**ORIGINAL ARTICLE**

# EATING BEHAVIOR DURING PREGNANCY AND ITS RELATIONSHIP WITH THE CHILD'S BIRTH WEIGHT

Laudicéia Ferreira Fróis[1]; Nathália Luíza Ferreira[2]
Lydiane Bragunci Bedeschi[3]; Nathália Stahlschmidt Petry[4]
Lilian Gonçalves Teixeira[5]

**Highlights:** (1) Gestational feeding behavior neglected in prenatal care. (2) Presence of dysfunctional gestational feeding behavior. (3) Intuitive feeding behavior may not predict birth weight deviations.

PRE-PROOF
(as accepted)

This is a preliminary, unedited version of a manuscript accepted for publication in Revista Contexto & Saúde. As a service to our readers, we are making this initial version of the manuscript available as accepted. The article will still undergo revision, formatting, and author approval before being published in its final form.

http://dx.doi.org/10.21527/2176-7114.2025.50.15541

How to cite:
Fróis LF, Ferreira NL, Bedeschi LB, Petry NS, Teixeira LG. Eating behavior in pregnancy and its relationship with infant birth weight. Contexto & Saúde. 2025;25(50):e15541.

[1] Universidade Federal de Lavras - Departamento de Nutrição. Lavras/MG, Brazil.
https://orcid.org/0000-0002-8514-2600

[2] Universidade Federal de Lavras - Departamento de Nutrição. Lavras/MG, Brazil.
https://orcid.org/0000-0002-2751-2458

[3] Universidade de Coimbra - Faculdade de Psicologia e Ciências da Educação. Coimbra, Portugal.
https://orcid.org/0000-0001-5508-4633

[4] Institute of Intuitive and Conscious Eating. Belo Horizonte/MG, Brazil.
https://orcid.org/0000-0002-4624-3222

[5] Universidade Federal de Lavras - Departamento de Nutrição. Lavras/MG, Brazil.
https://orcid.org/0000-0003-4682-8594

**EATING BEHAVIOR DURING PREGNANCY AND ITS RELATIONSHIP WITH THE CHILD'S BIRTH WEIGHT**


## ABSTRACT

This study aimed to evaluate the relationship between eating behaviors during pregnancy and infant birth weight. This was a cross-sectional study conducted with pregnant women receiving care in public and private health services in Lavras, Minas Gerais, Brazil. Eating behavior was assessed using the Three Factor Eating Questionnaire (TFEQ), the Intuitive Eating Scale-2 (IES), and the Mindful Eating Questionnaire (MEQ). Infant birth weight was reported by the mother, based on data recorded in the Child Health Booklet. The Shapiro-Wilk test was performed to check for normality, and Spearman's correlation and Mann-Whitney U tests were applied to correlate and compare different domains of eating behavior with infant birth weight. The sample consisted of 127 mother-child pairs, with maternal age ranging from 18 to 42 years and gestational age at birth between 37 and 42 weeks. No correlations or associations were found between different eating behaviors during pregnancy and infant birth weight. Intuitive and mindful eating behaviors adopted during pregnancy, when considered in isolation, may not be able to predict deviations in infant birth weight.


**Keywords:** Pregnancy; Eating Patterns; Diet Restriction; Mindful Eating; Intuitive Eating.

## 1 INTRODUCTION

The gravid period is characterized by physiological, endocrine, and anatomical changes in women. During this phase, maternal nutritional needs are modified due to the growing demand from fetal growth and development[1]. Therefore, a balanced and healthy diet is essential to reduce the risk of nutritional deviations and to supply the fundamental nutrients needed for this life event[2].

In this context, nutritional assistance during prenatal care is highly relevant for preventing complications during pregnancy and postpartum, leading to favorable outcomes such as appropriate birth weight[3]. Multiple factors can interfere with fetal weight gain and development throughout childhood, with inadequate food consumption and maternal nutritional status being prominent. The relationship between gestational

weight gain and birth weight is widely recognized, with a direct proportionality between these indicators[4].

Encouraging the adoption of health-promoting habits, including healthy eating practices, becomes crucial, as they can influence insufficient or excessive gestational weight gain and consequently lead to an inadequate birth weight. Studies indicate that mothers who do not achieve sufficient weight gain due to dietary restrictions are more prone to giving birth to low birth weight (LBW) newborns, a significant determinant of perinatal survival and morbidity and mortality[1]. Excessive weight gain also requires attention, as it is associated with various complications such as gestational diabetes mellitus, hypertension, and prematurity, contributing to high rates of neonatal mortality, macrosomia, metabolic alterations, and impaired neurological development[3].

