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OBESITY IN PREGNANT WOMEN: EPIDEMIOLOGICAL ANALYSIS AND MATERNAL-FETAL IMPLICATIONS IN BRAZIL, 2010 TO APRIL 2026

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ABSTRACT

Introduction: Excess weight during pregnancy, including overweight and obesity, is associated with maternal-fetal complications and requires nutritional surveillance during prenatal care. **Objectives:** To analyze the evolution of the nutritional status of pregnant women monitored by the Brazilian Food and Nutrition Surveillance System (SISVAN) from 2010 to April 2026, with emphasis on the increase in overweight and obesity. **Methods:** This was an epidemiological, observational, descriptive, retrospective, ecological study with a quantitative approach, based on publicly available secondary SISVAN data. Annual records of pregnant women classified according to gestational-week-specific body mass index as underweight, adequate/eutrophic, overweight, or obese were evaluated, including complete data from 2010 to 2025 and partial data from 2026 available through April. Data were analyzed using descriptive statistics, including absolute numbers, relative frequencies, and the combined proportion of excess weight. **Results:** A total of 11,235,560 records were analyzed. From 2010 to April 2026, the proportion of underweight decreased from 21.06% to 11.31%, and adequate/eutrophic nutritional status decreased from 42.58% to 30.13%. In contrast, overweight increased from 23.23% to 29.49%, and obesity increased from 13.13% to 29.08%, representing the greatest increase observed. From 2020 onward, overweight and obesity together accounted for more than half of the monitored pregnant women, reaching 58.57% in April 2026. **Conclusions:** A marked change was observed in the nutritional profile of pregnant women monitored by SISVAN, with a progressive shift from eutrophic status to excess weight. This scenario reinforces gestational obesity as a relevant public health issue and highlights the need for nutritional surveillance, pregestational prevention, dietary counseling, safe physical activity, and multidisciplinary prenatal care.

Keywords: Pregnant women, Obesity, Overweight, Nutritional status, SISVAN, Maternal health.

INTRODUCTION

Obesity is defined as a body mass index (BMI) equal to or greater than 30 kg/m², whereas overweight corresponds to a BMI between 25 and 29.9 kg/m². In the gestational context,

excess weight deserves special attention because of its association with obstetric and neonatal complications, including gestational diabetes mellitus, hypertensive disorders, macrosomia, cesarean delivery, and greater postpartum weight retention.[1]

Pregnancy represents an important window of care, as women maintain frequent contact with healthcare services and may receive targeted guidance regarding nutrition, physical activity, weight gain, and clinical follow-up. International studies indicate that excessive gestational weight gain in women with overweight or obesity increases maternal and fetal risks, reinforcing the need for surveillance and early intervention during prenatal care.[2]

In Brazil, monitoring nutritional status and gestational weight gain is part of prenatal care practices. Recent national recommendations reinforce the need to assess BMI, monitor weight progression at all prenatal visits, and use tools adapted to the Brazilian context in order to guide nutritional care for adult pregnant women.[3]

Considering the epidemiological and clinical relevance of excess weight during pregnancy, the present study aimed to analyze the evolution of the nutritional status of pregnant women monitored by SISVAN in Brazil from 2010 to April 2026, with emphasis on the categories of overweight and obesity.

METHODS

This is an epidemiological, observational, descriptive, retrospective, ecological study with a quantitative approach, conducted using secondary public-domain data obtained from the Food and Nutrition Surveillance System (SISVAN).[4]

The analyzed population consisted of pregnant women monitored by SISVAN in Brazil, with records classified according to BMI by gestational week. Annual data from 2010 to 2025 and partial data from 2026 available up to April were included, considering the parameters “all months,” life stage “pregnant woman,” sex “all,” age “all,” and nationwide coverage.

Data collection was performed through consultation of public SISVAN reports on a year-by-year basis. The categories evaluated included underweight, adequate/eutrophic, overweight, and obesity. For each year, absolute numbers and corresponding percentages for each classification were recorded, in addition to the total annual number of pregnant women monitored. The data were organized into a dedicated spreadsheet and analyzed using descriptive statistics, with presentation of absolute numbers and relative frequencies. The combined proportion of overweight and obesity, referred to in this study as excess weight, was also calculated.

