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PELLEGRIM**

Dyspnea, level of physical activity and social and emotional factors in pregnant women in the context of the COVID-19 pandemic in Portugal

Dispneia, nível de atividade física e fatores emocionais e sociais em gestantes em contexto de pandemia por COVID-19 em Portugal



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Dissertação apresentada à Universidade de Aveiro para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Fisioterapia, realizada sob a orientação científica da Prof.^a Doutora Ana Rita Pinheiro, Professora Adjunta da Escola Superior de Saúde da Universidade de Aveiro, e coorientação científica do Prof. Doutor António Mesquita Montes, Professor Adjunto da Escola Superior de Saúde de Santa Maria.

À minha querida filha Natália
Por um mundo cheio de Ocitocina
(hormona do amor)

o júri

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agradecimentos

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resumo

Introdução: A gestação é um período em que ocorrem várias alterações multimodais na mulher. Este estudo pretende caracterizar a dispneia, o nível de atividade física e aspetos emocionais e sociais em gestantes em contexto de COVID-19 em Portugal.

Métodos: Realizou-se um estudo observacional e transversal em 2020, em Portugal. Mediante o contexto de restrições de contacto pessoal vigente no país à data, foi elaborado um questionário de autopreenchimento para divulgação online, em redes sociais portuguesas destinadas a gestantes. O questionário incluiu questões para caracterização da amostra, assim como a Medical Research Council (MRC) para avaliar a dispneia. Foi também integrada a versão portuguesa do Questionário Internacional de Atividade Física para Gestantes (PPAQ) para caracterizar o nível de atividade física, a Escala de Ansiedade, Depressão e Stress (DASS-21) para avaliar fatores emocionais e Escala de Satisfação com Suporte Social (ESSS) para avaliar o satisfação da pessoa com o suporte social.

Resultados: Participaram neste estudo 10 gestantes. Apenas uma reportou dispneia grau 1 – “sem problemas de falta de ar, exceto em caso de exercício intenso”, no 3º trimestre (T), idade entre o 34-37 anos, peso adequado, maior dispêndio energético em atividades moderadas, e apresentando fortes indícios de alterações emocionais e satisfação com suporte social abaixo da média. Quatro gestantes referiram dispneia grau 2 – “falta de ar quando se apressa ou sobe inclinações”, estando no 2º ou 3ºT, tendo idades compreendidas entre 30-33 anos, apresentando baixo peso, peso adequado ou excesso de peso, referindo maior dispêndio energético em atividades sedentárias ou leves. A sua satisfação com o suporte social foi mediana e apenas uma gestante reportou alterações emocionais (ansiedade e depressão moderadas). Cinco gestantes referiram dispneia grau 3 – “andar mais devagar do que outras pessoas devido à falta de ar, ou precisar parar para respirar ao caminhar ao seu ritmo normal”. Destas, 4 estavam no 3ºT, tinham idades compreendidas entre 26-37 anos, com peso adequado ou em excesso, com maior dispêndio energético em atividades leves ou moderadas. A satisfação com o suporte social foi mediano e uma gestante evidenciou alterações emocionais (ansiedade severa e depressão e stress moderados). Uma das gestantes com dispneia grau 3 estava no 1ºT e reportou dispêndio energético semelhante em atividades de todos os níveis, não evidenciando alterações emocionais e referindo ter uma baixa satisfação com suporte social.

Conclusão: Na pequena amostra deste estudo, conclui-se uma prevalência elevada de dispneia em gestantes (9 em 10), com maior dispêndio energético em atividades sedentárias ou leves (7 em 10). Na generalidade, a satisfação com o suporte social parece ser mediano ou baixo, existindo indicadores de ansiedade, depressão e stress em algumas gestantes (1-2 em 10). Perante o baixo nº amostral, não foi possível estabelecer uma correlação entre as variáveis, sendo importante realizar estudos futuros nesse sentido.

keywords

pregnancy, shortness of breath physical activity, mood states.

abstract

Introduction: Pregnancy is a period in which several multimodal changes occur in women. This study aims to characterize dyspnea, the level of physical activity and emotional and social aspects in pregnant women in the context of COVID-19 in Portugal.

Methods: An observational and cross-sectional study was carried out in 2020, in Portugal. Given the context of restrictions on personal contact in force in the country at the time, a self-completion questionnaire was prepared for online dissemination on Portuguese social networks aimed at pregnant women. The questionnaire included questions for sample characterization, as well as the m Medical Research Council (MRC) to assess dyspnea. The Portuguese version of the International Physical Activity Questionnaire for Pregnant Women (PPAQ) was also integrated to characterize the level of physical activity, the Anxiety, Depression and Stress Scale (DASS-21) to assess emotional factors and the Social Support Satisfaction Scale (ESSS) to assess the person's satisfaction with social support.

Results: Ten pregnant women participated in this study. Only one reported grade 1 dyspnea – “no problems with shortness of breath, except in case of intense exercise”, in the 3rd trimester (T), age between 34-37 years, adequate weight, greater energy expenditure in moderate activities, and presenting strong evidence of emotional changes and satisfaction with social support below average. Four pregnant women reported grade 2 dyspnea – “shortness of breath when rushing or climbing slopes”, being in the 2nd or 3rd T, aged between 30-33 years, presenting low weight, adequate weight or overweight, referring to greater energy expenditure in sedentary or light activities. Their satisfaction with social support was median and only one pregnant woman reported emotional changes (moderate anxiety and depression). Five pregnant women reported grade 3 dyspnea – “walking slower than other people due to shortness of breath or needing to stop for breath when walking at their normal pace”. Of these, 4 were in the 3rd T, aged between 26-37 years, with adequate or excess weight, with greater energy expenditure in light or moderate activities. Satisfaction with social support was average and one pregnant woman showed emotional changes (severe anxiety and moderate depression and stress). One of the pregnant women with grade 3 dyspnea was in the 1st T and reported similar energy expenditure in activities at all levels, showing no emotional changes and reporting low satisfaction with social support.

Conclusion: In the small sample of this study, there is a high prevalence of dyspnea in pregnant women (9 out of 10), with greater energy expenditure in sedentary or light activities (7 out of 10). In general, satisfaction with social support seems to be medium or low, with indicators of anxiety, depression and stress in some pregnant women (1-2 out of 10). Given the low sample size, it was not possible to establish a correlation between the variables, and it is important to carry out future studies in this sense.

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List of abbreviations

PA - Physical activity

AOCG - American College of Obstetrics and Gynecology

PPAQ - Pregnancy Physical Activity Questionnaire

MRC - Medical Research Council

DASS-21- Scale of Stress, Anxiety, and Depression with 21 questions.