Beyond anthropometric outcomes, maternal eating habits and behaviors appear to be important predictors of body weight during pregnancy[4]. Eating habits refer to practices adopted by individuals in their various contexts. These encompass cultural, religious, environmental, and social customs, as well as the methods groups or individuals use to acquire, prepare, and consume food[5]. Eating behavior, in turn, relates to a set of factors involving cognitions and affects, directly linked to eating conduct that is, who and where one eats, why certain foods or preparations are chosen, along with environmental and sociocultural attributes associated with food or the act of eating[6]. Among the various eating behaviors explored in the literature are components of dysfunctional eating (cognitive restriction, emotional eating, disinhibition) as well as healthy eating behaviors (intuitive eating and mindful eating)[7].

Dysfunctional eating behaviors during pregnancy are strongly associated with body dissatisfaction, excessive weight gain, and emotional problems[8]. Conversely, intuitive eating and mindful eating, which primarily focus on enabling individuals to know themselves and respect the signals evoked by their bodies during eating, have been associated with adequate weight gain, better glycemic control, lower body mass index, better emotional control, and healthier eating attitudes[9].

Given the above, considering that better eating behaviors during pregnancy have positive impacts on gestational outcomes and contribute to a more appropriate infant birth weight, it is hypothesized that less uncontrolled, more intuitive, and more mindful eating during pregnancy would positively impact infant birth weight. Therefore, the present study aimed to evaluate the correlation of different eating behaviors during pregnancy and infant birth weight.

## 2 METHODS

This was a quantitative cross-sectional study, derived from a prospective cohort titled "Evaluation of Nutritional Status, Eating Behavior, and Practices during Pregnancy, Lactation, and Introduction of Complementary Foods," conducted in a municipality in the interior of the Southeast Region of Brazil.

The sample size calculation for the base project was performed using Epi-Info software version 7.2. It considered the average number of live births from the Live Birth Information System (SINASC)[10] between 2013-2017 in the study municipality (n=1.396). Assuming a 95% significance level, a 5% sampling error, a prevalence of pregnant women with excessive body weight concern (the central outcome of the initial project) of 5.5%[11], and possible losses of 40%[12], the study sample should have comprised at least 107 participants. For the present study, considering the same criteria and a prevalence of 13.74% of live-born children with low or excessive weight in the municipality of Lavras-MG, it was established that the minimum sample should consist of 161 children.

Data were collected while pregnant women awaited their prenatal appointments in all urban public primary and secondary health units and in private gynecologist/obstetrician offices in the municipality. Data collection was conducted in two stages: during the gestational period, between July 2019 and February 2020, in person; and during the postpartum period, between March 2020 and May 2021, via telephone interview due to social isolation resulting from the Covid-19 pandemic. Eligible women were aged ≥ 18 years and received prenatal care in the mentioned

municipality. Women whose babies were born preterm (born before 37 weeks of gestation)[2] were excluded. The study was approved by the Human Research Ethics Committee of the Federal University of Lavras under opinion 3.362.629.

2.1 Instruments

2.1.1 Gestational characterization

2.1.1.1 Sociodemographic characteristics

In the first stage of the study (gestational period), a semi-structured questionnaire was administered containing questions about age, self-reported skin color, marital status, education, and family income.

2.1.1.2 Clinical and anthropometric characteristics

The following variables were evaluated: age at menarche, pre-pregnancy weight (kg), height (m), and pre-pregnancy Body Mass Index (BMI) (kg/m²).

For the analysis of pre-pregnancy weight, data described in the Pregnant Woman's Health Booklet (official document for recording prenatal care in Brazil) were considered, and when absent, self-reported data from participants were used[13]. Pre-pregnancy BMI was calculated from weight divided by the square of height in meters (kg/m²). Classification was performed according to World Health Organization (WHO) criteria for adults, divided into four categories: < 18.5 kg/m² - underweight, 18.5 - 24.9 kg/m² - normal weight, ≥ 25 - < 30 kg/m² - overweight, and ≥ 30 kg/m² - obesity[13]. Pregnant women aged 18-19 years were evaluated according to the BMI/A index as proposed by the Food and Nutritional Surveillance System (SISVAN)[14].

