Could physical discomforts be related to weight gain and parity in last trimester pregnant women?

Desconfortos físicos poderiam estar relacionados com o ganho de peso e paridade em gestantes no último trimestre?

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ABSTRACT

BACKGROUND AND OBJECTIVES: To identify and check the incidence of physical discomfort in third trimester pregnant women and relate it to parity, weight gain and regular practice of physical activities.
METHODS: Data were collected by means of interviews made up of identification, socioeconomic data and lifestyle. In addition to pain intensity by means of the 10-cm visual analog scale, we have also calculated weight gain estimates for pregnant women as from body mass index considering the pre-gestational period. Physical discomforts were listed and answered "yes" or "no" with regard to their presence. Statistical analysis was carried out by simple frequency, percentages, Shapiro-Wilk, Chi-square and Student *t* tests. Statistical program was Stata 9.2 and significance level was 5%.
RESULTS: Participated in the study 64 low risk pregnant women under pre-natal follow up. Most frequent symptom was fatigue, reported by 79.6%, followed by low back pain by 68.7%, uterine contraction pain and heartburn, each one reported by 60.9% of respondents, insomnia 53.1%, cramps 50%, nausea 29.6%, pain on ribs and vomiting, each with 21.8%, sciatic pain 20.3%, cervical and abdominal pain 18.7% each, chest pain 17.1%, nightmare and itching, each with 1.6% and brachial plexus pain by 3.1%. There has been no relationship with parity and weight gain.
CONCLUSION: Discomforts reported had no relationship with parity, weight gain and regular practice of physical activities.
Keywords: Gestational age, Pain, Pregnant women, Women's health.

RESUMO

JUSTIFICATIVA E OBJETIVOS: Identificar e verificar a incidência de incômodos físicos em gestantes, no terceiro trimestre, e relacioná-los com paridade, ganho de peso e prática regular de atividade física.
MÉTODOS: A coleta de dados ocorreu com a utilização de um roteiro de entrevista composto de identificação, dados socioeconômicos, hábitos de vida. Além da intensidade de dor por meio da escala analógica visual de 10cm, calculou-se também a previsão do ganho de peso para gestantes a partir do índice de massa corporal considerando o período pré-gestacional. Os incômodos físicos foram listados e respondidos de forma afirmativa ou não quanto à presença deles. A análise estatística foi realizada por frequência simples, porcentagem, testes de Shapiro-Wilk, Qui-quadrado e *t* de Student. O programa estatístico utilizado foi o Stata 9.2 e o nível de significância foi de 5%.
RESULTADOS: Participaram do estudo 64 gestantes de baixo risco que realizavam pré-natal. O sintoma de maior frequência apresentado foi fadiga, relatada por 79,6%, seguido de dor lombar por 68,7%, dor de contração uterina e azia queixados por 60,9% das gestantes, cada um deles, insônia 53,1%, câimbra 50%, náusea 29,6%, dor nas costelas e vômito 21,8% cada um, dor ciática 20,3%, dor cervical e dor abdominal 18,7% cada um, dor torácica 17,1%, pesadelo e prurido 15,6% cada um e dor na região do plexo braquial por 3,1%. Não houve relação com paridade ou ganho de peso.
CONCLUSÃO: Os desconfortos relatados não apresentaram relação com a paridade, com ganho de peso e prática regular de atividade física.
Descritores: Dor, Gestantes, Idade gestacional, Saúde da mulher.

INTRODUCTION

Changes in woman's body during gestation meet maternal and fetal demands and, in some cases, may induce from mild discomforts to major daily life or professional activities limitations. The effect of increased estrogen and relaxin hormones, typical of gestation, associated to weight gain, makes joints more unstable, causes biomechanical changes, ligament laxity and musculoskeletal disorders[1]. It should be considered that progressive weight gain during gestation is more pronounced in the third trimester and may overload joints and intensify discomforts[2,3]. In the context of our study, this term refers to

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maternal body restrictions, caused by physiological adaptations (hormonal and biomechanical), resulting in changes in musculoskeletal, gastrointestinal and urogenital systems, in addition to impaired quality of sleep.