ESSS - Social Support Satisfaction Scale

SPSS - Statistical Package for the Social Science

MET- Metabolic Equivalent of Task

COPD - Chronic Obstructive Pulmonary Disease

RGPD - General Data Protection Regulation

BMI - Body Mass Index

SD - Standard deviation

IQT - Interquartile deviation

n.a - Not applicable

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Introduction

During pregnancy, several changes occur in women, aiming to adapt to the organic needs of the maternal-fetal complex and prepare for childbirth. Physiological and psychological adaptations occur progressively, triggered by chemical/ hormonal, immunological and morphological adjustments, affecting different systems, including the respiratory, cardiovascular, nervous and musculoskeletal systems (Melzer *et al.*, 2010). Considering the respiratory system, lung volume and thoracic configuration changes during pregnancy due to the progressive uterine distension. The enlarging uterus increases the end-expiratory abdominal pressure, thereby displacing the diaphragm upwards, which implies two consequences: 1) the negative pleural pressure increases, leading to an earlier closure of the small airways with consequent reduction of functional residual capacity and expiratory reserve volume; 2) the chest height becomes shorter, but the other thoracic dimensions (transversal diameter and the lower thoracic perimeter) increase in order to maintain constant total lung capacity (LoMauro & Aliverti, 2015).

Shortness of breath, i.e., dyspnea, is observed in more than 60% of pregnant women. Though it causes numerous respiratory discomforts, especially in the third trimester, no specific intervention for dyspnea during pregnancy is currently being targeted. It is considered a physiological factor, being generally undervalued in pregnant women (Lee *et al.*, 2017). Besides the changes in the ventilatory biomechanics, that may contribute to dyspnea, this symptom also seems to be influenced by emotional factors, such as anxiety, depression, and alteration in mood states, which, depending on the level of physical conditioning, may intensify the perception of dyspnea and increase its severity (Banzett, & Moosavi, 2001; Hayen *et al.*, 2013). This data is particularly important since the literature reports that the period of pregnancy is accompanied by mood instability, with frequent fluctuations in emotional response, especially in the third trimester (Ferreira *et al.*, 2014). Moreover, the degree of satisfaction with maternal health services offered for future pregnant women or even the pregnant women seem to contribute to these mood changes, leading to anxiety, stress, and possibly depression in the postpartum period (Webster *et al.*, 2000). In addition, by itself, dyspnea causes discomfort and can lead the person to cease practicing any physical activity, since the fear of dyspnea can discourage the performance of different activities of daily living (Kamal *et al.*, 2011).

In general, regular physical activity is proven to promote health. During pregnancy, it seems to promote health of both the mother and the fetus. It seems to prevent, and control hypertension, gestational diabetes, low back pain, and musculoskeletal injuries, to strengthen

the pelvic floor, to decrease premature births and cesarean sections, to increase self-esteem of the pregnant woman, and to bring other numerous benefits that work in all the systems of the organism, including the respiratory system (Krzepota *et al.*, 2018; Szumilewicz *et al.*, 2013; Zavorsky & Longo, 2011). An active lifestyle characterized by higher levels of moderate-to-vigorous physical activity and lower levels of sedentary time during pregnancy also seem to improve emotional regulation and mental health of pregnant women (Rodriguez-Ayllon *et al.*, 2021). Moreover, the practice of physical activity by the pregnant woman promotes an improvement of the nutritional status of the fetus, and an increase in birth weight (Batista *et al.*, 2003).

According to the World Health Organization (WHO), physical activity is defined as any bodily movement produced by skeletal muscles that requires energy expenditure, referring to all movements, including those made during leisure time, for transport to get to and from places, or as part of a person's work (WHO, 2020). Common ways to be active include walking, cycling, sports, active recreation, and playing, and can be performed at any level of skill and for enjoyment. Current international recommendations for pregnant women without physical activity contraindication refer that they should do at least 150 minutes of moderate-intensity aerobic physical activity throughout the week, as well as incorporate a variety of aerobic and muscle-strengthening activities. In addition, they should limit the amount of time spent being sedentary, replacing sedentary time with physical activity of any intensity, including light intensity (WHO, 2020). The American College of Obstetrics and Gynecology also recommends that women who were already physically active should continue their physical activity during pregnancy, unless they have a specific clinical or obstetric contraindication (ACOG, 2020). In a study carried out in Portugal by Santos *et al.* (2016), it was observed that women seem to change physical activity during pregnancy, reducing its levels (Santos *et al.*, 2016).

Worldwide, COVID-19 pandemic caused a challenge to governmental decision makers and to all society. To face the need of taking care of SARS-CoV-2 infected people, the health systems required a strong mobilization (Leiras *et al.*, 2021). With that in mind, in March 2020 the Portuguese Government adopted strict restrictive measures, that evolved until 2022, depending on the epidemiologic state of the countries as well as the scientific knowledge that was being produced. Restrictions included the closure of schools, limited access to restaurants and bars, and mandatory teleworking. The country initiated a first lockdown in March 2020 and a second in January 2021. In between and afterwards, a "civic duty" of selective confinement replaced the ban on movement, with several restrictions (Violante & Lanceiro, 2021), and the Portuguese reduced their overall mobility by 80% (Ricoça-Peixoto, *et al.*, 2020). During the

critical periods, the Portuguese non-emergent health care services were predominantly ensured in a non-presential format (Leiras *et al.*, 2021).

Though the study of Santos *et al.* (2016) contributes to the characterization of the physical activity lifestyle of Portuguese women during pregnancy, it is still lacking information about the prevalence of dyspnea in this population, as well as of other potential confounders. Therefore, the present study aims to characterize dyspnea, the level of physical activity and emotional e social factors in pregnant women in Portugal, during the Covid-19 pandemic.

2. Methods

This chapter presents a detailed description of the study type and methodological procedures.

2.1 Study design

This study was observational cross-sectional, survey type.

2.2 Ethical considerations

The present study was approved by the Ethics and Deontology Council of the University of Aveiro (07- CED/2020) and was in agreement with the General Data Protection Regulation (RGPD). To proceed in the survey, participants had to consent their participation, after reading the information about the objectives and general characteristics of the study. Data was stored on a Secure Platform (LimeSurvey by UA). To clarify any doubts, the e-mail of the investigator was made available. To quit participation, the respondent only had to stop filling the survey. Data was collected anonymously (Appendix I).

2.3 Participants

Participated in this study pregnant women living in Portugal, clinically monitored as having a normal pregnancy, aged over 18 and under 40. Were excluded pregnant women having: a medical contraindication to physical activity; respiratory diseases (such as asthma, chronic obstructive pulmonary disease, bronchitis, acute respiratory infections, among others); cardiovascular disorders (such as hypertension); uncontrolled diabetes; thyroid diseases; antidepressant medication; and drug, alcohol, and/or tobacco use during pregnancy (Oliveira *et al.*, 2016).

Due to the Covid-19 pandemic restrictions, participants' recruitment was planned to occur exclusively online, using the snowball sampling technique approach. To do so, social network groups related to the subject "pregnancy in Portugal" were identified and contacted to request the disclosure of the study, hoping for a dissemination to their followers. Of 20 groups that were contacted, 12 were available to collaborate. The disclosure of the link to the questionnaire was only possible after authorization from the administrators of private groups regarding the participation of the main researcher. Data collection was carried out between June and July 2021.

