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Nutritional assistance in prenatal care of women attended at family health units in a municipality of the Reconcavo da Bahia: a cohort study

Assistência nutricional no pré-natal de mulheres atendidas em unidades de saúde da família de um município do Recôncavo da Bahia: um estudo de coorte

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Abstract

This study objective was to analyze the nutritional guidance offered to pregnant women during prenatal care in family health units (USFs) of Santo Antonio de Jesus, BA. A cross-sectional study with pregnant women enrolled in prenatal service in 16 USFs, May-July 2011. The sample consisted of 316 pregnant women. For data collection we used a pre-tested structured questionnaire. Data were analyzed using *Stata*, version 10. The average age was 26.1 years (SD = 6.91). It was observed that pregnant women in the first quarter were overweight (45.8%), in the second and third quarter they had normal weight (50% and 45.6%). From pregnant women, 78.6% stated receiving nutritional guidance, individually (93.3%) or in groups (5.2%), 82.2% were guided by a nurse and 9.2% by a nutritionist. Regarding the content of the guidelines, 77.3% received guidance on water intake, 75.4% on salt intake, 70.7% on fruits and vegetables, 64.9% on consumption of beans and 51.7% on consumption of liver. Given the above, the majority of pregnant women received nutritional guidance, but it was not done by professional nutritionists. However, even these guidelines being held by another professional, the results in general are presented positively to the population in question.

Keywords: Prenatal Care. Prenatal. Family health.

Resumo

Este estudo objetiva analisar as orientações nutricionais oferecidas às gestantes durante o pré-natal, em unidades de saúde da família

(USFs) do município de Santo Antônio de Jesus-Ba. Estudo transversal realizado com gestantes cadastradas no serviço de pré-natal em 16 USFs, de maio a julho de 2011. A amostra foi constituída por 316 gestantes. Para a coleta de dados, utilizou-se questionário estruturado e previamente testado. Os dados foram analisados no *Stata*, versão 10. A média de idade foi de 26,1 anos (DP=6,91). Observou-se que as gestantes no primeiro trimestre apresentavam sobrepeso (45,8%); no segundo e terceiro trimestre, eutrofia (50% e 45,6%, respectivamente). Das gestantes, 78,6% revelaram receber orientação nutricional, individuais (93,3%) ou por grupo (5,2%), 82,2% foram orientadas por enfermeiro (a) e 9,2% por nutricionista. Quanto ao conteúdo das orientações, 77,3% receberam orientações sobre a ingestão hídrica; 75,4%, sobre o consumo de sal; 70,7%, de frutas e legumes; 64,9%, quanto ao consumo de feijão; e 51,7%, de fígado. Diante do exposto, a maioria das gestantes recebeu orientação alimentar, porém não foi realizado pelo profissional nutricionista. Entretanto, mesmo essas orientações sendo feitas por outro profissional, os resultados se apresentaram de forma positiva para a população estudada.

Palavras-chave: Assistência nutricional. Pré-Natal. Saúde da Família.

Introduction

Pregnancy is a period of recognized biological vulnerability. It is one of the life cycles, which represents the most crucial physiological process, due to the increase in nutritional demands due to pregnant women's physiological adjustments and nutrient demands for fetal growth.[1] Pregnancy causes physiological changes in women's bodies, which generate an increased need for essential nutrients, both in terms of micronutrients and macronutrients. Pregnant women's inadequate energy intake can lead to competition between the mother and the fetus, limiting the availability of essential nutrients to an adequate fetal growth. In this sense, scientific evidence reveals that maternal nutritional status can be considered an indicator of health and quality of life for both women and children in immediate periods, such as the positive impact on birth weight and later life cycles.[2]