Regular practice of physical activities provides protecting effects against pregnant women discomforts and complications, however, adherence to physical exercises during gestation is still low. To change this scenario, it is necessary that health professionals encourage and explain to pregnant women the safety of this practice and its advantages[4]. Health professionals and pregnant women often consider discomforts as inherent to gestation and, as such, believe that preventive or relieving measures do not exist or are unnecessary or even inefficient[5,6]. In general, they are not aware of non-pharmacological methods for discomfort relief[7]. Currently, multidisciplinary programs to prepare to labor have become common and aim at physical and psychic balance for a healthy life.

Prenatal and Birth Humanization Program guidelines (PBHP)[8,9] suggest the inclusion of educative, psychological and fitness activities. The positive impact of adopting a healthy lifestyle during gestation improves perinatal results for babies and decreases the risk of premature birth, low weight at birth and the need to be admitted to the neonatal unit, in addition to decreasing the number of adverse perinatal results[10]. So, understanding major pregnant women's complaints is important to guide the development of clinical strategies and management of health services for this target audience, aiming at decreasing injuries and generating positive impact on quality of life of such women[7]. So, this study aimed at identifying the incidence of physical discomforts in third trimester pregnant women and relate them to parity, weight gain and regular practice of physical activities.

METHODS

This is a cross-sectional and exploratory study. Sample was made up of 64 pregnant women in the third trimester, selected by convenience in the Gynecology and Obstetrics Sector of the Ambulatory *Maria da Glória, Hospital de Clínicas da Universidade Federal do Triângulo Mineiro (UFTM)*, during four consecutive months. Inclusion criteria were age equal to or above 18 years, prenatal medical follow-up, of normal risk and adequate cognitive level for the procedures of the study. Exclusion criteria were women with musculoskeletal complaints previous to gestation.

Pregnant women were invited to participate in the survey when arriving for medical consultation. After reading and signing the Free and Informed Consent Term (FICT), they were individually interviewed and then weight and height were measured. Interview was made up of identification of socioeconomic data, habits related to alcoholic beverage and smoking, weight previous to gestation and obstetric history. Information on presence, intensity and frequency of physical discomforts and regular practice of physical activity were collected by a semi-structured interview. This was guided by a tool developed as from extensive literature review, to address most possible discomforts described in the literature and typical of the gestational period.

Physical discomforts commonly reported were listed and participants were asked to answer whether they were present or not. This strategy was adopted because many of such discomforts are considered common and not reported by pregnant women as discomfort if they do not induce major incapacity[5,6]. Intensity and frequency of existing discomforts were questioned and whether there was regular practice of physical activity.

Pain intensity was evaluated by the 10-cm visual analog scale (VAS). Regular practice of physical activity was defined as practicing for at least three times a week with approximate duration of 60 minutes[11]. A pilot study with 25 pregnant women was carried out to identify issues with "perceived answer difficulties", their suitability and training of interviewers. Data were collected by two previously trained university students to assure standardization. Weight gain estimate was calculated for pregnant women as from body mass index (BMI) considering the pre-gestational period. For women with low BMI, estimated weight gain for the gestational period was between 12.5 and 18.0 kg; for normal BMI between 11.5 and 16.0 kg; for high BMI estimated gain of 7.0 to 11.5 kg; and for obese BMI, estimated weight gain was up to 7kg[12].

Since this is a non-probabilistic sample (by convenience), sample size was not calculated. Size was given by pregnant women accepting to participate in the study.

This study was approved by the Research Ethics Committee, UFTM, under protocol 2119.

Statistical analysis

Simple frequency and percentages were used for statistical analysis. Inferential analysis was carried out with Chi-square test for categorical variables and Student *t* test for continuous variables, respecting data normality tested with Shapiro-Wilk test. Statistical program was Stata 9.2 and significance level was 5%.

RESULTS

Sample was made up of 64 pregnant women with mean age of 26.4 years (minimum 18 and maximum 35 years), 56.2% (n=36) were mulattos, 84.3% (n=54) have reported stable union and 51.5% (n=33) had complete or incomplete high school. Most (89%) would not ingest alcoholic beverages or smoked and 57.8% (n=37) did not work outside home. With regard to parity, 37.5% (n=24) were primiparous and 62.5% (n=40) multiparous. As to pre-gestational BMI, 17% (n=11) were classified with low BMI, 44% (n=28) with normal BMI, 22% (n=14) with high BMI and 17% (n=11) with obese BMI. Weight gain was according to estimates in 39% (n=25), below estimates in 29.7% (n=19) and above estimates in 31.3% (n=20). The incidence of physical discomforts reported by participants, taking into account the number of complaints, is shown in table 1.

