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Depression and anxiety among women with unwanted pregnancies seeking termination

İstenmeyen gebeliği sonlandırmak isteyen kadınlarda depresyon ve anksiyete

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Abstract

Objective: To compare depressive and anxiety symptoms in women with unwanted and planned pregnancies.

Materials and Methods: In this cross-sectional comparative study, we enrolled 220 pregnant women who presented to the Obstetrics and Gynecology Department of Yozgat Bozok University between January 2023 and June 2025. The study group comprised 120 women with unwanted pregnancies seeking elective termination before 10 weeks of gestation. The control group included 100 women with planned pregnancies. Socio-demographic and obstetric data were collected. Depressive and anxiety symptoms were assessed using the Beck Depression Inventory and Beck Anxiety Inventory, respectively.

Results: Women with unwanted pregnancies had a significantly higher prevalence of depressive symptoms than women with planned pregnancies (46.7% vs. 28.0%; p=0.004). In contrast, there was no statistically significant difference in the prevalence or severity of anxiety symptoms between the groups (p=0.450). Women in the unwanted pregnancy group were significantly older, had higher parity and lower educational attainment, and were more likely to be unmarried (all p<0.001). Following termination, 20.8% of women had no future contraceptive plans, whereas 40% intended to use an intrauterine device.

Conclusion: Unwanted pregnancy culminating in a request for termination is a potent risk factor for depressive symptoms, particularly among socioeconomically vulnerable women, but not necessarily for anxiety. These findings underscore the critical need to integrate mental health screening, especially for depression, and comprehensive, patient-centered contraceptive counseling into routine antenatal and post-abortion care services. Addressing the psychosocial needs of this population is essential for mitigating adverse mental health outcomes.

Keywords: Unwanted pregnancy, unintended pregnancy, depression, anxiety, pregnancy termination, abortion, contraception, mental health

Öz

Amaç: İstenmeyen ve planlı gebelik yaşayan kadınlar arasında depresyon ve anksiyete belirtilerini karşılaştırmak.

Gereç ve Yöntemler: Bu kesitsel karşılaştırmalı çalışmada, Ocak 2023 ile Haziran 2025 tarihleri arasında Yozgat Bozok Üniversitesi Kadın Hastalıkları ve Doğum Anabilim Dalı'na başvuran 220 gebe kadın dahil edilmiştir. Çalışma grubunu, 10 gebelik haftasından önce isteğe bağlı gebelik sonlandırma talebinde bulunan 120 istenmeyen gebelikli kadın oluşturmuştur. Kontrol grubunda ise planlı gebeliği olan 100 kadın yer almıştır. Sosyo-demografik ve obstetrik veriler toplanmıştır. Depresyon ve anksiyete belirtileri sırasıyla Beck Depresyon Envanteri ve Beck Anksiyete Envanteri kullanılarak değerlendirilmiştir.

PRECIS: Women with unwanted pregnancies seeking termination show higher depressive symptoms but similar anxiety levels compared to women with planned pregnancies, highlighting the need for integrated mental health screening.

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Bulgular: İstenmeyen gebeliğe sahip kadınlarda depresif belirtilerin prevalansı, planlı gebeliği olan kadınlara göre anlamlı derecede daha yüksekti (%46,7'ye karşı %28,0; p=0,004). Buna karşın, gruplar arasında anksiyete belirtilerinin yaygınlığı veya şiddeti açısından istatistiksel olarak anlamlı bir fark bulunmadı (p=0,450). İstenmeyen gebelik grubundaki kadınlar anlamlı şekilde daha ileri yaşta, daha yüksek pariteye sahip, daha düşük eğitim düzeyine sahip ve bekar olma olasılığı daha yüksekti (tüm p<0,001). Gebelik sonlandırma sonrasında kadınların %20,8'inin geleceğe yönelik herhangi bir kontraseptif planı bulunmazken, %40'ı rahim içi araç kullanmayı planladığını belirtmiştir.