2.1.2 Dimensions of eating behavior

Three self-administered questionnaires were used to assess eating behavior.

2.1.2.1 Three-Factor Eating Questionnaire

The Three Factor Eating Questionnaire (TFEQ-21)[15–16] - Brazilian version addresses the assessment of eating behavior through three scales: lack of control over eating, cognitive restraint and emotional eating. It contains 21 questions in Likert scale format. Questions 1-16 were reverse scored, that is, the answers obtained were recoded (1=4; 2=3; 3=2 and 4=1), while in items 17-20 the score was obtained in ascending order and in item 21 there is a numerical rating scale of 8 (eight) points. The average of each of the scales was calculated and the results were provided in the format of 0 to 100 points. Higher scores indicate greater lack of control over eating, cognitive restraint and emotional eating. To meet the purposes of this study, 127 questionnaires with complete answers were considered.

2.1.2.2 Intuitive Eating

The Intuitive Eating Scale (IES-2)[17–18] - Portuguese version of the questionnaire contains 23 items and is divided into four subscales: unconditional permission to eat, eating for physical and non-emotional reasons, dependence on internal hunger and satiety signals, and food-body choice congruence. Responses are based on a Likert scale ranging from 1 (“strongly disagree”) to 5 (“strongly agree”). The unconditional permission to eat subscale consists of six questions, three of which are reverse scored. On the other hand, the eating for physical and non-emotional reasons subscale groups eight questions, four of which are reverse scored. The individual scores for each subscale were calculated, allowing the overall mean to be obtained, which is the mean of all subscales. High scores on each subscale or on the overall score indicate greater adherence to intuitive eating. In this study, 122 questionnaires with complete answers were considered.

2.1.2.3 Mindful Eating

The Mindful Eating Questionnaire (MEQ-28)[19–20] - Brazilian version consists of 28 items that address five subscales of mindful eating: awareness, distraction, disinhibition, emotional and external influences. The distraction subscale, consisting of three questions, and the emotional subscale, consisting of four questions, have reverse scores. The disinhibition domain has eight questions, of which five have reverse scores. The overall score was obtained by adding the means of all subscales. Higher scores indicate eating more mindfully and better behaviors in the subscales. For this purpose, 119 questionnaires with complete answers were considered.

2.1.3 Neonatal characterization

2.1.3.1 Infant birth weight

Infant birth weight was obtained via maternal self-report during a telephone interview, based on data present in the Child Health Booklet (official document for recording child growth and development monitoring).

2.1.3.2 Gestational age at birth

Gestational age recorded in the Child Health Booklet was considered. Newborn classification according to gestational age was performed following the criteria proposed by the Brazilian Ministry of Health (MS).

2.1.4 Statistical Analysis

Data tabulation was performed using Epi-Info software version 7.2, through double entry and validation. Statistical analyses were conducted using Statistical Package for the Social Science (SPSS) version 20.0 software.

The Shapiro-Wilk test was applied to check for normality of numerical variables; none followed a normal distribution. Categorical variables were analyzed by crossing each covariate with the outcome variable in median, using the Mann-Whitney U test, with results expressed as absolute and relative frequency. Continuous variables were presented as median and interquartile range. Additionally, the same test was applied to compare values below and above the median birth weight with values below and above the median of the eating behavior domains.

Spearman's correlation test was performed to test the association between maternal eating behavior variables and infant birth weight. In all analyses, a significance level of 0.05 was adopted.

The internal consistency of the responses obtained from the eating behavior questionnaires (TFEQ-21, IES-2, MEQ-28) was verified using Cronbach's Alpha test. Reliability was considered acceptable when a minimum value of 0.70 was obtained. Lower values were disregarded due to low reliability[21].

## 3 RESULTS

The initial sample consisted of 200 pregnant women; however, there was a sample loss of 36.5% during the study. Consequently, the final sample comprised 127 mother-infant dyads. The characteristics of the sample, categorized by infant birth weight, are summarized in Table 1. Participant ages ranged from 18 to 42 years, with most self-identifying as Black/Brown and being married or living in a consensual union. The minimum recorded birth weight was 2.0 kg, and the maximum was 4.5 kg.

