Mental health and physical inactivity during pregnancy: a cross-sectional study nested in the BRISA cohort study

Saúde mental e inatividade física durante a gestação: estudo transversal aninhado no estudo de coorte BRISA

La salud mental y la inactividad física durante el embarazo: estudio transversal anidado en la cohorte BRISA

Abstract

The aim of this study was to investigate the association between mental health and physical inactivity in 1,447 pregnant women in the second trimester of pregnancy. Subjects answered the short version of the International Physical Activity Questionnaire. Symptoms of depression and anxiety, and stress levels were assessed using the Center for Epidemiological Studies Depression Scale, the Beck Anxiety Inventory and the Perceived Stress Scale, respectively. The rate of physical inactivity was low (39.8%). The prevalence rates of symptoms of severe depression and severe levels of anxiety were 28.8% and 16.9%, respectively. The average perceived stress score was 24.9. An association was found between physical inactivity and not living with a partner (OR = 1.28), having a manual occupation (OR = 0.71) and, unexpectedly, normal and low levels of anxiety (OR = 1.46 and OR = 1.44, respectively). No association was observed between physical inactivity and symptoms of depression and perceived stress. It is plausible to assume that the majority of physical activity practiced by these women was attributable to housework or occupation which may in turn be associated with high levels of anxiety.

Mental Health; Motor Activity; Pregnancy

Resumo

O objetivo do estudo foi analisar a associação entre indicadores de saúde mental e a inatividade física em amostra com 1.447 mulheres no 2o trimestre gestacional, que responderam ao Questionário Internacional de Atividade Física – versão curta, à Escala de Rastreamento Populacional para Depressão do Centro de Estudos Epidemiológicos, à Escala de Ansiedade de Beck e à Escala de Estresse Percebido. A taxa de inatividade física foi baixa (39.8%), sintomas depressivos graves estiveram presentes em 28.8% da amostra e nível de ansiedade intensa em 16.9%. O escore médio de estresse percebido foi de 24.9. Não residir com companheiro (RP = 1,28), função ocupacional manual (RP = 0,71) e, contrariamente do esperado, níveis de ansiedade normal (RP = 1,46) e leve (RP = 1,44) apresentaram associação com a inatividade física. Não houve associação entre estresse e sintomas de depressão com a inatividade física. É possível que nas mulheres desta amostra uma parcela importante da atividade física esteja ligada a atividades domésticas ou laborais, que poderiam estar associadas a maiores níveis de ansiedade.

Saúde Mental; Atividade Motora; Gravidez
Introduction

Current guidelines suggest that, in the absence of medical or obstetric complications, pregnant women should practice at least 30 minutes of moderate physical activity a day. However, activities that involve a high risk of falling and prolonged exercise (more than 45 minutes), especially in hot and humid conditions, should be avoided.

In a population-based study carried out in the State of São Paulo, Zanchetta et al. observed a physical inactivity rate of 12.9% among women aged between 18 and 29 years. Despite current recommendations and reported benefits for mother and child, physical activity, especially sports and exercise, decreases during pregnancy. The rate of physical inactivity during pregnancy is high, ranging from 64.5% to 91.5%, and tends to be lower in the third trimester of pregnancy. In addition, physical inactivity during pregnancy is associated with an increased probability of admission of infants to neonatal intensive care units, preterm delivery, low birth weight, intrauterine growth restriction, cesarean sections and stillbirths.

Recent studies that focused on understanding the determinants and correlates of physical activity among pregnant women show that lower levels of education and socioeconomic status, and unemployment are factors associated with reduced levels of physical activity during pregnancy. It is important to obtain a better understanding of the barriers to practicing physical activity, especially those related to mental health.

Women are more vulnerable to mental health problems during pregnancy due to the intense psychological and biological changes that occur during this period. The prevalence of symptoms of depression, stress and 12-month prevalence rate of anxiety in women who are not pregnant is 5.9%, 79.3% and 11% respectively, while prevalence rates of symptoms of depression, anxiety and perceived stress in pregnant women vary between 12.8 and 25%, 19.8 and 64.9%, and 78%, and 93%, respectively. Such changes in mental health can result in adverse health outcomes for mother and child, including preterm birth and low birth weight. Evidence also suggests that depression and stress during pregnancy are risk factors for psychiatric disorders during the postpartum period.