Distribution of physical discomforts reported by 50% or more of participants with regard to parity is shown in table 2, and with regard to weight gain, data are shown in table 3.

Table 1. Physical discomforts in the third trimester of gestation

Discomfort	Nº of pregnant	%
Fatigue	51	79.6
Low back pain	44	68.7
Uterine contraction pain	39	60.9
Heartburn	39	60.9
Insomnia	34	51.3
Cramps	32	50
Nausea	19	29.6
Ribs pain	14	21.8
Vomiting	14	21.8
Sciatic pain	13	20.3
Cervical pain	12	18.7
Abdominal pain	12	18.7
Chest pain	11	17.1
Nightmare	10	15.6
Itching	10	15.6
Brachial plexus pain	2	3.1

Table 2. Distribution of physical discomforts according to parity and p value

Discomfort	Primiparous n=24	Multiparous n=40	Total n=64	p value
Fatigue	19	32	51	0.4030
Low back pain	13	30	43	0.4350
Uterine contraction pain	16	23	39	0.4670
Heartburn	17	22	39	0.5170
Insomnia	13	21	34	0.8640
Cramps	11	20	31	0.3420

Table 3. Distribution of physical discomforts according to weight gain estimates and p value

Discomfort	Below n=19	Estimated n=25	Above n=20	Total n=64	p value
Fatigue	16	19	16	51	0.9890
Low back pain	14	13	16	43	0.3820
Uterine contraction pain	16	13	10	39	0.2440
Heartburn	13	12	14	39	0.1700
Insomnia	11	12	11	34	0.3710
Cramps	6	14	11	31	0.4950

Only 3.1% (n=2) of pregnant women practiced regular physical activity.

DISCUSSION

Gestational period changes result from the interaction of hormonal, mechanical and metabolic factors[13] which may generate mild to total restriction physical discomforts. Studies[3,5] point that discomforts are intensified in the third gestational trimester and are often not evaluated or treated by professionals[5,6]. It is important to identify them and verify their frequency for the development of programs aimed at handling such changes. According to the Brazilian Institute of Geography and Statistics (IBGE)[14], mean age of pregnant women with education level above eight years is 27.8 years, which is in line with our study. As in other Brazilian studies[9,15,16], there has been a higher percentage of mulattos, in stable union, who did not ingest alcoholic beverages, did not smoke and were multiparous. Fatigue, low back pain, uterine contraction pain, heartburn, insomnia and cramps were reported by more than 50% of participants. These results are similar to those of Nazik & Eryilmaz[7].

Our study has considered fatigue as oppressive and sustained sensation of tiredness and incapacity to perform normal physical and mental activities[17], which was presented by 79.6% of participants. Studies[7] investigating this same complaint have described incidence between 72.7% and 88.4% among third trimester pregnant women. It was also observed that in 86.3% of women reporting fatigue in this study, the frequency of such complaint was 4 to 7 days a week. This frequency is considered high, but no data were found in the literature to support such statement.

The high incidence of fatigue was not related to parity or weight gain. Studies have shown that anemia and sleep deprivation increase the chance of pregnant women having fatigue in 47 and 14%, respectively[15]. Factors inducing fatigue and sleep deprivation during gestation are not totally clear, however their relationship with higher indices of C-sections and development of depression is known[18,19]. Fatigue and stress are directly associated to fear of childbirth, so educational strategies to answer pregnant women's questions are favorable and may decrease the request for C-sections[19].

The percentage of women complaining of insomnia was 51.3%. In a study carried out by Nazik & Eryilmaz[7], insomnia rate was 63.7% in third trimester pregnant women. There has been weekly sleep deprivation frequency of 4 to 7 days without relationship with parity or weight gain. On the other hand, Tsai et al.[20] have suggested the association between sleep disturbances and BMI. Other studies have pointed that insomnia is a sleep disturbance reported during gestation which might be associated to discomforts which appear and/or are intensified at the end of gestation, such as heartburn, low back pain and cramps[7,21].

