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Comparison of Health Practices and Depression in Planned and Unplanned Pregnancies

Planlı ve Plansız Gebeliklerde Sağlık Uygulamaları ve Depresyonun Karşılaştırılması

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ABSTRACT

Aim: The aim of this study was to compare health practices and depression in planned and unplanned pregnancies. **Subjects and Methods:** The study was designed as a descriptive cross-sectional study. The research sample consists of a total of 230 pregnant women with planned and unplanned pregnancy. The population of this descriptive study consists of pregnant women attending the obstetrics clinics of a public hospital. The sample consisted of 230 pregnant women calculated with the g-power program (115 planned pregnancies and 115 correspondingly selected unplanned pregnancies). The data were collected using the Descriptive Information Form, the Health Practices in Pregnancy Questionnaire, and the Beck Depression Inventory. **Results:** The mean age of the pregnant women was 29.06±5.71 (min: 18, max: 42). The Health Practices in Pregnancy Questionnaire scores of pregnant women were 127.10±12.03 for planned pregnancies and 124.06±12.00 for unplanned pregnancies. Women with planned pregnancies received 9.97±8.56 from the Beck Depression Inventory, and those with unplanned pregnancies received 10.83±7.75. No significant difference was found between the mean scores of the Health Practices in Pregnancy Questionnaire (p=0.058) and the Beck Depression Inventory (p=0.425) depending on the pregnancy planning status. When planned and unplanned pregnancies are evaluated separately, there is a negative correlation between Beck Depression Inventory and Health Practices in Pregnancy Questionnaire scores (p=0.006, r=0.179). As the Beck Depression Inventory score increases, the total scores of the Health Practices in Pregnancy Questionnaire decrease. **Conclusion:** Women with planned pregnancy had higher total scores on the scale of health practices during pregnancy than women with unplanned pregnancy. When planned and unplanned pregnancies were evaluated separately, there was a negative relationship between Beck Depression Inventory and Health Practices in Pregnancy Questionnaire scores. In maintaining maternal and fetal health; it is important to determine the health practices and depression status of women during pregnancy starting from the preconceptional period, to plan pregnancies, and to question negative health behaviors.

Keywords: Depression, health practices during pregnancy, planned pregnancies, unplanned pregnancies

Makale Bilgisi

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ÖZ

Amaç: Bu çalışmanın amacı, planlı ve plansız gebeliklerde sağlık uygulamaları ve depresyonu karşılaştırmaktır. **Örneklem ve Yöntem:** Çalışma tanımlayıcı kesitsel bir çalışmadır. Araştırmanın örneklemini, planlı ve plansız gebeliği olan toplam 230 gebe oluşturmaktadır. Bu tanımlayıcı kesitsel çalışmanın evrenini, bir devlet hastanesinin kadın doğum polikliniklerine başvuran gebeler oluşturmaktadır. Örneklem, G-power programı kullanılarak hesaplanan 230 gebeden (115 planlı gebelik, 115 plansız gebelik) oluşmuştur. Veriler, Tanımlayıcı Bilgi Formu, Gebelikte Sağlık Uygulamaları Ölçeği ve Beck Depresyon Envanteri kullanılarak toplanmıştır. **Bulgular:** Gebelerin yaş ortalaması 29.06±5.71 (min: 18, max: 42) olarak bulunmuştur. Planlı gebeliklerde GSUÖ puanları 127.10±12.03, plansız gebeliklerde ise 124.06±12.00 olarak belirlenmiştir. Planlı gebeliklerdeki kadınların Beck Depresyon Skalası puanı 9.97±8.56, plansız gebeliklerdeki kadınların ise 10.83±7.75 olarak bulunmuştur. Gebelik planlama durumuna göre Gebelikte Sağlık Uygulamaları Ölçeği (p=0.058) ve Beck Depresyon Envanteri (p=0.425) puanları arasında anlamlı bir fark bulunmamıştır. Beck Depresyon Envanteri ile Gebelikte Sağlık Uygulamaları Ölçeği puanları arasında negatif yönlü bir ilişki vardır (p=0.006, r=0.179). Beck Depresyon Envanteri puanları arttıkça Gebelikte Sağlık Uygulamaları Ölçeği toplam puanları azalmaktadır. **Sonuç:** Gebeliği planlı olan kadınların gebelikte sağlık uygulamaları ölçek toplam puanları gebeliği plansız olan gebelere göre daha yüksektir. Planlı ve plansız gebelikler ayrı ayrı değerlendirildiğinde, Beck Depresyon Envanteri ve Gebelikte Sağlık Uygulamaları Ölçeği puanları arasında negatif bir ilişki bulunmuştur. Anne ve bebek sağlığının korunmasında; gebelik öncesi dönemde kadınların sağlık uygulamaları ve depresyon durumlarının belirlenmesi, gebeliklerin planlanması ve olumsuz sağlık davranışlarının sorgulanması önemli bir faktördür.