The relationship between mental health and physical activity during pregnancy is complex. Tendais et al. found that symptoms of depression were stable during pregnancy, but psychological well-being decreased among pregnant women that were inactive during the first trimester of pregnancy. Poorer mental health status associated with pregnancy may be a contributing factor to reduced activity as physical effort becomes less attractive and more difficult. On the other hand, studies of population samples of nonpregnant women show that regular exercise can alleviate psychological complaints and lead to improvements in quality of life.

Studies of samples of pregnant women corroborate these findings. Physical activity during pregnancy has been shown to provide mood stability and a cross-sectional study found an inverse association between physical activity and symptoms of depression in pregnant women. Evidence also shows that participation in aerobic exercise programs reduces the occurrence of symptoms of depression during pregnancy.

However, the association between physical activity and symptoms of depression differs depending on the type of activity: the practice of moderate or vigorous-intensity physical activity reduces the likelihood of symptoms of severe depression, whereas activities related to adult or child care and household chores have the opposite effect. It has also been observed that symptoms of anxiety are less prevalent in women who practice recreational physical activity. On the other hand, Segato et al. found no difference in the prevalence of stress symptoms when comparing physically active and inactive pregnant women.

The mechanisms involved in the association between mental health and physical activity remain open to debate. Studies suggest a complex interaction between psychological and neurobiological factors and the intensity, frequency, duration and type of physical activity.

Despite the frequency of physical inactivity and mental disorders during pregnancy, the relationship between these two states remains unclear, and a better understanding of these factors is important to assure improvements in mother and child care strategies.

The main aims of this study were: (1) to classify levels of physical activity and identify the rate of physical inactivity among pregnant women; (2) to evaluate mental health status through the assessment of symptoms of depression and anxiety and perceived stress levels; (3) to analyze the association between mental health and physical inactivity. We hypothesized that higher levels of anxiety, depression and perceived stress in pregnant women are associated with physical inactivity during pregnancy.
Methods

A cross-sectional study of 1,447 pregnant women attending private and public hospitals in the municipality of São Luís, State of Maranhão in the Northeast of Brazil was conducted between March 2010 and June 2011. This project was nested in the cohort study Etiology of Preterm Birth and Consequences of Perinatal Outcomes for Child Health: Birth Cohorts in Two Brazilian Cities – BRISA (acronym in Portuguese), carried out in São Luís and in the city of Ribeirão Preto in the State of São Paulo beginning in 2010. Due to the lack of availability of listing, it was not possible to obtain a random sample of pregnant women and therefore the study was conducted using a convenience sample. Women resident in the municipality and who agreed to participate in the study were recruited in selected prenatal care and ultrasound settings. Since one of the main objectives of the BRISA cohort is to study risk factors for preterm delivery, women were included in the sample only if they had performed an ultrasound before the twentieth week of pregnancy.

This sample size has a power of 80% to identify differences in the rate of physical inactivity among women with a probability of type I error of 5%.

Outpatients between the twenty-second and twenty-fifth weeks of gestation, confirmed by an obstetric ultrasound performed before the twentieth week were considered eligible for interview. This period was chosen to avoid the possibility of miscarriage and to identify mental health problems as early as possible during pregnancy.

Data was obtained using a questionnaire which the women filled out with the aid of interviewers. The interviewers were trained to ensure standardization of data collection. Data input was carried out by two separate typists and the accuracy of the two datasets was then tested through comparison and correction of inconsistencies.

Variables

- Level of physical activity

Level of physical activity was assessed using the short version of the International Physical Activity Questionnaire (IPAQ) validated for use with the Brazilian population by Matsudo et al. and previously tested with samples of pregnant women. We evaluated energy expenditure in metabolic equivalents (MET) for three specific types of activities: walking, moderate-intensity physical activities and vigorous-intensity physical activities. MET-minutes/week were defined by multiplying the standard MET value for each activity by the time spent (in minutes) per day doing the activity multiplied by the number of days per week that the activity was performed as follows: walking = 3.3 x time (minutes) x days; moderate-intensity activity = 4.0 x time (minutes) x days; and vigorous-intensity activity = 8.0 x time (minutes) x days. The total physical activity MET-minutes/week is the sum of the MET-minutes/week for each activity.

Level of physical activity was initially classified into the following three categories:

(a) High: a vigorous-intensity activity practiced at least three days a week, comprising a minimum total of 1,500 MET-minutes/week, or at least seven days of any combination of walking, moderate-intensity or vigorous-intensity activity, comprising a minimum total of 3,000 MET-minutes/week;

(b) Moderate: a vigorous-intensity activity practiced for at least 20 minutes a day three days a week, or moderate-intensity activity and/or walking practiced for at least 30 minutes a day five days a week, or any combination of walking, moderate-intensity or vigorous-intensity activity practiced at least five days a week and comprising a minimum total of 600 MET-minutes/week;

(c) Low: physical activity that does not meet the above criteria.

