have unsurprisingly reported a decline in the PA level in France.^[9-12] To our knowledge, no study has yet examined the PA behavior of pregnant women in France linked to the recent lockdown. Yet, the literature shows that pregnant women in other countries have undergone adverse lifestyle changes during the COVID-19 pandemic.^[13] One study of pregnant Spanish women found a significant decrease in PA (vigorous, moderate, and walking activities; $P < 0.01$) due to the lockdown.^[14] We assume that sedentary activity and household/caregiving activity, representing a large part of the PA behavior of pregnant women,^[15,16] increased during lockdown.

Of the very few studies that have focused on the PA behavior of pregnant women in France, all reported that these women showed low PA levels.^[15,17] Overall, the international literature shows that few women meet the PA recommendations,^[18,19] and the 2015 American College

of Obstetricians and Gynecologists update revealed a low prevalence of women meeting the new recommendations compared to the 2002 recommendations (variation from 12.7% to 45.0%).^[20] Consistently, studies find that women’s PA decreases throughout pregnancy^[21-26] and that women spend most of their time in sedentary activity.^[27,28]

Understanding the factors that influence the behavior of women regarding PA during pregnancy is crucial for the development of effective, targeted health promotion strategies. Several of these factors should be noted. First, pregnant women have reported that intrapersonal factors limit their participation in PA, such as pain, parity, age, nausea and fatigue, lack of motivation, lack of time, working hours, and insecurity related to the practice.^[29-32] Studies have reported environmental barriers to PA during pregnancy, such as the lack of sports facilities and adverse weather.^[31,33,34] Pregnant women also report interpersonal factors, including insufficient social support and the lack of advice during their pregnancies or advice in disagreement with the recommendations.^[31,35] Being advised on the benefits of PA appears to be a factor that influences PA practice.^[36] In addition, the benefits for maternal and fetal health seem to be major motivating factors;^[30,37] understanding barriers is important determinants of PA behaviors,^[38] hence the importance of countering the mistaken beliefs reported by some women by providing evidence-based advice as reported in the literature.^[39,40] In this regard, pregnancy can be viewed as an opportunity to address lifestyle issues because lifestyle choices can have powerful effects on the health of women and their babies.^[41,42]

Benefits of physical activity during pregnancy

Clearly, several studies on maternal PA have identified its many benefits, both during and after pregnancy, for both mothers and their babies.^[43] The current recommendations are based on the observation that moderate-intensity PA does not adversely affect maternal or fetal health and indeed appears to improve it.

Wang *et al.*^[44] performed a meta-analysis of 23 randomized controlled trials and found that pregnant women benefiting from PA interventions were less likely to exhibit excessive gestational weight gain compared to controls. These results were observed in women with BMIs >25 kg/m² before pregnancy.^[45] The literature indeed reports strong evidence for the effect of activity on gestational weight gain.^[46]

Moreover, in addition to limiting gestational weight gain, PA appears to help prevent gestational diabetes.^[47] A recent systematic review found a greater decrease in fasting glucose following acute exercise and lower

postprandial glucose during chronic exercise in pregnant women with diabetes.^[48] Physically active pregnant women were also shown to have a lower risk of pre-eclampsia and hypertensive disorders.^[49,50]

Barakat *et al.*^[51] reported that pregnant women participating in a PA program 3 days/week (50–55 min/session) throughout pregnancy had a 2.5 times lower risk of giving birth to a baby with macrosomia. The benefits of PA have also been reported on labor and delivery outcomes in a randomized clinical trial. Recently, Shojaei *et al.*^[52] show that walking during late pregnancy could improve Bishop score, increase spontaneous onset of labor, and decrease induction, cesarean, and instrumental delivery without having any adverse effect on the neonate's Apgar score. Furthermore, the influence of PA during pregnancy does not seem to stop with delivery. Indeed, the fetal environment during pregnancy may be favorably modulated, with possibly longer term positive consequences on the child's health.^[53]

Although these encouraging results should be considered with caution given the many factors involved in the development of a child into an adult, some of the studies have nevertheless reported the positive effects of PA during pregnancy on future health.^[54,55] To benefit from these effects, pregnant women need to follow the PA recommendations established by their country's health policy.

