RIASE
REVISTA IBERO-AMERICANA DE SAÚDE E ENVELHECIMENTO
REVISTA IBERO-AMERICANA DE SALUD Y ENVEJECIMIENTO

PREGNANT WOMEN PERCEPTION ABOUT BODY-SHAPE IN THE THIRD SEMESTER

Maria Margarida Santana Fialho Sim-Sim – S. João de Deus. Nursing School University of Évora

Maria Antónia Poupas Martins – Planície Family Health Unit. Central Alentejo Health Centres Group

Maria da Luz Ferreira Barros – S. João de Deus. Nursing School University of Évora

Maria Teresa Vicente Ortet – Sol Family Health Unit. Central Alentejo Health Centres Group

Luís Manuel Pinto Miranda – Hospital de N.ª S.ª do Rosário. Centro Hospitalar Barreiro-Montijo EPE

VOL. 4 N.º 1 APRIL 2018

ABSTRACT

Objective: to analyze the perception of the body image of pregnant women in the third trimester and to evaluate their relationship with the Body Mass Index.

Methods: Observational and transversal study. Convenience sample of 231 women in the 3rd trimester, with mean age of 32.07 years (SD= 5.41), who attended prenatal class. Self-filling questionnaire. A body image scale was used, presenting Cronbach's α of .885. Ethical principles were observed.

Results: The body image is tendentially positive, whether considering the total physical figure or body parts. The pregnant womb and the breasts are the highest scoring body elements (M= 5.76, SD= 1.29 and M= 5.15, SD= 1.25). The weight had the lowest mean score (M= 4.48, SD= 1.64). Older women tend to have a more favorable body image. Data suggests that women carry to pregnancy social models who value the thinness. The Anova one-way test, in women with lower weight gain, showed a significantly more favorable body image (M= 55.28; SD= 8.63). Multiple regression, suggests the consistency of the construct during pregnancy.

Conclusion: it will be important that the body image becomes integrated as an indicator of well-being in the prenatal surveillance.

Key words: Body image; pregnancy; body mass index; nursing; prenatal care; obstetrics.

INTRODUCTION

Human existence derives from a physical entity: a body. The shape and features are perceived by the individual, who assesses it, resulting in body image. Body image is a multidimensional concept, which defines the attitude and perception of the self with regard to one's physique. It expresses feelings about anthropometric data, but also about body parts evaluated individually or as a whole. It refers to the way a person feels in their body and not just how they feel in relation to their body. Body image becomes vulnerable in some health contexts, stages of development or at certain ages[1,2]. The essence of body image is in the way the body is experienced throughout life.

In the life of a human being, there are periods in which the individual's physical appearance changes within a short space of time. In 40 weeks, the body of a pregnant woman presents different sizes, weight, postures, textures and colours[3-6].

Studies during the gravid-puerperal cycle show that women's perceptions of their body seem to change to perceiving a functional body rather than an aesthetic body, rejecting standards upheld by social stereotypes[7,8]. In this phase, weight gain is perceived positively, in a health pattern, contrary to the perceived "ideal" body[9]. The physique changes to become a body that nourishes; an understanding that is different and incongruous with the body that has other roles, whether in conjugality, in the workplace or in social circumstances[7,10]. Studying body image in pregnancy offers opportunities to identify where there is dissatisfaction and to understand the importance of support in health, in reflection of the concern with body image, weight gain and consequently Body Mass Index (BMI), also named the Quetelet Index. A normal BMI throughout pregnancy is advised for foetal and maternal well-being[6,11,12]. Multicentre studies reveal that a BMI corresponding to overweight or obese is associated with dissatisfaction with body image[12]. In view of the considerations, this study aims to: a) analyse body image in pregnant women in the third trimester of pregnancy, b) identify correlations between body image and BMI.

METHOD

An observational and cross-sectional study was designed, carried out from September 2016 to September 2017. Out of 250 invitations, 231 pregnant women who attended prenatal classes in health institutions located in Évora and Barreiro, Portugal, took part in a convenience sample. The following inclusion criteria were applied: a) nulliparous, b) adult, c) single foetus, d) 3rd trimester, e) monitored in prenatal consultation, f) speaks Portuguese. The questionnaire had the following sections: a) sociodemographic aspects, b) obstetric history, c) anthropometric data before pregnancy and current and d) scale of attitudes towards body image (EAIC; in the original Attitude to Body Image Scale ABIS) [13], obtaining the permission of the authors.