2.4 Outcome measures

A self-completed questionnaire (Appendix 1) was developed by the research team consisting of closed questions, made available through LimeSurvey by the University of Aveiro. This questionnaire has been divided into six sections: 1) Section 1. Eligibility of participants; 2) Section 2. Characterization of participants; 3) Section 3. Assessment of the level of physical activity using The Pregnancy Physical Activity Questionnaire (PPAQ); 4) Section 4. Assessment of dyspnea at rest using the dyspnea scale of the Medical Research Council (MRC); 5) Section 5. Assessment of depression, anxiety, and stress, using the Depression, Anxiety and Stress Scale (DASS-21); and 6) Section 6. Assessment of satisfaction with social support using the Social Support Satisfaction Scale (ESSS).

2.4.1. Section 1. Eligibility of participants

Questions to guarantee the inclusion and exclusion criteria were elaborated.

2.4.2. Section 2. Characterization of participants

Questions to characterize participants considering age, number of pregnancies, gestational period in which they are, height and weight were elaborated.

2.4.3. Section 3. Assessment of the level of physical activity using The Pregnancy Physical Activity Questionnaire (PPAQ)

PPAQ aims to measure and evaluate physical activity (frequency, duration, and intensity) during pregnancy, and consists of 32 questions. For each activity analyzed, participants are invited to select the category that best approximates the amount of time spent on that activity, per day or week. The categories are subdivided into four levels of intensity according to the score obtained in each measure in METs, with 1 MET corresponding to the metabolic equivalent of energy spent at rest. Sedentary activities correspond to energy expenditure < 1.5 METs; light with energy expenditure > 1.5 and < 3 METs; moderate > 3 and < 6 METs; and vigorous > 6.0 METs (Chasan-Taber *et al.*, 2004). The sum of the sedentary and light activity values represents activities below moderate. The energy expenditure spent on the activity in METs (intensity) is multiplied by the duration of this activity per day and thus obtains an average measurement of energy spent weekly ($\text{MET}\cdot\text{h}\cdot\text{wk}^{-1}$). After standardized calculation of the duration and intensity of activities, the PPAQ allows the following

measurements: sedentary, light, moderate, vigorous, domestic and care activities, occupational, sport/exercise and total activity (Chasan-Taber *et al.*, 2004).

PPAQ was originally developed by Chasan-Taber *et al.* (2004). The validation for the Portuguese population was performed by Pombo (2012) and Mesquita (2015), having obtained semantic equivalence through translation, retroversion, and obtaining a consensus version and analysis of the quality of the translation performed by two clinicians, and the content validity was obtained by the understanding and acceptance analysis by a panel of experts (Bernardo, 2019; Santos *et al.*, 2016).

2.4.4. Section 4. Assessment of dyspnea at rest using the dyspnea scale of the Medical Research Council (MRC)

The MRC is a scale widely used for classification of grade of dyspnea in several international studies and its use in Portugal is advised by the Directorate-General for Health, for which it is considered the gold standard.

MRC is a 5-degree scale, with grade 1 (No problems with shortness of breath except in case of intense exercise), grade 2 (Short of breath when hurrying or walking up inclines), grade 3 (Walking slower than other people due to shortness of breath, or need to stop for breath when walking at your normal pace), grades 4 (Stops to breathe every 100 meters or after walking a few minutes straight) and 5 (Too tired or out of breath to go out from home, dressing or undressing being the highest). This scale allows the assessment of the degree, numerically and increasingly (1-5), of functional disability due to dyspnea (Williams, 2017; Stenton, 2008).

2.4.5. Section 5. Assessment of depression, anxiety, and stress, using the Depression, Anxiety and Stress Scale (DASS-21)

This DASS-21 scale is divided into three dimensions to assess depression, anxiety, and stress. Each dimension consists of 7 items, a total of 21, forming a Likert-type answer. Answers should be given based on the symptoms experienced in the last week, about each symptom. The values range from 0 to 21 in each dimension, so in total they range from 0 to 63. The results of each dimension are determined by the sum of the results of the 7 items. The highest quotes in each dimension correspond to more negative affective states. This instrument was validated for the Portuguese population by Pais-Ribeiro *et al.*, (2004). The translated and adapted version to Portuguese shows good psychometric qualities, with a good internal consistency ($\alpha = 0.88$), the unidimensionality of the scale, as well as its temporal stability (Ribeiro *et al.*, 2004).

2.4.6. Section 5. Assessment of satisfaction with social support using the Social Support Satisfaction Scale (ESSS)

ESSS consists of 15 statements that reflect the participant's satisfaction with their social life, and the participant must complete the degree to which they agree with each one through a Likert scale with five positions, where "A" means that the person agrees completely, and "E" does not agree at all. The total score can vary between 15 and 75, with the highest score corresponding to a perception of greater social support. The Cronbach's alpha value of the instrument is 0.85 (Ribeiro, 2011).

2.5. Data analysis

The database containing the questionnaire responses was exported from LimeSurvey to Excel. Due to the small sample size, only a descriptive analysis was performed using the IBM Statistical Package for the Social Science version 27. The median and interquartile range were used to characterize numerical variables, and the absolute frequency and percentage, were used to characterize the categorical variables.

3. Results

3.1 Sample selection and characterization

From a total of 749 subjects who accessed the questionnaire, 31 consented to participate in this study. 5 women were not pregnant, and 9 women had other health conditions, therefore they were not included. Also, 7 subjects did not complete the questionnaire, so they were excluded. The final sample was composed by 10 participants (Figure 1).