Thus, pregnant women's adequate weight gain positively influences the health of women and children, impacting birth weight.[3] Pregnant women who present inadequate nutrient reserves, together with insufficient weight gain, may present negative gestational outcomes, such as growth impairment and fetal development. In contrast, excessive gestational weight gain has a negative influence on newborns, since the surplus can deteriorate maternal nutritional status and is not necessarily channeled to the fetus.[4] Among such outcomes, maternal diabetes and hypertension,

macrosomia, fetal distress, prolonged labor, surgical delivery, intrauterine growth restriction and prematurity.[5]

Pregnant women presenting nutritional disorders can more frequently have infections, parasitoses, anemia, hypertensive syndromes, placental insufficiency, obesity, increased chances of hemorrhage during childbirth and puerperal infection, as well as giving birth to preterm infants with intrauterine growth restriction (IUGR), who are more likely to develop infections, respiratory conditions and to increase perinatal mortality statistics.[6]

For these reasons, pregnant women should have an adequate diet, since preserved nutritional status may positively contribute to gestational outcomes. Therefore, evaluation of food consumption in pregnancy through the use of food surveys is considered relevant. These allow to identify women's dietary pattern throughout the pregnancy and to evaluate if it is considered as protection or risk for pregnancy appropriate development.[7] Dietary evaluation is part of nutritional assistance during the prenatal period, which presupposes professional services aimed at identifying pregnant women at nutritional risk through diagnosis of pregestational and gestational nutritional statuses, as well as carrying out individualized guidance aimed at maintaining or improving gestational nutritional status and maternal conditions for childbirth and reduction of maternal and child morbidity and mortality.[8]

Nutritional guidelines should be developed by valuing economic, social and cultural aspects experienced by each patient, elements that are included in extended clinical nutrition, which discusses nutritional assistance based on subjects' integrality and the understanding of the complexity of the health-disease-care process.[9] Considering the importance of nutritional assistance in prenatal care, which assesses its structure and the process in the care offered by family health teams, it is essential to evaluate the nutritional assistance offered to pregnant women during prenatal care in public health facilities in the Brazilian municipality of Santo Antônio de Jesus, BA, to support health managers with information that helps in health planning and intervention in unsatisfactory situations.

Methodology

It is a cross-sectional study allied to a prospective cohort of pregnant women at Brazilian Center for Maternal and Child Health Research (NISAMI, in the Portuguese abbreviation), which is part of a research project called "Maternal risk factors for low birth weight (LBW), prematurity and intrauterine growth retardation in the Brazilian Recôncavo of Bahia," carried out in the municipality of Santo Antônio de Jesus, BA.

In 2007, the municipality of Santo Antonio de Jesus had coverage of 79.3% of the population assisted by the family health strategy, with the participation of 21 teams. According to the Municipal

Health Department, the population coverage in 2009 increased to 88.2%, with 23 teams implanted and two Family Health Support Centers (NASF).[10]

Data from the present study were obtained through interviews with adult and clinically healthy pregnant women resident and domiciled in the urban area and enrolled in the prenatal service in Brazilian Family Health Units (USF, in the Portuguese abbreviation) of the municipality of Santo Antonio de Juda, in the period from May to August 2011. Women pregnant with twins, having HIV/AIDS (human immunodeficiency virus infection and acquired immune deficiency syndrome) and residing in the rural area of the municipality were considered ineligible for the sample. Initially, the project was presented to the Municipal Department of Health (SMS, in the Portuguese abbreviation) and to all USFs teams. The coordinator of each USF was asked about the number and names of pregnant women attending the prenatal service. This information provided internal control in identifying the women to be interviewed, as well as in verifying the prenatal appointment schedule for those who had not yet been found in the service.

The sample comprised 16 USFs belonging to the urban area of the municipality. Although the municipality has 21 USFs, five of these were considered ineligible to make up the sample because they were located in districts difficult to access or in rural areas as the research had little financial and human resources.