Sonuç: Sonlandırma talebiyle sonuçlanan istenmeyen gebelik, özellikle sosyoekonomik açıdan dezavantajlı kadınlarda depresif belirtiler için güçlü bir risk faktörüdür; ancak anksiyete için aynı durum geçerli değildir. Bu bulgular, rutin doğum öncesi ve gebelik sonlandırma hizmetlerine, özellikle depresyon açısından ruh sağlığı taramasının ve hasta merkezli kapsamlı kontraseptif danışmanlığın entegre edilmesinin önemini vurgulamaktadır. Bu grubun psikososyal ihtiyaçlarının karşılanması, olumsuz ruh sağlığı sonuçlarının azaltılması açısından kritik öneme sahiptir.

Anahtar Kelimeler: İstenmeyen gebelik, planlanmamış gebelik, depresyon, anksiyete, gebelik sonlandırma, kürtaj, kontrasepsiyon, ruh sağlığı

Introduction

Family planning is a cornerstone of public health, essential for social stability and sustainable population dynamics. Despite global efforts, unintended pregnancies—defined as pregnancies that are either mistimed or unwanted—remain a pervasive challenge, affecting millions of women annually and representing a significant medical and societal issue[1,2]. A substantial proportion of these pregnancies result in elective termination (abortion), a decision often influenced by a complex interplay of personal, social, and economic factors[3]. The antecedents of unintended pregnancy are multifactorial and disproportionately concentrated among vulnerable populations. Key risk factors include low socioeconomic status (SES), low educational attainment, unmarried status, and high parity[4,5]. Studies have consistently shown that even when financial barriers to contraception are removed, women with low SES remain at a significantly higher risk of unintended pregnancy[4]. This highlights the deep-rooted social determinants that shape reproductive health outcomes. Beyond the immediate decision-making process, an unintended pregnancy can have profound and lasting implications for a woman's mental health. The experience is often associated with heightened psychological distress, including symptoms of depression and anxiety[6,7]. Seminal longitudinal research, such as the Wisconsin Longitudinal Study, has demonstrated a strong and persistent association between experiencing an unwanted pregnancy carried to term and poorer mental health outcomes, including higher depressive scores, later in life[8]. This association holds even after controlling for pre-existing personality traits and a range of early life confounders, suggesting that the pregnancy experience itself is a significant stressor.

While the link between unintended pregnancy and depression is well-established, the psychological impact on women who choose to terminate is more complex. Some research indicates that the decision to terminate can be accompanied by feelings of guilt, shame, and regret, which may precipitate or exacerbate depressive symptoms[9,10]. Conversely, other studies suggest that being denied an abortion is associated with worse mental health outcomes than those associated with receiving one, and that most women who have an abortion do not experience long-term psychological harm[11]. This complex landscape highlights a critical gap in the literature: the need to differentiate the psychological profiles of women based on their pregnancy intentions and decisions. Specifically, there is a need for a clearer understanding of the mental health status of women who identify their pregnancies as unwanted and actively seek termination. This study focuses specifically on this subgroup. Our primary objective was to assess the impact of unwanted pregnancies on maternal mental health by comparing levels of depression and anxiety in women seeking elective termination with levels in women with planned pregnancies. A secondary aim was to identify the socio-demographic and obstetric factors associated with vulnerable mental health in this context.

Materials and Methods

Study Design and Population

This comparative cross-sectional study was conducted at the Obstetrics and Gynecology Outpatient Clinic of Yozgat Bozok University, a tertiary care center in our country. The study protocol was approved by the Clinical Research Ethics Committee of Yozgat Bozok University (approval number: 2017-KAEK-189_2023.10.26_02, date: 26.10.2023), and all participants provided written informed consent prior to enrollment. Data were collected between January 2023 and June 2025.

The study population consisted of 220 pregnant women, divided into two groups. The study group included 120 women who presented with an unwanted pregnancy and voluntarily requested elective termination (curettage) within the first 10 weeks of gestation, as permitted by Turkish law. The control group consisted of 100 women with a planned, desired, and healthy ongoing pregnancy who were the clinic for routine antenatal care.