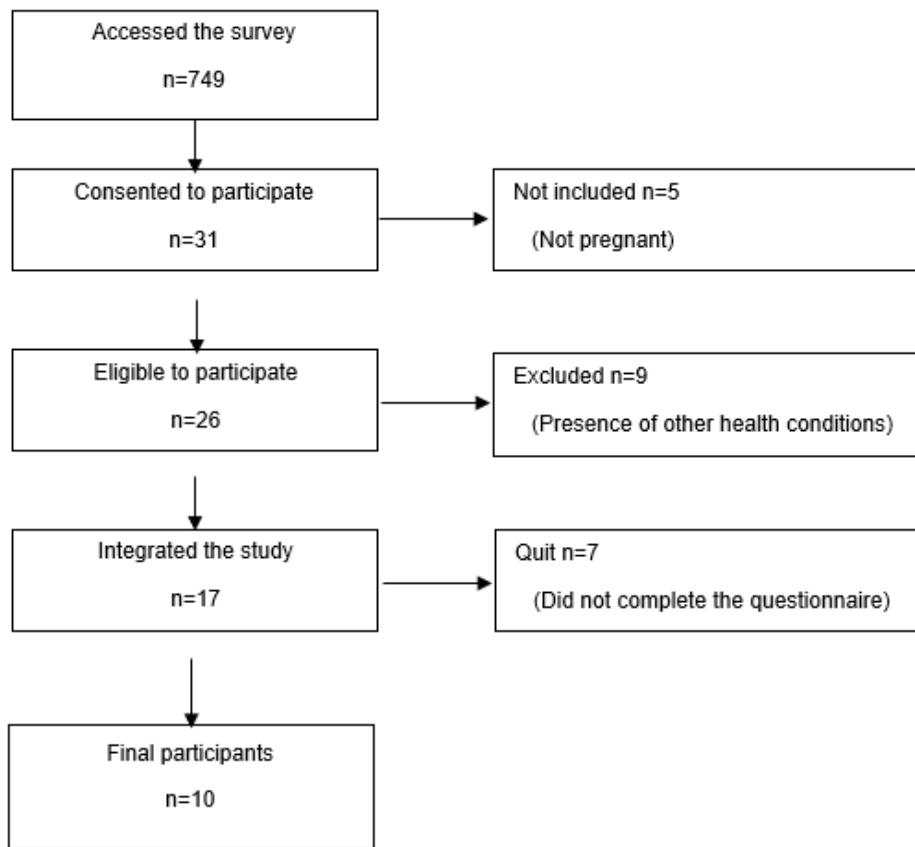


Figure 2. Flowchart illustrating the recruitment of participants

Of the 10 participants, one was in the 1st trimester of pregnancy (participant 1 – 10%), one was in the 2nd trimester (participant 2 – 10%) and the remaining eight were in the 3rd trimester (participants 3 to 10 – 80%). The 1st trimester participant (participant 1) was 34-37 years old, had an adequate body mass index (BMI, 21.11 kg/m²) and was in her second pregnancy. The 2nd trimester participant (participant 2) was 30-33 years old, had an overweight BMI (28.52 kg/m²) and was in her first pregnancy. Regarding the participants who were in the

3rd trimester, they were aged between 26-29 years (participants 6 and 10), 30-33 years (participants 3, 5 and 8) and 34-37 years (participants 4, 7 and 9) and exhibited a predominantly adequate BMI (participant 5: 25.28 kg/m², participant 6: 26.84 kg/m², participant 7: 28.13 kg/m² and participant 9: 25.10 kg/m²), except for participant 3 (underweight, 21.53 kg/m²) and participants 4, 8 and 10 (overweight, 32.39; 30.86 and 30.85 kg/m², respectively). Also, regarding the pregnant women who were in the 3rd trimester, two were primiparas (participants 5 and 9), two were in the second pregnancy (participants 8 and 10), two were in the third pregnancy (participants 3 and 4), and two were in the fourth pregnancy (participants 6 and 7).

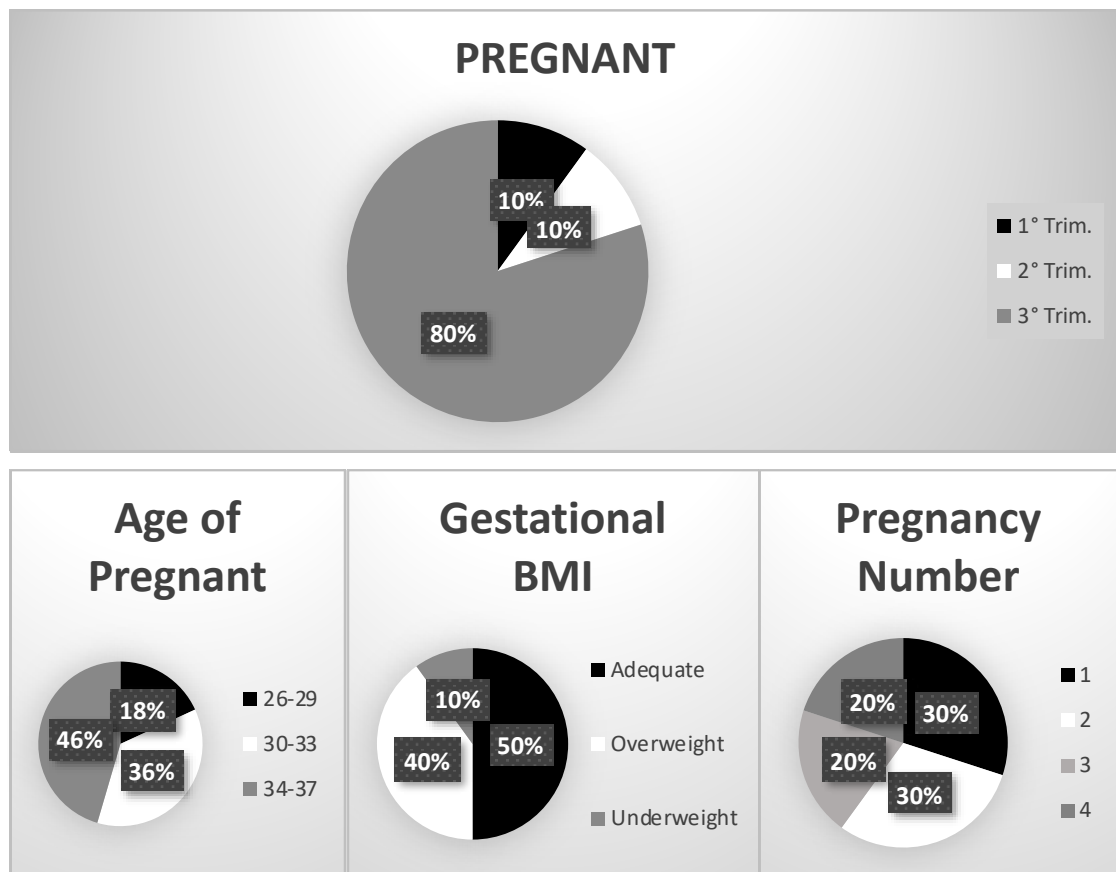


Figure 2. Sample characterization: trimester of pregnancy, age of pregnant, gestational body mass index (BMI) and number of pregnancies.

3.2 Characterization of the level of dyspnea

The level of dyspnea, assessed using the MRC, varied between the grades 1 to 3. Only one participant reported grade 1 (participant 9 – 10%), four participants reported grade 2

(participants 2, 3, 5 and 8 – 40%) and five participants reported grade 3 (participants 1, 4, 6, 7 and 10 – 50%).

Table 1. Level of dyspnea by the MRC.

Participant	Self-reported degree	MRC		
		Minimal degree	Maximal degree	Cut-off values / interpretation
1	3			
2	2			
3	2			
4	3			
5	2	1	5	Lower values – absence/lower level of dyspnea. Higher values – higher level of dyspnea.
6	3			
7	3			
8	2			
9	1			
10	3			

Legend: MRC – Medical Research Council.

3.3 Characterization of the level of physical activity

The level of physical activity and the caloric expenditure of the activities performed by each pregnant woman, both assessed through the PPAQ, can be seen in Table 2.

Five pregnant women (50%) did not perform vigorous activities and the remaining five (50%), vigorous activities represented a reduced caloric expenditure (ranged from 1.63 to 4.88 MET.h/wk⁻¹).

Two pregnant women (20%) spent more energy in activities considered as moderate level (participants 9 and 10), four (40%) in activities of light physical activity (participants 2, 4, 6 and 7) and three (30%) for the level of sedentary physical activity (participants 3, 5 and 8). One pregnant woman (10%) exhibited similar values of caloric expenditure for the various levels of physical activity (between sedentary and moderate activity).

In household/caregiving activities, caloric expenditure ranged from 37.98 to 172.38 MET-h/wk⁻¹, thus being the largest activity performed by the pregnant women in the sample.

The pregnant women performed few occupational and sports activities, but participants 9 and 10 self-reported high levels of caloric expenditure in occupational activities (258.3 and 203.4 MET-h/wk⁻¹, respectively).