The EAIC assesses attitudes towards ten aspects: weight, breasts, waist, buttocks, legs, feet, face, width of the shoulders, abdomen and hair. The answers are given on a Likert scale of 1 to 7. The highest score means a more favourable body image. In the internal consistency, a Cronbach alpha of 0.885 was obtained. BMI was also evaluated, based on weight and height data (i.e., weight/h2).

The data was entered into the SPSS IBM® version 22. Parametric tests were applied considering the principle of the Central Limit Theorem. All the participants signed the consent form. The project obtained a positive opinion from the Ethics Commission of the

University of Évora (registration 10040) and was developed in accordance with ethical principles in accordance with Standard no. 015/2013 of the Directorate-General of Health (DGS) which respects the Declaration of Helsinki.

RESULTS

In the 231 pregnant women, the average age was 32.07 (DP=5.41), the mode was 36 and the range was between 18-45. The academic level of licentiate degree was the most represented (n= 106; 46.1%). There were 22 participants with an academic level below the 9th year (9.6%). The majority were married (n= 172, 74.5%), followed by single women (n= 54, 23.4%) and divorced women (n= 5, 2.2%). The participants were in the third trimester, between the 29th and the 40th week. Before pregnancy, the majority (n= 134, 58%) had a normal BMI. Considering the height and weight before pregnancy and taking into account the current Gestational Age (GA), following guidelines*1415*, it was found that 41.6% (n = 96) had the recommended weight for the GA (table 1).

Table 1 - Weight characteristics before pregnancy and at the end of pregnancy.

Weight characteristics	N	%
BMI before pregnancy		
Underweight	11	4.8
Normal weight	134	58.0
Overweight/obese	86	37.2
Categorisation of the current BMI	56	24.2
Underweight for the GA	96	41.6
Standard weight for the GA	79	34.2

As for body image, through the descriptive statistics an average of 49.42 (DP = 9.86) was found, and a mode of 60, ranging between 20 and 70. Thus, body image tended to be positive. The parameter with the highest average was the abdomen (M = 5.76, DP = 1.29) and the lowest scoring factor was weight (M = 4.48, DP = 1.64), according to the table.

Table 2 - Descriptive elements of body image in pregnancy.

	Weight	Breasts	Waist	Buttocks	Legs	Feet	Face	Shoulders	Belly	Hair
Average	4,48	5,15	4,78	4,56	4,42	4,61	5,11	5,03	5,76	5,05
DE	1,64	1,25	1,37	1,44	1,50	1,48	1,39	1,23	1,29	1,36
Minimum	1	1	1	1	1	1	1	2	1	1
Maximum	7	7	7	7	7	7	7	7	7	7

Body image showed a positive correlation with age (r= .149; n= 231; p= .024).

Through a one-way Anova test, it was observed that there are significant differences in the body image score, when considering the BMI groups in the current GA. Women with a normal BMI have an average of M= 50.54 (DP= 9.43) in body image, underweight participants M= 55.28 (DP= 8.63) and overweight participants M= 43.92 (DP) 8.32). The participants who have a BMI below normal are the ones that are significantly more satisfied with their silhouette (F (2.228) = 28.148, p <.05) (figure 1).