Those women in the moderate category meet the American Congress of Obstetricians and Gynecologists (ACOG) recommendation regarding physical activity during pregnancy (at least 30 minutes of physical activity on most or all days of the week). Two categories were therefore created to classify levels of physical inactivity: active individuals (which included moderate and high levels of activity) and inactive individuals (low level of physical activity).

- Sociodemographic variables

The following sociodemographic variables were analyzed: maternal age (under 20 years; 20 to 34 years; and 35 years and over); level of education (less than nine years; nine to 11 years; and at least 12 years of study); occupation (non-manual; manual; and unemployed); socioeconomic status, defined based on the Economic Classification Criterion for Brazil developed by the Associação Brasileira de Empresas de Pesquisa (http://www.abep.org/novo/Content.aspx?ContentID=301, accessed on 17/Dec/2012). The ABEP categorization allows the estimation of the purchasing power of urban households which are grouped into the following income classes: A1, A2, B1 and B2 into category A/B; C1 and C2 into category C; and D and E into category D/E. Category A/B includes individuals in the upper socioeconomic
status groups, whereas classes D/E comprise low socioeconomic status groups. Whether the mother lived alone or with a family member (e.g., spouses and children) was also considered.

- **Symptoms of depression**

Symptoms of depression were identified using the Center for Epidemiologic Studies Depression Scale (CES-D) \(^51\). The scale was developed for use in populations with no known history of mental illness and assesses the intensity of depressive symptoms and has been previously tested with pregnant women \(^52\).

The CES-D comprises 20 items and identifies the presence of salient symptoms of depression, such as depressed mood, feelings of guilt and worthlessness, feelings of helplessness and hopelessness, psychomotor retardation, loss of appetite and sleep disturbance \(^51\). Four items were worded in the positive direction. Each response was scored from zero to three based on the frequency of occurrence of the symptom and positive items were reversed scored. CES-D scores range from zero to 60, where higher scores indicate a greater number of symptoms. According to recommendations made by a previous study, a cutoff score of \(\geq 22\) was used to represent “symptoms of severe depressive” \(^52\).

- **Symptoms of anxiety**

The presence of anxiety symptoms was assessed using the Beck Anxiety Scale (BAI), which has been validated for use with pregnant women \(^53\). The scale is usually used to carry out a clinical assessment of anxiety, but is also an appropriate tool for screening individuals with anxiety disorders from the general population \(^54\). The BAI is a 21-item questionnaire designed to assess the severity of anxiety symptoms. Respondents rate the extent to which they were affected by each symptom during the past week on a scale of zero (not at all) to three (severely) \(^53\). Anxiety level is classified based on the total score as follows; normal (zero-nine points), mild (10-18 points), moderate (19-29 points) and severe (30-63 points) \(^55\).

- **Perceived stress**

The perceived stress level was analyzed using the Perceived Stress Scale (PSS-14) \(^56\), a short self-report questionnaire translated and validated for use with the Brazilian population \(^57\). The PSS-14 consists of 14 items designed to measure the perception of stressful life events during the previous four weeks. The questionnaire is rated using a five-point scale ranging from zero (never) to four (always), with a minimum total score of zero and a maximum of 56 \(^56\). The PSS-14 has been used with both clinical and non-clinical samples, including pregnant women \(^31,58\). Recommendations suggested by Deslandes et al. \(^36\) were followed in order to achieve a more accurate estimation of higher levels of perceived stress among the sample. Subjects with scores within the highest quartile were categorized as being subject to a severe level of perceived stress.

**Statistical analysis**

Data was analyzed using the Stata version 10.0 software (Stata Corp., College Station, USA). Descriptive statistics (means with standard deviations or frequency distribution) of sociodemographic variables, physical inactivity and mental health variables were computed.

The dependent variable was level of physical activity (physically active or inactive). Unadjusted and adjusted analysis of the factors associated with physical inactivity was conducted using robust Poisson regression adopting a significance level of 0.05.

**Ethical aspects**

This research meets the criteria of the Resolution 196/96 of the Brazilian National Health Council and its complementary norms. Informed written consent was obtained from all subjects after they had received a detailed explanation about the study protocol. This study was approved by the local Ethics Committee (process number 4771/2008-30).