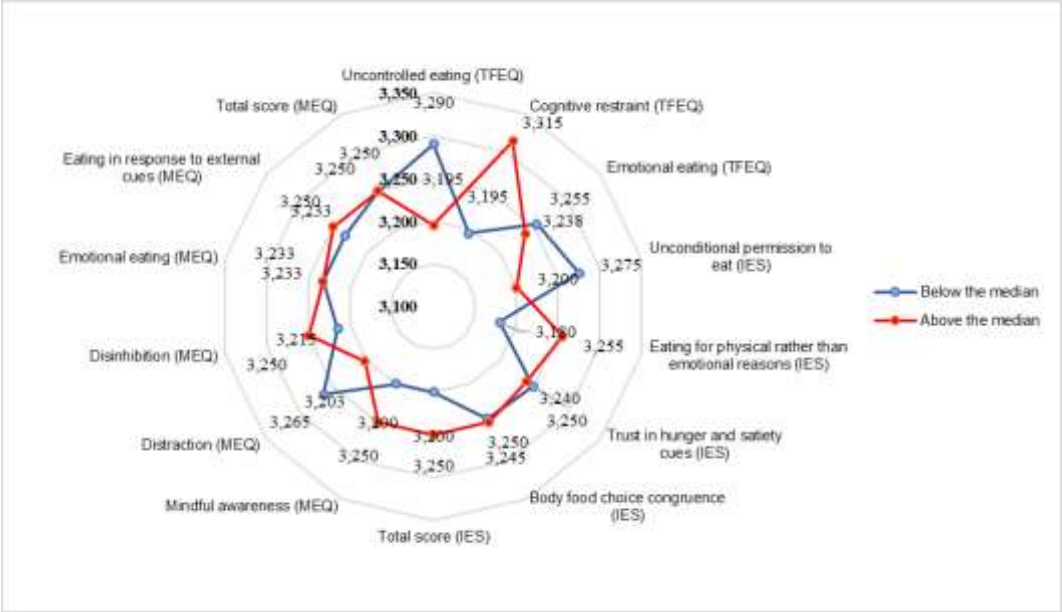
**Table 1:** Sociodemographic and anthropometric characteristics of pregnant women according to infant birth weight. Lavras, Brazil, 2019-2021. (n=127)

| Variables | Total % (n) | Median Birth Weight (kg) | p-value |
|---|---|---|---|
| **Age – years** | 100 (127) | 32.0 (18.0;42.0) | 0.497 |
| **Skin Color** | | | |
| Black/Brown | 65.1 (82) | 3.195 | 0.408 |
| White | 34.9 (44) | 3.280 | |
| **Marital Status** | | | |
| Without partner | 32.3 (41) | 3.195 | 0.369 |
| With partner | 67.7 (86) | 3.295 | |
| **Education** | | | |
| ≤ 9 years | 12.6 (16) | 3.562 | 0.146 |
| >9 years | 87.4 (111) | 3.250 | |
| **Income** | | | |
| <2 minimum wages | 66.9 (85) | 3.255 | 0.729 |
| ≥2 minimum wages | 33.1 (42) | 3.250 | |
| **Pre-gestational (BMI Classification)#** | | | |
| Inadequate Weight | 5.8 (7) | 3.100 | 0.407 |
| Adequate Weight | 44.6 (54) | 3.245 | |
| Overweight | 49.6 (60) | 3.322 | |
| **Gestational Trimester** | | | |
| First | 20.3 (25) | 3.405 | 0.278 |
| Second | 40.6 (52) | 3.375 | |
| Third | 39.1 (50) | 3.140 | |
| **Number of Pregnancies** | | | |
| Primiparous | 37.8 (48) | 3.227 | 0.112 |
| Multiparous | 62.2 (79) | 3.297 | |

Note: BMI: Body Mass Index; Primiparous: number of pregnancies equal to 1;Multiparous: number of pregnancies greater than or equal to 2; #: Data available for the evaluated variable (n=121).

When comparing the values below and above the median birth weight with the domains of eating behavior, no statistical differences were evidenced (Figure 1).

**Figure 1:** Association between the domains of eating behavior and the birth weight of babies. Lavras, Brazil, 2019-2021.




No correlation was observed between the baby's weight and the variables of eating behavior (Table 2). The reliability of the TFEQ-21, IES-2 and MEQ-28 questionnaires were respectively: $\alpha = 0.81$, $\alpha = 0.79$ and $\alpha = 0.71$.