3.4 Characterization of emotional factors

In the DASS-21 (Table 3), participant 10 had the highest score (51), therefore presenting high levels of changes in anxiety, depression and stress. Participant 3 also had a high score for emotional changes (40).

Table 2. Physical activity level assessed by PPAQ (MET.h/wk⁻¹).

Participant	Total score	Sedentary	Light	Moderate	Vigorous	Household/ caregiving	Occupational	Sports/ exercise
1	131.85	43.40	43.40	43.43	1.63	62.30	30.10	10.05
2	225.85	85.58	105.70	32.95	1.63	95.88	0.00	7.48
3	178.15	118.30	47.25	12.60	0.00	42.88	67.20	0.00
4	214.73	84.53	124.9	5.25	0.00	117.08	0.00	0.00
5	311.75	153.48	97.30	60.98	0.00	37.98	147.53	5.85
6	240.73	67.73	159.95	13.05	0.00	145.95	0.00	0.80
7	214.60	65.63	142.10	5.25	1.63	134.23	0.00	1.63
8	250.03	119.70	80.15	48.55	1.63	56.53	104.48	8.35
9	483.05	58.98	131.95	287.25	4.88	121.43	258.30	18.98
10	465.15	131.25	122.85	211.05	0.00	172.38	203.35	0.00
Median	233.29	85.06	114.28	38.19	0.82	106.48	48.65	3.74

Legend: PPAQ – The Pregnancy Physical Activity Questionnaire.

Table 3. Emotional factors assessed through DASS-21.

Participant	Total	Anxiety	Depression	Stress	Minimal degree	Maximal degree	Cut-off values / interpretation			
							Depression	Anxiety	Stress	
1	1	0	0	1	0	3 X 21 63	Normal	0 - 9	0 -7	0 – 14
2	7	1	3	3						
3	40	11	16	13						
4	14	2	5	7						
5	11	4	6	1						
6	17	5	0	12						
7	15	5	5	5						
8	5	2	1	2						
9	7	3	1	3						
10	51	16	16	19						

Legend: DASS-21 – Depression, Anxiety and Stress scale.

3.5 Characterization of Social Support (ESSS)

Considering the minimum and maximum values of the scale (15-75), without knowing cut-off values, it was considered that the score that is 50% of the score is the value 45. Thus, eight participants (80%) had a score below or equal to 45 (which may eventually mean low satisfaction with social support), and only participants 5 and 10 (20%) had a slightly better score (53).

Table 4. Level of ESSS.

Participant	Self-reported degree	ESSS		Cut-off values / interpretation
		Minimal degree	Maximal degree	
1	34			
2	43			
3	42			
4	45			
5	53			
6	41	15	75	Higher values – better state of satisfaction
7	40			
8	38			
9	39			
10	53			
Median	42			

Legend: ESSS- Social Support Scale.

3.6. Characterization of each pregnant woman, by dyspnea levels

As previously referred, participants 1, 4, 6, 7 and 10 showed a MRC = 3 on the dyspnea scale, whereas participants 2, 3, 5 and 8 presented a MRC = 2, and participant 9 exhibited a MRC = 1. Considering that the low sample limits the analysis of a potential correlation between factors, each participant was individually described in Table 5.

Table 5. Description dyspnea and physical activity levels, and emotional and social factors in pregnant women.

<i>Participant</i>	<i>MRC (Grade)</i>	<i>PPAQ (total) (MET.h/Wk⁻¹)</i>	<i>Activity level with the highest expenditure</i>	<i>Vigorous (YES/NO)</i>	<i>Occupational (YES/NO)</i>	<i>Sport (YES/NO)</i>	<i>Vigorous (MET.h/wk⁻¹)</i>	<i>Household/ caregiving (MET.h/wk⁻¹)</i>	<i>Occupational (MET.h/wk⁻¹)</i>	<i>Sports/exercise (MET.h/wk⁻¹)</i>	<i>DASS-21 (total)</i>	<i>Anxiety Dimension</i>	<i>Stress Dimension</i>	<i>Depression Dimension</i>	<i>ESSS</i>	<i>Age (years)</i>	<i>BMI</i>	<i>Gestational Trimester</i>
1	3	131.85	All the same	YES	YES	YES	1.63	62.30	30.10	10.05	1	0	1	0	34	34-37	Adequate	1
4	3	214.73	Light	NO	NO	NO	1.63	95.88	0.00	7.48	14	2	7	5	43	34-37	Overweight	3
6	3	240.73	Light	NO	NO	NO	0.00	42.88	67.20	0.00	17	5	12	0	41	26-29	Adequate	3
7	3	214.60	Light	YES	NO	NO	0.00	117.08	0.00	0.00	15	5	5	5	40	34-37	Adequate	3
10	3	465.15	Moderate	NO	YES	YES	0.00	37.98	147.53	5.85	51	16	19	16	53	26-29	Overweight	3
<i>Median or relative frequency n=5</i>	3	214,73	Light: 3/5 Moderate: 1/5	NO: 3/5 YES: 2/5	NO: 3/5 YES: 2/5	NO: 3/5 YES: 2/5	0.00	62.30	30.10	5.85	15	5	7	5	41	34-37: 3/5	Adequate: 3/5 Overweight: 2/5	3
2	2	225.85	Light	YES	NO	NO	0.00	145.95	0.00	0.80	7	0	1	0	43	30-33	Overweight	2
3	2	178.15	Sedentary	NO	YES	YES	1.63	134.23	0.00	1.63	40	11	13	16	42	30-33	Underweight	3
5	2	311.75	Sedentary	NO	YES	YES	1.63	56.53	104.48	8.35	11	4	1	6	53	30-33	Adequate	3
8	2	250.03	Light	YES	YES	YES	4.88	121.43	258.30	18.98	5	2	2	1	38	30-33	Overweight	3
<i>Median or relative frequency n=4</i>	3	237.94	Light: 2/4 Sedentary: 2/4	YES: 2/4 NO: 2/4	YES: 3/4 NO: 1/4	YES: 3/4 NO: 1/4	1.63	127.83	52.24	4.99	9	3	2	4	43	30-33: 4/4	Overweight:2/4 Adequate:1/4 Underweight: 1/4	3
9	1	483.05	Moderate	YES	YES	YES	0.00	172.38	203.35	0.00	7	3	3	1	39	34-37	Adequate	3

5. Discussion

The aim of this study was to characterize dyspnea, physical activity and emotional and social factors in pregnant women in the context of a COVID-19 pandemic in Portugal, subjectively measured through an online questionnaire, developed by the team of researchers, which included questions for eligibility of the sample and the scales MRC, PPAQ, DASS-21 and ESSS. To the knowledge of the team, the present study was the first research study, in a pilot dimension, that explored all these factors, in the Portuguese scenario, even with no pandemic context.

A high prevalence of dyspnea was found in this study (9 out of 10 pregnant women), which is in agreement with the knowledge that dyspnea during pregnancy is quite common. However, in this study the prevalence of dyspnea was higher than that observed by others, which varied from 37.5% (Choi *et al.*, 2001), 60-70% (Gilbert & Auchincloss, 1966, cit in Goland *et al.* 2015, p598), and 76%, the later by 31 weeks of gestation (Milne *et al.*, 1978). Interestingly, it lacks recent epidemiological characterizatón of dyspnea, being assumed that it is physiological during pregnancy, therefore, common .