The exclusion criteria for both groups were: history of major psychiatric disorders (e.g., schizophrenia, bipolar disorder); current use of psychotropic medications (antidepressants or antipsychotics); cognitive impairment that would preclude understanding the questionnaires; or pregnancy complicated by severe obstetric conditions.

Data Collection and Measures

Data were collected by trained research personnel through structured face-to-face interviews. A standardized

questionnaire was used to gather information on sociodemographic characteristics (age, marital status, educational level, employment) and obstetric history (gravida, parity, number of living children, previous deliveries, and terminations).

Mental Health Assessment

Depressive and anxiety symptoms were assessed using the Turkish-validated versions of the Beck Depression Inventory (BDI) and the Beck Anxiety Inventory (BAI).

BDI: The BDI is a 21-item self-report inventory measuring the severity of depressive symptoms. Each item is scored on a 4-point scale from 0 to 3. The total score ranges from 0 to 63, with higher scores indicating more severe depression. Standard cut-off scores were used: 0-9 (minimal), 10-16 (mild), 17-29 (moderate), and 30-63 (severe)[12].

BAI: The BAI is a 21-item self-report scale designed to measure the severity of anxiety symptoms. Similar to the BDI, each item is rated on a 4-point scale, yielding a total between 0 and 63. The scores were categorized as follows: 0-7 (minimal), 8-15 (mild), 16-25 (moderate), and 26-63 (severe) [13]. Both the BDI and the BAI are widely used, well-validated instruments for assessing mood and anxiety symptoms in diverse populations, including perinatal women[14].

Other Variables

Regarding marital problems and violence, participants were asked about their relationship satisfaction. Marital problems were defined as self-reported, ongoing significant conflict with a spouse or partner. Exposure to intimate partner violence (verbal, physical, or sexual) within the past year was also recorded.

Contraceptive Plans: Women in the study group who underwent termination were asked about contraception following the procedure.

Statistical Analysis

Statistical analyses were performed using SPSS for Windows, version 27.0 (IBM Corp., Armonk, NY, USA). The normality of continuous variables was assessed using the Kolmogorov-Smirnov test and visual inspection of histograms. Normally distributed continuous variables were presented as mean ± standard deviation, while categorical variables were reported as frequencies and percentages (%).

Differences between the unwanted-pregnancy and control groups were analyzed using an independent-samples t-test for continuous variables and the chi-square (χ^2) test for categorical variables. Fisher's exact test was used when the expected cell count was fewer than five. Statistical significance was set at $p<0.05$. A subgroup analysis within the unwanted pregnancy group was performed to compare primigravida and multiparous women.

Results

Participant Characteristics

A total of 220 women were enrolled in the study, with 120 in the unwanted pregnancy group and 100 in the planned pregnancy (control) group. The socio-demographic and obstetric characteristics of the participants are presented in Table 1.

Women in the unwanted pregnancy group were, on average, significantly older than those in the control group (31.20±6.17 vs. 27.91±5.92 years; $p<0.001$). Significant differences were also observed in marital status and education. The unwanted pregnancy group had a higher proportion of unmarried women (14.2% vs. 0%; $p<0.001$) and a lower proportion of with a university education (15.0% vs. 39.0%; $p<0.001$).

Regarding obstetric history, women seeking pregnancy termination had significantly higher mean gravida (3.7 vs. 2.36), mean parity (2.14 vs. 0.96), and mean number of living children (2.13 vs. 0.93) than those in the control group (all $p<0.001$). The smoking rate was also substantially higher in the unwanted pregnancy group (37.5% vs. 16.0%; $p<0.001$).

Mental Health Outcomes: Depression and Anxiety

The primary mental health outcomes are presented in Table 2. A key finding of this study is the significant difference in the prevalence of depressive symptoms between the two groups. Nearly half of the women in the unwanted pregnancy group (46.7%) screened positive for depressive symptoms (BDI score ≥10), compared to 28.0% in the control group. This difference was statistically significant ($p=0.004$). Specifically, moderate-to-severe depressive symptoms were more than three times as common in the unwanted-pregnancy group (15.8% vs. 6.0%).