**Table 2:** Characteristics of the eating behavior of pregnant women according to the birth weight of the babies. Lavras, Brazil, 2019-2021.

| Birth weight | r | p |
|---|---|---|
| **Three factor feeding** | - 0.408 | 0.589 |
| Eating dysregulation | 0.051 | 0.572 |
| Cognitive restraint | - 0.105 | 0.242 |
| Emotional eating | | |
| **Intuitive eating** | | |
| Unconditional permission to eat | -0.062 | 0.495 |
| Eating for physical rather than emotional reasons | 0.059 | 0.519 |
| Trusting hunger and satiety cues | -0.035 | 0.706 |
| Body-food choice congruence | -0.076 | 0.405 |
| Overall score | -0.000 | 0.999 |
| **Mindful eating** | | |
| Food awareness | 0.039 | 0.672 |
| Distraction | -0.132 | 0.154 |
| Disinhibition | 0.032 | 0.727 |
| Emotional eating | 0.021 | 0.821 |
| Eating in response to external cues | 0.042 | 0.650 |
| Overall score | -0.030 | 0.744 |

## 4 DISCUSSION

This study stands out for its pioneering approach in analyzing the facets that permeate eating behaviors during pregnancy and their relationship with infant birth weight. Although the present study did not show an isolated influence of eating behaviors on birth weight. it is noteworthy that this is a multifactorial condition, with eating behavior not being the sole determinant of this outcome. In this sense, seeking to understand the findings, it is hypothesized that other obstetric conditions may have influenced the results obtained.

From this perspective. it is highlighted that maternal comorbidities (obesity. hypertension. diabetes mellitus. among others) have a direct relationship with birth weight, given that maternal metabolic functions reflect on fetal growth, predisposing the baby to weight deviations, as well as increasing negative outcomes, such as premature

birth[1]. Furthermore, pre-gestational nutritional status and the distribution of maternal weight gain during pregnancy can also impact neonatal weight[7]. High prevalences of insufficient or excessive weight gain during pregnancy corroborate inadequate weight gains[3].

Another aspect that contributes to infant birth weight is maternal food consumption during pregnancy. It is known that during pregnancy, an adequate and healthy diet is essential[3]. However, when evaluating the Brazilian reality, studies indicate that pregnant women's diets are marked by high consumption of ultra-processed foods in parallel with low consumption of fresh and/or minimally processed foods. Such habits can negatively impact pregnancy nutrition, as high energy consumption contributes to the development of metabolic changes and inadequate weight gain, factors that directly interfere with infant weight gain[22].

Beyond the harms provided by inadequate food consumption, studies conducted in countries at different stages of development report that excesses or dietary restrictions during pregnancy can be a reflection, among other aspects, of the absence or low quality of food and nutritional education actions from pre-conception, as well as during prenatal care, which would lead to negative repercussions on maternal and fetal health[23].

Furthermore, although it is not yet clear how inadequate eating behaviors during pregnancy can interfere with infant birth weight, investigating these aspects is necessary, given that dysfunctional programming in fetal life can be harmful in the postnatal environment[24]. Outcomes such as diabetes mellitus, cardiovascular diseases, and obesity can impact health in the present and in subsequent phases of life. In view of this, during the gestational period, if a woman experiences scenarios of dietary restrictions or excesses, sporadically or continuously, these behaviors can contribute to adverse effects on the child's life, in the short or long term[25]. From this perspective, the interconnection between intuitive eating and mindful eating is already consolidated in the literature, which emphasizes the importance of this dietary approach in pregnancy, with the aim of preventing neonatal complications[26].

Considering that mindful eating can impact gestational weight gain, with potential harm to nutrient supply for the baby, and that adherence to intuitive eating is related to more adequate eating practices, it is inferred that these behaviors reduce the chance of developing eating disorders, as well as improving glycemic control and increasing the chance of adequacy of gestational weight[9]. Moreover, the absence of guilt about the pleasure of eating can impact greater autonomy in food choices and attention to hunger and satiety perceptions, in addition to less association with disordered eating[27].