For data collection, a structured questionnaire was used, previously validated in Brazil by Niquini,[11] cutting the specific segment to obtain the nutritional information. Identification of receiving nutritional counseling in prenatal care was obtained by means of the following variables: receiving nutritional counseling, a professional who provided nutritional guidance (nurse, doctor, nutritionist and others), the way by which guidance was provided (consultation, groups, lectures and otherwise) and the content of those guidelines offered (water intake, consumption of fruits, vegetables, salt, foods rich in iron, milks and milk products and the importance of having meals 5 to 6 times a day).

For racial classification, the self-definition method was used. Options of choice for the race/skin color variable followed the IBGE criteria, these being: Yellow, white, black, dark-skinned and Brazilian native population. Subsequently, they were grouped in black (dark-skinned and black) and non-black (yellow, white and Brazilian native population).

A total of 387 pregnant women registered at the USFs was identified. Of these, 71 did not participate in the study because they were already in the postpartum period or because they refused to respond to the questionnaire. Thus, the final sample consisted of a total of 316 pregnant women, who were interviewed after accepting the invitation to participate and signing an Informed Consent Form (ICF).

The data were collected by a team of students from Nutrition and Nursing courses and previously trained researchers.

Data was entered in (public domain statistical software for epidemiology) Epi Info 6.04 b. And for descriptive analysis, (general-purpose statistical software package) *Stata*, version 10.

The research was approved by the Research Ethics Committee (REC) at Brazilian college Faculdade Adventista de Fisioterapia da Bahia (Adventist Physiotherapy Faculty of Bahia) (Process no. 4369.0.000.070-10) in 2011.

Results

The general characterization of the 316 pregnant women studied indicates that the mean age was 26.1 years (SD = 6.1), most had completed secondary education (45.2%), 41.7% were in cohabitation marital status, 85.1% stated being black, more than half (52.8%) said they had incomes less than or equal to Brazilian minimum wage, 49.7% were Catholic and 38.8% had some work activity, the majority being salespeople (13.6%), followed by housemaids (10.9%). Regarding obstetric characterization, 45% of the pregnant women were in the second gestational trimester, with an average of 25 gestational weeks (SD = 8.3) (Table 1).

Table 1. Sociodemographic and nutritional characteristics of pregnant women served at Family Health Units in Brazilian municipality of Santo Antônio de Jesus, BA, 2011.

Characteristics	n	(%)
Age (years)		
< 20 years	54	17.1
20-30 years	176	55.7
> 30	86	27.2
Total	316	100
Marital status		
Single	69	22.0
Married	112	35.6
Brazilian legislation consensual union (cohabitation marital status)	131	41.7
Divorced	1	0.3
Others	1	0.3
Total	314	100

to be continued

Characteristics	n	(%)
Education		
Can not read or write	1	0.3
Has not completed elementary school	51	16.1
Has completed elementary school	25	8.0
Has not completed secondary school	81	25.6
Has completed secondary school	143	45.2
Has not completed higher education	11	3.4
Has completed higher education	4	1.2
Total	316	100
Income		
≤ 1 MW	166	52.8
2-4 MW	144	45.8
5-7 MW	3	0.9
≥ 8 MW	1	0.3
Total	314	100
Skin color		
Black	269	85.1
Non-black	42	13.3
Does not know	5	1.5
Total	316	100
Gestational trimester		
1st quarter	38	12.6
2nd quarter	137	45.5
3rd quarter	126	41.8
Total	301	100

With regard to pregnant women's anthropometric profile according to gestational trimesters, it was possible to observe that pregnant women who were in the first trimester were overweight (45.8%), in the second trimester, eutrophy (50%) and for the third trimester the highest occurrence was eutrophy (45.6%) followed by overweight (22.8%). It was also observed that there was an increase in low weight and obesity from the first to the third gestational quarters (Table 2).

Table 2. Anthropometric profile according to gestational trimesters of women served at Family Health Units in Brazilian municipality of Santo Antônio de Jesus, BA, 2011.