A strategy for physical activity promotion? The passive approach of France

Until recently, France had no comprehensive public policy to promote PA for health.^[56] Several plans targeting physical inactivity were put into place over several years through the successive National Health and Nutrition Programs (PNNS). However, these policy actions were insufficient, and the government strategies to increase PA have not sufficiently increased the proportion of the adult population meeting the recommended levels of activity. Indeed, the High Council of Public Health reported that the strategies behind the past PNNS were based mainly on purely passive approaches, hence the partial achievement of the set objectives.^[57] Moreover, the ineffective efforts to combat physical inactivity do not seem to be due to a lack of knowledge, but rather to erroneous framing and the absence of coherent strategies within the health system. Despite the ANSES revision of benchmarks for PA and sedentary lifestyles “distinguishing questions relating to PA from those relating to dietary benchmarks”^[58] and the announced target of 80% of the adult population reaching the recommendations, the new PNNS 2019–2023 has nevertheless remained a passive policy for PA promotion.^[59] Moreover, one can note that pregnant women are not considered part of the 80% meeting the

recommendations. General goals were formulated for the general population, and the population groups most in need, such as those with low levels of PA, especially pregnant women, were rarely and weakly targeted.

An active policy of PA promotion and large-scale coordinated initiatives should be further promoted and implemented in this country. Recently, health-enhancing physical activity (HEPA) policies have been developed in several countries.^[60] Considered necessary in France, HEPA promotion has nevertheless remained a fragmented process^[61,62] despite being a key objective in public health policy. Promoting and improving PA levels in France requires an individual policy and not a multisector policy.

A better strategy for the future to promote physical activity among pregnant women?

Although pregnancy is an opportunity for lifestyle change, the French recommendations for PA during pregnancy actually provide little information for health professionals or pregnant women. Indeed, it seems that various documents have followed one another, for example, those of the National College of French Gynecologists and Obstetricians,^[63] the High Authority of Health,^[64,65] and ANSES,^[58] without great precision on the recommended PA of women during pregnancy. While ANSES recommends that the advice of health professionals prioritize the continuity and regularity of PA rather than the intensity, this raises an important issue. Does this recommendation significantly reflect our “passive” health policy? It should be recalled, first, that the PA recommendations for adults have been unclear in the past PNNS and, second, that health professionals face a multitude of obstacles in promoting PA to pregnant women. In the recent publication “Follow-up for pregnant women during the COVID-19 pandemic: French national authority for health recommendations,” the physical activity of these women was not mentioned.^[66] The new WHO 2020 Guidelines on Physical Activity and Sedentary Behavior provide recommendations on the amount and types of PA for pregnant and postpartum women, and this should encourage interest in thinking about and accentuating PA promotion with the help of health professionals. Yet clearly, promoting PA during pregnancy is not a national priority in the new PNNS 2019–2023 since this program has chosen to focus on a postnatal trajectory for PA promotion. Comparisons with recommendations from other countries (Canada and the USA) reveal a form of delay in French physical activity guidelines during pregnancy and the need to facilitate advice-giving by health-care providers.^[67] The Canadian example with Mottola *et al.* who performed a literature review and identified some benefits of prenatal PA provided preliminary guidance for

pregnant women and health-care professionals on prenatal PA. Multiple recommendations are reported for example resources for the healthcare provider, exercise professionals and pregnant women, or safety precautions.^[68]

Opportunities to increase physical activity promotion among pregnant women in France

There are many opportunities to promote PA during pregnancy^[69] in ways that are feasible and acceptable to all pregnant women and using sustainable resources.^[70] For pregnant women, health professionals are the expected and trusted sources of advice and behavior change.^[37] In addition, these professionals are well positioned to communicate the importance of PA.^[71] Indeed, how to provide advice and encourage behavior changes in pregnant women should be part of professional training and practice.^[72,73]