Consistent with these findings, a study that investigated the relationship between maternal eating behavior 12 months after the child's birth showed that emotional eating was positively associated with infant weight gain[28]. In contrast, a multicenter study conducted with overweight pregnant women did not show an association when evaluating the implication of emotional eating in fetal growth and weight gain (estimated by ultrasound)[29]. Regarding intuitive eating, a study developed from data from a New Zealand cohort that adopted a methodology distinct from that used in the present study did not show a relationship between intuitive eating in pregnancy and infant birth weight[30].

When investigating the association of maternal sociodemographic variables with infant birth weight, no statistical differences were found. However, it is known that beyond clinical conditions, maternal characteristics such as age group, skin color, education, and income play an important role in a child's birth and future conditions[31]. Regarding the maternal age group, it is highlighted that early pregnancy or late pregnancy has been associated with negative outcomes, such as low birth weight, micronutrient deficiencies, and intrauterine growth restriction[32].

Regarding family income, it was found that the largest portion of the evaluated families had an income of less than two minimum wages, and most of the sample consisted of women who self-declared as Black-Brown. These variables reflect worse living conditions, given that the historical racial inequality that affects Brazil leads to higher levels of economic and social vulnerability in Black, Brown, Asian, and Indigenous populations compared to white populations. These populations have lower monthly incomes and education, higher prevalences of poverty and food insecurity, which

chronically place them in disadvantageous situations regarding information and access to health services, as well as dignified means of life[33].

The findings presented in the present study should be interpreted considering some potential limitations. The first refers to convenience data collection, which limits the ability to make assumptions at the population level. However, it is emphasized that the sample calculation performed and the adherence to the sample number in the recruitment of the initial population allow for the inference of robust results. In addition, the confidence level was greater than 90%.

The present study stands out for its originality in investigating possible relationships between different eating behaviors such as disinhibited eating attitudes, cognitive restriction, emotional eating, mindful eating, and intuitive eating practices in pregnancy, with consequent influence on infant birth weight, in a Brazilian population without eating disorders. Although no correlation was found in the present work when using raw birth weight, other possibilities were sought to enhance the results. Thus, other analyses were conducted, such as evaluation by birth weight classification categories Fenton and/or Intergrowth and World Health Organization (WHO), logarithmized outcome variable, as well as multivariate analysis (data not shown), and statistical differences were also not evidenced. Possible memory biases were minimized by investigating eating behavior still during the gestational period. It is also highlighted that the analysis of all domains of the questionnaires allowed for greater detailing of the findings. Furthermore, a part of the study was conducted during the COVID-19 pandemic, and even in the face of the challenges inherent in social distancing and the need for adaptations in methodological resources for the virtual and remote format, it was possible to complete the work without compromising its potential. It is emphasized that more research is needed to clarify the relationship between maternal emotional eating and infant birth weight, in order to determine to what extent this relationship reflects modifiable factors, such as clinical aspects, eating practices, and eating behaviors; as opposed to non-modifiable factors, such as genetic factors.

## 5 CONCLUSION

The findings of this study suggest that intuitive and mindful eating behaviors adopted in isolation during the gestational period may not predict deviations in birth weight.

## REFERENCES

1. Brasil. Saúde da mulher na gestação, parto e puerpério. Brasília: Ministério da Saúde; 2019. v. 1, p. 56.

2. Secretaria da Saúde do Estado de São Paulo. Atenção à Gestante e à Puérpera no SUS – SP. Coordenadoria de Planejamento em Saúde. Assessoria Técnica em Saúde da Mulher; 2010. p. 234.

3. Brasil. Protocolo de uso do guia alimentar para a população brasileira na orientação alimentar da gestante. Brasília: Ministério da Saúde; 2021.

4. Bulik CM, Sullivan PF, Kendler KS. Medical and psychiatric morbidity in obese women with and without binge eating. Int J Eat Disord. 2002;32(1):72–8. DOI: https://doi.org/10.1002/eat.10072

5. Souza D, Vaz S, Bennemann RM. Comportamento Alimentar E Hábito Alimentar: Uma Revisão Eating Behavior and Food Habit: a Review. Rev Uningá Rev. 2014;20(1):108–12.

6. Costa V, Cunha R. Abordagem Subjetiva e Comportamento Alimentar Comportamento alimentar : do que estamos falando? 2012.