By contrast, no statistically significant difference in anxiety levels was observed between the groups ($p=0.450$). The distribution of anxiety severity—from minimal to severe—was comparable across both the unwanted-pregnancy and control groups.

Subgroup and Other Analyses

Within the unwanted pregnancy group, a subgroup analysis was conducted to determine whether mental health outcomes differed between primigravida women (n=12) and multiparous women (n=108) (Table 3). No significant differences were found in the prevalence or severity of anxiety ($p=0.334$) or depression ($p=0.385$) based on parity within this group.

Rates of self-reported marital problems and verbal violence were low in the overall sample and did not differ significantly between the groups ($p>0.05$ for all comparisons). No participants reported physical or sexual violence.

Contraceptive Planning Post-termination

Among the 120 women who underwent pregnancy termination, clinicians assessed their future contraceptive plans (Figure 1). A significant proportion (40.0%) planned to

Table 1. Demographic and obstetric characteristics of women with unwanted pregnancies and the control group

Variables	Unwanted pregnancy group (n=120)	Control (n=100)	Total (n=220)	p-value
Age (mean ± SD)	31.20±6.17	27.91±5.92	29.7±6.27	<0.001
Occupation, n (%)				
Employed	34 (28.3%)	19 (19%)	53 (24.1%)	0.108
Unemployed	86 (71.7%)	81 (81%)	167 (75.9%)	
Marital status, n (%)				
Married	103 (85.83%)	100 (100%)	203 (92.3%)	<0.001
Single	14 (11.66%)	0	14 (6.4%)	
Cohabiting	3 (2.5%)	0	3 (1.4%)	
Chronic illness, n (%)	21 (17.5%)	17 (17%)	38 (17.3%)	0.923
Educational level, n (%)				
Illiterate	6 (5%)	3 (3%)	9 (4.1%)	<0.001
Primary School	49 (40.8%)	26 (26%)	75 (34.1%)	
High School	47 (39.2%)	32 (32%)	79 (35.9%)	
University	18 (15%)	39 (39%)	57 (25.9%)	
Gestational age (weeks)				
By LMP (mean, min-max)	6.94 (5-9)	7.41 (5-10)	7.15 (5-10)	0.002
By ultrasound (mean, min-max)	6.86 (5-9)	7.37 (5-10)	7.09 (5-10)	<0.001
Gravida (mean, min-max)	3.7 (1-8)	2.36 (1-7)	3.09 (1-8)	<0.001
Parity (mean, min-max)	2.14 (0-7)	0.96 (0-6)	1.60 (0-7)	<0.001
Living children (mean)	2.13 (0-7)	0.93 (0-6)	1.58 (0-7)	<0.001
Curettage (mean)	0.29 (0-3)	0.06 (0-2)	0.19 (0-3)	<0.001
Abortion (mean, min-max)	0.31 (0-3)	0.33 (0-3)	0.32 (0-3)	0.811
Normal vaginal delivery (mean, min-max)	1.37 (0-7)	0.6 (0-6)	1.02 (0-4)	<0.001
Cesarean section (mean, min-max)	0.77 (0-5)	0.36 (0-3)	0.58 (0-4)	0.008
Smoking, n (%)	45 (37.5%)	16 (16%)	61 (27%)	<0.001

LMP: Last menstrual period, SD: Standard deviation

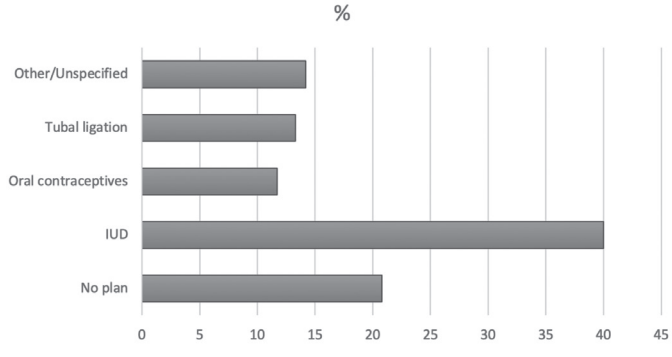

Figure 1. Distribution of planned contraception methods reported by women following an unwanted pregnancy

use an intrauterine device (IUD), a highly effective long-acting reversible contraceptive (LARC). However, a concerning 20.8% of women reported having no contraceptive plan for the future. Tubal ligation (13.3%) and oral contraceptives (11.7%) were other planned methods.