**Results**

Table 1 depicts the sociodemographic characteristics of the cohort sample of 1,447 pregnant women: 81% of the sample were aged between 20 and 34 years, 75.4% had between nine and 11 years of study, 79.8% were living with a partner, 57.4% were not living with children and 64.4% were from economic class C. The majority of the sample were unemployed and had manual occupations.

The rate of physical inactivity was 39.8%. Symptoms of severe depression (CES-D \(\geq 22\)) were observed in 28.8% of the sample and 16.9% of the pregnant women experienced severe levels of anxiety (BAI \(\geq 30\)). The average perceived stress level was 24.9 (Table 2).

The results of the unadjusted analysis (Table 3) show that subjects under 20 years of age (OR = 1.28; \(p = 0.002\), living without a partner
Table 1

Sociodemographic characteristics of a sample of pregnant women (N = 1,447) from São Luís, State of Maranhão, Brazil, 2010 to 2011.

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 20</td>
<td>178</td>
<td>12.3</td>
</tr>
<tr>
<td>20-34</td>
<td>1,172</td>
<td>81.0</td>
</tr>
<tr>
<td>&gt; 34</td>
<td>97</td>
<td>6.7</td>
</tr>
<tr>
<td>Education (years)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>&lt; 9</td>
<td>183</td>
<td>12.7</td>
</tr>
<tr>
<td>9-11</td>
<td>1,090</td>
<td>75.4</td>
</tr>
<tr>
<td>&gt; 11</td>
<td>172</td>
<td>11.9</td>
</tr>
<tr>
<td>Living with a partner</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>1,154</td>
<td>79.8</td>
</tr>
<tr>
<td>No</td>
<td>292</td>
<td>20.2</td>
</tr>
<tr>
<td>Living with children</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>616</td>
<td>42.6</td>
</tr>
<tr>
<td>No</td>
<td>831</td>
<td>57.4</td>
</tr>
<tr>
<td>Employment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-manual occupation</td>
<td>240</td>
<td>16.6</td>
</tr>
<tr>
<td>Manual occupation</td>
<td>451</td>
<td>31.2</td>
</tr>
<tr>
<td>Unemployed</td>
<td>754</td>
<td>52.2</td>
</tr>
<tr>
<td>Economic class</td>
<td></td>
<td></td>
</tr>
<tr>
<td>A/B</td>
<td>289</td>
<td>20.0</td>
</tr>
<tr>
<td>C</td>
<td>932</td>
<td>64.4</td>
</tr>
<tr>
<td>D/E</td>
<td>226</td>
<td>15.6</td>
</tr>
</tbody>
</table>

Table 2

Levels of physical activity and mental health status of a sample of pregnant women (N = 1,447) from São Luís, State of Maranhão, Brazil, 2010 to 2011.

<table>
<thead>
<tr>
<th>Variable</th>
<th>n</th>
<th>%</th>
<th>Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level of physical activity</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low</td>
<td>576</td>
<td>39.8</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>607</td>
<td>42.0</td>
<td></td>
</tr>
<tr>
<td>High</td>
<td>264</td>
<td>18.2</td>
<td></td>
</tr>
<tr>
<td>Symptoms of severe depression</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>No</td>
<td>1,026</td>
<td>71.3</td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>414</td>
<td>28.8</td>
<td></td>
</tr>
<tr>
<td>Anxiety level</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Normal</td>
<td>387</td>
<td>26.8</td>
<td></td>
</tr>
<tr>
<td>Mild</td>
<td>469</td>
<td>32.4</td>
<td></td>
</tr>
<tr>
<td>Moderate</td>
<td>346</td>
<td>23.9</td>
<td></td>
</tr>
<tr>
<td>Intense</td>
<td>245</td>
<td>16.9</td>
<td></td>
</tr>
<tr>
<td>Perceived stress level</td>
<td></td>
<td></td>
<td>24.9 ± 8.3</td>
</tr>
</tbody>
</table>

SD: standard deviation.
OR = 1.28; p = 0.001) or children (OR = 1.24; p = 0.002) were more likely to present higher rates of physical inactivity, whereas having a manual occupation (OR = 0.69; p < 0.001) was associated with lower rates of physical inactivity. No association was found between education and economic status and level of physical activity. The rate of physical inactivity in pregnant women presenting mild or normal levels of anxiety was 46% and 50% higher, respectively, than in women subject to severe levels of anxiety (p = 0.001). The presence of symptoms of severe depression was associated with a 17% higher rate of physical inactivity (p = 0.039). No association was found between perceived stress and physical inactivity (p = 0.115).