7. Biagio LD, Moreira P, Amaral CK. Eating behavior in obesity and its correlation with nutritional treatment. J Bras Psiquiatr. 2020;69(3):171–8. DOI: https://doi.org/10.1590/0047-2085000000280

8. Chan CY, Chae C, Au C, Chen M, Ng LC, Leung H. Associations of body dissatisfaction with anxiety and depression in the pregnancy and postpartum periods: A longitudinal study. J Affect Disord. 2263;263(September):582–92. DOI: https://doi.org/10.1016/j.jad.2019.11.032

9. Soares FLP, Barreto TL, Costa RF da S, Lima M da S, Calfa ADC, Leal de Menezes M de M. Intuitive eating is associated with glycemic control in type 2 diabetes. Eat Weight Disord. 2020.

10. Victora CG, Barros AJD, França GVA, Monteiro CA, Schmidt MI, Victora G, et al. Maternal and child health in Brazil: Progress and challenges. Lancet. 2011;377(9780):1863–76. DOI: https://doi.org/10.1016/S0140-6736(11)60138-4

11. Soares RM, Horta BL, Gigante DP, Lima RC. Inappropriate eating behaviors during pregnancy: Prevalence and associated factors among pregnant women attending primary care in Southern Brazil. Int J Eat Disord. 2009;42(5):387–93. DOI: https://doi.org/10.1002/eat.20643

12. Raggio Luiz R, Magnanini MMF. A Lógica da determinação do tamanho da amostra em investigações. Cad Saúde Coletiva. 2000;8:9–28.

13. Brasil. Caderneta da Gestante. Brasília: Ministério da Saúde; 2016. v. 3, p. 1–31.

14. Brasil. Orientações para a coleta e análise de dados antropométricos em serviços de saúde : Norma Técnica do Sistema de Vigilância Alimentar e Nutricional - SISVAN. Brasília: Ministério da Saúde. Secretaria de Atenção à Saúde. Departamento de Atenção Básica.

15. Natacci LC, Ferreira Júnior M. The three factor eating questionnaire - R21: tradução para o português e aplicação em mulheres brasileiras. Rev Nutr. 2011;24(3):383–94. DOI: https://doi.org/10.1590/S1415-52732011000300002

16. Tholin S, Rasmussen F, Karlsson J. Genetic and environmental influences on eating behavior: the Swedish Young Male Twins Study 1-3. Am J Clin Nut. 2005;9:81–564. DOI: https://doi.org/10.1093/ajcn/81.3.564

17. Silva WR da, Santos JEF dos, Pinto DS, Queiroz MAF de, Alvarenga MS. A psychometric investigation of Brazilian Portuguese versions of the Caregiver Eating Messages Scale and Intuitive Eating Scale-2. Eat Weight Disord. 2020 Feb 1;25(1):221–30. DOI: https://doi.org/10.1007/s40519-018-0557-3

18. Tylka TL, Kroon Van Diest AM. The Intuitive Eating Scale-2: Item refinement and psychometric evaluation with college women and men. J Couns Psychol. 2013;60(1):137–53. DOI: https://doi.org/10.1037/a0030893

19. Apolzan JW, Myers CA, Zhu H, Wang D, Redman LM, Martin CK. Examination of the reliability and validity of the Mindful Eating Questionnaire in pregnant women. Appetite. 2016 May 1;100:142–51. DOI: https://doi.org/10.1016/j.appet.2016.02.025

20. Framson C, Kristal AR, Schenk JM, Littman AJ, White E, Neuhouser ML. Development and Validation of the Mindful Eating Questionnaire. J Am Diet Assoc. 2009;109(8):1439–44. DOI: https://doi.org/10.1016/j.jada.2009.05.006

21. Streiner DL. Statistical developments and applications. Being Inconsistent About Consistency: When Coefficient Alpha Does and Doesn't Matter Striener Scales and Indexes. J Pers Assess. 2003;80(3):217–22. DOI: https://doi.org/10.1207/S15327752JPA8003_01

22. Oliveira ACM de, Souza AI de, Gurgel RQ, Vieira MJ. Maternal nutritional status and its association with birth weight in high-risk pregnancies. Ciênc Saúde Coletiva. 2018;23(7):2373–82. DOI: https://doi.org/10.1590/1413-81232018237.12042016

23. Tavares JS, Silva CS, Vasconcelos HCA, Vasconcelos CTM, Pontes AG, Silva AAM. Associação entre o padrão de atividade física materna, ganho ponderal gestacional e peso ao nascer em uma coorte de 118 gestantes no município de Campina Grande, Nordeste do Brasil. Rev Assoc Médica Bras. 2009;55(3):335–41. DOI: https://doi.org/10.1590/S0104-42302009000300029