In relation to the physical activity level, in this sample of 10 pregnant women, the total value scores for PPAQ varied from 131.85 to 483.05 MET.h/ Wk⁻¹, with a median of 233.29 MET.h/ Wk⁻¹, which is slightly lower than the median total score of 270.92±145.4 MET.h/ Wk⁻¹, found by Santos *et al.* 2015 ten years ago, when analysed 118 portuguese pregnant women (Santos *et al.*, 2015). In general, in the present study, self-reported physical activity tend to decline during the gestational period and a greater energy expenditure was observed for light activities, a tendency that was also observed by Santos *et al.* (2015). Seeing in detail, only 2 pregnant women referred a greater energy expenditure in moderate activities, whereas 4 self-reported a greater energy expenditure in light activities. Despite the international guidelines, that do not recomment sedentary activities for pregnant women that do not have any physical activity restriction, as it was the case, 3 pregnant women self-reported a greater expenditure in sedentary activities. Moreover, though some pregnant women self-reported performing vigorous activities, this level did not represent a greater expenditure for any of the pregnant women, as expected. In fact, in the study of Santos *et al.* (2015), performed in Portugal between 2009 and 2011, pregnant women reported no energy expenditure with vigorous activities at all (Santos *et al.*, 2015). In this same study, it was also found that Portuguese pregnant women perceived that a considerable amount of health professionals do not recommend physical activity during pregnancy, which may help to explain the low physical activity levels that were

found, besides the international guidelines. Additionally, the lockdown and the pandemic restrictions could also have contributed to this finding.

Additionally to the small sample, given that dyspnea was measured at rest by the pregnant woman, concurrently with her self-perception over a period of 7 days, it becomes difficult to establish a possible association between the level of dyspnea found with the practice of physical activity. In fact, only studies with people with chronic obstructive pulmonary disease (COPD) show that the practice of physical activity has helped in the perception of dyspnea at rest (Global Strategy for the Diagnosis Management and Prevention of COPD, 2020; Vorrink SNW et al, 2011), but both populations are not comparable.

Considering that emotional factors may influence dyspnea (Hayen *et al.*, 2013), and that pregnancy is accompanied by mood instability, with frequent fluctuations in emotional response, especially in the third trimester (Ferreira *et al.*, 2014), emotional factors were assessed in the present study through DASS-21. In this sample of 10 pregnant women, 2 exhibited signs of moderate depression. One of those also reported moderate stress exposure and severe anxiety, whereas the other was borderline between no stress to mild stress, having moderate anxiety. The first was in the third trimester of pregnancy, was overweight, reported a MRC of 3, exhibited a high self-reported energy expenditure (465.15 MET.h/Wk⁻¹), mostly with moderate activities, and was still having occupational activities. The last was also in the third trimester of pregnancy, was underweight, reported a MRC of 2, exhibited a low self-reported energy expenditure (178.15 MET.h/Wk⁻¹), mostly with sedentary activities, and was not having occupational activities. Given these results, no association is possible to establish for this sample. However, according to the literature, increased levels of physical activity during pregnancy may promote the reduction of levels of depression before and after childbirth (Kandolaa, et al., 2019, Tendais *et al.*, 2011; Von Leupold *et al.*; Robledo-Colonia *et al.*; Ferreira *et al.*, 2014; Stubbs *et al.*, 2018). According to Dipietro, J. A. et al (2003) negative emotional factors about their body-self-image change, namely weight gain during pregnancy, can also lead to psychological changes (Dipietro, J. A. et al, 2003).

Regarding social support, in the present sample 8 of the 10 women exhibited an ESSS score that was equal or below the average score. Though there are no cut-off values at the moment, this finding may suggest that the majority of the pregnant women studied are not well satisfied with their social support. Interestingly, this was not the case of the woman that self-reported depression, anxiety and stress, which is not in agreement with the literature. A study carried out in the southern Ethiopia by Dibaba et al, 2013, shows that the highest ESSS rates contribute to a lower prevalence of maternal depression (Dibaba et al, 2013). Similarly, in a

study carried out by Airoso & Silva (2013), there was a negative correlation between support in motherhood and emotional aspects such as anxiety and depression (Airoso & Silva, 2013).

Considering that the subject of dyspnea during pregnancy is multifactorial, complex, and stills devalued, with no specific intervention being targeted, further research involving pregnant women is recommended. A new methodology in a future research should be implement, recruiting pregnant women directly from the health national service.

6.1. Limitations and future research

Several limitations can be presented in this study. The first, one of the most relevant limitations, is the small sample size, in the way that a reduced number of participants answered the questionnaire, which may not be representative of the population, and did not allow to carry out an analysis of correlation of factors. In fact, online disclosure of the questionnaire, as well as the methods used to do it, possibly limited the access to a significant and representative sample of pregnant women in Portugal. The link to the questionnaire was only shared on pregnancy-related social network pages that accepted to collaborate, which made research slow and little publicized. Moreover, the questionnaire developed may have been considered long, which could become tedious and lead to a low rate of responses and/or dropouts. In this survey, 7 of 17 pregnant women dropped out. However, the methodology applied was due to the emergency state of COVID-19, in which there was a reorganization of services, with very limited physical contact and overload of health resources.

Another limitation is the fact that data was exclusively self-reported. Taking into account that in times of COVID-19 it would not be possible to perform other more complex measurements that would need physical contact, it was chosen to measure dyspnea at rest, because this symptom is an “easy” perception by the pregnant woman, as well as to use other validated questionnaires. However, the significance of the MRC scale could be valued if dyspnea was assessed during a specific activity rather than just rest (Stenton, 2008). In addition, other measurement, such as maximum inspiratory pressure and maximum expiratory pressure, thoracic posture and mobility, could be added.

7. Conclusions

In the small sample of this study, a high prevalence of dyspnea in pregnant women (9 out of 10), with greater energy expenditure in sedentary or light activities (7 out of 10), altered emotional component (2 out of 10), and social support with levels equal or below average (8 out of 10) were found. Although the low sample size does not allow establishing a correlation analysis between these variables, nor the extrapolation of these findings to the general population, these variables seem to deserve the attention of researchers and clinicians, particularly physical therapists. Further studies are needed to better understand the association of dyspnea with physical activity and emotional and social factors in pregnant women.

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Appendix I – Ethics Committee Approval



PARECER 07-CED/2021

CONSELHO DE ÉTICA E DEONTOLOGIA

I. Plenário CED

Submetido ao CED o respetivo parecer da sua Comissão Permanente, este Conselho, em sua reunião plenária de 7 de abril de 2021, por entender que ficam salvaguardadas as exigências éticas e os princípios da justiça e da autonomia e bem-estar dos participantes, concorda por unanimidade com o mesmo, em razão do que o ratifica e dá **parecer favorável** à realização do projeto intitulado: "Associação entre dispneia, o nível de atividade física e os fatores emocionais em gestantes".

O Presidente do CED

Assinado por: **António Costa Dias de Figueiredo**

Num. de Identificação: BI01589648

Data: 2021.04.13 12:10:33 +0100



Appendix II – Authorization for the use of the PPAQ, DASS e ESSS.