Anahtar Kelimeler: Depresyon, gebelikte sağlık uygulamaları, planlı gebelikler, plansız gebelikler

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Introduction

The most significant criterion for a societies' level of development is womens and children's health. To raise healthy generations in society, women are expected to have healthy pregnancies, and for pregnancies to be healthy, it is pivotal to plan pregnancies. The purpose of having a planned pregnancy is to minimize the effects of adverse health outcomes on the woman, fetus, and newborn (ACOG, 2019). Unplanned and unwanted pregnancies are associated with voluntary abortion, late initiation of antenatal care, low antenatal care, unhealthy behaviors during pregnancy, increased undesirable fetal and neonatal effects, delayed development, deterioration of maternal psychosocial health and depression (Nelson et al., 2022; McDougall et al., 2021). Unplanned pregnancy is another important predictor of perinatal depression (Biaggi et al., 2016; Muskens et al., 2022). Studies have confirmed that there is an association between unplanned pregnancy and higher levels of depressive symptoms (Biaggi et al., 2016; Boekhorst et al., 2019; Muskens et al., 2022). For instance Boekhorst et al. (2019) concluded that unplanned pregnancies are associated with persistently higher levels of depressive symptoms during the course of pregnancy. Another Brazilian prospective study showed that women with an unplanned pregnancy were 2.5 times more likely to have a depression during pregnancy and the postpartum period (11 months postpartum), compared to women with a planned pregnancy (Faisal-Cury et al., 2017).

Health practices during pregnancy, birth, and postpartum are the most effectual factors in maintaining the health of the mother and baby, and they are defined as practices that influence pregnancy outcomes involving the health of the pregnant woman, fetus, and newborn health. Health practices during pregnancy include appropriate nutrition and exercise, protection of psychological health, and positive health behaviors (Carlander et al., 2023). In addition, health practices such as avoiding smoking, alcohol, and substance use during pregnancy, avoiding toxic substances and areas, protecting from sexually transmitted infections, having regular dental care, and regulating drug use should be promoted and maintained (Er, 2006). Although the benefits of planned pregnancies for maternal and infant health are known, prepregnancy counseling has always been a neglected issue. Studies have shown that women with planned pregnancies and women who receive preconceptional counselling have a more positive, happy and healthy pregnancy period. (Borges et al., 2016; Enthoven et al., 2022). The researchers aimed to conduct a comparative analysis of health practices and depression in planned and unplanned pregnancies.

Subjects and Methods

Type of Research

This research is designed as a descriptive cross-sectional study. The data of the study were collected between 01.08.2020-31.12.2020. Aggarwal and Ranganathan defines the descriptive study methods is one that is designed to describe the distribution of one or more variables, without regard to any causal or other hypothesis (Aggarwal & Ranganathan, 2019).

Population and Sample of the Research

The population consists of pregnant women attending obstetrics clinics in a public hospital. As for the sample, a calculation was made by considering ±3 standard deviation, 95% reliability (5% significance level) out of a total of 4208 pregnant women admitted to the hospital within a year to apply the Health Practices in Pregnancy Questionnaire (HPQ-II), which has a 5-scale. Minimum sample size was determined with the help of power analysis. As a result of the power analysis, a total of 230 pregnant women, 115 of whom had planned and 115 unplanned pregnancies, were included in the study. Inclusion criteria for the study were being pregnant between the ages of 18-45, being in the third trimester, having a planned or unplanned pregnancy, being a Turkish citizen for communication purposes, being a volunteer, and not having any chronic disease, risky pregnancy, or a history of a risky pregnancy.

