



# Investigation of body perception in pregnant women according to physical changes in pregnancy

## Gebe kadınlarda beden algısının gebelikte meydana gelen fiziksel değişikliklere göre incelenmesi

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### Abstract

**Introduction:** The aim of this study was to investigate the body perception in pregnant women according to physical changes occurring during pregnancy.

**Methods:** This study was conducted with the pregnant women who applied to polyclinic of a government hospital at a city which in the middle of Turkey, as descriptive. Study was conducted with 300 pregnant women. Data were collected by using an Informative Form and Body Perception Questionnaire. Data were evaluated by using percentage, mean, One-Sample Kolmogorov-Smirnov, Independent Samples Test and One-way Anova importance tests with Pearson correlation.

**Results:** Pregnancy mask, abdominal striae, edema, body perception scores were higher in pregnant women and it was significant as statistically ( $p<0.05$ ). Body perception scores were found to be higher in pregnant women with low income and those with health problems in pregnancy ( $p<0.05$ ). In addition, body perception scores increased as the age increased [ $r(300)=0.166$ ;  $p<0.01$ ].

**Discussion and Conclusion:** As a result, body perception scores of women, who experienced some physical changes during pregnancy, increased.

**Keywords:** Body perception; physical change; pregnancy.

Body perception is a comprehensive concept that included Bin perceptions, attitudes, thinking, belief, feelings and behaviors of person about his/her body.<sup>[1]</sup> Body perception has been defined as an individual's internal representation of his

### Özet

**Amaç:** Çalışmada; gebe kadınlarda beden algısının gebelikte meydana gelen fiziksel değişikliklere göre incelenmesini amaçlanmıştır.

**Gereç ve Yöntem:** Çalışma Türkiye'nin iç bölgesinde bulunan bir ildeki devlet hastanesinin gebe polikliniğine başvuran gebelerle yürütülmüş olup tanımlayıcı tiptedir. Çalışmanın örneklemini 300 gebe oluşturmuştur. Araştırmanın verileri araştırmacılar tarafından geliştirilen bir bilgi formu ve 'vücut algısı' ölçeği kullanılarak toplanmıştır. Verilerin değerlendirilmesinde sayı, yüzde, ortalama, One-Sample Kolmogorov-Smirnov, Independent Samples t Test One-way anova ve Pearson correlation tesleri kullanılmıştır.

**Bulgular:** Gebelik maskesi, karında stria, ödem olan gebelerde beden algısı skorları daha yüksek bulunmuştur ve bu istatistiksel olarak anlamlıdır ( $p<0.05$ ). Düşük gelir durumuna sahip olan gebelerde ve gebeliğinde sağlık problemi yaşayanlarda beden algısı skorlarının daha yüksek olduğu belirlenmiştir ( $p<0.05$ ). Ayrıca yaş arttıkça beden algısı skorlarının arttığı belirlenmiştir [ $r(300)=0.166$ ;  $p<0.01$ ].

**Sonuç:** Sonuç olarak, gebelikte bazı fiziksel değişiklikler yaşayan kadınların beden algısı skorları artmıştır.

**Anahtar Sözcükler:** Beden algısı; fiziksel değişiklikler; gebelik.

or her own outer appearance.<sup>[2,3]</sup> This situation that could evaluated as attachment of person with his/her own body can be both positive or negative.<sup>[4]</sup>

Body dissatisfaction is common in the general population,

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**Table 1. Sociodemographic and obstetric characteristics of pregnant women**

Characteristics	n	%
Age ( $\bar{X} \pm SD$ )	26.9 $\pm$ 5.6	
Working statute		
Worked	274	91.3
Not worked	26	8.7
Educational statute		
Literate	34	11.3
Primary school	82	27.3
Secondary school	62	20.7
High school	75	25.0
College/faculty	47	15.7
Income monthly		
Low income from expense	116	38.7
Equal income to expense	164	54.6
More income from expense	20	6.7
Number of pregnancy		
1	80	27.0
2	115	38.3
3	74	24.7
4 and over	30	10.0
Trimester		
1 <sup>th</sup> trimester	52	17.3
2 <sup>th</sup> trimester	116	38.7
3 <sup>th</sup> trimester	132	44.0