Anthropometric status in the second gestational trimester									
Gestational trimester	Underweight		Eutrophy		Overweight		Obesity		Total
	n	%	n	%	n	%	n	%	n
I quarter	3	12.5	9	37.5	11	45.8	1	4.2	24
II quarter	21	19.4	54	50.0	24	22.2	9	8.3	108
III quarter	22	19.3	52	45.6	26	22.8	14	12.3	114
Total	46	18.7	115	46.7	61	24.8	24	9.8	246

Results on characterization of nutritional guidelines received during prenatal care are described in Table 3. Of the total number of pregnant women, 78.6% reported having received some type of nutritional counseling during the prenatal visit, of which only 15% received written guidance. When considering the professionals carrying out the guidance, 82.2% stated that they were guided by nurses and 9.2% by nutritionists. Regarding the way guidelines were implemented, 93.3% reported having been by means of individual consultations.

Table 3. Characterization of nutritional guidelines received during prenatal care at Family Health Units in Brazilian municipality of Santo Antônio de Jesus, BA, 2011.

Variables	n	(%)
Receiving food and nutritional guidance		
Yes	247	78.6
No	67	21.3
Total	314	100
Written guidance		
Yes	47	15.0
No	265	84.9
Total	312	100
Health care professional counselor		
Nurse	231	82.2
Nutritionist	26	9.2
Doctor of medicine (MD)	16	5.6
Others	8	2.8
Total	281	100
Behavior		
During the consultation	265	93.3
In a group	15	5.2
Otherwise	4	1.4
Total	284	100

Table 4 shows nutritional guidelines content evaluation. Thus, 77.3% of pregnant women reported having always received guidance on the importance of water intake, 75.4% on salt consumption and 70.7% on fruits and vegetables. With regard to food sources of iron, 64.9% were instructed on bean consumption, followed by liver consumption (51.7%). As for milk and dairy products, 52.5% were instructed to ingest these foods and 58.2% on the importance of having an average of 5 to 6 meals a day.

Table 4. Evaluation of nutritional guidelines content received by pregnant women served at Family Health Units in Brazilian municipality of Santo Antônio de Jesus, BA, 2011.

Variables	n	(%)
Water intake		
Never	47	14.9
Sometimes	24	7.6
Always	243	77.3
Total	314	100
Salt consumption		
Never	57	18.1
Sometimes	20	6.3
Always	237	75.4
Total	314	100
Fruit and vegetables		
Never	55	17.5
Sometimes	37	11.7
Always	222	70.7
Total	314	100
Food sources of iron: Beans		
Never	89	28.3
Sometimes	21	6.6
Always	204	64.9
Total	314	100
Food sources of iron: Liver		
Never	133	42.4
Sometimes	18	5.7
Always	162	51.7
Total	313	100

to be continued

Variables	n	(%)
Milk and milk products		
Never	123	39.1
Sometimes	26	8.2
Always	165	52.5
Total	314	100
Meals frequency: 5-6 x/day		
Never	105	33.4
Sometimes	26	8.2
Always	183	58.2
Total	314	100

On the other hand, a percentage of pregnant women who never received nutritional guidelines (21.3%) was identified and 33.4% were not informed about having several meals. Regarding foods to be consumed, 28.3% never received information on beans consumption, followed by liver consumption (42.4%) and in relation to milk and dairy products, 39.1% never received any type of guidance.

Discussion

Mean age of 26.1 years found for pregnant women in this study shows consonance with another Brazilian study, such as the one performed by Salvador et al.,[12] in which there is more frequency in the age group of 20 to 34 years, being considered the most suitable one for reproduction. This result may be associated with the justification that pregnant women under the age of 20 fail to seek prenatal care and are at increased risk for complications before and after delivery.