Data Collection Tools

The data were collected with the Descriptive Information Form, the Health Practices in Pregnancy Questionnaire (HPQ-II), and the BECK Depression Inventory (BDI). The descriptive information form consists of a total of 37 questions regarding the socio-demographic characteristics of pregnant women, their obstetric histories, and their level of knowledge about health behaviors during pregnancy.

The Health Practices in Pregnancy Questionnaire (HPQ-II), developed by Kelly Lindgreen in 2005, the HPQ-II is a self-report 34-item instrument that compares resting and exercising, measures safety, nutrition, avoiding harmful substances, getting health care, and obtaining information (Lindgren, 2005). A minimum of 34 points and a maximum of 170 points can be obtained on the scale. Items from 1 to 17 in the scale include 5-point Likert type response options ranging from "always" to "never". Never (a)=1 point, rarely (b)=2 points, sometimes (c)=3 points, often (d)=4 points, and Always (e)=5 points. Appropriate options are given for the items from 8 to 34, and there are 5 options scored between 1 and 5. Some items (6, 7, 8, 22, 23, 24, 25, 26, 27, 33 and 34) are reverse-coded. The scores of these items are reverse coded from 5 to 1. An overall score is obtained from the sum of all items. High scores indicate high-quality health behavior with significant benefits to pregnancy. Turkish validity and reliability study of the HPQ-II was performed by Sezer Er in 2006. The Cronbach's alpha coefficient was found to be 0.74 in Er's study (Er, 2006) and 0.756 in this current study.

The Beck Depression Inventory (BDI) was developed by Aaron T. Beck et al. in 1978. The scale was adapted into Turkish by Hisli in 1989. There are 21 items in total and 4 self-evaluation sentences under each item on the scale. Each item has a four-point Likert-type measurement, scored as 0, 1, 2, 3, respectively, according to the severity of depression. All items were specified within the scope of four options, and scoring between 0-3 was used for each item on the scale. The lowest score to be obtained from the scale is 0 and the highest score is 63 points. BDI scores of 17 and above indicate that there is a risk of depression in adults. As a result of the depression scale, the symptoms of depression, if any, and their levels. Each four-item sentence to score the BDI all the numbers marked in the groups are summed up. Depression levels are grouped as follows: 0 to 9 points indicate minimal depressive symptoms, 10 to 16 points indicate mild depressive symptoms, 17 to 29 points indicate moderate depression, and 30 to 63 points indicate severe depression. Tegin determined the reliability coefficient of BDI as α=0.86 and the validity coefficient as α=0.75 (Hisli, 1988; Hisli, 1989). In this study, the reliability coefficient (Cronbach's alpha) for the Beck Depression Inventory was found to be 0.882.

Data Collection

Before the data were collected, the Ethics Committee Approval, Institutional Permission from the institution where the study was conducted, and the permissions for the scales were obtained, and then the data collection phase started. The participants were informed about the purpose of the study, and their verbal and written consent was obtained from those who agreed to participate in the study. The data collection tools were filled out through face-to-face interviews with pregnant women who had planned and unplanned pregnancies and were being followed up healthily. The duration of the administration was approximately 20-30 minutes.

Statistical Evaluation of Data

The data were evaluated with the Statistical Package for the Social Sciences (SPSS) 21 program, and error controls, tables and statistical analyzes were performed. Frequency, percentage, mean, standard deviation statistical methods were used in the evaluation of the study data. Student's t-test and Mann Whitney U tests were performed according to normality analysis.

For categorical data, Chi-Square and Fisher Exact tests were applied, and Pearson correlation coefficients were calculated for continuous variables. The statistical significance level was considered 0.05.

Ethical Approval of the Study

The Ethics Committee approval was received from the Health Sciences University Non-Interventional Research Committee (Date: 06.12.2019, Decision No: 19/89).