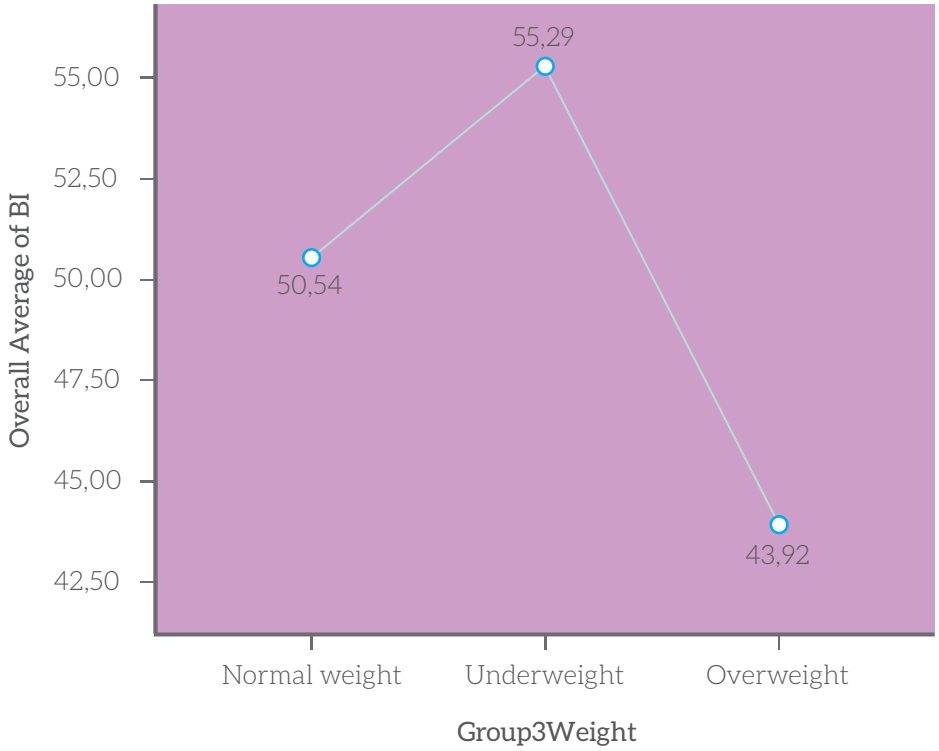

Figure 1 – Body image score according to the BMI groups.

Finally, a linear regression was achieved, in the sense of finding the best predictor of body image in the 3rd trimester of pregnancy. The age of the woman, the gestational age, the BMI before pregnancy and the current BMI were introduced as predictors. Using the Enter method, a significant model emerged (F (4.226) = 16.67, p <.05). The model explains 21.4% of the variance (R2 Adjusted = .214). The strongest predictors are BMI before pregnancy (β = .852) and current low BMI (β = -1,136) (table 3).

Table 3 - Multiple regression.

Coefficients[a]									
Model		Coefficients no.		Coefficients	t	Sig.	Correlations		
		B	Std. Error	Beta			Zero-order	Partial	Part
1	(Constant)	48,360	9,043		5,348	,000			
	Age pregnancy	,565	,219	,159	2,578	,011	,017	,169	,151
	BMIbefore	1,781	,344	,852	5,184	,000	-,197	,326	,303
	BMItrimester3	-2,452	,356	-1,136	-6,89	,000	-,330	-,417	-,403
	Age woman	,223	,108	,122	3	,040	,149	,136	,121

DISCUSSION

The descriptive statistics and the age range of the participants converged for primary studies or literature review, which investigated body image in pregnancy[9,12]. The age of the pregnant woman can have implications on self-appreciation of body image, since adolescence has passed and their maternal identity is being constructed. In the current study, the positive correlation between age and body image, although very weak, was significant, suggesting that older women value pregnancy more. Pregnancy in old age, socially proves their reproductive capacity and this is important for women in the pre-menopausal phase, when there is a decline in ovarian function[5].

The tendency towards positive body image concurs with European and Australian studies that convey veneration of the pregnant body and accommodation to physical changes[9,12,16]. This is rooted in the social value of procreation, in an aging Europe and particularly in Portugal, where since the 1980s, the Synthetic Fertility Index (ISF) does not allow for the replacement of generations (i), year of 1982 ISF= 2.08 versus 2.1 for replacement). The child is socially welcome and the pregnant represents, a contribution to the future, aspects that may have brought the woman a positive perception because of the social attention she receives. On the other hand, as the identity of women begins to revolve around roles at home, investment in their physical appearance diminishes[1].

Despite the changes imposed by the pregnancy, the evaluation was satisfactory in the various corporal elements referred to in the scale[13]. The highest score was in the image of the pregnant belly, which conveyed an idea of satisfaction, suggesting that the participants associate the well-being of the foetus with the size of the belly[10]. Aspects that were perhaps less valued by the participants were the typical linea alba, the umbilical prominence, the panniculus adiposus or the eventual abdominal stretch marks. The fact that the mammary glands are the second most valued element, conveyed an idea of satisfaction with a body that is prepared to nourish their child. Given the change in volume that the mammogenesis and lactogenesis bring, the body image of the participants will have moved towards the eroticised image of the female body[7], adding to breast prominence, due to the influence of oxytocin on this erectile tissue[4,5]. During pregnancy, the breasts change substantially size, mobility, shape and colours. Because of the proliferation of alveoli tissue and the stretching of the Cooper's ligaments, they tend to hang, maintaining gracefulness in movement[4,5]. Stretch marks occur due to adrenocorticoids and rupture of the connective tissue. Veins become visible due to the elevated levels of estrogen, the breasts and areolas darken and secondary areolas appear. If on the

one hand the results suggested gratification, they also concurred with studies that emphasise the constant social erotization of women's bodies[17]. For these reasons, body image relating to the breasts can be positive, in the exercise of sexuality in the third trimester.