Regarding schooling, it was observed that the majority had reached the high school level, showing some reasonable performance in terms of maternal schooling in the city studied, which may be associated with better understanding of nutritional guidelines offered at the time of the prenatal period. As for monthly household income, it was impressive that more than half of pregnant women reported monthly incomes equal to or less than Brazilian minimum wage. These findings are similar to those in the study by Santos et al.[13]

The low household income mentioned characterizes less availability of resources to ponder adequate food for this phase of life as well as to guarantee educational and health quality. However, maternal schooling may facilitate the understanding of the guidelines offered during prenatal consultations, even if sometimes they are not able to follow them strictly.

It is known that low maternal schooling has been related to infant morbidity and mortality, growth and malnutrition deficits, lower chance of them having more than six visits during prenatal care and greater difficulty in following vaccination schedules.[12] Therefore, educational profile of the pregnant women studied can provide a good prognosis for the aforementioned risks.

According to Santos et al.,[13] a schooling plays a central role in the way people are going to lead their lives and their children's. Mothers having higher education may have a broader view of how to conduct everyday situations. Rates of perinatal and maternal mortality, preterm deliveries and low birth weight newborns are considerably higher in populations without privileges and with low socioeconomic status.[13-15]

In relation to marital status, it was observed that the majority was in (Brazilian legislation) cohabitation. Similar result was identified in other studies.[16-18] The presence of a partner is very important in the gestational process, since it is a person with whom the woman can share her desires, doubts, fear and even issues related to pregnancy. That is, the actual presence of a partner can convey security in this period in which there are both physiological, psychological and emotional changes in women's life if those indeed play true supportive roles.

With regard to pregnant women stating to be black, there was a substantially high percentage. This data is similar to that found by 2010 Demographic Profile Census, conducted by Brazilian Institute of Geography and Statistics (IBGE, in the Portuguese abbreviation),[19] recording that 15 million people were classified as black (7.6%) and 82 million as dark-skinned (43.1%), thus reflecting the Brazilian reality. And it also shows consonance with the municipality where the study was developed, because it is located in the Recôncavo of Bahia region, historically marked by the presence of individuals who were enslaved and of African origin.

It is important to emphasize that because it is a black population, studies show that this ethnicity is more predisposed to the development of systemic arterial hypertension (SAH).[20] The appearance of this disease may result in higher risks of gestational hypertensive syndromes, which makes it necessary to provide dietary guidance to promote healthy eating habits and to prevent the appearance of complications during pregnancy.

Regarding the distribution of the anthropometric status according to the gestational trimester, it is observed that in the second and third trimesters there is a predominance of eutrophic pregnant women and in the first trimester pregnant women are overweight. However, it is important to note that half of the pregnant women studied in the second and third trimesters presented nutritional

changes regarding their anthropometric status and these may be associated with high-risk pregnancies, including childbirth complications, maternal anemia, preterm birth, macrosomia and child mortality.[21] In addition, the increase in the occurrence of low weight and obesity from the first to the third gestational trimesters shows that more specific nutritional care still needs to target this group.

According to Accioly,[22] the first gestational trimester is marked by a phase of major biological changes, in which the pre-gravidic nutritional condition has great impact on the adequate energy reserves. And the second and third trimester are stages in which environmental conditions are going to directly influence the fetus' nutritional status and maternal life habits, along with adequate prenatal care, are going to ensure normal fetal growth and development. According to the findings of this study, it can be implied that the good development of the gravidic state presented by the majority suggests that pregnant women may be following the nutritional guidelines that were offered to them. However, it is emphasized that these are only assumptions since this study had no follow-up approach.