The definition of low back pain is controversial in the literature due to its etiology. The more comprehensive definition proposed by Pitangui & Ferreira[22] was adopted, that is, a symptom affecting low back region. Authors in a study on gestational low back pain prevalence and characteristics have found incidence of 73%, being more frequent in the last trimester and in primiparous[23]. However there has been no relationship between low back pain and parity and weight gain, confirming Melhado & Soler results[24].

Most pregnant women (83%) have reported weekly frequency of 4 to 7 days and, from these, 55.8% had moderate pain, similar to data found in North-American women[25]. Even with moderate low back pain, its high incidence and weekly frequency make it a limiting factor for daily life activities and sleep[3,23], in addition to predisposing women to have it up to three years after labor and suffer of low back pain in other gestations[23]. Lack

of orientation on prevention and treatment may contribute for its worsening[23]. Pain relief factors are rest, massages and specific exercises, and worsening factors are domestic activities, remaining in the same position for a long time and postural defects[23]. There has been 60.9% incidence of uterine contraction pain, without relationship with parity or weight gain and which is result of physiological Braxton-Hicks contractions, which are intensified in the third trimester[26]. The scarcity of studies related to painful contractions during gestation has prevented the comparison of our results, since those found consider pain just during labor and delivery. However, one should contemplate this painful manifestation since it is manifested from 4 to 7 days a week (61.5%), being that in 56.4% with moderate intensity.

Gestational heartburn is caused by the reflux of stomach acid juices to the esophagus, due to the relaxing effect of hormones, increased by ascending pressure of the growing uterus[27]. It was reported by 60.9% of women, being 79.5% with weekly frequency of 4 to 7 days and 3% of cases with weekly frequency of 3 to 7 days[28]. A study[7] has described 81.8% of this symptom in the third gestational trimester. Heberlein et al.[29] have observed that participation in prenatal orientation groups had positive impact on dietary habits. So, it was considered pertinent the health education of women about adequate diet to minimize and/or prevent heartburn.

There has been no relationship with parity or weight gain. Cramps are painful muscle contractions especially in thigh and calf muscles during sleep and keeping affected region painful for a long time[26]. The incidence of this complaint was 50%, with weekly frequency of 4 to 7 days for most participants (61.3%), without relationship with parity or weigh gain. No studies were found about the impact of cramps on pregnant women. Stretching and massages are prevention methods[26]. Weight gain in our study, within or below estimates, was not assurance of less cramps[30].

Among the benefits of physical activity for pregnant women there are less physical discomforts, especially those of musculoskeletal origin[31,32] and improved general wellbeing[6]. From participants of our study, just 3.1% practiced physical activity, which might explain the higher incidence of symptoms. It is worth highlighting that those practicing physical activity have also presented those symptoms. It was impossible to perform data inferential analysis due to the low number of practitioners. Our results have shifted the focus of attention from musculoskeletal discomforts to other discomforts. Among symptoms affecting 50% or more of pregnant women there are fatigue, uterine contraction pain, heartburn, insomnia, cramps and low back pain. It is believed that providing knowledge about gestation as well as about possible management of discomforts inherent to the period, women might develop autonomy and safety to manage their symptoms, avoiding self-medication[33] and minimizing their negative influence on quality of life.

The practice of physical activity contributes to decrease pain, which may cause insomnia and even depression[34], in addition to providing adequate muscle strength and stretching, good fitness, general wellbeing and helping labor. Physiotherapy, with techniques such as stretching, global postural re-education[35], Pilates[36], aerobic and aquatic exercises[37] and acupuncture[38], among other techniques, helps relieving discomforts. An interdisciplinary approach to assist pregnant women is critical. Only as from the interaction and awareness of professionals, all described symptoms shall be managed. Example is the action of physiotherapy with resources such as kinesiotherapy, electrotherapy, manual therapy, hydrotherapy, thermotherapy and educational practice, knowingly effective to prevent and manage musculoskeletal pain[5,22,26,31,32]. So, strategies to promote integral assistance to pregnant women should be developed.

CONCLUSION

Symptoms such as fatigue, low back pain, uterine contraction pain, heartburn, insomnia and cramps reported by half the participants had no correlation with parity, weight gain and practice of physical activity.

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