The corporal elements that showed an intermediate assessment were the shoulders, face and hair. The response to nails during pregnancy is not uniform, because, while they grow more, and in some women the appearance improves, in others they become brittle[3,5]. On the other hand, as hair is a valued feature of the female body, when in poor condition, it is perceived as a significant loss of beauty[1,3,7]. As for the shoulders, they are an area of the body which bring grace to the silhouette if they are exposed, but they have little erotic significance and hence have less value[17]. The appearance of telangiectasias on the thorax is common, but this does not suggest a reason for dissatisfaction for the participants. In view of the scores attributed to the face, some of the changes such as brightness of the skin or acne vulgaris, by hypertrophy of sebaceous and sweat glands or chloasma, did not show up significantly[4,5]. As regards chloasma, the results counteract another 3 studies, but this is not surprising. In the current sample, only about 1/3 were beyond 37 weeks of pregnancy. This may have influenced the score, since cutaneous hyperpigmentation due to the stimulation of melanotropin released by the pituitary gland, or malar, frontal and perioral chloasma, conferring the typical mask of pregnancy, will not yet be noticeable to 2/3 of the participants.

The lowest scoring corporal elements in body image are weight, legs, buttocks, waist and feet, reflecting the discomfort experienced at the end of pregnancy. The implications on agility, mobility, gait, balance, diameter of the eye sockets, and the attitude towards the body, emphasise the hormonal effects. Due to the dominance of estrogen, progesterone and relaxin, the diameter of the thorax and pelvic bones/joints are amplified and relaxed. The curvature of the spine is accentuated, the centre of gravity moves forward, the belly projects between the diastasis of the rectus abdominis and the gait becomes anserine. Weight increases due to uterine content and the accumulation of adiposity in the thighs. In the lower limbs, the pressure of the lower caecum on the inferior and pelvic vena cava, by reducing the return circulation, imprisons the blood carrying the oedema, making the feet, ankles and legs swell[4,5]. Weight is emphasised as a less positive element, which is consistent with studies that identified a correlation between negative body image and weight gain beyond the recommended limits[6,9]. The conflicting feelings of the pregnant women, between what is positive for themselves and what is positive for the child, shall not be scorned, since the weight will work in the traditional sense, as an indicator of a healthy foetus.

The evolution of the BMI of the participants was intriguing. Women who were overweight prior to pregnancy maintained the same condition in the third trimester. However, the representation of underweight participants in the third quarter is notable. The results are somewhat controversial, agreeing and also disagreeing with other studies[1], as well as moving away from the popularly rooted idea that a heavier woman will give birth to a stronger baby.

The current participants are women of a generation that throughout childhood, adolescence and youth, were exposed to gender stereotypes, to fashion and ideal body measurements, as observed in other studies[2]. The results concur with the idea of some authors that women learn to see their body from an external perspective, in order to avoid negative judgments[18]. In other words, they continuously monitor their appearance. In fact, since childhood, in Western culture, the female body that is learned from the "Barbie" image, limits girls to the ideal of the perfect body, which is simply impossible to achieve. Thus, while those at a normal weight were free of the stereotyped image, those who were underweight kept a certain objective of the body, continuing into pregnancy. Weight being the element that brought the least satisfaction to the participants, the guidance of health professionals, who recommend paying attention to the evolution of one's weight, will be revealed here. It is possible that pregnant women may have lost the notion of recommended limits, in the idea of not gaining weight excessively. This confirms the topic of body image as a matter of interest, for the wellbeing of the couple, and later, for the implications on puerperium, in particular postpartum depression, refusal to breastfeed, early weaning and in female sexual response[9,19,20]. If prenatal monitoring enables advice and understanding of women's concerns, and guidance for the benefit of the relative[10], for the collection of data about body image in the three trimesters, for the identification of pregnancy expectations, for information about the evolution of shapes, colours, weight or body textures, as well as advice throughout pregnancy about BMI, they can optimise the experience of complete plasticity of the entire maternal organism during pregnancy.

Limitations

In the current study, the convenience sample, with a higher average age, may have created conditions for a generally positive perspective. However, the sample reflected the current tendency in Portugal to postpone maternity. As a result of the economic situation, knowledge and the use of contraceptives, as well as career and life choices, the average age of Portuguese women who give birth was 31.9 in 2016[21].

CONCLUSION

Women's perception of their body image during pregnancy tends to be positive. The analysis of body image allows for health professionals to better support women facing difficulties when accommodating to changes. The evaluation of body image associated with BMI can lead to a better nutritional condition, both in women who are underweight and overweight, through prenatal monitoring and the evaluation of body image in the three trimesters.