SD: Standard deviation.

and appears to be more prevalent among women than men.<sup>[5]</sup> A meta-analysis found that males are more satisfied with their bodies than females.<sup>[6]</sup> High levels of body dissatisfaction are primarily attributed to the existence of social pressures regarding thinness and body shape.<sup>[7,8]</sup>

Noonan (1981) suggested that a physical or psychologic change could cause a change at body perception; some physical changes as puberty, elderliness, pregnancy and delivery could disturb the body perception.<sup>[9,10]</sup> Besides, important changes at body as pregnancy, also, could affect body perception.<sup>[5]</sup>

In pregnancy, a woman's body undergoes rapid physical changes in many ways, but most notably in weight and shape.<sup>[11]</sup> Pregnancy is characterized by significant physiognomic and psychosocial changes, such as hormonal fluctuations, the experience of pregnancy related physical symptoms and changes to one's appearance (e.g., rapid weight gain, nausea, back ache, varicose veins, stretch marks, acne and swollen ankles and feet) and changing relationship dynamics with partner, family, and friends.<sup>[5]</sup> The physical changes at pregnancy especially exhibit with second trimester. The changes in weight and shape of body are characterized by waist's getting thick, growth in abdomen and breast enhancement.<sup>[12]</sup> Increased pigmentation, pregnancy mask, striae gravidarum,

hirsutism, changes in vascular structure and nails are the other changes that occurred at pregnancy.<sup>[13,14]</sup>

While the most of these physical changes in pregnancy were thought as normal for some women, some women can feel themselves as different, awkward, clumsy, blaze, ugly and unattractive.<sup>[14-16]</sup> These physical changes are Cash more apparent in time and could affect the body perception.<sup>[17]</sup> As a result, self-confidence and self-respect can decrease,<sup>[15,16]</sup> depression symptoms can occur.<sup>[17,18]</sup>

The aim of this study was to investigate the body perception in pregnant women according to physical changes occurring during pregnancy.

## Materials and Method

This study was conducted with the pregnant women who applied to polyclinic of a government hospital at a city which in the middle of Turkey, as descriptive. In the study, simple randomized sample method was used. Volunteering was based on for participating. The subjects were 300 pregnant. Data was collected by using face to face technique after taking written consent from institute. Also, verbal consent was taken from the participants by informing about study.

## Tools

Data was collected by Informative Form that was improved by the researchers and Body Perception Questionnaire.

## Informative Form

This form was prepared by the researcher in order to determine sociodemographic and pregnancy characteristics of women.

## Body Perception Questionnaire [BPQ]

This questionnaire that was improved by Secord and Jourard [1953] aimed to measure how much people pleased with their various body parts and functions. The reliability and validity were conducted by Hovardaoğlu [1993] in our country.<sup>[19]</sup> There are 40 items in questionnaire. High score shows not being pleased. The Cronbach's Alpha reliability score was 0.75 in this study.

## Statistical Analysis

Data were evaluated by using percentage and mean tests. Homogeneity was investigated by One-Sample Kolmogorov-Smirnov Test (sig. 0.20) and when it was higher than 0.05, it is accepted as normal distribution and so Independent Samples Test and One-way Anova importance tests with Pearson correlation test were used.

## Results

There are socio-demographic characteristics of pregnant women at Table 1. It was determined that the average age of the women was 26.9 $\pm$ 5.6, 91.3% didn't work, 27.3% graduated

**Table 2. Body perception scores according to physical changes in pregnancy**

Physical changes	Body Perception Scores		
	n	$\bar{X}\pm SD$	p
Pregnancy mask			
Yes	54	119.9±35.0	<b>0.001</b>
No	244	101.8±29.1	
Striae on breast			
Yes	99	110.1±33.1	0.057
No	199	102.6±29.7	
Striae gravidarum			
Yes	146	110.3±32.2	<b>0.004</b>
No	152	100.0±29.1	
Varicose			
Yes	66	105.0±33.8	0.987
No	232	105.1±30.2	
Edema			
Yes	80	111.5±31.4	<b>0.034</b>
No	218	102.7±30.6	

SD: Standard deviation.

from primary school, 54.6% had equal income to expense, 38.3% were in their second pregnancy. Also, 44.0% of the pregnant women were at their third trimester.