Considering that women were overweight (and obese) in the third gestational trimester (35.1%), it could be pondered that the lower purchasing power would lead to consumption of foods of low nutritional value, because these are considered cheaper, or else in less quantity.[23] These data may reflect part of the nutritional transition characteristics, which is characterized by reduction of energy-protein malnutrition, an increase in excess weight and the coexistence of specific nutritional deficiencies (hypovitaminosis A and anemia), which, in turn, associate with the development of intercurrent conditions during pregnancy, such as gestational diabetes and hypertensive disease of pregnancy, which can lead to unfavorable gestational outcomes.[24]

On the one hand, it is agreed that low maternal weight and insufficient gestational weight gain are associated with low birth weight (LBW). On the other, it is recognized that obesity and excessive gestational weight gain are associated with fetal macrosomia and risk of perinatal complications increases directly and proportional to pre-gravidic maternal weight.[25]

Regarding findings related to nutritional counseling, it was observed that almost all the pregnant women received food guidance during prenatal consultations. This result presented variation when compared to other studies, being higher than that found by Niquini et al.[11] and lower than that identified by Barreto[26] and Vitolo.[27]

Thus, considering the results of this study and others published in the scientific literature, it is necessary to rethink the quality of nutritional care, that is, the adequacy of prenatal care from a qualitative point of view. Therefore, it is important to highlight that these guidelines should be offered considering important constraints, such as economic, social and cultural contexts, as well as referral of pregnant women to social assistance programs, when necessary.

According to Barreto,[26] the desire to verify whether pregnant women attending public health services receive guidance on nutrition during prenatal care and whether they are pertinent to the nutritional status requires consideration of actions and activities developed in the field of nutritional care, aiming at reverting possible weaknesses as well as the need for reflection to direct or redirect actions and activities.

Studies suggest that when pregnant women receive guidance on nutrition their nutritional status improves, both for underweight and overweight pregnant women, that is, dietary changes are related to knowledge about nutrition needed in this phase.[28]

As for the content of such guidelines, the high percentage of pregnant women who reported receiving guidance was outstanding, which are widely disseminated in society, such as eating more fruits and vegetables, ingesting more milk, yogurt or cheese, adequate water intake, reducing salt intake, eating more legumes, especially beans.

Guidance for consumption of viscera once a week was received by 51.7% of the pregnant women, suggesting the need to encourage the introduction of iron source and vitamin A foods in these women's diets.[26]

Among essential nutrients for good gestational development is iron, present in other foods besides liver, which is necessary for women to replace their basal losses and expansion of erythrocyte mass, besides supplying deficiencies in fetus and placenta growth.[29]

When considering the professionals prescribing the dietary guidelines, there is a high frequency of nurses among them, also evidenced in the study by Niquini et al.[11] It is important to note that in the USFs studied all follow-ups during prenatal consultations were performed by nurses and there was no nutritionist in the minimum team. Thus, it is understood why these guidelines are carried out by these professionals.

It is known that the material adopted by the nursing team is the Prenatal and Puerperium Manual by the Brazilian Ministry of Health, which does not contain general nutritional guidelines that should be offered to pregnant women, describing only dietary guidelines to solve digestive symptoms. Basic nutritional guidelines are present only in the Food Guide for the Brazilian Population produced by the Brazilian Ministry of Health, which points out seven guidelines for obtaining an adequate diet for the population and at times specifies on diet during pregnancy. This instrument, together with academic training, makes nutritionists ready to handle it,[30, 31] thus pointing out the less mastering on the subject by professional nurses when compared to nutritionists' who have been enabled to deal with food and nutritional issues.

In view of this situation, the inclusion of nutritionists in the USF minimum team reveals a relevant political-social need. This professional should complement the multi-professional team in prenatal care, aiming to provide pregnant women with guidelines regarding their diets

and nutrition. It is necessary that prenatal care be carried out by all professionals able to offer appropriate attention to pregnant women and more frequent team work, with dialogues among the professionals.

A study on nutritional education in public health services has shown that physicians and nurses have poor nutrition training and difficulties in recognizing and dealing with users' eating problems. It has also identified that food deficiencies are not considered a problem to be solved by health services because they are considered as economic issues.[32]

It is suggested that better results would be achieved if the guidelines were carried out by nutritionist members in Brazilian government Family Health Support Center (NASF, in the Portuguese abbreviation). But the fact that there are good results regarding anthropometric status of the women studied and taking into account that the guidelines come from nurse practitioners can be an indication of some good integration between nursing and nutrition present at NASF.