REFERENCES

1. Neagu A. Body image: a theoretical framework. *Anthropology*. 2015;17(1):29-38.

2. Olesti-Baiges M, Martín-Vergara N, Riera-Solé A, *et al.* [Assessment of self-perceived body image in female adolescents aged 12-21 years in the city of Reus (Spain)]. *Enferm Clin*. 2007 Mar-Apr 2007;17(2):78-84.

3. Urasaki MBM. Alterações fisiológicas da pele percebidas por gestantes assistidas em serviços públicos de saúde. *Acta Paulista de Enfermagem*. 2010;23:519-525.

4. Montenegro C, Rezende J. *Rezende. Obstetrícia Fundamental*. 13th ed. Rio de Janeiro: Guanabara Koogan; 2014.

5. Coad J, Dunstall M. *Anatomy and Physiology for Midwives*. 4th ed. Edinburgh: Elsevier; 2012.

6. Rodríguez-Díaz L, Ruiz-Frutos C, Vázquez-Lara JM, Ramírez-Rodrigo J, Villaverde-Gutiérrez C, Torres-Luque G. Effectiveness of a physical activity programme based on the Pilates method in pregnancy and labour. *Enferm Clin*. Jul 2017.

7. de Souza MR, de Oliveira JF, do Nascimento ER, Carvalho ES. [Images and representations of the female body in Brazilian magazines]. *Rev Gaucha Enferm*. Jun 2013;34(2):62-69.

8. Watson B, Fuller-Tyszkiewicz M, Broadbent J, Skouteris H. The meaning of body image experiences during the perinatal period: A systematic review of the qualitative literature. *Body Image*. Jun 2015;14:102-113.

9. Meireles JFF, Neves CM, Carvalho PHBd, Ferreira MEC. Insatisfação corporal em gestantes: uma revisão integrativa da literatura. *Ciência & Saúde Coletiva*. 2015;20:2091-2103.

10. Hodgkinson EL, Smith DM, Wittkowski A. Women's experiences of their pregnancy and postpartum body image: a systematic review and meta-synthesis. *BMC Pregnancy Childbirth*. Sep 2014;14:330.

11. DGS. *Alimentação e Nutrição na Gravidez*. Lisboa: Direção Geral de Saude; 2015.

12. Shloim N, Hetherington MM, Rudolf M, Feltbower RG. Relationship between body mass index and women's body image, self-esteem and eating behaviours in pregnancy: a cross-cultural study. *J Health Psychol*. Apr 2015;20(4):413-426.

13. Strang VR, Sullivan PL. Body image attitudes during pregnancy and the postpartum period. *Journal of Obstetrics, Gynaecology and Neonatal Nursing*. Vol 14; 1985: 332-337.

14. Gilmore LA, Redman LM. Weight gain in pregnancy and application of the 2009 IOM guidelines: toward a uniform approach. *Obesity (Silver Spring, Md)*. 12/17 2015;23(3): 507-511.

15. DGS. Programa Nacional de vigilância de gravidez de baixo risco. In: Saúde DGd, ed. Lisboa; 2015: 110.

16. Kazmierczak M, Goodwin R. Pregnancy and body image in Poland: gender roles and self-esteem during third trimester. *Journal of Reproductive and Infant Psychology*. Vol 29; 2011: 334-342.

17. Hopper KM, Aubrey JS. Examining the Impact of Celebrity Gossip Magazine Coverage of Pregnant Celebrities on Pregnant Women's Self-Objectification. *Communication Research*. 2013/12/01 2011;40(6):767-788.

18. McKinley N. Feminist perspectives on body image. In: Cash T, Smolak L, eds. *Body image. A handbook of science, practice and prevention*. New York: The Guilford Press; 2012: 48-55.

19. Zanardo V, Volpe F, Giustardi A, Canella A, Straface G, Soldera G. Body image in breastfeeding women with depressive symptoms: a prospective study. *The Journal of Maternal-Fetal & Neonatal Medicine*. 2016/03/03 2016;29(5):836-840.

20. Holanda JBdL, Abuchaim EdSV, Coca KP, Abrão ACFdV. Disfunção sexual e fatores associados relatados no período pós-parto. *Acta Paulista de Enfermagem*. 2014;27:573-578.

21. Pordata. Idade média da mãe ao nascimento de um filho 27th jun 2017 ed. Lisboa: Fundação Manuel dos Santos; 2017. https://www.pordata.pt/Portugal/Idade+m%C3%A9dia+da+m%C3%A3e+ao+nascimento+do+primeiro+filho-805

Correspondence: msimsim@uevora.pt