Relative frequencies were calculated as the ratio between the number of pregnant women in each nutritional category and the total annual number of records, multiplied by 100. No inferential statistical tests were applied, considering the descriptive and ecological nature of the study.

Because this study used secondary, public, aggregated, and non-identifiable data, submission to a Research Ethics Committee and individual informed consent were not required. The year 2026 was maintained in the analysis because it was available in the consulted database; however, it should be interpreted with caution, as the records remain subject to updates.

RESULTS

From 2010 to April 2026, a total of 11,235,560 records of pregnant women monitored by SISVAN were analyzed, classified according to nutritional status based on BMI by

gestational week. The annual number of records ranged from 252,620 in 2010 to 1,047,711 in 2021, the year with the highest number of follow-up records.

Throughout the historical series, a progressive reduction was observed in the proportion of pregnant women classified as underweight and as adequate/eutrophic, accompanied by an increase in the categories of overweight and obesity. In 2010, the adequate/eutrophic category accounted for 42.58% of records, followed by overweight (23.23%), underweight (21.06%), and obesity (13.13%). In the partial data for 2026, the distribution was more balanced between adequate/eutrophic (30.13%), overweight (29.49%), and obesity (29.08%), while underweight decreased to 11.31% (Table 1).

The underweight category showed a reduction of 9.75 percentage points between 2010 and April 2026. The proportion of adequate/eutrophic women decreased by 12.45 percentage points during the same period. Conversely, overweight increased by 6.26 percentage points, while obesity showed the greatest increase, with a rise of 15.95 percentage points.

When analyzed together, the categories of overweight and obesity increased from 36.36% in 2010 to 58.57% in April 2026. From 2020 onward, excess weight accounted for more than half of the pregnant women monitored. Furthermore, obesity surpassed underweight beginning in 2017, when it reached 18.19%, compared with 17.32% for underweight (Figure 1).

Table 1:Nutritional status of pregnant women monitored by SISVAN in Brazil, 2010 to 2026 (partial data).

Year	Underweight	Adequate or eutrophic	Overweight	Obesity	Total
2010	53.198 (21,06%)	107.567 (42,58%)	58.686 (23,23%)	33.169 (13,13%)	252.620
2011	63.428 (19,94%)	131.512 (41,34%)	77.459 (24,35%)	45.751 (14,38%)	318.150
2012	79.272 (19,55%)	165.231 (40,74%)	99.511 (24,54%)	61.519 (15,17%)	405.533
2013	96.050 (19,85%)	193.168 (39,91%)	119.849 (24,76%)	74.898 (15,48%)	483.965
2014	97.294 (19,40%)	196.055 (39,08%)	126.381 (25,19%)	81.908 (16,33%)	501.638
2015	126.205 (18,21%)	269.562 (38,90%)	179.897 (25,96%)	117.311 (16,93%)	692.975
2016	154.373 (18,19%)	327.277 (38,57%)	221.150 (26,06%)	145.733 (17,17%)	848.533
2017	126.987 (17,32%)	277.750 (37,89%)	195.002 (26,60%)	133.350 (18,19%)	733.089
2018	119.074 (16,34%)	267.236 (36,67%)	199.734 (27,41%)	142.651 (19,58%)	728.695
2019	101.625 (16,14%)	224.215 (35,62%)	175.187 (27,83%)	128.479 (20,41%)	629.506
2020	146.373 (14,19%)	350.729 (34,01%)	295.811 (28,68%)	238.467 (23,12%)	1.031.380
2021	144.209 (13,76%)	351.096 (33,51%)	302.257 (28,85%)	250.149 (23,88%)	1.047.711
2022	118.560 (13,57%)	290.600 (33,27%)	251.736 (28,82%)	212.690 (24,35%)	873.586
2023	98.326 (13,24%)	241.787 (32,55%)	214.470 (28,87%)	188.295 (25,35%)	742.878
2024	108.704 (12,34%)	275.358 (31,25%)	256.380 (29,10%)	240.676 (27,31%)	881.118
2025	92.851 (11,43%)	244.601 (30,12%)	239.785 (29,52%)	234.935 (28,93%)	812.172
2026 (partial)	28.500 (11,31%)	75.930 (30,13%)	74.306 (29,49%)	73.275 (29,08%)	252.011

Source: prepared by the authors based on SISVAN data.