On the other hand, in a qualitative study carried out in a municipality in southern Brazil in 2009 with family health teams in order to identify the main difficulties encountered by the minimum team, the professionals interviewed reported performing several activities that were not specific to their professions due to the lack of professionals in the team. Interviewees reported prescribing dietary guidance through "tips" about healthy eating, reinforcing the need to include nutritionists in the family health strategy minimum team.[33]

Receiving written nutritional guidance was reported by a small portion of pregnant women interviewed, a result similar to that found by Niquini et al.[11] This result was already foreseen, since it is not a recurring practice by the USFs professionals because of the principles permeating the family health strategy and other demands related to prenatal consultations. It should be emphasized that it is important to avoid excessive provision of technical information translated into nutritional guidelines.

And as to the way in which such guidelines were conducted, individual consultations in prenatal care are also emphasized, once again revealing the presence of nurse practitioners in this process. A small portion of pregnant women interviewed reported receiving guidelines from educational groups, among which the (Brazilian society of pediatrics) Exclusive Breastfeeding Incentive Group (GIAME, in the Portuguese abbreviation), responsible for following up pregnant women from the 7th month of pregnancy until the 6th month postpartum. Several NASF professionals are responsible for conducting GIAME, among them: pharmacists, speech therapists, physical educators and nutritionists. Thus, nutritionists' participation at NASF during these meetings can be implied.

These professionals, when inserted in a strategy that has individuals, families, communities and the environment as fields of intervention, has the necessary competence to carry out the promotion of healthy eating habits, food and nutritional surveillance, prevention, diagnosis and treatment

of pregestational and gestational nutritional disorders, specific nutritional deficiencies, education of family health team members in the area of food and nutrition[34] and to propose nutritional guidelines appropriate to food culture, physiological conditions and availability.

In the context of promoting healthy eating for pregnant women, the proposal of the food pyramid specific for the gestational period is suggested, which can be a strategic tool when used in the health education process, since it allows the visualization of the foods, the amount to be consumed, as well as those that should be avoided by them.[35]

Finally and ideally, nutritional assistance performed by nutritionists should be ensured as an element of prenatal actions set for an adequate and integral attention to maternal nutritional health. And knowledge of the pregnant population's nutritional epidemiological profile as well as their interconnected factors is crucial.

Conclusions

Considering the results of the present study, it was observed that the majority of pregnant women have received some type of dietary guidance but it was not performed by nutritionists who were qualified in the topic. However, even if these guidelines are carried out by other professionals in the family health strategy and there is still a relevant percentage of pregnant women with changes in anthropometric state, it can be considered that the results, in a general way, were positive for the population, highlighting the importance of these guidelines.

In view of the scenario presented, there is a tendency to improve the nutritional assistance scenario in pregnancy due to the insertion of the NASF, created by ordinance GM no. 154 of January 24, 2008, as well as the inclusion of nutritionists as its member to broaden the comprehensiveness, integrality and capacity for solution of prenatal care.[36]

Nevertheless, the success of prenatal care requires the participation of inter- and multidisciplinary teams, qualified, humanized and early prenatal care, as well as ensuring quality care during pregnancy.[37] Therefore, professionals at the minimum team and at NASF should share their knowledge, allowing an expanded vision of health from the multidisciplinary work and toward an integral assistance to populations' health.

Thus, the nutritional guidance process must be understood by health professionals as one of the components that can contribute to reeducation on diet and the construction of healthy eating habits.

It is believed that greater effectiveness is going to be achieved with the valuation of preexisting eating habits, culture and customs, among other social and economic components involved in pregnant women's diets.

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Contributors

Lisboa CS has participated in the design and delineation of the study, interpretation of data, writing and critical review of intellectual content. Santana JM, Santos DB and Bittencourt LJ, have participated in data analysis, writing and review of the manuscript.

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