The results of the adjusted analysis (Table 4) show that there was a significant association between physical inactivity and the following factors: mild (OR = 1.44) or normal anxiety levels...
This study tested the hypothesis that there is an association between the occurrence of mental health complaints in pregnant women, such as anxiety, depression and perceived stress, and the absence of physical activity. Unexpectedly, physically inactive women in the second trimester of pregnancy showed lower levels of anxiety. Furthermore, no significant association was found between having symptoms of depression and perceived stress and physical inactivity after conducting adjusted analysis.

The majority of similar studies involving samples of the general population and pregnant women, such as anxiety, depression and perceived stress, and the absence of physical activity. Unexpectedly, physically inactive women in the second trimester of pregnancy showed lower levels of anxiety. Furthermore, no significant association was found between having symptoms of depression and perceived stress and physical inactivity after conducting adjusted analysis.
women found an association between symptoms of depression, anxiety, and stress and lower levels of specific types of leisure-time physical activity and/or exercise. Exercise is a type of leisure-time physical activity that aims to maintain or improve one or more aspects of physical fitness and is planned, structured, systematic, and generally more intense. The apparently contradictory findings of an association between lower anxiety levels and increased physical inactivity can be justified, at least in part, by the instrument used to assess physical activity. The short version of the IPAQ assesses physical activity undertaken during leisure time, domestic and gardening activities, work-related activities and transport-related activities, but does not allow for specific estimates of time spent on each type of physical activity.

Furthermore, patterns of physical activity, and therefore mental health, may be affected by sociodemographic profile. Given the sociodemographic profile of the sample (mainly young women with only primary school education, belonging to economic class C and unemployed or engaged in manual occupations), it is possible that most physical activity was related to domestic chores and/or work activities, which in turn could be associated with increased anxiety levels. In Brazil, housework and childcare are generally performed by women, while men typically assume the role of provider. It can therefore be assumed that the high rate of physical activity found in the sample is probably due to activities related to housework or childcare and, since some women may consider increased housework a burden, this situation may be associated with a greater likelihood of symptoms of severe depression.

Housework involves repetitive tasks with little autonomy and is generally undervalued and therefore may be associated with different forms of mental illness in women, meaning that mental health is likely to be significantly worse in housewives than in formal workers.

The rate of physical inactivity in the second trimester of pregnancy (39.8%) was lower than that reported in the literature. Two previous studies that used similar instruments to measure physical activity (long version of the IPAQ) among women in the same gestational trimester reported rates of 64.5% and 87.5%. It must be emphasized, however, that these studies used different cutoff points (at least 150 minutes of physical activity per week) using an instrument that classified level of physical activity based on metabolic equivalents, reported that 84.2% of pregnant women were physically inactive. Tavares et al. developed their own questionnaire similar to that of this study and showed that most pregnant women in the second trimester practiced insufficient physical activity. Dumith et al. found that 68.2% of mothers reported not having practiced physical activity during pregnancy, while another study reported that 91.5% of pregnant women did not perform leisure-time physical activity in the second trimester of pregnancy. It is likely that these discrepancies reflect differences in the demographic profile of the samples and methodological differences involving the definition of physical activity and inactivity, the type of instrument used and types of physical activity analyzed (leisure-time, work-related, household activities, transport-related). As mentioned above, it is possible that the majority of time spent on physical activity reported by this sample consists of housework and manual occupational activities. Time spent on work-related activities throughout pregnancy remained stable in comparison to the pre-pregnancy pattern. The practice of leisure-time physical activity, which is more likely to decrease during pregnancy, is more common in populations with higher levels of education and socioeconomic status.

A systematic review of women in the second trimester of pregnancy conducted by Bennett et al. found that the rate of symptoms of severe depression was 12.8% (95%CI: 10.7; 14.8). The high rate of symptoms of severe depression observed by the present study (28.8% higher than the rate reported by Bennett et al.) may be explained by the fact that more than half of the sample were unemployed. Previous studies have observed an association between symptoms of depression and unemployment and the perception of equity regarding housework. Furthermore, the psychopathology of depression can be conceived as a multidimensional construct, and the severity of symptoms may be influenced by low quality of life and other subjective aspects not addressed by this study.