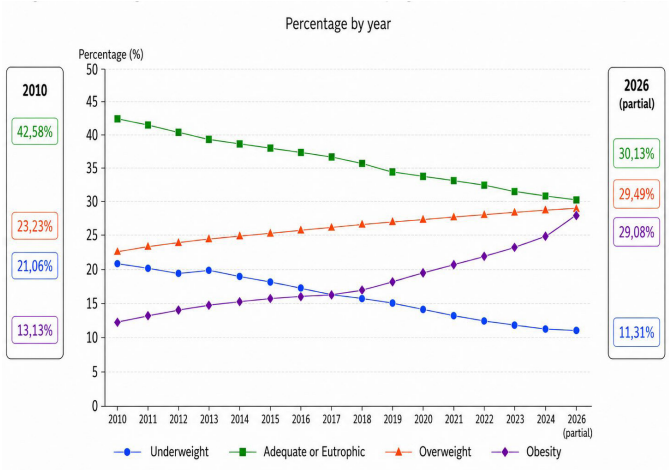

Figure 1: Percentage evolution of the nutritional status of pregnant women monitored by SISVAN in Brazil, 2010 to 2026 (partial data).
Source: prepared by the authors based on SISVAN data.

DISCUSSION

The results demonstrate an important shift in the nutritional profile of pregnant women monitored by the Food and Nutrition Surveillance System (SISVAN) in Brazil, based on public nutritional status reports consulted annually from 2010 to April 2026.[4] During this period, there was a proportional reduction in underweight and adequate/eutrophic categories, accompanied by a continuous increase in overweight and, more markedly, obesity. This pattern suggests that excess weight has become a central condition in the nutritional monitoring of Brazilian pregnant women. From 2020 onward, the combined prevalence of overweight and obesity accounted for more than half of the pregnant women monitored, indicating a progressive shift in the nutritional profile from eutrophy toward excess weight.

This pattern follows the national trend of increasing excess weight in the Brazilian adult population. Data from Vigitel Brazil 2006–2023 demonstrated an increase in the frequency of excess weight among adults living in Brazilian state capitals, rising from 42.6% in 2006 to 61.4% in 2023; among women, the proportion increased from 38.5% to 59.6% during the same period.[5] The 2019 National Health Survey also highlighted the magnitude of the problem, estimating excess weight in 60.3% of Brazilian adults and in 62.6% of adult women, in addition to an obesity prevalence of 29.5% among females.[6] Thus, the findings of the present study should be interpreted as part of a broader nutritional transition that significantly affects women of adult and reproductive age.

In the maternal and child health field, the Brazilian National Survey on Child Nutrition (ENANI-2019) identified excess weight in 58.2% of biological mothers of children under five years of age in Brazil, as well as an increase in excess weight within the mother–child dyad between 2006 and 2019.[7] This finding reinforces that maternal excess weight is not restricted to the gestational period, but may be part of an intergenerational cycle of nutritional risk. Brazilian studies involving women of reproductive age also support this interpretation. In a low-income urban community in Recife, excess weight was observed in 66.3% of women aged 15 to 49 years, associated with socioeconomic, demographic,

and reproductive characteristics.[8] Among adult women monitored in areas covered by the Family Health Strategy, the prevalence of excess weight was 61.0%, associated with factors such as age, early menarche, having children, and systemic arterial hypertension.[9]

From a maternal–fetal perspective, the increase in excess weight is relevant because pregnant women with overweight or obesity are at higher risk of obstetric and neonatal complications. A recent systematic review and meta-analysis described an association between gestational excess weight and outcomes such as gestational diabetes mellitus, hypertensive disorders, macrosomia, and other adverse outcomes, while also highlighting the role of physical exercise interventions in improving pregnancy outcomes.[1] Evidence from a randomized clinical trial involving a telehealth lifestyle intervention in pregnant women with overweight or obesity also reinforces pregnancy as a strategic window for preventing excessive weight gain and promoting healthy behaviors.[2]

In Brazil, current recommendations emphasize that gestational weight gain should be monitored at every prenatal visit, considering the pregnant woman's initial nutritional status and using appropriate tools to guide nutritional care.[3] The availability of Brazilian gestational weight gain charts, developed from the Brazilian Maternal and Child Nutrition Consortium, represents an important advance, as it enables follow-up that is more closely aligned with the national context and reduces exclusive dependence on international references.[10] The incorporation of these tools may favor early identification of inadequate weight gain trajectories and guide timely interventions during prenatal care.