Besides, it was found that of the women; 18.0% had pregnancy mask, 33.0% had got striae on her breast, 48.8% had striae gravidarum, 22% had got varicose, 26.6% had edema. Again, 35% of the pregnant women hadn't any health problems in their pregnancies and 34.3% of these were nausea-vomiting.

There are the body perception mean scores according to physical changes in pregnancy in Table 2. Pregnant women with pregnancy mask, striae gravidarum and edema were found to have a high score and it was significant as statistically ( $p < 0.05$ ).

The body perception scores according to some variables are seen in Table 3. Body perception scores were found to be higher in pregnant women with low income and those with health problems in pregnancy ( $p < 0.05$ ). In addition, as the number of pregnancies and trimesters increased, body perception scores increased in pregnant women but this increase was not statistically significant ( $p > 0.05$ ).

When the relationship between age and body perception scores was investigated, it was found that the body perception score increased as the age increased [ $r[300]=0.166$ ;  $pp < 0.01$ ].

### Discussion

Because of the effect of estrogen and progesterone level of melanocyte stimuli hormone gets higher and increasing of pigmentation starts in the second month of pregnancy. Pigmentation areas are mostly forehead, bucca and nasal bone. This change in face is called as pregnancy mask.<sup>[14,20,21]</sup>

**Table 3. Body perception scores according to some variables**

Variables	Body perception scores		
	n	$\bar{X}\pm SD$	p
Occupation			
Worked	272	105.1±31.4	0.993
Not worked	26	105.0±27.3	
Economic status			
Low income	115	110.2±32.3	<b>0.039</b>
Middle income	164	102.7±30.3	
High income	19	94.1±24.1	
Educational statute			
Literate	34	113.0±34.6	0.16
Primary school	81	106.2±27.7	
Secondary school	61	98.4±31.1	
High school	75	108.1±30.7	
College/faculty	47	101.5±33.3	
Number of pregnancy			
1	79	98.5±27.8	0.171
2	115	106.9±31.4	
3	74	108.5±31.0	
4 and over	30	107.0±36.0	
Trimester			
1 <sup>th</sup> trimester	51	100.6±30.3	0.50
2 <sup>th</sup> trimester	115	105.4±29.6	
3 <sup>th</sup> trimester	132	106.6±32.5	
Health problem in pregnancy			
Lived	105	110.1±30.3	<b>0.04</b>
Not lived	195	102.4±31.2	

SD: Standard deviation.

Also, abdominal wall is stretched and it gets thinner with a glazy appearance. In some areas, there are splits. These splits that can be seen around breast and hips occur because of laceration by stretching of skin and losing elasticity of adipose tissue. These splits are called as striae or linea gravidarum mostly occur after 6<sup>th</sup> gestational month.<sup>[14,21]</sup> In our study, the pregnant women had got striae on their breast (33.0%) and abdomen (48.8%). These physical changes that are seen in pregnancy can cause that their feeling themselves as different, awkward, clumsy, blaze, ugly and unattractive. As a result of these changes, self-confidence and self-respect of them can decrease and body perception can be affected as negatively.<sup>[15,16]</sup> In the study, pregnant women with pregnancy mask, striae gravidarum and edema were found to have high scores ( $p < 0.05$ ). Also, it was determined that with increased pregnancy month, the body perception scores increased and it was thought that the cause is that the changes that occurred in pregnancy (striae, edema) were more apparent with increased pregnancy month.

One of the changes in pregnancy is varicose. No difference was determined between the body perception scores of

women in terms of having varicose veins or not. In the region that the study was conducted, because of the wearing style of the women, their varicose veins aren't apparent. So, the body perception scores may not be affected.