Recognizing and addressing the barriers to the uptake and maintenance of physical activities may be a solution for facilitating pregnant women's PA engagement, according to health professionals.^[74] The involvement and skills of these professionals can contribute much to the success of such programs.^[75,76]

Yet, health professionals are currently not providing enough advice to pregnant women about their PA behaviors, and the advice that they do give may not be in accordance with the guidelines.^[77] The obvious causes seem to be a lack of knowledge and training that, interestingly enough, the health professionals themselves report.^[74,78-80] In France, midwives believe they lack the time for health promotion and education and consider their current training insufficient.^[81] Overall, this agrees with reports about the advice given to the general population, as PA is not systematically addressed by general practitioners and is rarely the reason for a specific consultation.^[82] These obstacles to PA advice-giving are probably explained by the lack of specific PA guidelines in PA policies for pregnant women and health professionals. There is therefore a real risk that pregnant women will continue to (i) not meet the PA recommendations and (ii) not receive appropriate PA advice from their health professionals.

To reduce sedentary behavior during pregnancy, France should provide guidance for pregnant women and obstetric care and exercise professionals on prenatal PA. This perspective is supported by the growing advocacy of many organizations, initiatives or private companies, and study to support the implementation of public health policies aimed at increasing the level of PA in the French population and improve PA advice in primary health care.^[83,84]

Discussion

The purpose of this study was to analyze French recommendations and the promotion of PA among pregnant women.

The analysis of recommendations shows that pregnant women and their health professionals have little information and recommendations on PA. The documents on PA recommendations in France seem to take little account of pregnant women. The lack of studies in pregnant women in the French population may limit the proposals for PA recommendations.

Future data would provide an opportunity public health policy makers and stakeholders in PA and prevention to examine the actions to promote PA and health from different perspectives and to further our understanding of the relative influences of physical, social, and motivational factors in the French population.

Public health actions, including interventions to promote health, are based on the health needs of a given population and the characteristics of the actions or services being implemented (locations, frequencies, tools). Ideally, obstetric care would be a pillar of any strategy designed to increase PA during pregnancy and reduce inequalities in maternal and child health.^[85] The importance of involving public health and health professionals to promote PA seems logical.^[86] Indeed, effective PA promotion should rely on these professionals, provided they are equipped with the appropriate level of knowledge and skills to assess and counsel their patients on PA.^[76]

Limitations and suggestions

Health policies should strengthen PA promotion among pregnant women with detailed evidence-based guidelines on PA during postpartum. Health-care professionals should have a number of resources such as tools and training on the guidelines and their updates to provide more informed advice when recommending practice to their patients.^[87] For example, health-care professionals should do an assessment of PA behaviors by indicating frequency, moderate-intensity 30-min exercise sessions to accumulate 150 min of exercise per week (RPE of 12–14 on the 6–20 Borg scale and/or via the talk test). The type of exercise should be discussed with the women (e.g. swimming, stationary cycling, walking) and resistance (e.g. light weights). An objective evaluation of the physical condition at the beginning of pregnancy could be carried out for the follow-up and the PA advice throughout the pregnancy, and the possible contraindications. The health professionals should educate patients regarding the benefits and safety of PA. The limitation is that we have few French

scientific studies to support the promotion of PA in this population.

Conclusion

Pregnancy is recognized as posing unique challenges to being sufficiently active. The COVID-19 pandemic has presented additional difficulties through disrupting social contact and daily routines, and limiting physical opportunities for PA. However, the pregnant population lacks informed recommendations for PA throughout pregnancy. Despite an extensive international literature on this subject (few data in France), the reading of the PA recommendations and especially fourth PNNS (2019–2023) suggests that public health policies in France still do not favor promoting PA for pregnant women. If health professionals are equipped with the right information, they have many opportunities to promote PA and thereby help to ensure healthier lifestyles for these women. Detailed recommendations on the type, intensity, and duration of exercise should be provided. Health policies should act quickly to effectively promote PA for pregnant women in France.

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Conflicts of interest

There are no conflicts of interest.

Ethical Considerations

Not applicable

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