24. Portella AK, Silveira PP. Neurobehavioral determinants of nutritional security in fetal growth-restricted individuals. Ann N Y Acad Sci. 2014;1331(1):15–33. DOI: https://doi.org/10.1111/nyas.12390

25. Gonçalves S, Moura-Ramos M, Martins C, Santos C, Barros H, Macedo A. Dysfunctional eating behaviour, psychological well-being and adaptation to pregnancy: A study with women in the third trimester of pregnancy. J Health Psychol. 2015;20(5):535–42. DOI: https://doi.org/10.1177/1359105315573432

26. Mathieu J. What Should You Know about Mindful and Intuitive Eating? J Am Diet Assoc. 2009;109(12):1982,1985,1987. DOI: https://doi.org/10.1016/j.jada.2009.10.023

27. Most J, Lang F, Smith SR, Beyl RA, Ryan DH, Sacks F, et al. Behavioral determinants of objectively assessed diet quality in obese pregnancy. Nutrients. 2019;11(7):1–14. DOI: https://doi.org/10.3390/nu11071446

28. Wright CM, Parkinson KN, Drewett RF. The influence of maternal socioeconomic and emotional factors on infant weight gain and weight faltering (failure to thrive): Data from a prospective birth cohort. Arch Dis Child. 2006;91(4):312–7. DOI: https://doi.org/10.1136/adc.2005.077750

29. Savage JS, Symons Downs D, Rivera DE, Stetter C, Sturgess M, Pauley AM, et al. Uncontrolled Eating during Pregnancy Predicts Fetal Growth: The Healthy Mom Zone Trial. Nutrients. 2019;11(4):1–16. DOI: https://doi.org/10.3390/nu11040899

30. Paterson H, Hayes C, McMahon E, Thornton C, McMahon K, Galletly C. Intuitive eating and gestational weight gain. Eat Behav. 2019 Aug 1;34:101–311. DOI: https://doi.org/10.1016/j.eatbeh.2019.101311

31. Nilson LG, Silva GA da, Andrade M. Proporção de baixo peso ao nascer no Brasil e regiões brasileiras, segundo variáveis sócio-demográficas. Rev Saúde Pública Santa Catarina. 2015;8(1):69–82.

32. Brasil. Plano Nacional de Prevenção Primária do Risco Sexual Precoce e Gravidez na Adolescência. 2022. v. 1.

33. Galiassi GER, Assis EM, Oliveira RR, Faganello LFS, Bezerra F, Rodrigues N, et al. Perfil epidemiológico e sociodemográfico de recém-nascidos de baixo peso no estado de Mato Grosso, no período de 2015 a 2019. Braz J Health Rev. 2021;4(6):26819–835. DOI: https://doi.org/10.34119/bjhrv4n6-254

Submitted: January 18, 2024

Accepted: March 13, 2025

Published: July 3, 2025

| Authors' contributions | |
|---|---|
| **Laudicéia Fróis:** | Conceptualization, Data curation, Methodology, Formal analysis, Investigation, Visualization, R Writing – original draft, Writing – review & editing. |
| **Nathália Luíza Ferreira:** | Conceptualization, Writing – review & editing. |
| **Lydiane Bragunci Bedeschi:** | Writing – review & editing. |
| **Nathália Stahlschmidt Petry:** | Writing – review & editing. |
| **Lilian Gonçalves Teixeira:** | Conceptualization, Methodology, Supervision, Writing – review & editing. |
| **All the authors approved the final version of the text.** | |
| **Conflict of interest:** | There is no conflict of interest. |
| **Financing:** | No financing. |

# EATING BEHAVIOR DURING PREGNANCY AND ITS RELATIONSHIP WITH THE CHILD'S BIRTH WEIGHT

**Corresponding author:** Laudicéia Ferreira Fróis
Universidade Federal de Lavras
Departamento de Nutrição,
Aquenta Sol n° 3037, Lavras/MG, Brasil.
laudiceiafrois@hotmail.com

**Editor:** Giuseppe Potrick Stefani. Ph.D

**Editor-in-chief:** Adriane Cristina Bernat Kolankiewicz. Ph.D