Rui Soles Gonçalves <ruigoncalves@estescoimbra.pt>
para mim, Ana, António ▾

sex., 11 de jun. 22:00 ☆ ↶ ⋮

Cara Carolina,

Muito obrigado pelo seu interesse na versão portuguesa do PPAQ.
Junto envio em anexo o instrumento de medição assim como os trabalhos de mestrado que deram origem à versão portuguesa.
Bom trabalho!

Cumprimentos,
RSG

Rui Soles Gonçalves, PT, PhD
Professor Coordenador / Coordinator Professor
Escola Superior de Tecnologia da Saúde de Coimbra / Coimbra Health School
Instituto Politécnico de Coimbra / Polytechnic Institute of Coimbra
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<http://www.researcherid.com/rid/B-8049-2010>



José Pais Ribeiro <jlpr@fpce.up.pt>
para mim ▾

seg., 7 de jun. 15:41 ☆ ↶ ⋮

Cara Colega

Autorizamos o uso da versão da Escala de Satisfação com o Suporte Social que estudámos para uso com a população portuguesa. Encontra o manual da escala de suporte social no meu site na secção "books".

Não nos opomos à utilização da versão da EADS 21 que estudámos e desenvolvemos para uso com a população portuguesa. O texto de validação encontra-se no meu site na secção "publications" a nº 108 e, se colocar o título do texto no google encontra o texto no researchgate.

cordialmente

José Luís Pais Ribeiro
jlpr@fpce.up.pt

Appendix III – Informed consent

DECLARAÇÃO DE CONSENTIMENTO INFORMADO

Designação do Estudo: Associação entre a dispneia, o nível de atividade física e os fatores emocionais em gestantes

O presente estudo insere-se no âmbito da Dissertação de Mestrado em Fisioterapia, da Escola Superior de Saúde da Universidade de Aveiro da estudante Carolina Pellegrim. De referir que o projeto se encontra aprovado pelo Conselho de Ética e Deontologia da Universidade de Aveiro (Parecer nº 07- CED/2020) e foi ouvida a equipa técnica RGPD da Universidade de Aveiro.

O estudo incidirá sobre gestantes a residir em território português. Como o título do estudo sugere, o principal objetivo do mesmo consiste em averiguar a possível associação entre a dispneia, o nível de atividade física e os fatores emocionais em gestantes. De modo a concretizar o objetivo delineado, a investigadora Carolina Pellegrim procederá à recolha de: 1) dados para aferição da elegibilidade para participação no estudo, tendo por base os critérios de inclusão e exclusão (se está grávida, reside em território português, tem mais de 18 e menos de 40 anos e a gravidez é acompanhada clinicamente como sendo normal); 2) dados para a caracterização dos participantes, nomeadamente idade (por intervalo), altura e peso (dados que serão convertidos em índice de massa corporal), período gestacional, número de gravidezes anteriores; 3) dados de avaliação do nível de atividade física, de acordo com o instrumento PPAQ, nomeadamente 32 questões relacionadas com atividades domésticas e de cuidados, atividades ocupacionais, desporto/exercício, deslocação e inatividade; 4) dados sobre dispneia, avaliada através da escala da dispneia do Medical Research Council (MRC); 5) dados sobre o estado emocional, aferido através da escala DASS-21; e 6) dados sobre o suporte social, através da ESSS, para perceber a satisfação do participante com a sua vida social. Os dados serão recolhidos e alojados numa plataforma informática da Universidade de Aveiro. Pelo facto de os dados carecerem de informação pessoal, são considerados absolutamente anónimos, podendo ser usados e partilhados em RGPD.

Caso tenha dúvidas, o participante pode esclarecer as suas questões enviando e-mail para cpellegrim@ua.pt e anaritapinho@ua.pt, com assunto "Esclarecimento de dúvidas". O participante pode ainda, caso entenda, apresentar reclamação junto da Autoridade Nacional de Proteção de Dados (www.cnpd.pt).

Das seguintes opções, selecione aquela com a qual concorda:

- CONCORDO em participar no estudo.** Confirmo que percebi a informação, que tive a oportunidade de me esclarecer, que a minha participação é voluntária e que sou livre de desistir em qualquer altura, sem qualquer repercussão.

- NÃO CONCORDO em participar no estudo.** Mediante a informação que me foi apresentada, pretendo que a minha colaboração termine aqui, não dando seguimento ao preenchimento do questionário.

Appendix IV – Questionnaire

SECÇÃO 1 – Dados para aferição da elegibilidade de participação

1. Está grávida, reside em território português, tem mais de 18 e menos de 40 anos e a sua gravidez é acompanhada clinicamente como sendo normal?

Sim

Não

Se respondeu NÃO, o seu questionário termina aqui. Obrigada pela colaboração!

2. Apresenta pelo menos uma das seguintes condições: obesidade, doenças respiratórias (como asma, DPOC, bronquite, infeções respiratórias agudas, entre outras), doenças cardiovasculares (como hipertensão), diabetes não controlada, doenças da tiróide, medicação antidepressiva, consumo de drogas, álcool e/ou tabaco durante a gestação, ou contraindicação médica para realizar exercício físico?

Sim

Não

Se respondeu SIM, o seu questionário termina aqui. Obrigada pela colaboração!

SECÇÃO 2 – Caracterização das participantes

1. Quantos anos tem?

18-21 anos

22-25 anos

26-29 anos

30-33 anos

34-37 anos

38-40 anos

2. Quanto mede (por favor refira em metros; exemplo: 1,60)?

3. Quanto pesava antes de engravidar (por favor refira em quilogramas; exemplo: 60 kg)?

4. Em que período gestacional se encontra neste momento?

1º trimestre (0- 13ª semana)

2º trimestre (14-26ª semana)

3º trimestre (27-40ª semana)

5. Quantas vezes esteve grávida (incluindo esta gravidez e abortos, caso se aplique)?

SECÇÃO 3 – Caracterização do nível de atividade física através do questionário internacional de atividade física para gestantes (PPAQ)

1. Durante este trimestre, quando NÃO está no local de trabalho, quanto tempo dedica normalmente a:

Respostas: A – Nenhum; B – menos de ½ hora por dia; C – ½ a 1 hora por dia; C –1 a 2 horas por dia; D – 2 a 3 horas por dia; E – mais de 3 horas por dia.

1. A preparar refeições (cozinhar, pôr a mesa, lavar a louça).
2. Vestir, dar banho, alimentar crianças enquanto esta sentada.
3. Vestir, dar banho, alimentar crianças enquanto está de pé.
4. Brincar com crianças enquanto está sentada ou de pé.
5. A brincar com crianças enquanto está a andar ou a correr.
6. A pegar em crianças ao colo.
7. A cuidar de um adulto mais velho.
8. Sentada a usar computador ou a escrever, sem estar no local de trabalho (emprego).
9. A ver televisão ou vídeo.