In Primary Health Care practice, the results reinforce the need to use SISVAN not only as a recording system, but also as a tool for surveillance, screening, and care planning. The Ministry of Health recommends that nutritional assessment in Primary Health Care should consider different life stages and events, and provides SISVAN protocols and guidance for the collection and analysis of anthropometric data in healthcare services.[11] In addition to anthropometric classification, SISVAN food consumption markers may support the identification of inadequate dietary patterns, including consumption of ultra-processed foods and low intake of fresh or minimally processed foods. The Protocol for the Use of the Dietary Guidelines for the Brazilian Population in Dietary Counseling for Pregnant Women recommends the use of these markers to support individualized dietary counseling during prenatal care.[12]

The Care Pathway for Overweight and Obesity in Adults also reinforces the clinical applicability of these findings for pregnant women. The document highlights that excessive gestational weight gain and failure to lose weight after childbirth are important predictors of long-term obesity. It also recommends nutritional status assessment at every prenatal visit using BMI by gestational week, documentation in the Pregnant Woman's Health Record, and reduction of the interval between consultations when overweight or obesity is diagnosed.[13] Therefore, the increase in obesity observed in this study points to the need for coordinated actions involving physicians, nurses, nutritionists, and other members of the multidisciplinary team, with continuity of care during the postpartum period.

Lifestyle-based interventions may contribute to reducing excessive gestational weight gain and associated outcomes. A systematic review on mobile health interventions identified benefits in pregnant women with overweight or obesity, including reductions in the incidence of gestational diabetes, preterm birth, macrosomia, and gestational weight

gain.[14] A network meta-analysis also indicated that interventions combining diet and physical activity tend to perform better when simultaneously considering prevention of gestational diabetes and restriction of excessive weight gain during pregnancy.[15] These findings support the need for preventive strategies before and during pregnancy, including nutritional counseling, encouragement of safe physical activity, and longitudinal follow-up.

Among the limitations of this study, it should be noted that SISVAN data represent pregnant women monitored and registered in the system, and not necessarily the total population of pregnant women in Brazil.[4] Furthermore, as this is an ecological, retrospective study based on aggregated data, it is not possible to establish causal relationships or evaluate individual characteristics such as age, educational level, race/skin color, parity, socioeconomic conditions, comorbidities, or quality of prenatal care. Data from 2026 should also be interpreted with caution, as they depend on database updates at the time of consultation.

In summary, the reduction in underweight prevalence was not accompanied by maintenance of eutrophy, but rather by a progressive increase in excess weight. This scenario requires food and nutrition surveillance to be used as a health intelligence tool, capable of transforming SISVAN records into concrete actions involving screening, counseling, active case finding, territorial monitoring, and prevention of excessive gestational weight gain. Primary Health Care occupies a strategic position in this process because it integrates reproductive planning, prenatal care, promotion of healthy eating, safe physical activity, and postpartum follow-up.

CONCLUSION

In conclusion, the results of this study demonstrate an important shift in the nutritional profile of pregnant women monitored by SISVAN in Brazil between 2010 and April 2026, characterized by a progressive reduction in the proportions of underweight and adequate/eutrophic nutritional status, alongside a continuous increase in overweight and, particularly, obesity. Obesity showed the most significant increase during the study period, rising from 13.13% to 29.08%, while overweight reached 29.49% in the partial 2026 data. Together, overweight and obesity accounted for more than half of the pregnant women monitored from 2020 onward.

These findings reinforce that excess gestational weight constitutes a relevant public health issue and reflects the national scenario of high prevalence of overweight and obesity among adult Brazilian women. In this context, SISVAN should be valued not only as a data recording system, but also as a strategic tool for food and nutrition surveillance, identification of risk groups, territorial planning, and qualification of prenatal care.

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EDITORIAL AND REVIEW

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