Results

According to the results, the mean ages of the women were 27.77±5.79 (min=18, max=41) in planned pregnancies and 29.06±5.71 (min=18, max=42) in unplanned pregnancies (p=0.01). The descriptive data of the pregnant women are given in Table 1. The mean age of pregnant women with planned pregnancies, their and their spouses' educational level, and employment status were higher than those with unplanned pregnancies (p<0.05). The presence of social security, spouse's employment status, family structure, income status and kinship status with spouse did not differ according to planned and unplanned pregnancy status (p>0.05). Educational attainment differed between planned and unplanned pregnancies (p=0.005). Specifically, the rate of literate women was higher among those with unplanned pregnancies, while the proportion of university graduates was higher among those with planned pregnancies (p<0.05). Employment status differed according to planned and unplanned pregnancies (p=0.024). Specifically, the proportion of homemakers was higher in unplanned pregnancies, while the proportion of civil servants was higher in planned pregnancies (p<0.05). Spouse's educational level differed according to the occurrence of planned versus unplanned pregnancies (p=0.002). Specifically, a higher proportion of women with planned pregnancies had spouses who were university graduates (p<0.05). The number of parities is lower in planned pregnancies (p<0.05, Table 2).

Table 1. Comparison of the Descriptive Characteristics of Pregnant Women According to their Pregnancy Planning Status

		Planned pregnancy		**Unplanned pregnancy**		**Total**		**p**
		n (115)	%	n (115)	%	n (230)	%	
Education level	Illiterate	4	3.5	7	6.1	11	4.8	**0.005**
	Literate	5	4.3	14	12.2*	19	8.3	
	Primary education	55	47.8	69	60.0	124	53.9	
	High school	19	16.5	13	11.3	32	13.9	
	University	25	21.7*	10	8.7	35	15.2	
	Post-graduate	7	6.1	2	1.7	9	3.9	
Employment status	Worker	3	2.6	5	4.3	8	3.5	**0.024**
	Civil servant	15	13.0*	3	2.6	18	7.8	
	Self-employed	2	1.7	0	0.0	2	0.9	
	Housewife	87	75.7	99	86.1*	186	80.9	
	Others	8	7.0	8	7.0	16	7.0	
Social security	Yes	96	83.5	94	81.7	190	82.6	0.728
	No	19	16.5	21	18.3	40	17.4	
Education level of the spouse	Illiterate	2	1.7	0	0,0	2	0.9	**0.002**
	Literate	3	2.6	9	7.8	12	5.2	
	Primary education	55	47.8	66	57.4	121	52.6	
	High school	22	19.1	29	25.2	51	22.2	
	University	30	26.1*	11	9.6	41	17.8	
	Post-graduate	3	2.6	0	0.0	3	1.3	
	No	83	72.2	86	74.8	169	73.5	

*p: Chi-square test: *represents the higher rate (p<0.05), SD: Standard Deviation, Min: Minimum, Max: Maximum.*

Table 1 (cont.). Comparison of the Descriptive Characteristics of Pregnant Women According to their Pregnancy Planning Status

		Planned pregnancy		Unplanned pregnancy		Total		p
		n (115)	%	n (115)	%	n (230)	%	
Employment status of the spouse	Worker	39	33.9	44	38.3	83	36.1	0.777
	Civil servant	13	11.3	9	7.8	22	9.6	
	Self-employed	18	15.7	22	19.1	40	17.4	
	Unemployed	4	3.5	3	2.6	7	3.0	
	Others	41	35.7	37	32.2	78	33.9	
Family structure	Extended	33	28,7	34	29.6	67	29.1	0.595
	Nuclear	82	71.3	80	69.6	162	70.4	
	Separated	0	0,0	1	0.9	1	0.4	
Income level	Income less than expenses	31	27.0	46	40.0	77	33.5	0.057
	Income equals to expenses	70	60.9	62	53.9	132	57.4	
	Income more than expenses	14	12.2	7	6.1	21	9.1	
Kinship between spouses	Yes	32	27.8	29	25.2	61	26.5	0.654
	No	83	72.2	86	74.8	169	73.5	

*p: Chi-square test: *represents the higher rate (p<0.05), SD: Standard Deviation, Min: Minimum, Max: Maximum.*