Body size dissatisfaction is affected by socio-economic factors.<sup>[22]</sup> In this study, the body perception scores were found to be higher in pregnant women with low income ( $p < 0.05$ ). The results of the study of Babacan Gümüş and friends are similar to our study in terms of relationship between low income and the body perception.<sup>[16]</sup> However in the study of Kumcağız and friends, the pregnant women with high socioeconomic level had negative body perception.<sup>[23]</sup>

Body perception is constituted of a combination the efforts of person about what her real body, what she wants and what she wants to change with their experiences. Body perception can be an important reason of anxiety before and after pregnancy. Pregnant women feel themselves as unattractive especially between 27<sup>th</sup> and 32<sup>nd</sup> gestational age. This situation can affect their self-confidence.<sup>[23]</sup> In terms of changes in body perception as women progress through pregnancy, findings have been inconsistent.<sup>[24]</sup> At 17 weeks the nulliparous woman is experiencing major body changes for the first time and thus feels a much greater level of dissatisfaction with the appearance of the body.<sup>[15]</sup> For the most part women reported adapting to the changes that occurred in their body; however, women were most likely to experience higher levels of body dissatisfaction in early to mid-second trimester.<sup>[24]</sup> In our study, it was determined that with increased gestational month, body perception scores increased but the difference between groups was not significant. Our study is similar to literature.

Besides, with increased age body perception score increased [ $r[300] = 0.166$ ;  $p < 0.01$ ]. In the study of Kumcağız and friends, a negative correlation between age and body perception of the pregnant women was found, younger women had more higher body perception score than the others ( $r = -0.305$ ,  $p = 0.001$ ).<sup>[23]</sup>

In the study, it was found that the body perception scores of women who experienced 2 or more pregnancies were higher than the body perception scores of women who experienced only one pregnancy but there wasn't any significant difference between groups. Also, the results of Babacan and friends are similar to our study that with increased number of pregnancy, their dissatisfaction also increased.<sup>[16]</sup> In another study, there was a negative correlation between number of pregnancy and body perception, the pregnant women who had less number of pregnancy had got higher body perception than the others.<sup>[23]</sup>

## Conclusions

It was determined that body perception scores were found to be higher in pregnant women with pregnancy mask, striae gravidarum, edema, low income, age and living health problem in pregnancy. The physical changes in pregnancy and health problems could cause the changes in body perception in pregnant women.

**Conflict of interest:** No conflict of interest has been declared by the authors.

## References

- Cash TF. Body perception: past, present, and future. *Body perception* 2004;1:1-5. [http://www.ufff.br/labesc/files/2012/03/Body-Image\\_2004\\_Body-Image-past-present-and-future.pdf](http://www.ufff.br/labesc/files/2012/03/Body-Image_2004_Body-Image-past-present-and-future.pdf)
- Slade PD. What is body perception? *Behav Res Ther* 1994;32(5):497-502. <https://www.ncbi.nlm.nih.gov/pubmed/8042960>
- Gjerdingen D, Fontaine P, Crow S, McGovern P, Center B, Miner M. Predictors of mothers' postpartum body dissatisfaction. *Women Health* 2009; 49(6):491-504. <https://www.ncbi.nlm.nih.gov/pubmed/20013517>
- Dogan T, Sapmaz F, Totan T. Beden İmgesi Baş Etme Stratejileri Ölçeğinin Türkçe uyarlaması: Geçerlilik ve güvenilirlik çalışması, *Anadolu Psikiyatri Dergisi* 2011;12:121-129. <http://toad.edam.com.tr/sites/default/files/pdf/beden-imagesi-bas-etme-stratejileri-olcegi-toad.pdf>
- Fuller TM, Skouteris H, Watson B, Hill B. Body perception during pregnancy: an evaluation of the suitability of the body attitudes questionnaire. *Biomed Central Pregnancy and Childbirth* 2012;12:91. <http://bmcpregnancychildbirth.biomedcentral.com/articles/10.1186/1471-2393-12-91>
- Feingold A, Mazzella R. Gender Differences in body perception are increasing. *Psychological Science* 1998;9(3):190-195. <http://journals.sagepub.com/doi/abs/10.1111/1467-9280.00036>
- Loth KA, Bauera WK, Wall M, Berge J, Neumark-Sztainer D. Body satisfaction during pregnancy. *NIH Public Access* 2011;8:297-300. <https://www.ncbi.nlm.nih.gov/pubmed/21561821>
- Holsen I, Carlson Jones D, Skoqbrott Birkeland M. Body perception satisfaction among Norwegian adolescents and young adults: A longitudinal study of the influence of interpersonal relationships and BMI. *Body perception* 2012;9:20-208. <https://www.ncbi.nlm.nih.gov/pubmed/22391409>
- Noonan KA. *Coping with illness*. Delmar Publication Inc. Newyork. 1981. pp.145-147.
- Öz F. *Sağlık Alanında Temel Kavramlar 2*. Baskı, Ankara, Mattek Baskı 2010.
- Tiggeman M. Body perception across the adult life span: stability and change. *Body perception* 2004;1:29-41. <http://www.sciencedirect.com/science/article/pii/S1740144503000020>
- Murray I, Hassall J. Change and Adaptation in pregnancy. In D.M. Fraser & M.A. Cooper (Eds.), *Myles Text Book For Midwives*. Toronto. 2009. pp:216.
- Durmazlar SPK, Atacan D, Eskioglu, F. Gebelikte Fizyolojik ve Biyolojik Deri değişiklikleri: Derleme, *Kadın Doğum Dergisi* 2007;6(1):1331-1334. [http://www.journalagent.com/goj/pdfs/GOJ\\_6\\_1\\_1287\\_1356.pdf](http://www.journalagent.com/goj/pdfs/GOJ_6_1_1287_1356.pdf)
- Taşkın, L. *Doğum ve Kadın Sağlığı Hemşireliği*. (13<sup>rd</sup> ed.). Sistem Ofset Matbaacılık Ankara. 2016.
- Goodwin A, Astbury J, McMeeken J. Body perception and psychosocial well-being in pregnancy: A comparison exercisers, and non-exercisers. *Aus N Z J Obstet Gynecol* 2000;40(4):442-7. <https://www.ncbi.nlm.nih.gov/pubmed/11194433>
- Babacan GA, Cevik N, Hataf HS, Biçen S, Keskin G, Tuna MA. Ge-