Discussion

This study provides a focused analysis of the mental health of women seeking termination of an unwanted pregnancy, revealing a significant burden of depressive symptoms, but no corresponding increase in anxiety. Our findings highlight that women in this situation are demographically distinct and psychologically vulnerable, underscoring the need for targeted clinical and public health interventions.

The central finding of our research is a markedly higher prevalence of depression among women with unwanted pregnancies compared with those with planned pregnancies. This is consistent with a large body of evidence linking unintended pregnancy to adverse mental health outcomes[7,15]. A systematic review by Nelson et al.[15] similarly found that unintended pregnancy was significantly associated with higher odds of maternal depression both during pregnancy and postpartum. Our study adds to this literature by demonstrating that this risk is particularly pronounced in a subgroup of women who have decided to terminate their pregnancy. Confronting an unwanted pregnancy, navigating the decision-making process, and dealing with potential social stigma and internal conflict can precipitate psychological distress, manifesting as depression[9,10].

Perhaps the most intriguing finding is the absence of a significant difference in anxiety levels between the two groups. This contrasts with the common assumption that the period preceding an abortion would be fraught with anxiety[10]. One possible explanation, which warrants further investigation, is related to the psychological construct of decision-making and resolution. For the women in our study group, the decision to terminate the pregnancy had already been made. This resolution of uncertainty may have had a mitigating effect on anxiety symptoms, which are often tied to anticipation of a future threat. While the decision itself may be emotionally painful and lead to feelings of loss, sadness, or guilt, the state of anxious uncertainty may already have passed. In contrast, the depressive symptoms may reflect the emotional aftermath of the decision and the circumstances leading to it. This dissociation between anxiety and depression in this specific clinical context represents a critical focus for future research and underscores the importance of avoiding bundling these conditions together in clinical screening.

Our socio-demographic findings paint a clear picture of vulnerability. Women with unwanted pregnancies were more

Table 2. Anxiety and depression levels among women with unwanted pregnancy and control group.

Variable	Unwanted pregnancy (n=120)	Control group (n=100)	Total (n=220)	p-value†
Anxiety, n (%)				
None	72 (60.0%)	52 (52.0%)	124 (56.4%)	0.450
Mild	35 (29.2%)	30 (30.0%)	65 (29.5%)	
Moderate	9 (7.5%)	12 (12.0%)	21 (9.5%)	
Severe	4 (3.3%)	6 (6.0%)	10 (4.5%)	
Depression, n (%)				
None	64 (53.3%)	72 (72.0%)	136 (61.8%)	0.004
Mild	37 (30.8%)	22 (22.0%)	59 (26.8%)	
Moderate	15 (12.5%)	4 (4.0%)	19 (8.6%)	
Severe	4 (3.3%)	2 (2.0%)	6 (2.7%)	

† Chi-square test

Table 3. Association between anxiety and depression levels and first pregnancy among women with unwanted pregnancies

Variable	First pregnancy (n=12)	Has living child(ren) (n=108)	Total (n=120)	p-value†
Anxiety, n (%)				
None	5 (41.7%)	67 (62.0%)	72 (60.0%)	0.334
Mild	5 (41.7%)	30 (27.8%)	35 (29.2%)	
Moderate	2 (16.7%)	7 (6.5%)	9 (7.5%)	
Severe	0 (0.0%)	4 (3.7%)	4 (3.3%)	
Depression, n (%)				
None	7 (58.3%)	57 (52.8%)	64 (53.3%)	0.385
Mild	2 (16.7%)	35 (32.4%)	37 (30.8%)	
Moderate	3 (25.0%)	12 (11.1%)	15 (12.5%)	
Severe	0 (0.0%)	4 (3.7%)	4 (3.3%)	

† Chi-square test

likely to be older, to have more children, to be unmarried, and to have lower educational attainment. These findings align with previous research indicating that high parity and lower SES are significant risk factors for unintended pregnancy[4,5]. The finding that women in the unwanted pregnancy group were older and had higher parity suggests that for many, the decision to terminate may be driven by the desire to limit family size because of limited economic or personal resources, which is also supported by previous studies[14,16]. The higher proportion of unmarried individuals in the unwanted pregnancy group underscores the profound influence of social context and support systems on reproductive decisions[17].