Table 2. Findings Related to Obstetric History of Pregnant Women According to Their Pregnancy Planning Status

	Planned pregnancy	Unplanned pregnancy	Total	p
	Median [%25/%75]	Median [%25/%75]	Median [%25/%75]	
Number of pregnancies	2 [1-3]	3 [2-4]	3 [2-4]	**<0.001**
Number of births	1 [1-2]	2 [1.5-3]	2 [1-3]	**<0.001**
Number of curettages	1 [1-1]	1 [1-1.75]	1 [1-1]	0.560
Number of miscarriages	1 [1-1.25]	1 [1-3]	1 [1-2]	**0.046**
Gestational week	35 [32-38]	37 [33-38]	36 [32-38]	0.115
Time since last birth	4 [2.75-6]	3 [2-7]	4 [2-6]	0.201

p: Mann Whitney U test.

No significant difference was observed between the groups in terms of the average scores of Health Practices in Pregnancy Questionnaire (HPQ-II) according to the pregnancy planning status (p=0.058) (Table 3). There was no significant difference in depression mean scores according to pregnancy plan status (p=0.425). No significant relationship was found between pregnancy planning status and BECK classification (p=0.293) (Table 4).

Table 3. Health Practices in Pregnancy Scale Scores according to Pregnant Women's Pregnancy Planning Status

	Planned pregnancy		Unplanned pregnancy		p
	Mean±SD	Min.-Max.	Mean±SD	Min.-Max.	
HPQ-II	127.10±12.03	94-154	124.06±12.00	87-150	0.058

p: Student's t-test.

Table 4. Comparison of Findings Related to Beck Depression Inventory scores and Classification According to Women's Pregnancy Planning Status

	Planned pregnancy		Unplanned pregnancy		p1
	Ort±SS	Min-Maks	Ort±SS	Min-Maks	
BDI	9.97±8.56	0-55	10.83±7.75	0-52	0.425
	n	%	n	%	p2
BDI classification					
Minimal depression	72	62.6	58	50.4	0.293
Mild depression	29	25.2	41	35.7	
Middle depression	10	8.7	11	9.6	
Severe depression	4	3.5	5	4.3	
Total	115	100.0	115	100.0	

p1:Student's t test, p2:Ki-Kare test.

Discussion

This descriptive cross-sectional study reveals findings on health practices during pregnancy and the depression status of pregnant women with planned and unplanned pregnancies. In this study, no significant difference was found between the mean scores of the HPQ-II according to the planning status of pregnancy (p=0.058, Table 3). However, different results have been obtained in the literature between women with planned and unplanned pregnancies (Goossens et al., 2016; McDougall et al., 2021; Nelson et al., 2022; Carlender et al., 2023). In a study conducted by Yanıkkerem et al. (2013b), it was found that the mean HPQ-II scores of women with unplanned pregnancy were significantly lower than those of women with planned pregnancy (p<0.0001). Similarly, in another study (2019), this difference was observed to be significant (p<0.001) (Çelik & Derya, 2019). However, in another study on women's health behaviors and attitudes during pregnancy, no significant difference was found between women with planned and unplanned pregnancies in terms of mean scores on the HPQ-II (p=0.083) (Weller & Sirin, 2017). In a study conducted to determine the health behaviors and attitudes of women during pregnancy, no significant difference was found between women with planned and unplanned pregnancies in terms of the mean scores of HPQ-II (p=0.083) (231). While the results obtained in this study differ from those obtained in the studies of Yanıkkerem et al. and Çelik and Derya, the results obtained in the study of Weller and Şirin are similar (Yanikkerem et al., 2013b; Çelik & Derya, 2019; Weller & Sirin, 2017). The mean scores of women with planned pregnancies were higher than those with unplanned pregnancies. The results of the studies were obtained this way may be attributed to differences in definition and methodology. Unintended pregnancy poses a higher risk of inadequate health practices during pregnancy compared to unplanned pregnancy.