10. Sentada a ler, a falar ou ao telefone, sem estar no local de trabalho (emprego).
11. A brincar com animais de estimação.
12. A limpezas ligeiras (fazer camas, lavar a roupa, passar a ferro, arrumar objetos).
13. A fazer compras (alimentação, vestuário, ou outros artigos);
14. A limpezas mais pesadas (aspirar, limpar o chão com a esfregona, varrer, lavar janelas).
15. A cortar relva com uma máquina automática em que esteja sentada.
16. Jardinar a apanhar ervas ou a cortar relva com uma máquina em que tenha que andar.

2. Deslocações... Durante este trimestre, quanto tempo dedica normalmente:

Respostas: A – Nenhum; B – menos de ½ hora por dia; C – ½ a 1 hora por dia; D – 1 a 2 horas por dia; E – 2 a 3 horas por dia; F – mais de 3 horas por dia.

1. A andar lentamente para ir a algum local (para o autocarro, para o trabalho, em visita). *Sem ser por prazer ou exercício.*
2. A andar rapidamente para ir a algum local (para o autocarro, para o trabalho, em visita). *Sem ser por prazer ou exercício.*
3. A conduzir ou a viajar de automóvel ou autocarro.

3. Por prazer ou exercício... Durante este trimestre, quanto tempo dedica normalmente:

Respostas: A – Nenhum; B – menos de ½ hora por dia; C – ½ a 1 hora por dia; D – 1 a 2 horas por dia; E – 2 a 3 horas por dia; F – mais de 3 horas por dia.

1. A andar lentamente para por prazer ou exercício.
2. A andar mais rapidamente para por prazer ou exercício.
3. A andar rapidamente em terrenos com inclinação (a subir) por prazer ou exercício.
4. A correr.
5. A realizar exercício em aulas de preparação para o parto.
6. A nadar.
7. A dançar.
8. A fazer outras coisas por prazer ou exercício. Diga-nos quais (nome da atividade).

4. Preencha esta secção seguinte se estiver empregada, se fizer voluntariado, ou se for estudante. Se trabalhar em casa, estiver sem trabalho, ou incapacitada para trabalhar, não necessita de preencher esta última secção. No trabalho... Durante este trimestre, quanto tempo dedica normalmente:

Respostas: A – Nenhum; B – menos de ½ hora por dia; C – ½ a 1 hora por dia; D – 1 a 2 horas por dia; E – 2 a 3 horas por dia; F – mais de 3 horas por dia.

1. A estar sentada a trabalhar ou em aulas.
2. A estar de pé ou andar lentamente no local de trabalho transportando objetos (de peso igual ou superior a um garrafão de água (5 litros)).
3. A estar de pé ou andar lentamente no local de trabalho sem transportar qualquer objeto.
4. A andar rapidamente no local de trabalho transportando objetos (de peso igual ou superior a um garrafão de água (5 litros)).
5. A andar rapidamente no local de trabalho sem transportar qualquer objeto.

SECÇÃO 4 – Caracterização da dispneia através da escala da dispneia do Medical Research Council (MRC)

Aponte a afirmação que melhor descreve a sua sensação de falta de ar:

1-GRAU 1- Sem problemas de falta de ar exceto em caso de exercício intenso. “Só sinto falta de ar em caso de exercício físico intenso”.

2-GRAU 2- Falta de fôlego em caso de pressa ou ao percorrer um piso ligeiramente inclinado. “Fico com falta de ar ao apressar-me ou ao percorrer um piso ligeiramente inclinado”.

3-GRAU 3- Andar mais devagar que as restantes pessoas devido a falta de fôlego, ou necessidade de parar para respirar quando anda no seu passo normal. “Eu ando mais devagar que as restantes pessoas devido à falta de ar, ou tenho de parar para respirar quando ando no meu passo normal”.

4-GRAU 4- Paragens para respirar de 100 em 100 metros ou após andar alguns minutos seguidos. “Eu paro para respirar depois de andar 100 metros ou passados alguns minutos”.

5-GRAU 5- Demasiado cansado/a ou sem fôlego para sair de casa, vestir ou despir. “Estou sem fôlego para sair de casa”.

SECÇÃO 5 – Caracterização do estado emocional através da escala DASS-21

1. Por favor leia cada uma das afirmações abaixo e assinale 0, 1, 2 ou 3 para indicar quanto cada afirmação se aplicou a si durante a semana passada. A classificação é a seguinte: 0 – não se aplicou nada a mim; 1 – aplicou-se a mim algumas vezes; 2 – aplicou-se a mim muitas vezes; 3 – aplicou-se a mim a maior parte das vezes.

1. Tive dificuldades em me acalmar
2. Senti a minha boca seca
3. Não consegui sentir nenhum sentimento positivo
4. Senti dificuldades em respirar
5. Tive dificuldade em tomar iniciativa para fazer coisas
6. Tive tendência a reagir em demasia em determinadas situações
7. Senti tremores (por ex., nas mãos)
8. Senti que estava a utilizar muita energia nervosa
9. Preocupe-me com situações em que podia entrar em pânico e fazer figura ridícula
10. Senti que não tinha nada a esperar do futuro
11. Dei por mim a ficar agitado
12. Senti dificuldade em me relaxar
13. Senti-me desanimado e melancólico
14. Estive intolerante em relação a qualquer coisa que me impedisse de terminar aquilo que estava a fazer
15. Senti-me quase a entrar em pânico
16. Não fui capaz de ter entusiasmo por nada
17. Senti que não tinha muito valor como pessoa
18. Senti que por vezes estava sensível
19. Senti alterações no meu coração sem fazer exercício físico
20. Senti-me assustado sem ter tido uma boa razão para isso
21. Senti que a vida não tinha sentido

SECÇÃO 6 – Caracterização do suporte social através da escala de suporte social

A seguir vai encontrar várias afirmações, seguidas de cinco letras. Assinale a letra que melhor qualifica a sua forma de pensar. Por exemplo, na primeira afirmação, se você pensa

quase sempre que por vezes se sente só no mundo e sem apoio, deverá assinalar a letra A, se acha que nunca pensa isso deverá marcar a letra E.

1. Por vezes sinto-me só no mundo e sem apoio.
2. Não saio com amigos tantas vezes quantas eu gostaria.
3. Os amigos não me procuram tantas vezes quanto eu gostaria.
4. Quando preciso de desabafar com alguém eu encontro facilmente amigos com quem o fazer.
5. Mesmo em situações mais embaraçosas, se precisar de apoio de emergência tenho várias pessoas a quem posso recorrer.
6. Às vezes sinto falta de alguém verdadeiramente íntimo que me compreenda e com que possa desabafar sobre coisas íntimas.
7. Sinto falta de atividades sociais que me satisfaçam.
8. Gostava de participar mais em atividades de organizações (p.ex. clubes desportivos, escuteiros, partidos políticos, etc.)
9. Estou satisfeito com a forma como me relaciono com a minha família.
10. Estou satisfeito com a quantidade de tempo passo com a minha família.
11. Estou satisfeito com o que faço em conjunto com a minha família.
12. Estou satisfeito com a quantidade de amigos que tenho.
13. Estou satisfeito com a quantidade de tempo que passo com os meus amigos.
14. Estou satisfeito com as atividades e coisas que faço com o meu grupo de amigos.
15. Estou satisfeito com o tipo de amigos que tenho.

O questionário terminou. OBRIGADO PELA SUA PARTICIPAÇÃO!