The data on post-termination contraceptive planning reveal both a challenge and an opportunity. It is encouraging that 40% of women plan to use an IUD, a highly effective LARC method. This aligns with recommendations from major health organizations, such as ACOG, which advocate offering LARC at the time of abortion to reduce subsequent unintended pregnancies[18,19]. However, the absence of a contraceptive plan in over 20% of women is alarming and highlights a critical gap in care. This highlights the necessity of integrating comprehensive, non-coercive, and patient-centered contraceptive counseling into all abortion-care services. The goal should be to empower women with the knowledge and access to choose a method that best fits their needs and life circumstances, thereby reducing the risk of repeat unintended pregnancies[20].

The extremely low rate of reported violence within our sample (<1%) is noteworthy and likely reflects significant underreporting due to social stigma, which is common in studies relying on self-report for sensitive topics[21]. International studies have shown a strong link between exposure to violence and both unintended pregnancy and adverse mental health outcomes, including PTSD, anxiety, and depression[22]. Obstetric care providers must be trained to create a safe and confidential environment for screening for intimate partner violence as part of a comprehensive psychosocial assessment.

Study Limitations

Several limitations of this study should be acknowledged. First, its cross-sectional design precludes causal inference. The study has a relatively small sample size for a retrospective design. We can report only an association between unwanted pregnancy and depression and cannot conclude that the former causes the latter. Second, the study was conducted at a single tertiary center in Türkiye, which may limit the generalizability of our findings to other geographic regions or healthcare settings. Third, our reliance on self-report measures (BDI and BAI) introduces the possibility of response bias, particularly for sensitive topics such as mental health symptoms and intimate partner violence. The low reported rate of violence strongly suggests underreporting. Fourth, while our study highlights the importance of sociodemographic factors, the sample size did not permit robust multivariable regression analysis to fully the independent effects of these variables from pregnancy intention. Finally, our control group consisted of women with planned pregnancies. Future research could benefit from including a third group of women with unintended (mistimed or unwanted) pregnancies who decide to carry their pregnancies to term, which would allow for a more nuanced understanding of the role of the final decision in mental health outcomes.

Conclusion

This study demonstrates that women seeking termination of an unwanted pregnancy constitute a population with a significantly elevated burden of depressive symptoms, but not of anxiety. These mental health outcomes are closely linked to a profile of socioeconomic vulnerability characterized by lower educational attainment, unmarried status, and higher parity. The findings strongly support the integration of routine mental health screening—with a particular focus on depression—into standard obstetric and abortion care. Furthermore, the significant proportion of women lacking a post-termination contraceptive plan highlights a critical gap in care. Providing patient-centered, comprehensive contraceptive counseling is a crucial, actionable step toward empowering women, preventing repeat unintended pregnancies, and ultimately improving maternal mental health.

Ethics

Ethics Committee Approval: The study protocol was approved by the Clinical Research Ethics Committee of Yozgat Bozok University (approval number: 2017-KAEK-189_2023.10.26_02, date: 26.10.2023).

Informed Consent: All participants provided written informed consent for the use of their clinical data for research purposes.

Footnotes

Authorship Contributions

Surgical and Medical Practices: M.B., Ç.A., E.S.Y., Concept: M.B., Ç.A., Design: Ç.A., E.S.Y., Data Collection or Processing: M.B., Ç.A., E.D.G., E.S.Y., Analysis or Interpretation: Ç.A., E.D.G., Literature Search: M.B., Ç.A., E.D.G., Writing: Ç.A., E.D.G., E.S.Y.

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