- belikte Benlik Saygısı ve Beden İmaji ile ilişkili özellikler, *Anatol J ClinInvestig* 2011;5(1):7-14. <http://citeweb.info/20112846835>
17. Skouteris H. Body perception Issues in Obstetrics and Gynecology. In T.F. Cash & L. Smolak (Eds.), *Body perception, A Handbook of Science, Practice, and Prevention* 2011 (pp. 364-371). New York: E-Publishing.
  18. Clark A, Skouteris H, Wertheim S, Paxton S, Milgrom J. The relationship between depression and body dissatisfaction across pregnancy and the postpartum: A prospective study. *Journal of Health Psychology* 2009;14:23–31. <https://www.ncbi.nlm.nih.gov/pubmed/19129334>
  19. Hovardaoğlu S. Body Perception Scale. In. Turkish. *Psikiyatri, Psikoloji, Psikofarmakoloji Dergisi* 1993;1(1):26.
  20. Murray SS, McKinney ES. *Foundation of maternal-Newbornand Women's Health Nursing* (5<sup>rd</sup> ed.). United States of America. 2010.
  21. Taşpınar A. Normal Gebelik. In A. Şirin & O. Kavlak (Eds.), *Kadın Sağlığı*, İstanbul. 2008,pp.454-45.
  22. Bagheri M, Dorosty A, Sadrzadeh YH, Eshraghian M, Amiri E, Khamoush CN. Pre-pregnancy body size dissatisfaction and excessive gestational weight gain. *Maternaland Child Health Journal* 2013;17(4):699-707. <https://www.ncbi.nlm.nih.gov/pubmed/22722914>
  23. Kumcagız H. Gebe Kadınlarda Beden Algısı ve Benlik Saygısının Bazı Değişkenlere Göre İncelenmesi, *Journal of Human Sciences* 2012; 9(2): 691. <https://www.j-humansciences.com/ojs/index.php/IJHS/article/view/1536/945>
  24. Skouteris H, Carr R, Wertheim EH, Paxton SJ, Duncombe D. A prospective study of factors that lead to body dissatisfaction during pregnancy. *Body perception* 2005;2:347–361. <https://www.ncbi.nlm.nih.gov/pubmed/18089200>