In this study, women with planned pregnancies had higher mean scores on the HPQ-II than those with unplanned pregnancies (Mean±SD: 127.10±12.03, Min-Max; 94-154). This is because the socio-economic and educational levels of women with planned pregnancies were higher. Similar results were obtained in this study by Weller and Şirin, Gomez (Weller & Sirin, 2017; Gomez et al., 2018).

In this study, no significant difference was observed in the mean Beck Depression Inventory (BDI) scores based on pregnancy planning status (p=0.425). Additionally, there was no significant correlation between pregnancy planning status and BDI classification (p=0.293, see Table 4). In studies conducted in the literature to determine the prevalence of unplanned pregnancies and related factors, the rate of depression was found to be higher in women with unplanned pregnancies (Du Toit et al., 2018; Boekhorst et al., 2019; Muskens et al., 2022). In a study aimed at identifying the factors influencing depression during pregnancy, researchers found no statistically significant difference between the scores obtained from the Beck Depression Inventory (BDI) scale and pregnancy planning status (Nazik & Oğuzöncül, 2017). The lack of significant findings may be attributed to variations in definitions and methodologies used across different studies. Unintended pregnancies present a higher risk of depression compared to planned pregnancies (Muskens et al., 2022). In this study, when planned and unplanned pregnancies were assessed separately, a negative relationship was observed between BDI scores and Health-Perceived Quality of Life (HPQ-II) scores (p> 0.05). Overall, as BDI scores increased among women, a corresponding decrease in HPQ-II scores was noted. Similar results were reported in studies conducted by Lindgren, Alhusen & Alvarez, and Yanikkerem et al. (Lindgren, 2001; Alhusen & Alvarez, 2016; Yanikkerem et al., 2013a). These results suggest that as depression levels rise during pregnancy, health practices tend to diminish.

Conclusion and Recommendations

In this study, no significant differences were observed in the mean HPQ-II scores based on pregnancy planning status. Likewise, the mean BDI scores did not reveal any substantial differences related to pregnancy planning status. Furthermore, there was no significant relationship identified between pregnancy planning status and BDI classification. When examining planned versus unplanned pregnancies separately, a negative correlation emerged between BDI and HPQ-II scores: generally, as BDI scores increased, HPQ-II scores decreased among the women studied. It is crucial to educate pregnant women about their health responsibilities, including prenatal care, maintaining a nutritious and balanced diet, ensuring proper immunizations, engaging in regular exercise, reducing caffeine intake, and avoiding smoking, alcohol, and substance use. Additionally, managing stress, ensuring adequate sleep, and fostering psycho-social and spiritual development are essential. Emphasizing the importance of pregnancy and developing training programs focused on pregnancy planning is also recommended.

Ethical Approval of the Study ▪ Etik Kurul Onayı
This study was approved by the University of Health Sciences Scientific Research Ethics Committee (Date: 06.12.2019, Number: 19/89). ▪ Bu çalışma Sağlık Bilimleri Üniversitesi Bilimsel Araştırmalar Etik Kurulu tarafından onaylanmıştır (Tarih: 06.12.2019, Etik Kod No: 19/89).

Informed Consent ▪ Bilgilendirilmiş Onam
Written and/or verbal consent was obtained from participants participating in the study. ▪ Çalışmaya katılan katılımcılardan yazılı ve/veya sözlü onam alınmıştır.

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Concept-EK, HÖ; Design-EK, HÖ; Supervision-HÖ; Materials EK, HÖ; Data Collection and/or Processing- EK; Analysis and/or Interpretation- HÖ, EK; Literature Search- EK, HÖ; Resources-EK, HÖ; Writing Manuscript- EK; Critical Review- HÖ. ▪ Fikir- EK, HÖ; Tasarım-EK, HÖ; Denetleme HÖ; Malzemeler-EK, HÖ; Veri Toplanması ve/veya işlenmesi- EK; Analiz ve/ veya yorum- HÖ, EK; Literatür taraması-EK, HÖ; Kaynaklar- EK, HÖ; Makaleyi yazan –EK; Eleştirel inceleme- HÖ.

Declaration of Interests ▪ Çıkar Çatışması
The authors declare that there is no conflict of interest. ▪ Yazarlar arasında herhangi bir çıkar çatışması bulunmamaktadır.

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