The anxiety rate observed by this study (16.9%) was relatively low compared to similar studies that observed prevalence rates between 19.8% and 64.9%. These differences may reflect methodological issues related to research design, sample size and characteristics. However, the findings of this study suggest that mood alterations are an important aspect that deserves further study and monitoring during pregnancy. The mean perceived stress score was 24.9, which is similar to that described by Cohen et al. in a study of a community sample of women, but lower than that observed by other studies, such as those carried out by Segato et al. and Rondo.
et al., that reported mean scores of 28.8 and 30.2, respectively.

The associations between not living with a partner and higher levels of physical inactivity and between manual occupation and lower levels of physical inactivity remained after adjusted analysis. The association between manual occupation and lower levels of physical inactivity was expected, given the nature of the job function. The association between level of physical activity and marital status has been observed by previous studies.

This study has a number of important limitations. The first concerns the instruments used to assess symptoms of depression. Common symptoms of depression, such as sleep and appetite disturbances and lack of energy, are also common during pregnancy, regardless of the mental state of the patient, meaning that pregnant women are more likely to generate a higher score for the items of the CES-D related to the neurovegetative symptoms. A higher cutoff point for the presence of symptoms of depression was adopted to address this problem and minimize bias. However, the rate found by this study is similar to that observed by Pottinger et al. using a questionnaire developed specifically for use with pregnant women (Edinburgh Postnatal Depression Scale – EPDS), indicating that the measure taken to minimize bias was apparently effective. Second, given the cross-sectional nature of the data, caution must be taken in the interpretation of causal relationships between variables. An isolated evaluation during pregnancy may not have the required sensitivity to detect possible associations between symptoms of depression and physical inactivity, given that symptoms of anxiety and depression may develop after chronic and continued exposure to external factors. Finally, the use of a convenience sample limits the generalization of the findings of this study to the general population.

However, it is important to note that level of physical activity, presence of symptoms of depression and anxiety and perceived stress levels were evaluated using instruments already validated and widely used in other studies. Another advantage of this study is the large sample size (1,447 women), which improves the accuracy of findings.

Our findings showed a high rate of symptoms of severe depression and anxiety among this sample of pregnant women, showing that professionals working in prenatal care should be attentive to common mental disorders in pregnant women so as to ensure early diagnosis and treatment and avoid possible negative outcomes for mother and child.

The hypothesis that symptoms of depression and anxiety and stress levels are accentuated in physically inactive women was not confirmed. In fact, physically active women showed higher levels of anxiety, suggesting that the type of physical activity practiced (housework and work-related) is not beneficial to mental health and therefore measures to promote physical activity in pregnant women should bear in mind the demographic profile of this segment of the population.

The identification of mood disorders associated with types of physical activity is essential for the development of effective health interventions aimed at promoting the psychological well-being of mothers and ensuring a healthy pregnancy and postpartum health.
Resumen

El objetivo del estudio fue analizar la asociación entre la salud mental y la inactividad física en 1.447 mujeres, durante el segundo trimestre del embarazo, que respondieron al Cuestionario Internacional de Actividad Física –versión corta, la Escala de Depresión del Centro de Estudios Epidemiológicos, la Escala de Ansiedad de Beck y la Escala de Estrés Percibido. La tasa de inactividad fue baja (39,8%), síntomas depresivos graves estaban presentes en un 28,8% de la muestra y el nivel de ansiedad intensa en un 16,9%. La puntuación media de estrés percibido fue de 24,9. No vivir en pareja (RP = 1,28), función manual de trabajo (RP = 0,71) y, contrariamente a lo esperado, nivel de ansiedad leve (PR = 1,46) y mínimo (PR = 1,44) mostraron asociación con la inactividad física. No fue encontrada ninguna asociación entre el estrés percibido y los síntomas de la depresión con la inactividad física. Es posible que en las mujeres de la muestra una porción significativa de la actividad física esté relacionada a las actividades domésticas o de empleo, que podrían estar asociadas con mayores niveles de ansiedad.

Salud Mental; Actividad Motora; Embarazo

Contributors

E. H. M. Takahasi participated in the conception of this study, data analysis and interpretation and the drafting of this article. G. S. Alves, A. A. M. Silva, R. F. L. Batista, V. M. E. Simões and C. M. Del-Ben contributed to data analysis and interpretation and the revision of this article. M. T. S. B. Alves contributed to the conception of this study, data analysis and interpretation and the revision of this article. M. A. Barbieri participated in the conception of this study, the critical revision of the intellectual content and approval of the final version of this article.

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